TIMKEN



TIMKEN® HOUSED UNIT CATALOG



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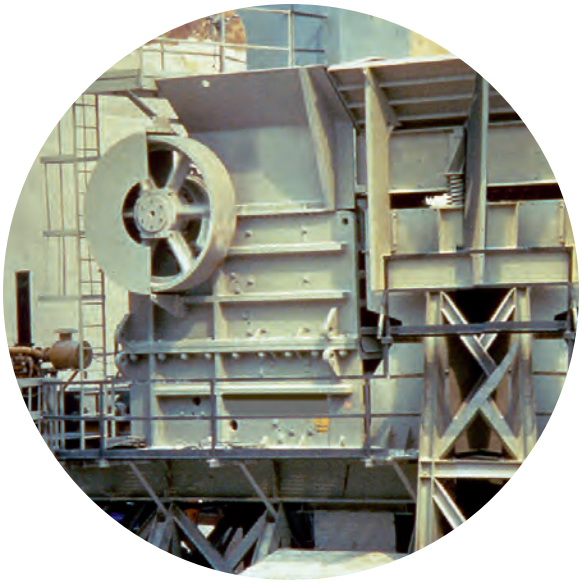
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GROW STRONGER WITH TIMKEN

Every day, people around the world count on the strength of Timken. Our expertise in metallurgy, friction management and mechanical power transmission helps them accelerate improvements in productivity and uptime.

We supply products and services that can help keep your operations moving forward, whether you need drive train kits for commercial vehicles, durable housings for bearings in dirty environments, couplings that avoid metal-to-metal contact between motors and gearboxes, repair services for rail bearings, steel for an aircraft engine shaft, or other products and services for your applications.

When you choose Timken, you receive more than high-quality products and services: You gain a worldwide team of highly trained and experienced Timken people committed to working collaboratively with you to improve your business.

Globally, our 20,000 people provide reliable answers for a wide range of operations in manufacturing, mining, medical equipment, aerospace, transportation, oil and gas – and other diverse industries.

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INCREASE YOUR EQUIPMENT UPTIME

In addition to high-quality bearings, engineered steel and mechanical power transmission components, we provide valuable integrated products and services. For example, we offer repair services and equipment monitoring equipment that can alert you to problems before they impact your uptime.

Additionally, we offer a broad selection of seals, premium lubricants, lubricators, couplings and chain to keep your operations moving smoothly.

Our 10 technology centers in the United States, Europe and Asia help pioneer tomorrow's innovations with extensive basic and applied scientific research programs. Through internal development and strategic acquisition of innovative companies, we continue to expand our portfolio of highly engineered bearings, steel and components.



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RUGGED TIMKEN® HOUSED UNITS HELP PROTECT YOUR BEARINGS

When you choose sturdy Timken housings, your bearings can keep rolling smoothly, even in harsh environments impacted by dirt, debris, water and other contaminants. Timken engineers designed special housings to withstand tough challenges on the job.

Protected inside durable cast iron or steel, our highly engineered Timken® ball and roller bearings work hard to help you manufacture and transport materials, without excessive maintenance due to contaminants.

Choose from our selection of housed units designed with ball, tapered and spherical bearings. Select enhancements like Timken® seals, lubricants and housing covers best suited for each task. Our engineers help you choose the right combination of bearings and accessories to extend bearing life, increase uptime and reduce maintenance costs.

Of course, you can interchange existing products with Timken housed units because our bolt holes and shaft centerline dimensions are designed to conform to industry standards.

Timken® housed units reflect our strengths in metallurgy, engineering and manufacturing. We produce all our bearings in adherence with the Timken Quality Management System for consistency in all our facilities around the world.

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TIMKEN® BALL HOUSED UNITS OFFER EASY INSTALLATION, FLEXIBLE OPTIONS

Timken® ball housed units, available in a variety of sizes and types, feature wide-inner-ring ball bearings that provide additional shaft support and locking options. The Timken® wide-inner-ring ball bearing is designed for straight shafts and can be positioned without shoulders, locknuts or adapters.

For easy installation, our ball housed units can be ordered pre-assembled with bearings, housings, seals and locking systems. Choose from pillow blocks, flanged cartridges, take-up units and cylindrical cartridges. Our cast-iron, pressed-steel and other optional materials give you durable choices for the exterior covers. Timken® locking options include set screws, self-locking collars and concentric collars.

Timken® Shaft Guarding Technology™ deters set-screw damage to shafts by placing a hardened band in the groove along the inner ring of the bearing. The set screws press against the band to transfer gripping pressure onto the shaft, preventing nicks, as well as raised-metal or permanent shaft damage. The stainless-steel band resists corrosion on the shaft. This system is particularly helpful for applications where it would be expensive and time-consuming to replace shafts.

TYPICAL INDUSTRIES AND APPLICATIONS

Use Timken ball bearing housed units in agricultural applications, fans, blowers, food processing devices and conveyors.



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TIMKEN® TYPE E HOUSED UNITS REPEL CONTAMINANTS, ENHANCE PERFORMANCE

Timken® Type E tapered roller bearing housed units feature double-lip seals and locking collars that protect against water and other contaminants. This double-lip seal design blocks debris and retains grease better than single-lip or triple-lip seals, according to Timken 2012 laboratory tests.

Its cast-iron exterior includes a corrosion-resistant electro-coat finish for the housing and collar, a more durable shield than industry-standard powder coating or black oxide. Set screws with nylon patches reduce back-out, even in rigorous applications.

Premium Timken® tapered roller bearings inside Type E housings are manufactured with advanced technology that results in longer predicted useful bearing life than other housed units with standard bearings. Designed with optimized bearing profiles and improved surface finishes, Timken tapered roller bearings operate efficiently within the housing.

TYPICAL INDUSTRIES AND APPLICATIONS

Use Timken Type E housings for pulp and paper, power generation, mining, cement and aggregate industries. Our Type E housed units also are widely used in equipment for air-handling and treatment of water and waste water. Other common machine applications include mixers, washers, shredders, mills and oven/furnace roller beds.



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TIMKEN® SPHERICAL ROLLER BEARING SOLID-BLOCK HOUSED UNITS WITHSTAND HARSH CONDITIONS

Timken® spherical roller bearing solid-block housed units stand up to rugged conditions. Composed of solid steel, they withstand most falling debris and handle up to ±1.5 degrees of misalignment. The steel used in these products is up to two times stronger than cast iron, which may break or pound out in tough applications.

Timken spherical roller bearing solid-block housed units come in five locking configurations: single and double set screws, eccentric locks for reversing applications, tapered-adaptor locks and double-tapered locks.

Choose from three sealing options: labyrinth seals (for high-speed, high-temperature applications) and triple-lip seals made of either nitrile or urethane. Timken® steel auxiliary covers provide an extra layer of protection, and they can be filled with Timken lubricants.

TYPICAL INDUSTRIES AND APPLICATIONS

Use Timken spherical roller bearing solid-block housed units in metals mills, aggregate and cement, mining, power generation, agriculture, pulp, paper, sawmills and other forest industries.



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TIMKEN® SAF SPLIT-BLOCK HOUSED UNITS BEAR HEAVY LOADS

Timken® SAF split-block housed units are available in rugged cast iron, ductile iron or cast steel to match a range of industrial environments. Our Timken SAF housed units have separate, matched caps and bases. In larger sizes where housed units are heavier, this split-block design eases installation. Remove the cap using a pry-tool slot for bearing inspection, service and replacement.

Available in a variety of shaft sizes, Timken SAF units offer the choice of tapered-bore design for easy mounting or a straight-bore design for better axial location. The block can be converted from fixed to float by removing the stabilizing ring. Several sealing options protect against contamination, including a standard seal, which is a precision aluminum triple-ring labyrinth seal.

TYPICAL INDUSTRIES AND APPLICATIONS

Use Timken SAF housed bearings in power generation, coal, mining, aggregate, cement, metals, pulp, paper and other forestry operations, water treatment and food processing industries. Applications include warehousing, conveyors, movable bridges/heavy structures, industrial fans and blowers.



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TIMKEN® SNT SPLIT PLUMMER BLOCKS CARRY HEAVY LOADS

Timken® SNT split plummer blocks are available in metric sizes. Their rugged cast iron, ductile iron or cast steel designs stand up to a range of industrial environments. Our Timken SNT plummer blocks have separate, matched caps and bases. In larger sizes where plummer blocks are heavier, this split-block design eases installation. Remove the cap using a pry-tool slot for bearing inspection, service and replacement.

Available in a variety of metric shaft sizes, Timken SNT plummer block units offer the choice of tapered-bore design for easy mounting or straight-bore design for better axial location. The block can be converted from fixed to float by adding or removing the locating rings. A variety of sealing options help protect against contamination including all-purpose elastomer seals, deflection-type V-ring seals, precision labyrinth seals and heavy-duty taconite seals for highly contaminated environments.

TYPICAL INDUSTRIES AND APPLICATIONS

Use Timken SNT plummer blocks in power generation (coal), mining, aggregate, cement, metals, pulp, paper and other forestry operations, water treatment and food processing industries. Applications include warehousing, conveyors, bulk material handling and industrial fans and blowers.



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HOW TO USE THIS CATALOG

We designed this catalog to help you find the Timken housed units best suited to your specifications.

Timken offers an extensive range of bearings and accessories in both imperial and metric sizes. For your convenience, size ranges are indicated in millimeters and inches. Contact your Timken engineer to learn more about our complete line for the special needs of your application.

This publication contains dimensions, tolerances and load ratings, as well as engineering sections describing fitting practices for shafts and housings, internal clearances, materials and other bearing features. It provides valuable assistance in the initial consideration of the type and characteristics of the bearings that may best suit your particular needs.

ISO and ANSI/ABMA, as used in this publication, refer to the International Organization for Standardization and the American National Standards Institute/American Bearing Manufacturers Association.

Updates are made periodically to this catalog. Visit www.timken.com for the most recent version of the Timken® Housed Unit Catalog.

DISCLAIMER

This catalog is provided solely to give you analysis tools and data to assist you in your product selection. Product performance is affected by many factors beyond the control of Timken. Therefore, you must validate the suitability and feasibility of all product selections for your applications.

Timken products are sold subject to Timken terms and conditions of sale, which include our limited warranty and remedy. You can find these at http://www.timken.com/en-us/purchase/Pages/TermsandConditionsofSale.aspx.

Please consult with your Timken engineer for more information and assistance.

Every reasonable effort has been made to ensure the accuracy of the information in this writing, but no liability is accepted for errors, omissions or for any other reason.

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SHELF LIFE AND STORAGE OF GREASE-LUBRICATED BEARINGS AND COMPONENTS

To help you get the most value from our products, Timken provides guidelines for the shelf life of grease-lubricated ball and roller bearings, components and assemblies. Shelf life information is based on Timken and industry test data and experience.

SHELF LIFE POLICY

Shelf life should be distinguished from lubricated bearing/component design life as follows:

- Shelf life of the grease-lubricated bearing/component represents the period of time prior to use or installation.
- The shelf life is a portion of the anticipated aggregate design life. It is impossible to accurately predict design life due to variations in lubricant bleed rates, oil migration, operating conditions, installation conditions, temperature, humidity and extended storage.
- Shelf life values, available from Timken, represent a maximum limit and assume adherence to the storage and handling guidelines suggested in this catalog or by a Timken associate. Deviations from the Timken storage and handling guidelines may reduce shelf life. Any specification or operating practice that defines a shorter shelf life should be used.

Timken cannot anticipate the performance of the grease lubricant after the bearing or component is installed or placed in service.

TIMKEN IS NOT RESPONSIBLE FOR THE SHELF LIFE OF ANY BEARING/COMPONENT LUBRICATED BY ANOTHER PARTY.

European REACH Compliance

Timken lubricants, greases and similar products sold in standalone containers or delivery systems are subject to the European REACH (**R**egistration, **E**valuation, **A**uthorization and Restriction of **CH**emicals) directive. For import into the European Union, Timken can sell and provide only those lubricants and greases that are registered with ECHA (**E**uropean **CH**emical **A**gency). For further information, please contact your Timken engineer.



STORAGE

Timken suggests the following storage guidelines for our finished products (bearings, components and assemblies, referred to as "products"):

- Unless directed otherwise by Timken, products should be kept in their original packaging until they are ready to be placed into service.
- Do not remove or alter any labels or stencil markings on the packaging.
- Products should be stored in such a way that the packaging is not pierced, crushed or otherwise damaged.
- After a product is removed from its packaging, it should be placed into service as soon as possible.
- When removing a product that is not individually packaged from a bulk pack container, the container should be resealed immediately after the product is removed.



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- Do not use product that has exceeded its shelf life as defined in the Timken shelf life guidelines statement.
- The storage area temperature should be maintained between 0° C (32° F) and 40° C (104° F); temperature fluctuations should be minimized.
- The relative humidity should be maintained below 60 percent and the surfaces should be dry.
- The storage area should be kept free from airborne contaminants such as, but not limited to, dust, dirt, harmful vapors, etc.
- The storage area should be isolated from undue vibration.
- Extreme conditions of any kind should be avoided.

Due to the fact that Timken is not familiar with your particular storage conditions, we strongly suggest following these guidelines. However, you may be required by circumstances or applicable government requirements to adhere to stricter storage requirements.

Most bearing components typically ship protected with a corrosion-preventive compound that is not a lubricant. These components may be used in oil-lubricated applications without removal of the corrosion-preventive compound. When using some specialized grease lubrications, we advise you to remove the corrosion-preventive compound before packing the bearing components with suitable grease.

We pre-pack most housed unit types in this catalog with general-purpose grease suitable for their normal applications. It may be necessary for you to frequently replenish the grease for optimum performance.

Be careful in selecting lubrication, however, since different lubricants are often incompatible. You may order housed units pre-lubricated with a specified lubrication.

When you receive a bearing or housed unit shipment, do not remove products from their packaging until they are ready for mounting so they do not become corroded or contaminated.

Store bearings and housed units in an appropriate atmosphere so they remain protected for the intended period.

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⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Failure to follow selection recommendations and installation instructions and to maintain proper lubrication can result in equipment failure.

Overheated bearings can ignite explosive atmospheres. Special care must be taken to properly select, install, maintain, and lubricate housed unit bearings that are used in or near atmospheres that may contain explosive levels of combustible gases or accumulations of dust such from grain, coal, or other combustible materials. Consult your equipment designer or supplier for installation and maintenance instructions.

⚠ CAUTION

Failure to follow these cautions could create a risk of injury.

Do not use damaged housed units. The use of a damaged housed unit can result in equipment damage and/or injury.

CAUTION

Failure to follow these cautions may result in property damage.

If hammer and bar are used for installation or removal of a part, use a mild steel bar (e.g., 1010 or 1020 grade). Mild steel bars are less likely to cause release of high-speed fragments from the hammer, bar or the part being removed.

Warnings for this product line are in this catalog and posted on www.timken.com/en-us/products/warnings/Pages/TimkenHousedUnitWarnings.aspx.

NOTE

Do not use excessive force when mounting or dismounting the unit.

Follow all tolerance, fit, and torque recommendations.

Always follow the Original Equipment Manufacturer's installation and maintenance guidelines.

Ensure proper alignment.

Never weld housed units.

Do not heat components with an open flame.

Do not operate at bearing temperatures above 121° C (250° F).

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A

BALL BEARING HOUSED UNITS

Timken® ball bearing housed units feature a wide-inner-ring ball bearing for additional shaft support. Designed for mounting on straight shafts with a slip fit, these housed units are available in an extensive array of types and sizes to accommodate many industrial applications.

When set screws are used, Timken suggests using Shaft Guarding Technology™, a stainless-steel, hardened band that is inserted in a groove on the inner ring. When the set screws are tightened, they press against the band, tightening the grip on the shaft. Unlike traditional set screws, which can dig into the shaft, there are no nicks, raised metal or permanent shaft damage. The stainless band resists the formation of corrosion on the shaft.

Updates are made periodically to this catalog. Visit www.timken.com for the most recent version of the Timken® Housed Unit Catalog.

TYPICAL INDUSTRIES AND APPLICATIONS

Common industries and applications include agriculture, food processing, fans, blowers, and conveyors.

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Wide-Inner-Ring Ball Bearings A-25
Ball Bearing Housed Units A-62



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ENGINEERING



Antifriction bearings possess capabilities involving broad ranges of speed and many combinations of radial and thrust loads. Other important environmental conditions, such as low and high temperatures, dust and dirt, moisture and unusual conditions, affect bearing operation.

This engineering section is not intended to be comprehensive, but it does serve as a useful guide in bearing selection. Where more complex bearing applications are involved, contact your Timken engineer.

To view the complete engineering catalog, please visit www.timken.com. To order the catalog, please contact your Timken engineer and request a copy of the Timken Engineering Manual, order number 10424.

The following topics are covered within this section:

Materials A-4
Internal Clearances A-6
Cages A-7
Lubrication A-8
Load Ratings and Life Calculations A-11
Frequency Coefficients A-13
Mounting A-14
Installation A-22
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MATERIALS

TEMPERATURE RANGES, RESISTANCE TO CORROSION AND OTHER OPERATING ENVIRONMENTS

To accommodate the needs of the rapidly expanding industrial world, the capability of bearings in various extreme environments becomes vitally important. No general recommendations can be made to cover all such applications. Each installation must be studied to determine peak and average operating temperatures, length of time at these temperatures, load, oscillation or rotation, and any other factors affecting bearing operation.

RINGS, BALLS AND ROLLERS

Suggested materials for use in rings, balls and rollers at various operating temperatures together with data on chemical composition, hardness and dimensional stability are listed in table A-1 on page A-5. A temperature of 427° C (800° F) is generally the upper limit for successful bearing operating steels. Above 427° C (800° F), or below where lubricant is not permitted, cast or wrought-cobalt alloys are generally used. Although chosen primarily for their good retention of physical properties, they also possess good oxidation resistance at elevated temperatures.

CAGES, SHIELDS AND SEALS

Recommended materials for cages, shields and seals with their temperature capabilities are in table A-3 on page A-7.

DIMENSIONAL STABILITY

Dimensional stability of rings and balls is achieved by tempering the hardened steel until any further growth by transformation of austenite to martensite is balanced by shrinkage from tempering martensite. This balance is never perfect, and some size change will always occur. The amount depends upon the operating time and temperature of the bearings and the composition of and heat-treatment of the steel. The American Bearings Manufacturers Association (ABMA) definition for stabilized rings and balls permits a change of less than 0.0001 inch per inch after exposure to a temperature of 149° C (300° F) for 2500 hours. Rings and balls used at elevated temperatures are defined as stable by ABMA where there is a size change of less than 0.00015 inch per inch after 1500 hours of exposure at temperatures of 232° C, 316° C and 427° C (450° F, 600° F and 800° F).

CORROSION RESISTANCE

Timken developed a premium coating named TDC™ (thin-dense chrome), which has excellent corrosion resistance, as well as other properties leading to improved bearing life. TDC-coated bearings are intended for use in applications where unprotected bearings do not survive. This proprietary coating, emanating from years of research and testing, is a real problem-solver.

Besides its corrosion resistance feature, this coating has a high hardness (HRC 70-72), reduced coefficient of friction and a dense modular texture.

TDC is resistant to most organic and inorganic compounds. The normal thin coating of less than 0.003 mm (0.0001 in.) will outlast 440C stainless steel. The very high hardness, lower coefficient of friction and surface texture provide extra resistance to wear under less-than-ideal lubrication and thus longer bearing life.

Under normal lubrication conditions, TDC-coated races can provide fatigue life that's two times longer than the life of standard bearings.

To order wide-inner-ring ball bearings with TDC-coated races, stainless-steel balls and nylon retainers, specify suffix TDC or TDCF, which includes food safe grease (i.e., G1100KRRB + COL TDCF). This coating also can be readily applied to various types of tapered, cylindrical and spherical roller bearings.

To ensure proper application of TDC, contact your Timken engineer.

In addition to the bearings mentioned above, Timken is able to supply specially coated housing for applications involving particularly harsh environments where Food and Drug Administration (FDA) and United States Department of Agriculture (USDA) regulations apply. These housings, named Survivor® are available as electroless nickel-plated or polymer depending on the situation. The electroless nickel units are required for food processing, medical and other applications and may be ordered by adding an -NT suffix to the part number. The polymer units are similar to the NT units but offer superior protection against corrosion. Add the suffix -PT to the part when ordering.

Both coatings offer excellent protection to a broad variety of corrosive environments and are vulnerable only to a very few aggressive materials.

A complete review of operating conditions is essential before specifying corrosion-resistance housed units and/or thin-dense chrome (TDC) coated bearings. Consult your Timken engineer for comprehensive recommendations.

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OTHER CONSIDERATIONS

Installations that operate at high temperatures for extended periods may lose the quality of shaft and housing fits. Carefully machined and heat-treated shafts and housings will minimize trouble from this source.

In some applications, the internal clearance of bearings may be partially absorbed. For example, during the first few seconds of rotation, a massive housing may keep the outer race cooler than the inner race and balls, even if the housing is already at some elevated temperature. Also, during heat soakback, when rotation stops, heat may flow back to the bearing along the shaft. If, while stationary, the effects of heat soakback nullify the radial internal clearance, radial brinelling of the races may occur and the bearing will be rough during subsequent rotation. Bearings with greater internal looseness may be required to compensate for these conditions. Consult your Timken engineer for recommendations.

This table provides standard operating temperatures for common bearing component materials. It should be used for reference purposes only. Other bearing component materials are available on request.

Contact your Timken engineer for further information.

TABLE A-1. OPERATING TEMPERATURES FOR BEARING COMPONENT MATERIALS – RINGS, BALLS AND ROLLERS

Material	Approximate Chemical Analysis %	Temp. °C, (°F)	Hardness HRC	-73° C -100° F	-54° C -65° F	-17° C 0° F	38° C 100° F	93° C 200° F	121° C 250° F	149° C 300° F	204° C 400° F	260° C 500° F	316° C 600° F	371° C 700° F	427° C 800° F
Low-alloy carbon-chromium bearing steels. 52100 and others per ASTM A295	1C 0.5 – 1.5Cr 0.35Mn	**21** (70)	60		STANDARD DIMENSIONAL STABILIZATION <0.0001 in./in dimensional change in 2500 hours at 100° C (212° F). Good oxidation resistance.										
Low-alloy carbon-chromium bearing steels. 52100 and others per ASTM A295	1C 0.5 – 1.5Cr 0.35Mn	**21** (70) **177** (350) **232** (450)	58 56 54	Heat stabilized per FS136. When given a stabilizing heat treatment, A295 steel is suitable for many applications in the 177° – 232° C (350° – 450° F) range; however, it is not as stable dimensionally as it is at temperatures below 177° C (350° F). If utmost stability is required, use materials in the 316° C (600° F) group below.											
Deep-hardening steels for heavy sections per ASTM A485	1C 1 – 1.8Cr 1 – 1.5Mn .06Si	**21** (70) **232** (450) **316** (600)	58 55 52	After heat-treated and tempered, it is stabilized.											
Carburizing steels per ASTM A534 a) low alloy 4118, 8X19, 5019, 8620 (Ni-Moly grades) b) high nickel 3310	Ni-Moly: 0.2C, 0.4-2.0Mn, 0.3-0.8Cr, 0-2.0Ni, 0-0.3Mo .0.1C, 1.5Cr, 0.4Mn, 3.5Ni	**21** (70)	58		Nickel-Moly grades of steel frequently used to achieve extra ductility in inner rings for locking device bearings. 3311 and others used for extra-thick-section rings.										
Corrosion-resistant 440C stainless steel per ASTM A756	1C 18Cr	**21** (70)	58		Excellent corrosion resistance.										
Corrosion-resistant 440C stainless steel per ASTM A756	1C 18Cr	**21** (70) **232** (450) **316** (600)	58 55 52	Heat stabilized for maximum hardness at high temperatures (FS238). Good oxidation resistance at higher temperatures. Note load capacity drops off more rapidly at higher temperatures than M50 shown below, which should be considered if loads are high.											
M-50 medium high speed	4Cr 4Mo 1V 0.8C	**21** (70) **232** (450) **316** (600)	60 59 57	Suggested where stable high hardness at elevated temperature is required.											

NOTE: Bearings have been made of special material for operation at temperatures above 427° C (800° F). Consult your Timken engineer regarding the application. ASTM A295 bearing steels are suitable for many applications up to 212° C (413° F) but are not as dimensionally stable as they are at the temperatures below 100° C (212° F).

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INTERNAL CLEARANCE
RADIAL INTERNAL CLEARANCE

The radial internal clearance of radial contact ball bearings can be defined as the average outer ring raceway diameter minus the average inner ring raceway diameter minus twice the ball diameter.

RADIAL BALL BEARINGS

While manufacturing ball bearings, it is standard practice to assemble rings and balls with a specified internal clearance (table A-2). This characteristic is necessary to absorb the effect of press fitting the bearing rings at mounting.

Internal clearance is sometimes utilized to compensate for thermal expansion of bearings, shafts and housings, or to provide a contact angle in the bearing after mounting.

Internal clearance can be measured by gaging either radially or axially.

Radial measurement is accepted as the more significant characteristic because it is more directly related to shaft and housing fits. It also is the method prescribed by the American Bearing Manufacturers Association (ABMA).

Radial internal clearance can be measured mechanically by moving the outer ring horizontally, as shown in fig. A-1. The total movement of the outer ring when the balls are properly seated in the raceways determines the radial internal clearance. Several readings should be taken using different circumferential orientations of the rings to get a comprehensive average reading.

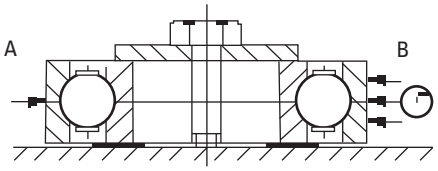


Fig. A-1. Radial internal clearance. A and B are applied forces.

TABLE A-2. LIMITS FOR RADIAL INTERNAL CLEARANCE OF SINGLE-ROW RADIAL CONTACT BALL BEARINGS UNDER NO LOAD (APPLIES TO BEARINGS OF ABEC1 AND ABEC3 TOLERANCES)

All tolerances in micrometers (µm) and ten-thousandths inches (0.0001 in.)

Timken Prefix (ABMA designation) Basic Bore Dia.		H (C2) Acceptance Limits		R (C0) Acceptance Limits[1]		P (C3) Acceptance Limits[1]		J (C4) Acceptance Limits		JJ (C5) Acceptance Limits	
Over	Incl.	Low	High	Low	High	Low	High	Low	High	Low	High
mm	mm	µm in.	µm in.	µm in.	µm in.	µm in.	µm in.	µm in.	µm in.	µm in.	µm in.
2.5	**10**	**0**	**7**	**2**	**13**	**8**	**23**	**14**	**29**	**20**	**37**
		0	3	1	5	3	9	6	11	8	15
10	**18**	**0**	**9**	**3**	**18**	**11**	**25**	**18**	**33**	**25**	**45**
		0	3.5	1	7	4	10	7	13	10	18
18	**24**	**0**	**10**	**5**	**20**	**13**	**28**	**20**	**36**	**28**	**48**
		0	4	2	8	5	11	8	14	11	19
24	**30**	**1**	**11**	**5**	**20**	**13**	**28**	**23**	**41**	**30**	**53**
		0.5	4.5	2	8	5	11	9	16	12	21
30	**40**	**1**	**11**	**6**	**20**	**15**	**33**	**28**	**46**	**40**	**64**
		0.5	4.5	2	8	6	13	11	18	16	25
40	**50**	**1**	**11**	**6**	**23**	**18**	**36**	**30**	**51**	**45**	**73**
		0.5	4.5	2.5	9	7	14	12	20	18	29
50	**65**	**1**	**15**	**8**	**28**	**23**	**43**	**38**	**61**	**55**	**90**
		0.5	6	3.5	11	9	17	15	24	22	35
65	**80**	**1**	**15**	**10**	**30**	**25**	**51**	**46**	**71**	**65**	**105**
		0.5	6	4	12	10	20	18	28	26	41
80	**100**	**1**	**18**	**12**	**36**	**30**	**58**	**53**	**84**	**75**	**120**
		0.5	7	4.5	14	12	23	21	33	30	47
100	**120**	**2**	**20**	**15**	**41**	**36**	**66**	**61**	**97**	**90**	**140**
		1	8	6	16	14	26	24	38	35	55
120	**140**	**2**	**23**	**18**	**48**	**41**	**81**	**71**	**114**	**105**	**160**
		1	9	7	19	16	32	28	45	41	63
140	**160**	**2**	**23**	**18**	**53**	**46**	**91**	**81**	**130**	**120**	**180**
		1	9	7	21	18	36	32	51	47	71
160	**180**	**2**	**25**	**20**	**61**	**53**	**102**	**91**	**147**	**135**	**200**
		1	10	8	24	21	40	36	58	53	79
180	**200**	**2**	**30**	**25**	**71**	**63**	**117**	**107**	**163**	**150**	**230**
		1	12	10	28	25	46	42	64	59	91
200	**240**	**3**	**36**	**30**	**81**	**74**	**137**	**127**	**193**	**183**	**267**
		1	14	12	32	29	54	50	76	72	105
240	**280**	**3**	**41**	**33**	**97**	**86**	**157**	**147**	**224**	**213**	**310**
		1	16	13	38	34	62	58	88	84	122
280	**320**	**5**	**48**	**41**	**114**	**104**	**180**	**170**	**257**	**246**	**353**
		2	19	16	45	41	71	67	101	97	139
320	**370**	**5**	**53**	**46**	**127**	**117**	**208**	**198**	**295**	**284**	**409**
		2	21	18	50	46	82	78	116	112	161
370	**430**	**8**	**64**	**56**	**147**	**137**	**241**	**231**	**340**	**330**	**475**
		3	25	22	58	54	95	91	134	130	187
430	**500**	**10**	**74**	**66**	**170**	**160**	**279**	**269**	**396**	**386**	**551**
		4	29	26	67	63	110	106	156	152	217
500	**570**	**10**	**81**	**74**	**193**	**183**	**318**	**307**	**450**	**439**	**630**
		4	32	29	76	72	125	121	177	173	248
570	**640**	**13**	**91**	**85**	**216**	**206**	**356**	**345**	**505**	**495**	**706**
		5	36	33	85	81	140	136	199	195	278
640	**710**	**20**	**114**	**107**	**239**	**229**	**394**	**384**	**564**	**554**	**780**
		8	45	42	94	90	155	151	222	218	307
710	**800**	**20**	**140**	**130**	**269**	**259**	**445**	**434**	**630**	**620**	**879**
		8	55	51	106	102	175	171	248	244	346
800	**1060**	**28**	**211**	**201**	**353**	**345**	**587**	**577**	**833**	**823**	**1148**
		11	83	79	139	136	231	227	328	324	452

[1]Standard fits for Timken® radial ball bearings. P(C3) for bearing O.D. greater than 52 mm (greater than 25 mm bore).

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CAGES

Cages (also referred to as rolling-element retainers) serve several purposes in the proper operation of a rolling-element bearing. Cages separate the rolling elements and prevent rolling-element-on-rolling-element contact and wear. Cages serve to maintain rolling-element spacing in the races of the inner and outer rings of the bearings as the rolling elements pass into and out of the load zones. For handling purposes, cages also can retain the rolling elements on the inner ring assembly to allow for bearing installation.

To meet the needs of the various service requirements of customers, Timken offers two reliable cage types for wide-inner-ring ball bearings – pressed-steel welded cages and molded-nylon finger-type cages.

PRESSED-STEEL WELDED CAGES

This cage type consists of two formed cage halves welded together (fig. A-2). This type of cage is standard for most radial non-filling-slot ball bearings, providing high strength and rigidity, as well as good uniformity of ball-to-pocket clearance. It is suitable for very high-temperature applications, but does not accommodate application misalignment.



Fig. A-2. Pressed-steel welded cage.

MOLDED-NYLON FINGER-TYPE CAGES

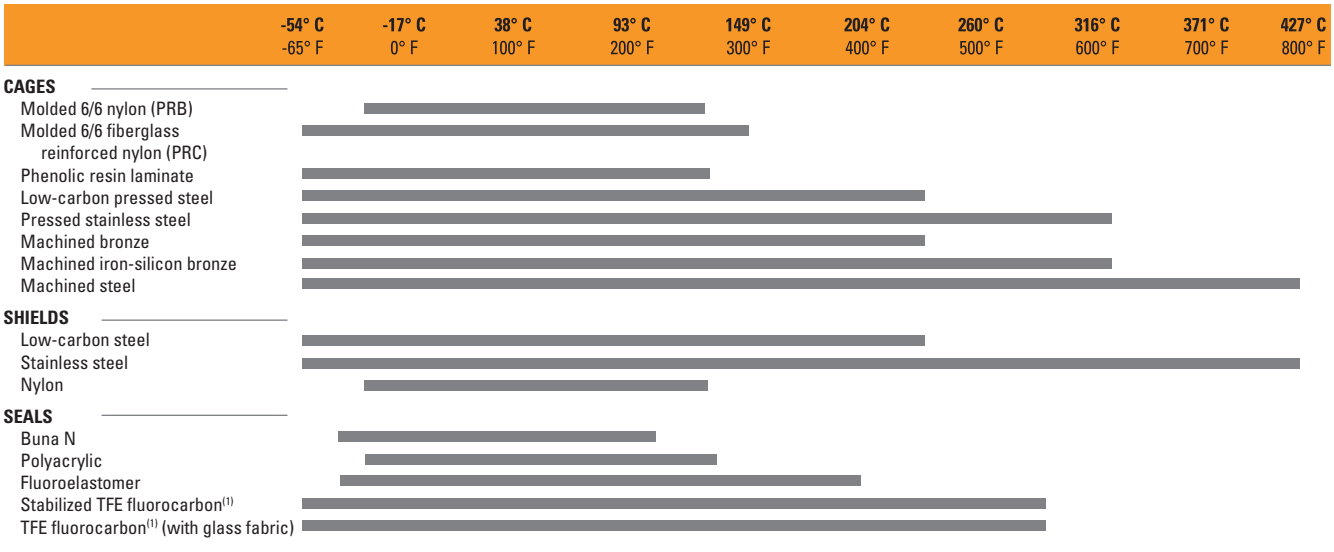
This type of cage consists of a one-piece molded design (fig. A-3). Rolling elements simply snap into place. Used in the majority of wide-inner-ring ball bearings, these cages are molded of nylon 6/6 that is heat-stabilized and moisture-conditioned. The polymer can withstand continuous operating temperatures up to 120° C (250° F) with spikes up to 150° C (300° F) and provides a non-corrosive, self-lubricating material with good resistance to abrasion, wear, most solvents, oils and greases. This cage type can accommodate application misalignment.

Care needs to be exercised when using aggressive lubricants with extreme-pressure (EP) additives in combination with elevated temperatures greater than 107° C (225° F).



Fig. A-3. Molded-nylon cage.

TABLE A-3. OPERATING TEMPERATURES FOR BEARING COMPONENT MATERIALS – CAGES, SHIELDS AND SEALS



(1)Limited life above these temperatures.

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LUBRICATION

SPEED CAPABILITY

There is no precise method for determining the maximum speed at which a ball bearing may operate. Bearing characteristics and features of surrounding parts, shafts, housings and other components, as well as basic service conditions, are all variables that are dependent upon each other for continued satisfactory high-speed performance.

The safe operating speed of a ball bearing is often limited by the temperature within the bearing, which, in turn, is dependent upon the temperature surrounding the application, bearing seals, shaft and housing tolerances, auxiliary parts, etc., and the type and amount of lubricant.

Although the speed values shown in the table A-4 are based on many years of research and accumulated data, numerous bearing applications successfully operate with speed ratings in excess of those tabulated. Such applications should be reviewed by your Timken engineer.

The values in the following table may be used as a general guide for determining the safe maximum speed of standard types of wide-inner-ring ball bearings. To obtain the speed rating for any bearing size with inner ring rotation, multiply the bore in millimeters of the basic size bearing by the speed in revolutions per minute.

TABLE A-4. MAXIMUM OPERATING SPEED RECOMMENDATIONS

Timken Series	Maximum dN Values
Industrial Duty	
R series	175000
Y series	175000
Medium Y series	175000
Special Duty	
R-NT series	175000
SAL and SAOL series	275000
RAKH and RAKHL series	175000
Severe Duty	
R-PT series	175000
Y-PT series	175000
L series	250000
T series	500 RPM maximum[1]
Standard Duty	
V series	140000
S series	140000

[1]Please contact your Timken engineer for applications where speeds may exceed 500 RPM.

Example:

Find the maximum operating speed for an LAK1 pillow block.

1. Find the maximum dN value for an LAK1 from the above table.
   250000
2. Find the bore of an LAK1 in millimeter.
   1 in. = 25.4 mm
3. Apply the dN equation.
   dN max. = bearing bore (in.mm) x max. operating speed
   250000 = 25.4 x maximum operating speed
   Max. operating speed = 250000/25.4 = 9840 RPM

Thus, the maximum operating speed for an LAK1 is 9840 RPM.

LUBRICANT SELECTION

The successful application of lubricating fluids on bearings depends on the physical and chemical properties of the lubricant as they pertain to the bearing, its application, installation and general environmental factors.

VISCOSITY

Generally, the most important single property of a lubricating fluid is its viscosity. Viscosity is the measure of the relative resistance of a fluid to flow and is a function of speed and temperature (fig. A-4).

The measurement of viscosity can be made by several different instruments called viscosimeters. A common unit of measure is the Saybolt Universal Second (SUS). This is the time, in seconds, required for 60 cc of a fluid to flow through a standardized orifice under a standard head, at a given temperature. The common temperatures for reporting viscosity are 37.78° C to 98.89° C (100° F to 210° F). The higher the viscosity number, the greater the resistance to flow.

Experience indicates that a lubricating fluid with a viscosity of at least 100 SUS at the operating temperature of the application will be adequate for normal bearing lubrication.

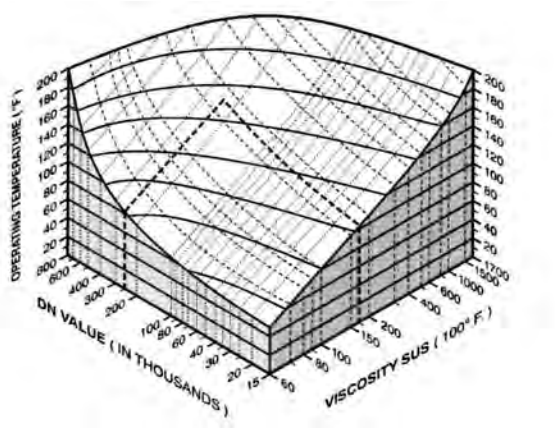


Fig. A-4. Lubrication selection as a function of bearing dN and operating speed.

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VISCOSITY INDEX

The ideal oil (as far as viscosity is concerned) would be the same viscosity at all temperatures. All oils become less viscous (thin-out) when heated and more viscous (thickened) when cooled.

However, oils do not vary in viscosity to the same extent. Some thicken or thin more rapidly than others.

The term viscosity index, or VI, is used to rate oils according to their temperature-viscosity behavior.

Oils with the highest viscosity index are more resistant to changes in viscosity with changes in temperature than lower viscosity index oils. Obviously, high viscosity-index lubricants are most suitable for bearing applications experiencing wide temperature variations.

The National Lubricating Grease Institute (NLGI) classification of grease consistency is shown below (table A-5):

TABLE A-5. NLGI CLASSIFICATIONS

NLGI Grease Grades	Penetration No.
0	355-385
1	310-340
2	265-295
3	220-250
4	175-205
5	130-160
6	85-115

POUR POINT

The pour point is the lowest temperature at which a fluid will flow or can be poured. It is important in applications exposed to low temperatures that the lubricating fluid selected has a pour point lower than the minimum ambient temperature.

⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

TYPES OF LUBRICATION

Timken understands the importance of friction management. Our line of application- and environment-specific lubricants has been developed by leveraging our knowledge of tribology and antifriction bearings, as well as how these two elements affect overall system performance.

Timken® lubricants help bearings and related components operate effectively in demanding industrial operations. High-temperature, anti-wear and water-resistant additives offer superior protection in challenging environments.

Similar to our bearings, all Timken lubricants are backed by highly trained customer service and technical support associates. Industrial customers turn to Timken for comprehensive friction management solutions. We help customers analyze performance and suggest options that make sense for their unique operating conditions and maintenance intervals.

TABLE A-6. STANDARD BALL-BEARING LUBRICATION

Bearing Type	Grease Type	Grease Temperature Range
Radial bearings (double shielded, and single and double shielded)	Polyurea thickener Petroleum oil	-34.44° C to +135° C (-40° to +275° F)
Wide-inner-ring ball bearings (contact seal types)	Polyurea thickener Petroleum oil	-34.44° C to +135° C (-40° to +275° F)
Wide-inner-ring ball bearings (labyrinth seal types)	Synthetic thickener Synthetic hydrocarbon fluid	-53.89° F to +162.75° C (-65° F to +350° F)

NOTE: Open-type bearings and single-shielded types are not prelubricated. They have a rust-preventative coating only and must be lubricated by the customer or end-user before operation.

Bearings that have been factory pre-lubricated use a high-quality grease. Bearings with contacting lip seals and shields contain No. 2 polyurea base grease. Bearings with non-contacting labyrinth seals (suffix KLL in bearing part number) contain a No. 2 modified clay base grease. For normal conditions of service, these bearings require no further lubrication.

Normal service is considered as operating in a clean, dry environment at temperatures between -34° C to +82° C (-30° F to +180° F) and at dN values (bore in millimeter multiplied by speed in RPM) less than 175000.

If service is considered abnormal due to speed, temperature or exposure to moisture, dirt or corrosive chemicals, periodic relubrication may be advisable. Excessive relubrication may cause high operating temperatures due to grease churning. General guidelines for relubrication are provided in table A-7.

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TIMKEN BALL-BEARING PILLOW-BLOCK GREASE

Timken ball-bearing pillow-block grease is an NLGI No. 2 polyurea-thickened grease. It provides outstanding long life and moderately high-temperature lubrication to ball bearings. This grease maintains its mechanical shear stability and provides corrosion resistance, even in the presence of salt water. Timken ball-bearing pillow-block grease features low-noise characteristics and excellent pumpability. This grease does not contain extreme-pressure additives but inhibits rust and oxidation. Operating temperatures range from -40° C to 163° C (-40° F to 400° F). This grease is typically used in lightly loaded ball bearings in pillow blocks and conveyors that operate in high-temperature environments, including kiln and glasswork applications, electric motors, chemical manufacturing and noise-sensitive environments.

SAL/SAOL LUBRICATION

SAL/SAOL housed units are intended for use with oil lubrication and are equipped with a filler cup located on top of the pillow block. Each housing assembly also has an overflow cup and a pipe plug located at the base. These can be interchanged as required to properly locate the overflow cup with respect to shaft rotation. The overflow cup should be placed on the downward side of the shaft rotation. Incorrect placement will cause oil to leak from the overflow cup during operation. Oil should be supplied through the filler cup until overflow is full. Please note to inspect and refill only when the shaft is stationary to avoid overfilling.

Inspection is necessary to determine the frequency of refilling, which is based on a number of factors, including speed, temperature and oil type. To avoid inadequate lubrication, maintain the oil level to the top of the overflow cup.

In general, a high-quality automotive or turbine oil with oxidation inhibitors is recommended. For normal operating conditions, an SAE 30 weight oil or equivalent is adequate. Contact your Timken engineer for abnormal service lubrication recommendations.

SURVIVOR® PT, NT AND PS LUBRICATION

These housed units are specifically designed for use in conditions of corrosion and contamination. The premium bearing insert is factory-prelubricated with aluminum-complex, high-quality, type H1, food-grade grease. This grease is acceptable in applications with incidental food contact.

GENERAL RELUBRICATION SUGGESTIONS

Periodic relubrication is advisable due to the nature of food-grade grease and the corrosive environments for which these units are designed. Consult your equipment manufacturer's operating manual for the relubrication cycle. General guidelines are found in table A-7.

TABLE A-7. GENERAL RELUBRICATION RECOMMENDATIONS FOR GREASED BEARINGS[1]

Condition	Relubrication Interval
Indoor service	Not required
Outdoor service	Two/three times per year
Severe outdoor exposure	Once a month
High contamination/washdown	Once a week

[1]As a guideline, relubricate until the first indication of grease is observed purging from either seal lip.

SINGLE-POINT AND CENTRALIZED MULTI-POINT LUBRICATORS

Proper lubrication is critical to bearing and machine performance. To help prevent damage, Timken G-Power and M-Power single-point lubricators deliver periodic grease to bearings, chains, guideways and other industrial equipment components (fig. A-5). You can choose from gas-powered or electromechanical varieties to meet your operating specifications. C-Power multi-point lubricators are a centralized lubrication system capable of delivering grease to up to six lubrication points (fig. A-6). Oil is not an option for this unit.

G-Power, M-Power and C-Power canisters can be filled with Timken-formulated lubricants or many other types of commercial lubricants. A full line of accessories – including brackets, clamps, brushes, fittings and hose extensions – ease installation and offer a host of mounting options for hard-to-reach locations.



Fig. A-5. G-Power and M-Power lubrication units with activators.



Fig. A-6. C-Power.

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LOAD RATINGS AND LIFE CALCULATIONS

RADIAL BALL-BEARING LOAD RATINGS

The load ratings published in this catalog are based on ABMA Standard Section 9, but they are increased to reflect improvements in materials and processing. These ratings are referred to as extended basic dynamic load ratings (C_E). Care must be taken that the extended basic dynamic load ratings only be used in equations containing C_E.

NOTATIONS USED IN THIS SECTION

C_N = Radial load rating of bearings at operating speed N – pounds or newtons = (N_f x C_E)
C_E = Extended basic dynamic load rating – radial ball bearings pounds or newtons
C_o = Basic static load rating – radial ball bearing pounds or newtons[1]
K_T = Relative thrust-load factor – ball bearings
L_f = Life factor
L_r = Fatigue life for reliability level r – hours
N = Operating speed – revolutions per minute (RPM)
N_f = Speed factor
R = Applied radial load on bearing pounds or newtons
P = Equivalent radial load on bearing pounds or newtons
T = Applied thrust load on bearing pounds or newtons
Y = Thrust-load factor
a_1 = Life-adjustment factor for reliability[2]
a_2 = Life-adjustment factor for bearing material[3]
a_3 = Life-adjustment factor for application conditions[4]
f_B = Dynamic load rating adjustment factor for number of adjacently mounted bearings[5]
i_B = Number of adjacently mounted bearings
r = Percent reliability of survival life
μ = Operating viscosity – centistokes
μ_R = Reference viscosity – centistokes

[1] C_E does **not** represent the maximum permissible radial load, which, in general, is equal to C_o, the static radial load ratings.

[2] L_{10} rating life is based upon 90 percent survival of a group of bearings at the specified load and speed. The a_1 value is 1.0 for L_{10} life calculations.

[3] The a_2 value is 1.0 when using typical Timken® bearing steel. Bearings with thin-dense chrome-plated races may use an a_2 factor of 3.0 for calculating life.

[4] The a_3 factor of 1.0 may be acceptable to most users, but the factor can be made up of multiple application factors such as adequate lubrication, alignment, temperature or mounting conditions. ABMA standard suggests and a_3 of 0.456 for insert ball bearings slip fitted to the shaft as a result of possible mounting variation.

[5] f_B = 1.0 for wide-inner-ring ball bearings.

FATIGUE LIFE

Because of the dispersion in the life of identical bearings operating under identical conditions, a statistical result will be obtained for bearing fatigue life. For most calculations, life is expressed as the number of hours that 90 percent of a group of identical bearings will exceed under a given set of conditions, and is referred to as the L_{10} life.

The basic equation for radial ball bearings is:

$$L_r = 16667 \times \frac{a_1 \times a_2 \times a_3}{N} \frac{[f_B \times C_E]^3}{P} \text{ (Hours)} \qquad \text{Formula } \mathbf{1}$$

In life calculations, the first step is to ascertain the equivalent radial load (P) applied to the bearing from the following equations:

R_e = R or P = 0.56R + YT } **use greater value of P,** Formula **2** **3**

Values of Y are selected from table A-8 for the appropriate K_T. For more intermediate values of K_T, Y may be estimated by linear interpolation.

TABLE A-8. REQUIRED Y FACTORS FOR BALL BEARING DYNAMIC EQUIVALENT RADIAL LOADS

K_T	Y
0.015	2.30
0.020	2.22
0.025	2.10
0.030	2.00
0.040	1.86
0.050	1.76
0.060	1.68
0.080	1.57
0.100	1.48
0.120	1.42
0.150	1.34
0.200	1.25
0.250	1.18
0.300	1.13
0.400	1.05
0.500	1.00
0.600	–
0.800	–
1.000	–
1.200	–

For single-row bearings and tandem mountings: $K_T = \frac{T}{i_B Co}$

For double-row and preloaded pair mountings: $K_T = \frac{T}{Co}$

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RADIAL BALL BEARING LIFE

The L_{10} (expected minimum life for 90 percent of the bearings of a given size and type in a given population) is calculated by the following formula, which is a condensed version of formula 1.

$$L_{10} = \frac{16700}{N} \left(\frac{C_E}{P}\right)^3 \text{ (Hours)} \qquad \text{Formula } \mathbf{4}$$

The calculation of bearing life also can be performed by using logarithmic factors for rotational speed (N_r) and life (L_f) based on the formula.

$$L_{10} = 500 \left(\frac{C_N}{P}\right)^3 \text{ (Hours)} \qquad \text{Formula } \mathbf{5}$$

In cases where the rating at a specific speed is not listed, determine C_N by $C_N = N_f \times C_E$; thereby:

$$L_{10} = 500 \left(\frac{N_f C_E}{P}\right)^3 \qquad \text{Formula } \mathbf{6}$$

where:

$$N_f = \left(\frac{1}{0.03N}\right)^{3/10} \qquad \text{Formula } \mathbf{7}$$

The speed factor (N_f) can be read directly from scale 1 (fig. A-7).

Scale 2 provides life factors (L_f) for practical life requirements, where:

$$L_f = \frac{C_N}{1.44P} \text{ or } L_f = \frac{N_f(C_E)}{1.44P}$$

Frequently it is necessary to determine the minimum bearing capacity that will meet a specific application requirement. For this purpose, formula 4 is rewritten:

$$C_E = P \left(\frac{N \times L_{10}}{16700}\right)^{1/3} \qquad \text{Formula } \mathbf{8}$$

BEARING LIFE UNDER VARYING LOADS AND SPEEDS

In many applications, bearings are required to run at a number of different loads and speeds. If the different loads and speeds and the portions of time that are in effect are known, the life can be found from the following relation:

$$L_r = \frac{1}{\frac{p_1}{L_{n_1}} + \frac{p_2}{L_{n_2}} + \frac{p_3}{L_{n_3}} + \ldots + \frac{p_n}{L_{n_n}}}$$

Note: $p_1 + p_2 + p_3 + \ldots + p_n = 1.0$

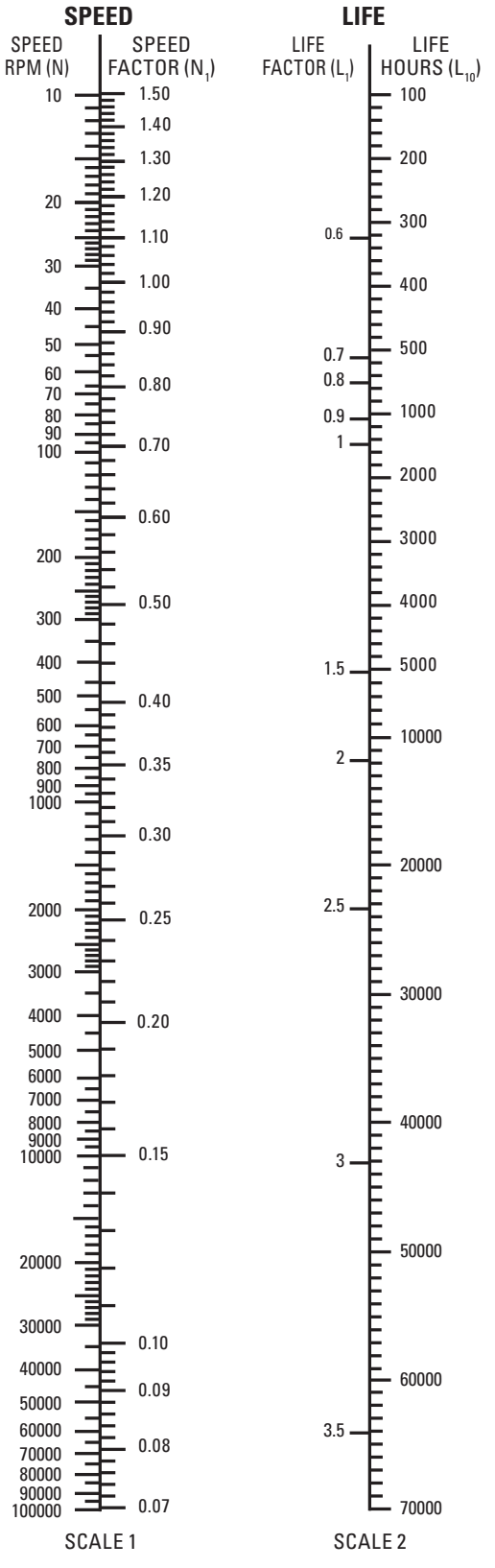


Fig. A-7. Wide-inner-ring ball bearing's speed and life factors.

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FREQUENCY COEFFICIENTS

Predictive application maintenance requires knowledge of the frequencies that a bearing can emit, which are based on its specific design. The table below (table A-9) provides the most commonly used coefficients for this purpose. The frequencies are expressed as Orders. To obtain bearing defect frequencies in Hz, multiply the bearing coefficient by the rotating speed in revolutions per second.

Example:

9104-series bearing retainer frequency shaft running at 1200 RPM:

1200 RPM x 1 min/60 seconds x 0.398 = 7.96 Hz.

WIDE-INNER-RING BALL BEARINGS

FTF **Fundamental Train Frequency:** The frequency at which the retainer will operate with inner ring rotation.

BSF **Ball Spin Frequency:** The frequency at which a single defect on a rolling element will be detected.

BPFO **Ball Pass Frequency Outer:** The frequency at which a single defect in the outer race will be detected.

BPFI **Ball Pass Frequency Inner:** The frequency at which a single defect in the inner race will be detected.

OR ROT FTF **Fundamental Train Frequency:** The frequency at which the retainer will operate with outer-ring rotation. Also know as Outer-Ring ROTation.

TABLE A-9. FREQUENCY COEFFICIENTS OF WIDE-INNER-RING BALL BEARINGS

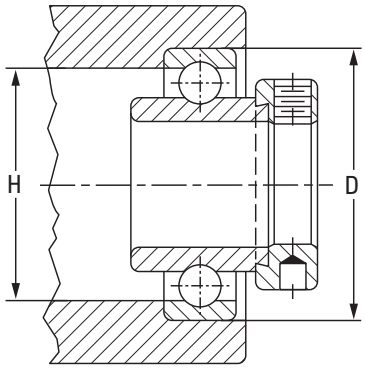
Basic Outer-Ring Size	FTF	BSF	BPFO	BPFI	OR ROT FTF
9104	0.398	2.339	3.578	5.422	0.602
9105	0.397	2.328	3.574	5.426	0.603
9106	0.417	2.933	4.588	6.412	0.583
202K	0.391	2.175	3.125	4.875	0.609
203K	0.382	1.994	3.053	4.947	0.618
204K	0.382	1.992	3.052	4.948	0.618
205K	0.397	2.328	3.574	5.426	0.603
206K	0.396	2.311	3.568	5.432	0.604
207K	0.396	2.303	3.565	5.435	0.604
208K	0.394	2.256	3.547	5.453	0.606
209K	0.402	2.461	3.621	5.379	0.598
210K	0.409	2.665	4.093	5.907	0.591
211K	0.408	2.620	4.078	5.922	0.592
212K	0.407	2.584	4.066	5.934	0.593
213K	0.410	2.685	4.099	5.901	0.590
214K	0.410	2.702	4.104	5.896	0.590
215K	0.415	2.850	4.148	5.852	0.585
216K	0.417	2.923	4.585	6.415	0.583
217K	0.412	2.759	4.122	5.878	0.588
219W	0.410	2.692	6.562	9.438	0.590
220W	0.409	2.665	6.549	9.451	0.591

Basic Outer-Ring Size	FTF	BSF	BPFO	BPFI	OR ROT FTF
303K	0.364	1.696	2.545	4.455	0.636
304K	0.368	1.757	2.574	4.426	0.632
305K	0.367	2.328	3.574	5.426	0.603
306K	0.368	1.757	2.574	4.426	0.632
307K	0.376	1.888	3.006	4.994	0.624
308K	0.378	1.925	3.023	4.977	0.622
309K	0.380	1.955	3.037	4.963	0.620
310K	0.381	1.981	3.047	4.953	0.619
311K	0.382	2.002	3.057	4.943	0.618
312K	0.383	2.020	3.064	4.936	0.617
314K	0.385	2.050	3.076	4.924	0.615
315K	0.385	2.062	3.081	4.919	0.615
316K	0.386	2.073	3.086	4.914	0.614
318K	0.387	2.091	3.093	4.907	0.613
318W	0.381	1.982	4.572	7.428	0.619
319W	0.382	1.993	4.198	6.802	0.618
320K	0.384	2.041	3.073	4.927	0.616
320W	0.379	1.946	4.549	7.451	0.621
321W	0.380	1.958	4.557	7.443	0.620
322W	0.382	2.002	4.203	6.797	0.618
326W	0.384	2.036	4.222	6.778	0.616

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MOUNTING
STANDARD SERIES MOUNTING DATA

When shafts are selected for use with wide-inner-ring ball bearings, a minimum slip fit is desirable for the most satisfactory mounting. Special shaft limits are required in certain cases and a variety of standard fits can be used, including a press fit. The recommended figures are noted in table A-10. In some applications, it may be permissible to use increased shaft tolerances. In such cases, applications should be forwarded to your Timken engineer for complete recommendations.



Bearing bore tolerances:

½ in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.;
2 ¼ in. – 3 3/16 in., nominal to +0.015 mm, +0.0006 in.;

Recommended shaft tolerances:

½ in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

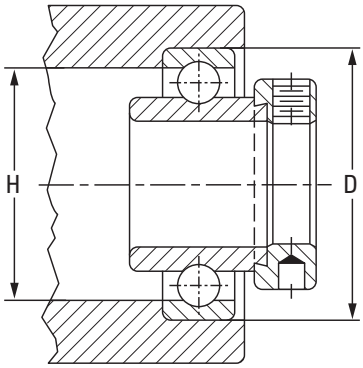
TABLE A-10. HOUSING, SHOULDER AND SHAFT DIAMETERS

Bearing No.					Shaft Dia.	Basic Outer-Ring Size	Stationary Housing[1]			Shoulder Dia.	
KRR Type	G-KRR Type	RA-RR Type	GRA-RR Type	GYA-RR Type			Housing Bore D		Mean Fit	H	
							Max.	Min.	Loose	Max.	Min.
					in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
1008KRR	–	RA008RR	GRA08RR	GYA008RR	½	203	**40.015** 1.5754	**40.000** 1.5748	**0.013** 0.0005	**34.8** 1.37	**34.0** 1.34
–	–	RA009RR	GRA009RR	GYA009RR	9/16						
101KRR(KR)	G1010KRR	RA010RR	GRA010RR	GYA010RR	5/8						
1011KRR	G1011KRR	–	–	–	11/16						
E17KRR	GE17KRR	RAE17RR	GRAE17RR	GYAE17RR	**17**						
1012KRR(KR)	G1012KRR	RA012RR	GRA012RR	GYA012RR	¾	204	**47.015** 1.8510	**47.000** 1.8504	**0.013** 0.0005	**40.9** 1.61	**40.6** 1.60
E20KRR	GE20KRR	RAE20RR	GRAE20RR	GYAE20RR	**20**						
1013KRR	–	RA013RR	GRA013RR	GYA013RR	13/16	205	**52.017** 2.0479	**51.999** 2.0472	**0.015** 0.0006	**46.0** 1.81	**45.7** 1.80
1014KRR	G1014KRR	RA014RR	GRA014RR	GYA014RR	7/8						
1015KRR(KR)	G1015KRR	RA015RR	GRA015RR	GYA015RR	15/16						
1100KRR(KR)	G1100KRR	RA100RR	GRA100RR	GYA100RR	1						
E25KRR	GE25KRR	RAE25RR	GRAE25RR	GYAE25RR	**25**						
–	G1101KRR	RA101RR	GRA101RR	GYA101RR	1 1/16	206	**62.017** 2.4416	**61.999** 2.4409	**0.015** 0.0006	**56.1** 2.21	**54.9** 2.16
1102KRR(KR)	G1102KRR	RA102RR	GRA102RR	GYA102RR	1 1/8						
1103KRR(KR)	G1103KRR	RA103RR	GRA103RR	GYA103RR	1 3/16						
–	–	–	–	GYA103RR2	1 1/4						
E30KRR	GE30KRR	RAE30RR	GRAE30RR	GYAE30RR	**30**						
1104KRR(KR)	G1104KRR	RA104RR	GRA104RR	GYA104RR	1 1/14	207	**72.017** 2.8353	**71.999** 2.8346	**0.015** 0.0006	**65.0** 62.7	**54.9** 2.47
1105KRR	–	RA105RR	GRA105RR	GYA105RR	1 5/16						
1106KRR	G1106KRR	RA106RR	GRA106RR	GYA106RR	1 3/8						
1107KRR(KR)	G1107KRR	RA107RR	GRA107RR	GYA107RR	1 7/16						
E35KRR	GE35KRR	RAE35RR	GRAE35RR	GYAE35RR	**35**						

[1]When the housing revolves in relation to the shaft, the housing bore dimensions shown on page 131 of the Timken Engineering Manual (order no. 10424) should be used. Outer ring tolerances and housing fillet radii correspond to equivalent 200-series single-row radial bearings.

Continued on next page.

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Continued from previous page.

Bearing No.					Shaft Dia.	Basic Outer-Ring Size	Stationary Housing[1]			Shoulder Dia.	
KRR Type	G-KRR Type	RA-RR Type	GRA-RR Type	GYA-RR Type			Housing Bore D		Mean Fit	H	
							Max.	Min.	Loose	Max.	Min.
					in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
1108KRR(KR)	G1108KRR	RA108RR	GRA108RR	GYA108RR	1 1/2	208	**80.018** 3.1503	**80.000** 3.1496	**0.015** 0.0006	**72.9** 2.87	**70.6** 2.78
–	–	RA109RR	GRA109RR	GYA109RR	1 9/16						
–	–	–	GRAE40RR	GYAE40RR	**40**						
1110KRR	G1110KRR	RA110RR	GRA110RR	GYA110RR	1 5/8	209	**85.024** 3.3474	**85.001** 3.3465	**0.020** 0.0008	**78.0** 3.07	**75.4** 2.97
1111KRR(KR)	G1111KRR	RA111RR	GRA111RR	GYA111RR	1 11/16						
1112KRR(KR)	G1112KRR	RA112RR	GRA112RR	GYA112RR	1 3/4						
E45KRR	–	–	GRAE45RR	GYAE45RR	**45**						
–	–	RA113RR	GRA113RR	GYA113RR	1 13/16	210	**90.023** 3.5442	**90.000** 3.5433	**0.020** 0.0008	**83.1** 3.27	**81.0** 3.19
1114KRR	–	RA114RR	GRA114RR	GYA114RR	1 7/8						
1115KRR(KR)	G1115KRR	RA115RR	GRA115RR	GYA115RR	1 15/16						
–	–	–	GRA115RR2	–	2						
E50KRR	GE50KRR	RAE50RR	GRAE50RR	GYAE50RR	**50**						
1200KRR(KR)	G1200KRR	RA200RR	GRA200RR	GYA200RR	2	211	**100.023** 3.9379	**100.000** 3.9370	**0.020** 0.0008	**90.9** 3.58	**90.4** 3.56
–	–	RA201RR	GRA201RR	GYA201RR	2 1/16						
1202KRR	–	RA202RR	GRA202RR	GYA202RR	2 1/8						
1203KRR(KR)	G1203KRR	RA203RR	GRA203RR	GYA203RR	2 3/16						
E55KRR	GE55KRR	RAE55RR	GRAE55RR	GYAE55RR	**55**						
1204KRR	–	–	–	–	2 1/4	212	**110.023** 4.3316	**110.000** 4.3307	**0.020** 0.0008	**101.1** 3.98	**98.3** 3.87
1207KRR(KR)	G1207KRR	–	–	–	2 7/16						
E60KRR	GE60KRR	–	–	–	**60**						
1215KRR	–	–	–	–	2 15/16	215	**130.025** 5.1191	**130.000** 5.1181	**0.023** 0.0009	**120.9** 4.76	**116.6** 4.59
E75KRR	–	–	–	–	**75**						

[1]When the housing revolves in relation to the shaft, the housing bore dimensions shown on page 131 of the Timken Engineering Manual (order no. 10424) should be used. Outer ring tolerances and housing fillet radii correspond to equivalent 200-series single-row radial bearings.

08-19-13 DRAFT

SNAP WIRE MOUNTING

KR-KRR SERIES

When shafts are selected for use with wide-inner-ring ball bearings, a minimum slip fit is desirable for the most satisfactory mounting. Special shaft limits are required in certain cases and a variety of standard fits can be used, including a press fit. The recommended figures are noted in table A-11. For requirements, contact your Timken engineer.

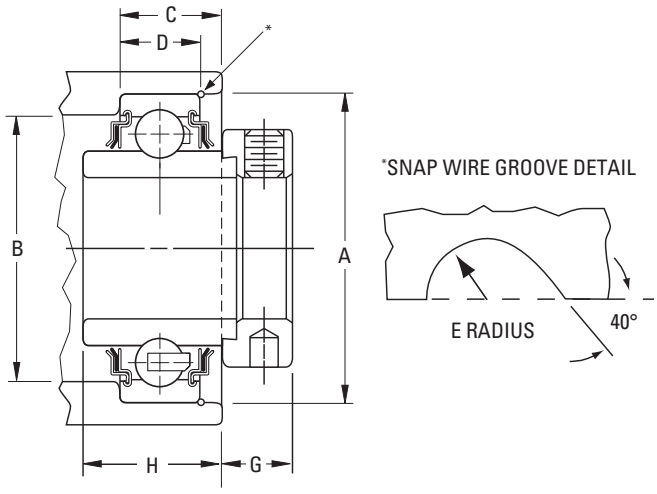


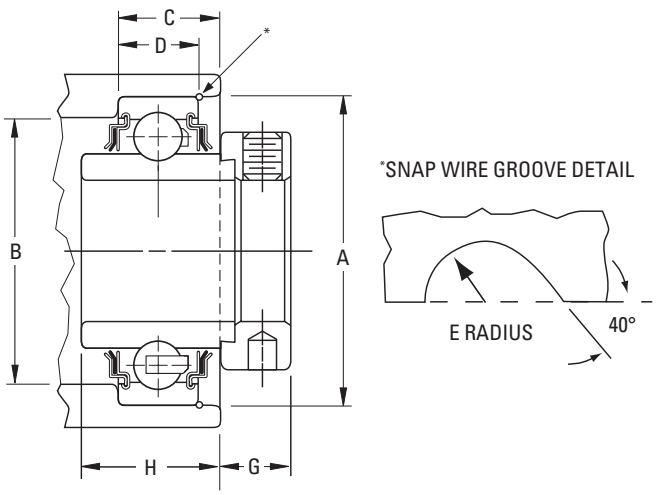
TABLE A-11. R-SEAL STANDARD KR, KRR SERIES

Bearing No.	Shaft Dia.	Basic Outer-Ring Size	Housing Bore		Shoulder Dia.		C	D	Radius	G	H
			Stationary Housing A[1]		B				E		
			Max.	Min.	Max.	Min.					
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
1008KRR	1/2	203	**40.015** 1.5754	**40.000** 1.5748	**36.6** 1.44	**35.8** 1.41	**17.5** 11/16	**9.1** 23/64	**1.2** 3/64	**11.9** 15/32	**25.4** 1
–	9/16										
1010KRR(KR)	5/8										
1011KRR	11/16										
E17KRR	**17**										
1012KRR(KR)	3/4	204	**47.015** 1.8510	**47.000** 1.8504	**43.7** 1.72	**41.1** 1.62	**19.0** 3/4	**15.1** 19/32	**1.2** 3/64	**14.7** 37/64	**29.0** 1 9/64
E20KRR	**20**										
1013KRR(KR)	13/16	205	**52.017** 2.0479	**51.999** 2.0472	**48.5** 1.91	**46.7** 1.84	**20.6** 13/16	**15.9** 5/8	**1.2** 3/64	**13.9** 35/64	**30.6** 1 13/64
1014KRR	7/8										
1015KRR(KR)	15/16										
1100KRR(KR)	1										
E25KR	**25**										
–	1 1/16	206	**62.017** 2.4416	**61.999** 2.4409	**57.9** 2.28	**56.4** 2.22	**21.4** 27/32	**17.1** 43/64	**1.2** 3/64	**16.7** 21/32	**31.8** 1 1/4
1102KRR(KR)	1 1/8										
1103KRR(KR)	1 3/16										
1103KRR3	1 1/4										
E30KRR	**30**										
1104KRR(KR)	1 1/4	207	**72.017** 2.8353	**71.999** 2.8346	**67.6** 2.66	**64.3** 2.53	**23.0** 29/32	**18.3** 23/32	**1.6** 1/16	**17.9** 45/64	**33.3** 1 15/16
1105KRR	1 5/16										
1106KRR	1 3/8										
1107KRR(KR)	1 7/16										
E35KRR	**35**										

[1]When the housing revolves in relation to the shaft, the housing bore dimensions shown on page 131 of the Timken Engineering Manual (order no. 10424) should be used. Outer ring tolerances and housing fillet radii correspond to equivalent 200-series single-row radial bearings.

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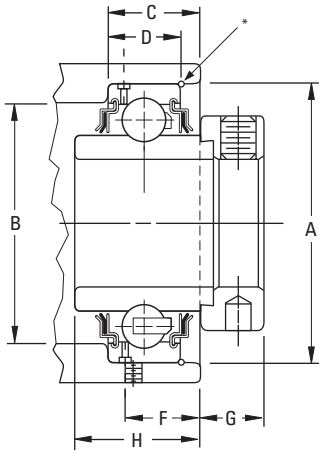
Bearing No.	Shaft Dia.	Basic Outer-Ring Size	Housing Bore		Shoulder Dia.		C	D	Radius	G	H
			Stationary Housing A[1]		B				E		
			Max.	Min.	Max.	Min.					
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
1108KRR(KR)	1 1/2	208	**80.078** 3.1503	**80.000** 3.1496	**75.4** 2.97	**71.4** 2.81	**24.6** 31/32	**19.4** 49/64	**1.6** 1/16	**19.4** 49/64	**36.9** 1 29/64
1109KRR	1 9/16										
E40KRR	**40**										
1110KRR	1 5/8	209	**85.024** 3.3474	**85.001** 3.3465	**80.3** 3.16	**77.0** 3.03	**25.4** 1	**20.2** 51/64	**1.6** 1/16	**19.0** 3/4	**37.3** 1 15/32
1111KRR(KR)	1 11/16										
1112KRR(KR)	1 3/4										
E45KRR	**45**										
1114KRR	1 7/8	210	**90.023** 3.5442	**90.000** 3.5433	**83.1** 3.27	**82.3** 3.24	**26.2** 1 1/32	**21.4** 37/32	**1.6** 1/6	**21.8** 55/64	**40.9** 1 39/64
1115KRR(KR)	1 15/16										
E50KRR	**50**										
1200KRR(KR)	2	211	**100.023** 3.9379	**100.000** 3.9370	**93.7** 3.69	**90.4** 3.56	**26.2** 1 1/32	**22.2** 7/8	**1.6** 1/16	**26.2** 1 1/32	**45.2** 1 25/32
1202KRR	2 1/8										
1203KRR(KR)	2 3/16										
E55KRR	**55**										
1204KRR	2 1/4	212	**110.023** 4.3316	**110.000** 4.3307	**101.1** 3.98	**99.6** 3.92	**28.6** 1 1/8	**23.0** 29/32	**1.6** 1/16	**29.4** 1 5/32	**48.4** 1 29/32
1207KRR(KR)	2 7/16										
E60KRR	**60**										

[1]When the housing revolves in relation to the shaft, the housing bore dimensions shown on page 131 of the Timken Engineering Manual (order no. 10424) should be used. Outer ring tolerances and housing fillet radii correspond to equivalent 200-series single-row radial bearings.

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G-KRR SERIES

When shafts are selected for use with wide-inner-ring ball bearings, a minimum slip fit is desirable for the most satisfactory mounting. Special shaft limits are required in certain cases and a variety of standard fits can be used, including a press fit. The recommended values are in table A-12. For special requirements, contact your Timken engineer.



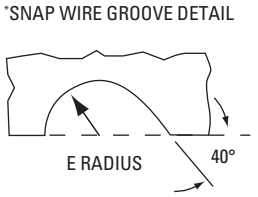


TABLE A-12. R-SEAL STANDARD G-KRR SERIES

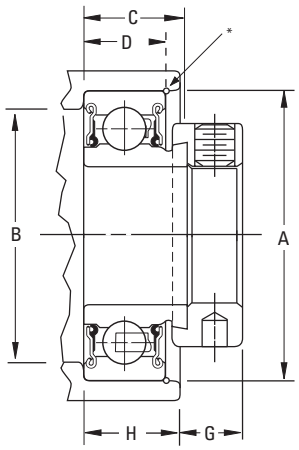
Bearing No.	Shaft Dia.	Basic Outer-Ring Size	Housing Bore		Shoulder Dia.		C	D	Radius	F	G	H
			Stationary Housing A[1]		B				E			
			Max.	Min.	Max.	Min.						
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
G1010KRR	5/8	203	**40.015** 1.5754	**40.000** 1.5748	**36.6** 1.44	**35.8** 1.41	**17.5** 11/16	**13.1** 33/64	**1.2** 3/64	**14.7** 37/64	**11.9** 15/32	**25.4** 1
G1011KRR	11/16											
GE17KRR	**17**											
G1012KRR	3/4	204	**47.015** 1.8510	**47.000** 1.8504	**43.7** 1.72	**41.1** 1.62	**19.0** 3/4	**15.1** 19/32	**1.2** 3/64	**15.9** 5/8	**14.7** 37/64	**29.0** 1 9/64
GE20KRR	**20**											
G1014KRR	7/8	205	**52.017** 2.0479	**51.999** 2.0472	**48.5** 1.91	**46.7** 1.84	**20.6** 13/16	**15.9** 5/8	**1.2** 3/64	**16.7** 21/32	**13.9** 35/64	**30.6** 1 13/64
G1015KRR	15/16											
G1100KRR	1											
GE25KRR	**25**											
G1101KRR	1 1/16	206	**62.017** 2.4416	**61.999** 2.4409	**57.9** 2.28	**56.4** 2.22	**23.8** 15/16	**19.0** 3/4	**1.2** 3/64	**19.8** 25/32	**15.5** 39/64	**32.9** 1 19/64
G1102KRR	1 1/8											
G1103KRR	1 3/16											
GE30KRR	**30**											
G1104KRR	1 1/4	207	**72.017** 2.8353	**71.999** 2.8346	**67.6** 2.66	**64.3** 2.53	**25.4** 1	**20.2** 51/64	**1.6** 1/16	**21.4** 27/32	**16.7** 21/32	**34.5** 1 23/64
G1106KRR	1 3/8											
G1107KRR	1 7/16											
GE35KRR	**35**											
G1108KRR	1 1/2	208	**80.018** 3.1503	**80.000** 3.1496	**75.4** 2.97	**71.4** 2.81	**27.8** 1 3/32	**22.2** 7/8	**1.6** 1/16	**23.8** 15/16	**17.5** 11/16	**38.9** 1 17/32
G1109KRR	1 9/16											
GE40KRR	**40**											
G1110KRR	1 5/8	209	**85.024** 3.3474	**85.001** 3.3465	**80.3** 3.16	**77.0** 3.03	**28.6** 1 1/8	**23.4** 59/64	**1.6** 1/16	**24.2** 31/32	**17.5** 11/16	**38.9** 1 17/32
G1111KRR	1 11/16											
G1112KRR	1 3/4											
GE45KRR	**45**											
G1115KRR	1 15/16	210	**90.023** 3.5442	**90.000** 3.5433	**83.1** 3.27	**82.3** 3.24	**29.4** 1 5/32	**24.2** 61/64	**1.6** 1/16	**24.6** 31/32	**20.2** 51/64	**42.5** 1 43/64
GE50KRR	**50**											
G1200KRR	2	211	**100.023** 3.9379	**100.000** 3.9370	**93.7** 3.69	**90.4** 3.56	**31.8** 1 1/4	**26.2** 1 1/32	**1.6** 1/16	**26.6** 1 3/64	**24.2** 61/64	**47.2** 1 55/64
G1203KRR	2 3/16											
GE55KRR	**55**											

[1]When the housing revolves in relation to the shaft, the housing bore dimensions shown on page 131 of the Timken Engineering Manual (order no. 10424) should be used. Outer ring tolerances and housing fillet radii correspond to equivalent 200-series single-row radial bearings.

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RA-RR SERIES

When shafts are selected for use with wide-inner-ring ball bearings, a minimum slip fit is desirable for the most satisfactory mounting. Special shaft limits are required in certain cases and a variety of standard fits can be used, including even a press fit. The recommended values are in table A-13. For special requirements, contact your Timken engineer.



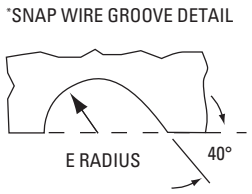


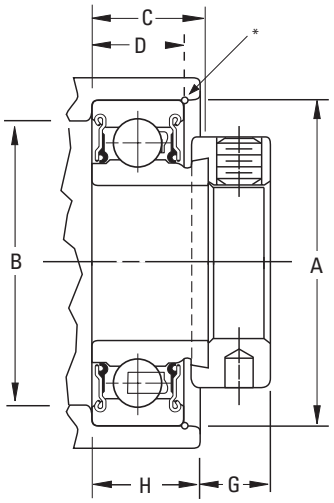
TABLE A-13. RA-RR SERIES, NON-RELUBRICATABLE

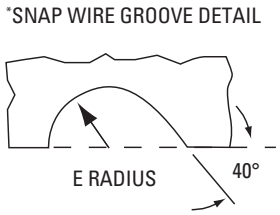
Bearing No.	Shaft Dia.	Basic Outer-Ring Size	Housing Bore		Mean Fit Loose	Shoulder Dia.		C	D	H	Radius	G
			Stationary Housing A[1]			B						
			Max.	Min.		Max.	Min.					
	in. **mm**		**mm** in.	**mm** in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
RA008RR	1/2	203	**40.015** 1.5754	**40.000** 1.5748	**0.013** 0.0005	**1.34** 35.1	**1.31** 34.3	**19.0** 3/4	**14.3** 9/16	**16.67** 21/32	**1.2** 3/64	**9.5** 3/8
RA009RR	9/16											
RA010RR	5/8											
RAE17RR	**17**											
RA012RR	3/4	204	**47.015** 1.8510	**47.000** 1.8504	**0.013** 0.0005	**1.61** 40.9	**1.58** 40.6	**20.6** 13/16	**15.9** 5/8	**17.07** 43/64	**1.2** 3/64	**10.3** 13/32
RAE20RR	**20**											
RA013RR	13/16	205	**52.017** 2.0479	**51.999** 2.0472	**0.015** 0.0006	**1.81** 46.0	**1.78** 45.7	**20.6** 13/16	**15.9** 5/8	**17.07** 43/64	**1.2** 3/64	**10.3** 13/32
RA014RR	7/8											
RA015RR	15/16											
RA100RR	1											
RAE25RR	**25**											
RA101RR	1 1/16	206	**62.017** 2.4416	**61.999** 2.4409	**0.015** 0.0006	**2.21** 56.1	**2.16** 54.9	**23.8** 15/16	**19.0** 3/4	**20.24** 51/64	**1.2** 3/64	**11.9** 15/32
RA102RR	1 1/8											
RA103RR	1 3/16											
RA103RR2	1 1/4											
RAE30RR	**30**											
RA104RR	1 1/4	207	**72.017** 2.8353	**71.999** 2.8346	**0.015** 0.0006	**2.56** 65.0	**2.47** 62.7	**25.4** 1	**20.6** 13/16	**22.22** 7/8	**1.6** 1/16	**13.5** 17/32
RA105RR	1 5/16											
RA106RR	1 3/8											
RA107RR	1 7/16											
RAE35RR	**35**											
RA108RR	1 1/2	208	**80.018** 3.1503	**80.000** 3.1496	**0.015** 0.0006	**2.87** 72.9	**2.78** 70.6	**28.6** 1 1/8	**23.0** 29/32	**26.19** 1 1/32	**1.6** 1/16	**15.1** 19/32
RA109RR	1 9/16											
RAE40RR	**40**											
RA110RR	1 5/8	209	**85.024** 3.3474	**85.001** 3.3465	**0.020** 0.0008	**3.07** 78.0	**2.97** 75.4	**28.6** 1 1/8	**23.0** 29/32	**26.19** 1 1/32	**1.6** 1/16	**15.1** 19/32
RA111RR	1 11/16											
RA112RR	1 3/4											
RAE45RR	**45**											

[1]When the housing revolves in relation to the shaft, the housing bore dimensions shown on page 131 of the Timken Engineering Manual (order no. 10424) should be used. Outer ring tolerances and housing fillet radii correspond to equivalent 200-series single-row radial bearings.

Continued on next page.

08-19-13 DRAFT





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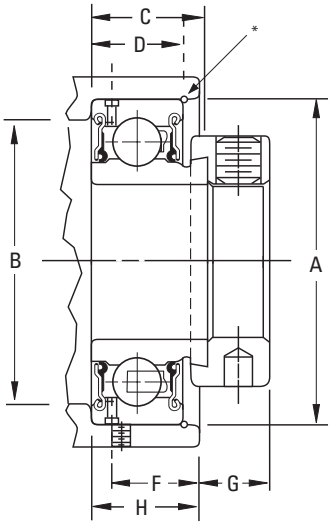
Bearing No.	Shaft Dia.	Basic Outer-Ring Size	Housing Bore		Mean Fit Loose	Shoulder Dia.		C	D	H	Radius	G
			Stationary Housing A[1]			B						
			Max.	Min.		Max.	Min.					
	in. **mm**		**mm** in.	**mm** in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
RA113RR	1 13/16	210	**90.023** 3.5442	**90.000** 3.5433	**0.020** 0.0008	**3.27** 83.1	**3.17** 80.5	**28.6** 1 1/8	**23.0** 29/32	**26.19** 1 1/32	**1.6** 1/16	**15.1** 19/32
RA114RR	1 7/8											
RA115RR	1 15/16											
RAE50RR	**50**											
RA200RR	2	211	**100.023** 3.9379	**100.000** 3.9370	**0.020** 0.0008	**3.68** 93.5	**3.56** 90.4	**31.0** 1 7/32	**25.4** 1	**28.18** 1 7/64	**1.6** 1/16	**17.5** 11/16
RA201RR	2 1/16											
RA202RR	2 1/8											
RA203RR	2 3/16											
RAE55RR	**55**											

[1]When the housing revolves in relation to the shaft, the housing bore dimensions shown on page 131 of the Timken Engineering Manual (order no. 10424) should be used. Outer ring tolerances and housing fillet radii correspond to equivalent 200-series single-row radial bearings.

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GRA-RR SERIES

When shafts are selected for use with wide-inner-ring ball bearings, a minimum slip fit is desirable for the most satisfactory mounting. Special shaft limits are required in certain cases and a variety of standard fits can be used, including even a press fit. The recommended values are in table A-14. For special requirements, contact your Timken engineer.



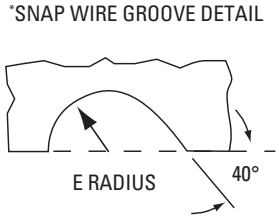


TABLE A-14. GRA-RR SERIES, RELUBRICATABLE

Bearing No.	Shaft Dia.	Basic Outer-Ring Size	Housing Bore		Shoulder Dia.		C	D	H	Radius	F	G
			Stationary Housing A[1]		B					E		
			Max.	Min.	Max.	Min.						
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
GRA008RR	1/2	203	**40.015** 1.5754	**40.000** 1.5748	**35.1** 1.38	**34.3** 1.35	**19.0** 3/4	**14.3** 9/16	**16.67** 21/32	**1.2** 3/64	**22.32** 0.879	**9.5** 3/8
GRAE17RR	**17**											
GRA012RR	3/4	204	**47.015** 1.8510	**47.000** 1.8504	**40.9** 1.61	**40.6** 1.60	**20.6** 13/16	**15.9** 5/8	**17.07** 43/64	**1.2** 3/64	**25.6** 1.008	**10.3** 13/32
GRAE20RR	**20**											
GRA014RR	7/8	205	**52.017** 2.0479	**51.999** 2.0472	**46.0** 1.81	**45.7** 1.80	**20.6** 13/16	**15.9** 5/8	**17.07** 43/64	**1.2** 3/64	**30.61** 1.205	**10.3** 13/32
GRAE25RR	**25**											
GRA101RR	1 1/16	206	**62.017** 2.4416	**61.999** 2.4409	**56.1** 2.21	**54.9** 2.16	**23.8** 15/16	**19.0** 3/4	**20.24** 51/64	**1.2** 3/64	**37.29** 1.468	**11.9** 15/32
GRAE30RR	**30**											
GRA104RR	1 1/4	207	**72.017** 2.8353	**71.999** 2.8346	**65.0** 2.56	**62.7** 2.47	**25.4** 1	**20.6** 13/16	**22.22** 7/8	**1.6** 1/16	**43.08** 1.696	**13.5** 17/32
GRAE35RR	**35**											

[1]When the housing revolves in relation to the shaft, the housing bore dimensions shown on page 131 of the Timken Engineering Manual (order no. 10424) should be used. Outer ring tolerances and housing fillet radii correspond to equivalent 200-series single-row radial bearings.

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INSTALLATION

Ball bearing housed units are available in a wide variety of types and sizes to accommodate a complete range of operating conditions.

These units generally have cast-iron housings and are designed for mounting on straight shafts with a slip fit. The self-locking collar and the set screw inner bearing design provides ease in mounting.

1. Ensure that the shaft is clean, free from burrs, straight and of proper diameter. The bearing should not be mounted on a worn section of the shaft. Using shafts with hardness greater than HRC 45 will reduce effectiveness of locking devices. See table A-15 on page A-23 for recommended shaft tolerances.
2. Align the bearing in its housing and slide the unit into position on the shaft.
3. Bolt housing tightly to its mounting supports using an appropriately sized fastener (table A-17 on page A-23). Flat washers should be used when installing any kind of housed unit. Washers should be properly sized to bolt diameter and should not be an SAE grade, which is smaller.

BALL HOUSED UNITS MAY BE LOCKED INTO POSITION ON SHAFTS USING EITHER OF THE FOLLOWING METHODS

4. **Eccentric locking-collar bearings:** Slide collar over cammed end of inner ring. Rotate collar to engage cams and lock by lightly tapping with drift pin in the direction of shaft rotation. Tighten set screw to recommended torque levels as shown in table A-16 on page A-23.

   In cases where the units are mounted vertically or where they are to assume considerable thrust loading, the unit should be placed so that the collar is forced against the inner ring by the thrust rather than away from it. In these cases, it may be advisable to spot the shaft under the set screw.

   To disassemble, loosen set screw and lightly tap collar in direction opposite shaft rotation.

5. **Set screw locking bearings:** Lock bearing to the shaft by tightening each inner ring set screw incrementally to recommended torque levels as shown in table A-16 on page A-23. For concentric collar units, tighten each collar set screw to recommended torque levels in tables. To disassemble, loosen set screw.

INSTALLATION PROCEDURE FOR HIGH-SPEED OR HIGH-TEMPERATURE SAL/SAOL BEARINGS

6a. Remove housing cover gasket, bearing, spacer ring, endplates and packings. Use care when handling gasket and packings. Slide housing and one endplate along shaft. Ensure that the overflow cup, located at the base of the pillow block, is placed on the downward side of shaft rotation. Slide bearing onto shaft and into housing, with cam side outward (facing open end of housing).

Fixed mounting: Position bearing against housing shoulder and place spacer ring between bearing aligning ring face and housing cover shoulder face.

Float mounting: Position bearing in center of its floating space between housing and housing cover shoulder faces. Do not use spacer ring.

In general, it is preferable for the fixed bearing to be closest to the drive position.

b. Follow step 4 or 5 on this page to secure bearing to shaft.

c. Replace gasket and housing cover.

d. Install packings and endplates. Tighten screws holding endplates to force packings into contact with shaft. This creates an effective seal.

e. To disassemble, reverse the above operations to remove bearing from the shaft.

NOTE

Do not overtighten packings. If considerable heat develops during operation, loosen packings by loosening the screws holding endplate.

⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

08-19-13 DRAFT

TECHNICAL DATA

This section provides useful installation details related to shaft tolerance and torque for set screws and bolts.

TABLE A-15. SUGGESTED SHAFT TOLERANCE[1]

Shaft Size		Tolerance
in.	**mm**	
1/2 - 1 15/16	**12.7 - 49.2**	nominal to -0.0005 in. , -0.013 mm
2 - 3 15/16	**50.8 - 100.0**	nominal to -0.0010 in., -0.025 mm
above 4	**101.6**	nominal to -0.0015 in., -0.038 mm

[1]These are for normal service; for heavy loads, high speeds or vertical shaft applications, reduce the suggested shaft tolerance by half.

TABLE A-16. SUGGESTED SET SCREW TIGHTENING TORQUE

Set Screw Size	Standard Steel	Stainless Steel (TDCF inserts)
in.	in. - lbs.	in. - lbs.
#10	35	23
1/4	80	60
5/16	155	122
3/8	275	213
7/16	425	340
mm	**Nm**	**Nm**
M5	**4.0**	**3.1**
M6	**6.6**	**4.9**
M8	**15.3**	**11.5**
M10	**30.0**	**22**
M12	**49.0**	**37**

TABLE A-17. SUGGESTED BOLT MOUNTING TORQUE

Bolt Size	Torque
in.	ft. - lbs.
3/8	27
1/2	65
5/8	130
3/4	230
7/8	573
1	858
1 1/8	1059
mm	**Nm**
M10	**44**
M12	**77**
M16	**192**
M20	**372**

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SELECTION GUIDE FOR APPLICATIONS
BALL-BEARING HOUSED UNITS

This is a general guide. For operating conditions outside the ranges identified in table A-18, consult your Timken engineer.

TABLE A-18. APPLICATION FACTOR

(Low) -30000 dN	Increasing Speed →	175000 dN →	250000 dN[1]
-34° C (-30° F)	Increasing Temperature →	+121° C (+250° F)	+135° C (275° F)
(Severe)	← Increasingly Contaminated Environment	(Slight)	

[1]Bearing bore (mm) x RPM.

Table A-19 is an application selection guide for ball-bearing housed units.

TABLE A-19. BALL-BEARING HOUSED-UNIT SELECTION GUIDE FOR APPLICATIONS

Load	Bearing Types																				
	Wide Inner Ring Ball Bearing with Tri-ply Seals Self-Locking Collar		Wide-Inner-Ring Ball Bearing With Contact Seals Self-Locking Collar				Extended Inner Ring Bearing with Contact Seals Self-Locking Collar				Wide-Inner-Ring Ball Bearing with Contact Seals Set Screw Lock			Narrow Width Bearing with Contact Seals Set Screw Lock			Wide-Inner-Ring Ball Bearing with Labyrinth or Special Seals Self-Locking Collar		
	Housing Type		Housing Type				Housing Type				Housing Type			Housing Type			Housing Type		
	Pillow Block	Flange Unit	Pillow Block	Flange Unit	Take-Up Unit	Cartridge	Pillow Block	Flange Unit	Take-Up Unit	Cartridge	Pillow Block	Flange Unit	Take-Up Unit	Pillow Block	Flange Unit	Take-Up Unit	Pillow Block	Flange Unit	Take-Up Unit
Light Duty				RR, RRT[1] RRTR[1] GRR			PB[1] PBS[1] RBG(U) RPB[1]	LFST[1] VFMST[1] RBGF RA, RAT[1] RATR[1] GRA	MSTU[1]	RCSM[1] RCR[1] LCR[1] RABR[1]									
Normal Duty	TAK TAS	TCJ TCJT	RAK RAS RAKH RAKHL[2] DRNR	RCJ RCJT GFRTD(R) RFTD(R)[1] GRFD(R) RFD(R)[1]	RTU TU	RC	VAK VAS VTB	VCJ VCJT FLCT[1] GVFTD(R) VFTD(R)[1] GVFD(R) VFD(R)[1]	VTU VNTU		YAS YAK RASC	YCJ YCJT RCJC RCJTC RFC YCJTM YCJM	YTU	SAS SAK STB	SCJ SCJT	STU	LAK LAS LSA SAL[3] LAKHL	LCJ LCJT	LTU
Heavy Duty			RAO RSAO	RCJO													LAO LSAO SAOL[3]	LCJO	

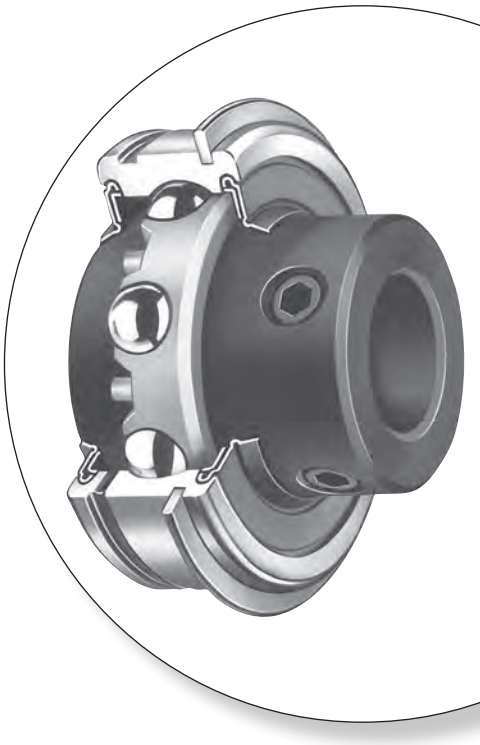
[1]Non-relubricatable.
[2]Float unit, grease lubrication.
[3]Fixed and floating. Oil lubrication, SAL and SAOL units, with adjustable seal packages also can be considered for adverse environments.
NOTE: All bearings or units are double sealed and prelubricated with grease except where noted.

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WIDE-INNER-RING BALL BEARINGS

Wide-inner-ring ball bearings consist of a single-row ball bearing and an extended inner ring. They carry radial, axial and combination loads. The extended inner ring slips onto the shaft and secures with a locking mechanism.

- **Sizes:** Standard series: 15 mm – 75 mm shaft (1/2 – 2 15/16 in.). Medium and heavy-duty series are available in larger sizes.
- **Industries and applications:** Agriculture, food processing, fans, blowers, and conveyors.
- **Features:** Available with a variety of shaft locking systems: eccentric locking collars, set screws and concentric locking collars.
- **Benefits:** Designed for ease of mounting and maximum shaft support.



Nomenclature A-26
Introduction A-27

INDUSTRIAL SERIES
KR, KRR, KRRB Non-Relubricatable Types A-32
G-KRR, G-KRRB Relubricatable Types A-34
KL, KLB, KLL, KLLB Special Series, Non-Relubricatable Types A-36
G-KLL, G-KLLB Special Series, Relubricatable Types A-37
KLLG Special Series with Wireloc® A-38
Tri-Ply Industrial Series, Non-Relubricatable and Relubricatable Types A-39
GC-KRRB Industrial-Series Concentric Collar, Relubricatable Type A-40
SM Industrial Series A and B Types/MUA-B Inserts A-41
SM-S Industrial Series A-43
GY-KRRB Set Screw Industrial Series A-44
ER Industrial Series, Relubricatable Types A-46

STANDARD SERIES
RA-RR, RA-RRB Non-Relubricatable Types A-48
GRA-RR, GRA-RRB Relubricatable Types A-50
RA-DD, Non-Relubricatable Types A-52
YA-RR, YA-RRB Non-Relubricatable Types A-53
GYA-RR, GYA-RRB Relubricatable Types A-54

LIGHT SERIES
RAL-NPPB Non-Relubricatable Types A-55

MEDIUM SERIES
GYM-KRRB Inserts Set Screw Lock A-56

HEAVY SERIES
GN-KRRB Relubricatable Types A-57
GN-KLLB Special Duty A-59
SMN A and B Types/MUOA-B Inserts A-60
SMN-S Series A-62

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NOMENCLATURE

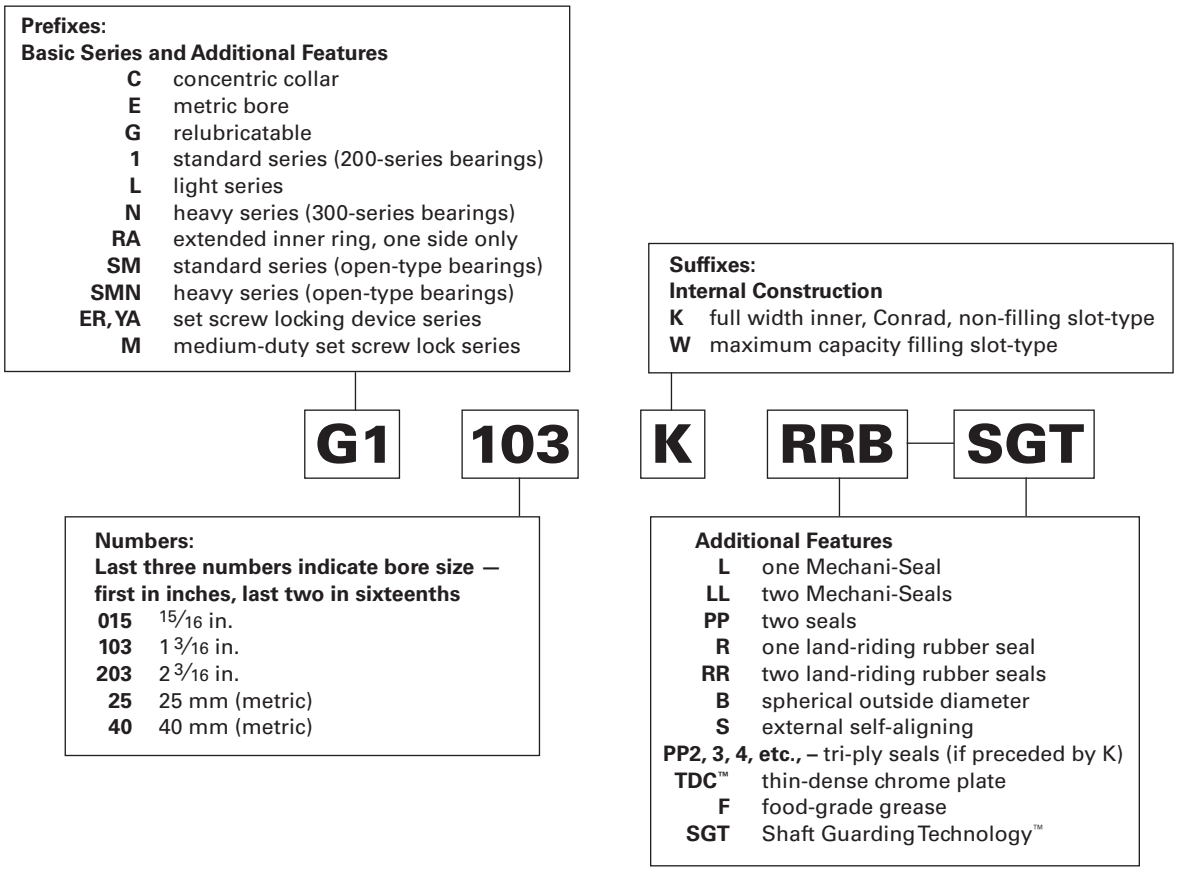


Fig. A-8. Wide-inner-ring ball bearing nomenclature.

⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

Tensile stresses can be very high in tightly fitted bearing components. Attempting to remove such components by cutting the cone (inner race) may result in a sudden shattering of the component causing fragments of metal to be forcefully expelled. Always use properly guarded presses or bearing pullers to remove bearings from shafts, and always use suitable personal protective equipment, including safety glasses.

⚠ CAUTION

Failure to follow this caution could create a risk of injury.

SHAFT GUARDING TECHNOLOGY™
Do not remove band from bore groove. Removal may cause it to release suddenly.

NOTE

The products catalogued are application specific. Any use in applications other than those intended could lead to equipment failure or to reduced equipment life.

Use of improper bearing fits may cause damage to equipment.

Do not use damaged bearings. The use of a damaged bearing can result in equipment damage.

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INTRODUCTION

WIDE-INNER-RING BALL BEARING DESIGN FOR BALL BEARINGS THAT ARE EASILY MOUNTED ON STRAIGHT SHAFTS AND POSITIONED WITHOUT SHOULDERS, LOCKNUTS OR ADAPTERS

The internal bearing construction is basically the same as the deep race, single-row radial type with the ability to carry radial, thrust and combined loads, while providing low-friction qualities. The inner ring is generally extended on both sides of the race to provide additional shaft support, and is locked to the shaft by specially designed set screws, an eccentric self-locking collar or a concentric collar. The wide-inner-ring ball bearings also are available with cylindrical or spherical outside diameters (O.D.). The cylindrical or straight O.D. type is used for mounting in straight-bored housings. The spherical O.D. type must be mounted in a corresponding spherical seat and is used to compensate for shaft or housing misalignments.

WIDE-INNER-RING BALL BEARINGS WITH ECCENTRIC LOCKING COLLARS

The following series are available with the eccentric cam (self-locking) collar. See installation instructions in table A-20 on page A-29.

RR SERIES

These bearings feature the flareout, contact-type R-seal which encloses a synthetic rubber-impregnated washer between two metal caps (fig. A-9). Most sizes incorporate the shroud-seal design. R-seal wide-inner-ring ball bearings are available in the following non-relubricatable variations: KR (one seal, cylindrical O.D.), KRR (two seals, cylindrical O.D.) and KRRB (two seals, spherical O.D.). Relubricatable versions are: G-KRR, G-KRRB and GN-KRRB (heavy-duty).



Fig. A-9. RR series.

RA-RR SERIES

The RA-RR series features an extended inner ring and self-locking collar for simple and effective shaft retention in a standard-series bearing (fig. A-10). The positive contact, land-riding R-seal provides improved protection against the heavy contamination encountered in many applications. All sizes have a heat-stabilized, moisture-conditioned 6/6 nylon retainer, which has proven effective under conditions of misalignment. RA-RR extended inner- ring bearings are available as RA-RR (two-seals, straight O.D.) and RA-RRB (two seals, spherical O.D.). Relubricatable versions are GRA-RR and GRA-RRB.



Fig. A-10. RA-RR series.

LL SERIES

These bearings are dimensionally interchangeable with the RR series, but have non-contact labyrinth seals and steel cages for low torque, high speed and higher temperature service (up to 177° C [350° F]).

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TRI-PLY SEAL SERIES



Fig. A-11. Tri-ply seal series.

Tri-ply seal bearings are designed for environments where severe conditions and moisture are present (fig. A-11). The one-piece tri-ply seals incorporate a highly effective seal design molded to an exterior shroud cap. The shroud cap protects the seal lips from fiber wrap and abrasion while enhancing the overall sealing effectiveness of the unit. All units incorporate the self-locking collar and have a nylon retainer. Tri-ply seal bearings are available in both a non-relubricatable (KPPB) and relubricatable version (G-KPPB).

EXTERNAL SELF-ALIGNING SERIES

The construction of this series permits the inner assembly, which contains an open-type ball bearing with spherical O.D. to align in the seat of the mating outer ring (fig. A-12). The seat of this outer ring is matched with the spherical O.D. of the ball bearing outer ring providing unrestricted self-alignment and allowing the inner assembly to become square and true with the shaft. Self-aligning units are available in both standard SM-S or heavy SMN-S series.



Fig. A-12. External self-aligning series.

RA-DD-SERIES BEARINGS

The RA-DD-series bearings are extended inner-ring types with cam locking collars (fig. A-13). They incorporate two close-fitting, non-contact grease shields to effectively retain lubricant and provide protection against harmful contaminants. The non-contact metallic shields provide improved high-speed and low-torque performance required for high-speed applications such as printing presses and tissue manufacturing. The 6/6 molded nylon retainer has proven effective under conditions of misalignment. These bearings are dimensionally interchangeable and have the same load capacities as the RA-RR series. Available in 15.88 mm – 38.10 mm (⅝ in. – 1 ½ in.) shaft sizes.



Fig. A-13. RA-DD series.

WIDE-INNER-RING BALL BEARINGS WITH CONCENTRIC COLLARS

GC SERIES



Fig. A-14. GC series.

The GC series wide-inner-ring ball bearings are relubricatable with spherical outside diameters, nylon retainers and shroud seals (fig. A-14). The metal shroud maintains tight seal contact against the inner ring and shields the rubber seals from damage due to dirt or fiber wrap. The concentric collar is locked to the shaft by two set screws, located 120 degrees apart, mated with threaded holes in the collar and drilled holes in the bearing inner ring.

YM MEDIUM-DUTY SERIES



Fig. A-15. YM series.

The Timken medium-duty series offers reliable performance and extended life for applications that carry heavier loads (fig. A-15). This series has been designed with a combination of premium features – superfinished raceways and a nylon-patch set screw locking device, designed for demanding conditions. These bearing inserts will operate with reduced levels of noise, vibration and friction and are the choice antifriction component for saw and paper mill applications, fan and blower assemblies, food and grain handling, and conveyor systems.

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CAM (SELF-LOCKING) COLLAR INSTALLATION INSTRUCTIONS

The self-locking collar eliminates the need for locknuts, washers, shoulders, sleeves and adapters. With various seal and inner width variations for many agricultural and industrial applications, self-locking collars are the easiest housed units to install.

The locking collar has a counterbored recess made purposely eccentric to the collar bore. When assembled on the shaft, this eccentric recess engages or mates with an eccentric cam end of a bearing's inner ring. The collar is engaged on the inner cam of the bearing.

This assembly grips the shaft tightly with a positive binding action that increases with use. No adjustments of any kind are necessary. The collar set screw provides supplementary locking.

TABLE A-20. CAM COLLAR INSTALLATION



1. Observe cam design of the wide inner ring and self-locking collar.



2. Mate the cam of the collar with the cam of the wide inner ring.



3. Press the locking collar against the wide inner ring and turn in the direction of shaft rotation until tightly engaged.



4. With drift pin in collar hole, tap lightly in direction of shaft rotation to lock.

   For stationary shafts and outer ring rotation, turn the collar in opposite direction of rotation.



5. Tighten set screw in collar.

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WIDE-INNER-RING BALL BEARINGS WITH SET SCREW LOCKING DEVICE

The following series are available with the set screw locking device with special set screws that are resistant to loosening during operation.

Y SERIES

Full-width, inner-ring Y-series bearings increase shaft support in heating, ventilation and air conditioning (HVAC) systems, conveyors and other industrial applications (fig. A-16). They feature superfinished raceways, grade-10 balls and anti-backout nylon-patch set screws. Flexible 6/6 nylon retainers and land-riding shroud seals ensure excellent performance. They are factory-prelubricated. Relubricatable set screw mounting feature is ideal for reversing applications. To protect the shaft with Shaft Guarding Technology™ (page A-31), add suffix SGT to the part number when ordering.



Fig. A-16. Y series.

YA SERIES

The YA-series relubricatable and non-relubricatable bearings are an extended inner-ring type with specially designed set screws (fig. A-17). Positive-contact, land-riding R-seals provide protection against harmful contaminants and retain lubricant.

Set screw series bearings are available in both non-relubricatable version YA and relubricatable version GYA-RRB. Both types have nylon retainers.



Fig. A-17. YA series.

ER SERIES

This series offers industry-standard mounting dimensions and standard nomenclature for a large variety of sizes of relubricatable, extended inner-ring bearings for through-bored housings (fig. A-18). All bearings in this series have nylon retainers and are equipped with snap rings, eliminating the need for machining housing shoulders. ER bearings are designed with a unique set screw locking device that locks the bearing to the shaft and is resistant to loosening during operation. Positive-contact, land-riding R-seals provide protection against harmful contaminants and retain lubricant. All ER bearings are black-oxide-coated for corrosion resistance. Ideal for low-starting and running-torque applications. To protect the shaft with Shaft Guarding Technology (page A-31), add suffix SGT to the part number when ordering.



Fig. A-18. ER series.

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SHAFT GUARDING TECHNOLOGY™ FOR SET SCREW LOCKING DEVICES

Housed units with Timken Shaft Guarding Technology use a stainless-steel, hardened band to transfer gripping pressure on the shaft. Unlike traditional set screws, which can dig into the shaft, there are no nicks, raised metal or permanent shaft damage when using Shaft Guarding Technology. The stainless band won't corrode on the shaft.

Timken Shaft Guarding Technology is designed to exceed gripping application requirements, maintain dimensional integrity and reduce fretting corrosion. This is a preferred solution when shaft replacement is costly.

Housed units with Shaft Guarding Technology™:

- Are faster and easier to install and remove.
- Reduce the number of shaft replacements.
- Decrease overall system costs.

Tight grip offers protection.

- Two set screws and a nylon patch at a 90-degree separation provide strong holding capability with minimal distortion.
- Groove running beneath the set screws in the inner ring bore keeps the band in place.
- Hardened stainless-steel band helps protect the shaft from damage.
- Longer inner ring along the shaft (ABMA compliant) improves shaft support and reduces bearing misalignment.
- Timken thin-dense chrome (TDC™) optional.
- Seal options include three-piece R-seal for normal-to-high contamination environments and L-seal for higher speeds and temperatures.
- Choice of housing configurations.

Industries and applications:

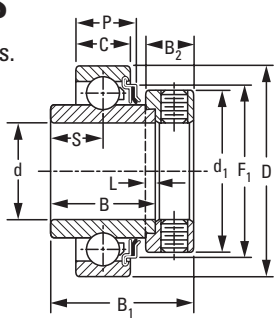
- Rubber and plastic.
- Agriculture (combines and implements).
- Forest products (paper, tissue, newsprint, fine paper).
- Industrial machinery.
  - Fans and blowers.
  - Canning and bottling.
  - Conveyors.
  - Food processing.
  - Printing presses.
  - Packaging.
  - Textiles.

08-19-13 DRAFT

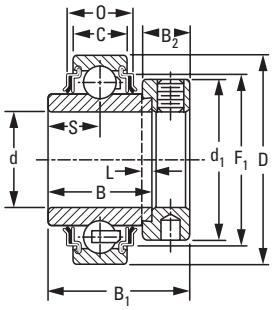
INDUSTRIAL SERIES

KR, KRR, KRRB NON-RELUBRICATABLE TYPES

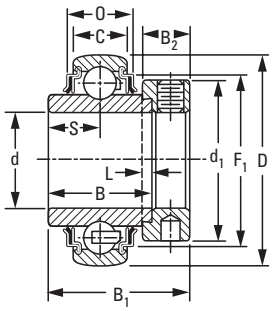
- Designed for extremely dirty or wet conditions.
- Feature R-seals with flared lips that firmly contact the ground O.D. of the inner ring.
- R-seals provide a positive seal against dirt and other contaminants, while effectively retaining the lubricant.
- Equipped with shroud-seals, providing extra effectiveness and protection.
- Extra-wide design provides additional shaft support and extra-large grease capacity.



KR One Seal Cylindrical O.D.



KRR Two Seals Cylindrical O.D.



KRRB Two Seals Spherical O.D.

Suggested shaft tolerances:

½ in. – 1 15⁄16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15⁄16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify bearing number followed by "+ COL".

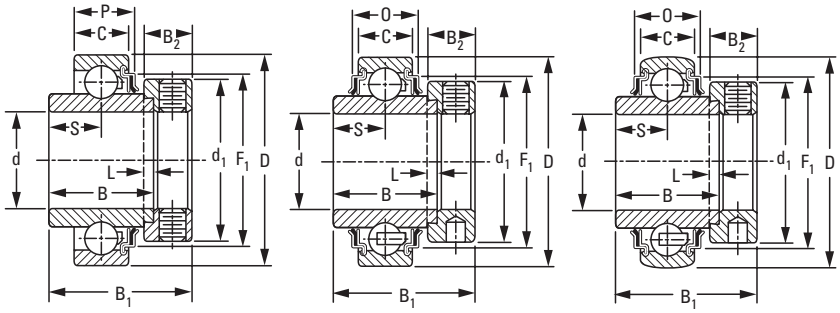
Example: 1103KRRB + COL.

Bearing No. Cylindrical O.D.	Bearing No. Spherical O.D.		Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	L	d_1	B_2	B_1	F_1	O	P	Brg. and Collar Wt.		Static Load Rating C_o	Extended Dynamic Load Rating C_E
					in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg**	lbs.	**N** lbs.	**N** lbs.
–	1008KRR	(KRRB)	S1008K		½												**0.154**	0.34		
1010KR	1010KRR	(KRRB)	S1010K	203	⅝	**40**	**27.78**	**12**	**13.90**	**4.0**	**28.6**	**13.5**	**37.3**	**34.01**	**16.56**	**14.27**	**0.145**	0.32	**4700**	**10700**
–	1011KRR	(KRRB)	S1011K		11⁄16	1.5748	1 3⁄32	0.472	35⁄64	5⁄32	1 1⁄8	17⁄32	1 15⁄32	1.339	0.652	0.562	**0.122**	0.27	1060	2400
–	E17KRR	(KRRB)	SE17K		**17**												**0.122**	0.27		
1012KR	1012KRR	(KRRB)	S1012K	204	¾	**47**	**34.13**	**14**	**17.10**	**4.0**	**33.3**	**13.5**	**43.7**	**38.91**	**16.56**	**15.29**	**0.204**	0.45	**6200**	**14300**
–	E20KRR	(KRRB)	SE20K		**20**	1.8504	1 11⁄32	0.551	43⁄64	5⁄32	1 5⁄16	17⁄32	1 23⁄32	1.532	0.652	0.602	**0.204**	0.45	1400	3200
–	1013KRR	(KRRB)	S1013K		13⁄16												**0.286**	0.63		
–	1014KRR	(KRRB)	S1014K		⅞												**0.272**	0.60		
1015KR	1015KRR	(KRRB)	S1015K	205	15⁄16	**52**	**34.92**	**15**	**17.50**	**4.0**	**38.1**	**13.5**	**44.1**	**45.19**	**16.66**	**15.82**	**0.254**	0.56	**7700**	**15800**
1100KR	1100KRR	(KRRB)	S1100K		1	2.0472	1 3⁄8	0.591	11⁄16	5⁄32	1 ½	17⁄32	1 47⁄64	1.779	0.656	0.623	**0.231**	0.51	1730	3550
–	E25KRR	(KRRB)	SE25K		**25**												**0.231**	0.51		
–	1101	(KRRB)	S1101K		1 1⁄16												**0.413**	0.91		
1102KR	1102KRR	(KRRB)	S1102K		1 ⅛												**0.404**	0.89		
1103KR	1103KRR	(KRRB)	S1103K	206	1 3⁄16	**62**	**36.51**	**16**	**18.30**	**4.0**	**44.4**	**15.9**	**48.4**	**52.53**	**19.56**	**17.78**	**0.376**	0.83	**11100**	**21200**
–	1103KRR3	(KRRB3)	S1103K3		1 ¼	2.4409	1 7⁄16	0.630[1]	23⁄32	5⁄32	1 ¾	⅝	1 29⁄32	2.068	0.770	0.700	**0.349**	0.77	2500	4900
–	E30KRR	(KRRB)	SE30K		**30**												**0.376**	0.83		
1104KR	1104KRR	(KRRB)	S1104K		1 ¼												**0.653**	1.44		
–	1105KRR	(KRRB)	S1105K		1 5⁄16												**0.603**	1.33		
–	1106KRR	(KRRB)	S1106K	207	1 ⅜	**72**	**37.70**	**17**	**18.85**	**4.0**	**54.0**	**17.1**	**51.2**	**60.55**	**19.69**	**18.34**	**0.572**	1.26	**15100**	**28500**
1107KR	1107KRR	(KRRB)	S1107K		1 7⁄16	2.8346	1 31⁄64	0.669[2]	0.742	5⁄32	2 ⅛	43⁄64	2 1⁄64	2.384	0.775	0.722	**0.544**	1.20	3400	6400
–	E35KRR	(KRRB)	SE35K		**35**												**0.572**	1.26		

[1]Spherical O.D. outer-ring width is 18 mm (0.709 in.).
[2]Spherical O.D. outer-ring width is 19 mm (0.748 in.).
[3]Spherical O.D. outer-ring width is 21 mm (0.827 in.).
[4]Available with spherical O.D. To order, add suffix B. Example 1115KRRB.
[5]Spherical O.D. outer-ring width is 22 mm (0.866 in.).
NOTE: Bore tolerances: ½ in. – 2 3⁄16 in. nominal to +0.013 mm, +0.0005;
2 ¼ in. – 2 15⁄16 in. nominal to +0.015 mm, +0.0006 in.

Continued on next page.

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KR One Seal Cylindrical O.D. **KRR Two Seals Cylindrical O.D.** **KRRB Two Seals Spherical O.D.**

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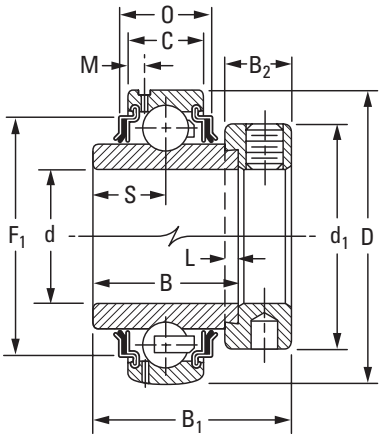
Bearing No. Cylindrical O.D.	Bearing No. Spherical O.D.	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	L	d_1	B_2	B_1	F_1	O	P	Brg. and Collar Wt.	Static Load Rating C_o	Extended Dynamic Load Rating C_E
				in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.	**N** lbs.	**N** lbs.
1108KR	1108KRR (KRRB)	S1108KT	208	1 1/2	**80**	**42.86**	**18**	**21.40**	**4.8**	**60.3**	**18.3**	**56.4**	**67.79**	**20.45**	**19.28**	**0.789** 1.74		
–	1109KRR (KRRB)	S1109KT		1 9/16	3.1496	1 11/16	0.709[3]	27/32	3/16	2 3/8	23/32	2 7/32	2.669	0.805	0.757	**0.739** 1.63	**19600**	**36000**
–	E40KRR (KRRB)	SE40K		**40**												**0.739** 1.63	4400	8150
–	1110KRR (KRRB)	S1110K		1 5/8												**0.898** 1.98		
1111KR	1111KRR (KRRB)	S1111K	209	1 11/16	**85**	**42.86**	**19**	**21.40**	**4.8**	**63.5**	**18.3**	**56.4**	**73.86**	**24.18**	**21.59**	**0.848** 1.87	**20000**	**36000**
1112KR	1112KRR (KRRB)	S1112K		1 3/4	3.3465	1 11/16	0.748	27/32	3/16	2 1/2	23/32	2 7/32	2.908	0.952	0.850	**0.825** 1.82	4500	8150
–	E45KRR (KRRB)	SE45K		**45**												**0.825** 1.82		
–	1114KRR (KRRB)	S1114K		1 7/8												**1.057** 2.33		
1115KR[4]	1115KRR (KRRB)	S1115K	210	1 15/16	**90**	**49.21**	**20**	**24.60**	**4.8**	**69.9**	**18.3**	**62.7**	**77.7**	**24.51**	**22.25**	**1.000** 2.18	**22709**	**39000**
–	E50KRR (KRRB)	SE50K		**50**	3.5433	1 15/16	0.787[5]	31/32	3/16	2 3/4	23/32	2 15/32	3.059	0.965	0.876	**1.000** 2.18	5100	8800
1200KR	1200KRR (KRRB)	S1200K		2												**1.520** 3.35		
–	1202KRR (KRRB)	S1202K	211	2 1/8	**100**	**55.56**	**21**	**27.80**	**4.8**	**76.2**	**20.6**	**71.4**	**87.17**	**27.41**	**24.21**	**1.356** 2.99	**28500**	**48000**
1203KR	1203KRR (KRRB)	S1203K		2 3/16	3.9370	2 3/16	0.827	1 3/32	3/16	3	13/16	2 13/16	3.432	1.079	0.953	**1.306** 2.88	6400	10800
–	E55KRR (KRRB)	SE55K		**55**												**1.306** 2.88		
–	1204KRR (KRRB)	S1204K		2 1/4												**1.715** 3.78		
1207KR	1207KRR (KRRB)	S1207K	212	2 7/16	**110**	**61.91**	**22**	**31.00**	**6.4**	**84.1**	**22.2**	**77.8**	**94.89**	**30.02**	**26.01**	**1.565** 3.45	**35600**	**58500**
–	E60KRR (KRRB)	SE60K		**60**	4.3307	2 7/16	0.866	1 7/32	1/4	3 5/16	7/8	3 1/16	3.736	1.182	1.024	**1.615** 3.56	8000	13200
–	1215KRR (KRRB)	S1215K	215	2 15/16	**130**	**74.61**	**25**	**37.30**	**6.4**	**101.6**	**23.8**	**91.2**	**113.13**	**34.03**	–	**2.640** 5.82	**43600**	**69500**
	E75KRR (KRRB)	SE75K		**75**	5.1181	2 15/16	0.984	1 15/32	1/4	4	15/16	3 5/8	4.454	1.340		**2.640** 5.82	9800	15600

[1]Spherical O.D. outer-ring width is 18 mm (0.709 in.).
[2]Spherical O.D. outer-ring width is 19 mm (0.748 in.).
[3]Spherical O.D. outer-ring width is 21 mm (0.827 in.).
[4]Available with spherical O.D. To order, add suffix B. Example 1115KRRB.
[5]Spherical O.D. outer-ring width is 22 mm (0.866 in.).
NOTE: Bore tolerances: 1/2 in. – 2 3/16 in. nominal to +0.013 mm, +0.0005;
2 1/4 in. – 2 15/16 in. nominal to +0.015 mm, +0.0006 in.

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G-KRR, G-KRRB RELUBRICATABLE TYPES

- The G-KRR-series wide-inner-ring ball bearings are the same as the RR series and have a provision for relubrication.
- These bearings are designed for extremely dirty or wet conditions.
- The bearing includes R-seals with flared lips that firmly contact the ground O.D. of the inner ring. The inner ring provides a positive seal against dust, dirt and other contaminants, and effectively retains the lubricant.
- G-KRR-series bearings are equipped with shroud-seals, providing extra effectiveness and protection.
- The extra-wide design provides additional shaft support and extra-large grease capacity.



Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify bearing number followed by "+ COL".

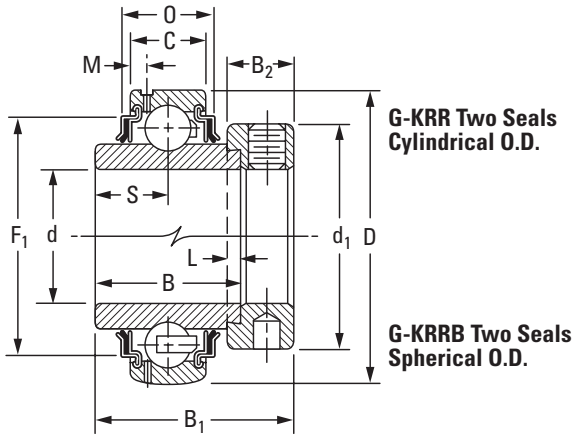
Example: G1010KRRB + COL.

Bearing No.		Collar No.	Basic Outer-Ring Size	Shaft Dia.	O.D.	Ring Widths										Brg. and Collar Wt.		Static Load Rating	Extended Dynamic Load Rating
Cylindrical O.D.	Spherical O.D.					Inner	Outer	S	L	d_1	B_2	M	B_1	F_1	O				
				d	D	B	C											C_o	C_E
				in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg**	lbs.	**N** lbs.	**N** lbs.
–	G1008KRRB	S1008K		1/2												**0.154**	0.34		
–	G1009KRRB	S1009K		9/16												**0.141**	0.31		
G1010KRR	G1010KRRB	S1010K	203	5/8	**40** 1.5748	**27.78** 1 3/32	**12** 0.472	**13.90** 35/64	**4.0** 5/32	**28.6** 1 1/8	**13.5** 17/32	**2.72** 0.107	**37.3** 1 15/32	**34.01** 1.339	**16.56** 0.652	**0.141**	0.31	**4700** 1060	**10700** 2400
G1011KRR	G1011KRRB	S1011K		11/16												**0.118**	0.26		
GE17KRR	GE17KRRB	SE17K		**17**												**0.118**	0.26		
G1012KRR	G1012KRRB	S1012K	204	3/4	**47** 1.8504	**34.13** 1 11/32	**14** 0.551	**17.10** 43/64	**4.0** 5/32	**33.3** 1 5/16	**13.5** 17/32	**3.43** 0.135	**43.7** 1 23/32	**38.91** 1.532	**17.30** 0.681	**0.204**	0.45	**6200** 1400	**14300** 3200
GE20KRR	GE20KRRB	SE20K		**20**												**0.204**	0.45		
–	G1013KRRB	S1013K		13/16												**0.286**	0.63		
G1014KRR	G1014KRRB	S1014K		7/8												**0.263**	0.58		
G1015KRR	G1015KRRB	S1015K	205	15/16	**52** 2.0472	**34.92** 1 3/8	**15** 0.591	**17.50** 11/16	**4.0** 5/32	**38.1** 1 1/2	**13.5** 17/32	**3.86** 0.152	**44.4** 1 3/4	**45.19** 1.779	**16.66** 0.656	**0.240**	0.53	**7700** 1730	**15800** 3550
G1100KRR	G1100KRRB	S1100K		**1**												**0.227**	0.50		
GE25KRR	GE25KRRB	SE25K		**25**												**0.227**	0.50		
G1101KRR	G1101KRRB	S1101K		1 1/16												**0.417**	0.92		
G1102KRR	G1102KRRB	S1102K		1 1/8												**0.404**	0.89		
G1103KRR	G1103KRRB	S1103K	206	1 3/16	**62** 2.4409	**36.51** 1 7/16	**18** 0.709	**18.30** 23/32	**4.0** 5/32	**44.1** 1 47/64	**15.9** 5/8	**3.96** 0.156	**48.4** 1 29/32	**52.53** 2.068	**21.56** 0.849	**0.376**	0.83	**11100** 2500	**21800** 4900
–	G1103KRRB3	S1103K3		1 1/4												**0.349**	0.77		
GE30KRR	GE30KRRB	SE30K		**30**												**0.376**	0.83		
G1104KRR	G1104KRRB	S1104K		1 1/4												**0.653**	1.44		
–	G1105KRRB	S1105K		1 5/16												**0.617**	1.36		
G1106KRR	G1106KRRB	S1106K	207	1 3/8	**72** 2.8346	**37.70** 1 31/64	**19** 0.748	**18.85** 0.742	**4.0** 5/32	**54.0** 2 1/8	**17.1** 43/64	**3.68** 0.145	**51.2** 2 1/64	**60.55** 2.384	**21.74** 0.856	**0.585**	1.29	**15100** 3400	**28500** 6400
G1107KRR	G1107KRRB	S1107K		1 7/16												**0.562**	1.24		
GE35KRR	GE35KRRB	SE35K		**35**												**0.585**	1.29		
G1108KRR	G1108KRRB	S1108KT		1 1/2												**0.812**	1.79		
–	G1109KRRB	S1109KT	208	1 9/16	**80** 3.1496	**42.86** 1 11/16	**21** 0.827	**21.40** 27/32	**4.8** 3/16	**60.3** 2 3/8	**18.3** 23/32	**4.06** 0.160	**56.4** 2 7/32	**67.79** 2.669	**23.44** 0.923	**0.771**	1.70	**19600** 4400	**36000** 8150
GE40KRR	GE40KRRB	SE40K		**40**												**0.771**	1.70		

(1)Spherical O.D. outer-ring width is 22 mm, 0.866 in. 2 1/4 in. – 2 15/16 in., nominal to 0.015 mm, +0.0006 in.
(2)Spherical O.D. outer-ring width is 24 mm (0.945 in.).
NOTE: Bore tolerances: 1/2 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.

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Bearing No.		Collar No.	Basic Outer-Ring Size	Shaft Dia.	O.D.	Ring Widths										Brg. and Collar Wt.		Static Load Rating	Extended Dynamic Load Rating
Cylindrical O.D.	Spherical O.D.					Inner	Outer	S	L	d_1	B_2	M	B_1	F_1	O				
				d	D	B	C											C_o	C_E
				in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg**	lbs.	**N** lbs.	**N** lbs.
G1110KRR	G1110KRRB	S1110K	209	1 5/8	85 3.3465	42.86 1 11/16	22 0.866	21.40 27/32	4.8 3/16	63.5 2 1/2	18.3 23/32	4.55 0.179	56.4 2 7/32	73.86 2.908	27.18 1.07	**0.925**	2.04	20000 4500	36000 8150
G1111KRR	G1111KRRB	S1111K		1 11/16												**0.880**	1.94		
G1112KRR	G1112KRRB	S1112K		1 3/4												**0.835**	1.84		
GE45KRR	GE45KRRB	SE45K		**45**												**0.835**	1.84		
–	G1113KRR	S1113K	210	1 13/16	90 3.5433	49.21 1 15/16	23 0.903(1)	24.60 31/32	4.8 3/16	69.9 2 3/4	18.3 23/32	4.70 0.185	62.7 2 15/32	77.70 3.059	27.51 1.083	**1.116**	2.46	22700 5100	39200 8800
–	G1114KRRB	S1114K		1 7/8												**1.034**	2.28		
G1115KRR	G1115KRRB	S1115K		1 15/16												**1.016**	2.24		
GE50KRR	GE50KRRB	SE50K		**50**												**1.016**	2.24		
G1200KRR	G1200KRRB	S1200K	211	2	100 3.9370	55.56 2 3/16	25 0.983(2)	27.80 1 3/32	4.8 3/16	76.2 3	20.6 13/16	5.00 0.197	71.4 2 13/16	87.17 3.432	29.01 1.142	**1.583**	3.49	28500 6400	48000 10800
–	G1201KRRB	S1201K		2 1/16												**1.470**	3.24		
–	G1202KRRB	S1202K		2 1/8												**1.406**	3.10		
G1203KRR	G1203KRRB	S1203K		2 3/16												**1.365**	3.01		
GE55KRR	GE55KRRB	SE55K		**55**												**1.365**	3.01		
–	G1204KRRB	S1204K	212	2 1/4	110 4.3307	61.91 2 7/16	27 1.063	31.00 1 7/32	6.4 1/4	84.1 3 5/16	22.2 7/8	5.13 0.202	77.8 3 1/16	94.89 3.736	35.03 1.379	**2.041**	4.50	35600 8000	58800 13200
–	G1205KRRB	S1205K		2 5/16												**1.923**	4.24		
–	G1206KRRB	S1206K		2 3/8												**1.846**	4.07		
G1207KRR	G1207KRRB	S1207K		2 7/16												**1.778**	3.92		
GE60KRR	GE60KRRB	SE60K		**60**												**1.846**	4.07		
–	G1210KRRB	S1210K	214	2 5/8	125 4.9213	68.26 2 11/16	28 1.102	34.10 1 11/32	6.4 1/4	96.8 3 13/16	23.8 15/16	5.08 0.200	79.4 3 1/8	109.17 4.298	35.94 1.415	**2.681**	5.91	43000 9650	69500 15600
–	G1211KRRB	S1211K		2 11/16												**2.585**	5.70		
–	GE70KRRB	SE70K		**70**												**2.585**	5.70		
–	G1212KRRB	S1212K	215	2 3/4	130 5.1181	74.61 2 15/16	29 1.142	37.30 1 15/32	6.4 1/4	101.6 4	23.8 15/16	5.56 0.219	92.1 3 5/8	113.13 4.454	38.03 1.497	**3.084**	6.80	43600 9800	69500 15600
–	G1213KRRB	S1213K		2 13/16												**2.976**	6.56		
–	G1214KRRB	S1214K		2 7/8												**2.867**	6.32		
–	G1215KRRB	S1215K		2 15/16												**2.753**	6.07		
–	GE75KRRB	SE75K		**75**												**2.753**	6.07		

(1)Spherical O.D. outer-ring width is 22 mm, 0.866 in. 2 1/4 in. – 2 15/16 in., nominal to 0.015 mm, +0.0006 in.
(2)Spherical O.D. outer-ring width is 24 mm (0.945 in.).
NOTE: Bore tolerances: 1/2 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.

08-19-13 DRAFT

KL, KLB, KLL, KLLB SPECIAL SERIES, NON-RELUBRICATABLE TYPES

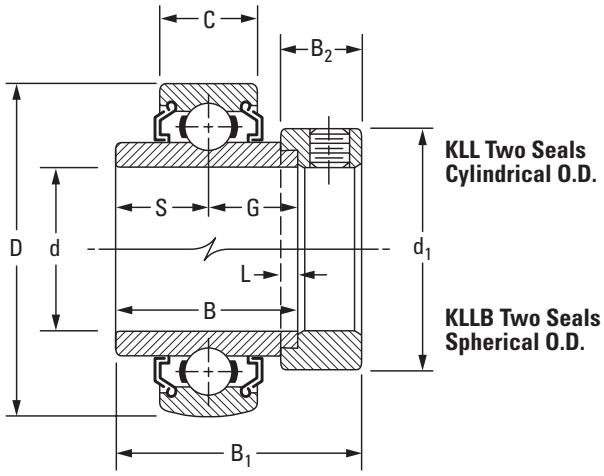
- These wide-inner-ring ball bearings have either one or two Mechani-Seals.
- Types KLB and KLLB have spherical outside diameters permitting self-alignment when mounted in a housing with a corresponding spherical seat.
- All four types are prelubricated at the factory and require no further lubrication.
- These bearings are suitable for higher-speed and/or higher-temperature applications.
- Because they incorporate non-contact seals, these bearings have very low rotational torque.

Suggested shaft tolerances:

½ in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify bearing number followed by "+ COL".

Example: 1100KLL + COL.



Bearing No. Cylindrical O.D.		Bearing No. Spherical O.D.	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S(G)	L	d_1	B_2	B_1	Brg. and Collar Wt.		Static Load Rating C_o	Extended Dynamic Load Rating C_E
					in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg	lbs.	N lbs.	N lbs.
1008KL		1008KLL	(KLLB)	S1008K		½								**0.168**	0.37		
–		1009KLL	–	S1009K	203	9/16	**40**	**27.78**	**12**	**13.89**	**3.97**	**28.58**	**13.49**	**37.31**	**0.163**	0.36	**4700**	**10700**
1010KL		1010KLL	(KLLB)	S1010K		5/8	1.5748	1 3/32	0.4724	35/64	5/32	1 1/8	17/32	1 15/32	**0.141**	0.31	1060	2400
1011KL		1011KLL	(KLLB)	S1011K		11/16									**0.122**	0.27		
1012KL		1012KLL	(KLLB)	S1012K	204	¾	**47** 1.8504	**34.13** 1 11/32	**14** 0.5512	**17.06** 43/64	**3.97** 5/32	**33.34** 1 5/16	**13.50** 17/32	**43.70** 1 23/32	**0.209**	0.46	**6200** 1400	**14300** 3200
–		–	–	S1013K		13/16									**0.286**	0.63		
1014KL		1014KLL	(KLLB)	S1014K	205	7/8	**52**	**34.92**	**15**	**17.46**	**3.97**	**38.10**	**13.49**	**44.45**	**0.277**	0.61	**7700**	**15800**
1015KL		1015KLL	(KLLB)	S1015K		15/16	2.0472	1 3/8	0.5906	11/16	5/32	1 1/2	17/32	1 47/64	**0.254**	0.56	1730	3550
1100KL	(KLB)	1100KLL	(KLLB)	S1100K		1									**0.250**	0.55		
1101KL		–	–	S1101K		1 1/16									**0.417**	0.92		
1102KL		1102KLL	(KLLB)	S1102K	206	1 1/8	**62**	**36.51**	**16**	**18.26**	**3.97**	**44.10**	**15.88**	**48.42**	**0.413**	0.91	**11100**	**21800**
1103KL	(KLB)	1103KLL	(KLLB)	S1103K		1 3/16	2.4409	1 7/16	0.6299[1]	23/32	5/32	1 3/4	5/8	1 29/32	**0.372**	0.82	2500	4900
1103KL3		1103KLL3	(KLLB3)	S1103K3		1 1/4									**0.358**	0.79		
1104KL		1104KLL	(KLLB)	S1104K		1 1/4									**0.649**	1.43		
–		1105KLL	(KLLB)	S1105K	207	1 5/16	**72**	**37.70**	**17**	**18.85**	**3.97**	**54.00**	**17.46**	**51.20**	**0.617**	1.36	**15100**	**28500**
1106KL		1106KLL	(KLLB)	S1106K		1 3/8	2.8346	1 31/64	0.6693[2]	0.742	5/32	2 1/8	43/64	2 1/64	**0.581**	1.28	3400	6400
1107KL	(KLB)	1107KLL	(KLLB)	S1107K		1 7/16									**0.544**	1.20		
1108KL	(KLB)	1108KLL	(KLLB)	S1108K	208	1 1/2	**80**	**42.86**	**18**	**21.43**	**4.76**	**60.32**	**18.26**	**56.36**	**0.821**	1.81	**17600**	**36200**
–		1109KLL	(KLLB)	S1109K		1 9/16	3.1496	1 11/16	0.7087[3]	27/32	3/16	2 3/8	23/32	2 7/32	**0.767**	1.69	4000	8130
1110KL		1110KLL	(KLLB)	S1110K		1 5/8									**0.934**	2.06		
1111KL		1111KLL	(KLLB)	S1111K	209	1 11/16	**85**	**42.86**	**19**	**21.43**	**4.76**	**60.35**	**18.26**	**56.36**	**0.890**	1.96	**20000**	**36300**
1112KL	(KLB)	1112KLL	(KLLB)	S1112K		1 ¾	3.3465	1 11/16	0.7480	27/32	3/16	2 1/2	23/32	2 7/32	**0.844**	1.86	4500	8160
1114KL		1114KLL	(KLLB)	S1114K	210	1 7/8	**90**	**49.21**	**20**	**24.61**	**4.76**	**69.90**	**18.26**	**62.71**	**1.075**	2.37	**22700**	**39000**
1115KL	(KLB)	1115KLL	(KLLB)	S1115K		1 15/16	3.5433	1 15/16	0.7874	31/32	3/16	2 ¾	23/32	2 15/32	**1.021**	2.25	5100	8800
1200KL	(KLB)	1200KLL	(KLLB)	S1200K		2									**1.540**	3.40		
–		1202KLL	(KLLB)	S1202K	211	2 1/8	**100**	**55.56**	**21**	**27.98**	**4.76**	**76.20**	**20.64**	**71.44**	**1.406**	3.10	**28500** 6400	**48000** 10800
1203KL		1203KLL	(KLLB)	S1203K		2 3/16	3.9370	2 3/16	0.8268	1 3/32	3/16	3	13/16	2 13/16	**1.347**	2.97		
1207KL		–	–	S1207K	212	2 7/16	**110** 4.3307	**61.91** 2 7/16	**22** 0.8661	**30.96** 1 7/32	**6.35** ¼	**84.14** 3 5/16	**22.22** ⅞	**77.79** 3 1/16	**1.660**	3.66	**35600** 8000	**58500** 13200
–		1215KLL	(KLLB)	S1215K	215	2 15/16	**130** 5.1181	**74.61** 2 15/16	**25** 0.9843	**37.31** 1 15/32	**6.35** ¼	**101.6** 4	**23.81** 15/16	**91.08** 3 5/8	**2.268**	5.00	**43600** 9800	**69500** 15600

[1]Spherical O.D. outer-ring width is 18 mm (0.7087 in.).
[2]Spherical O.D. outer-ring width is 19 mm (0.7480 in.).
[3]Spherical O.D. outer-ring width is 21 mm (0.8268 in.).
NOTE: Bore tolerance: ½ in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.
2 7/16 in. – 2 15/16 in., nominal to +0.015 mm, +0.0006 in.

08-19-13 DRAFT

G-KLL, G-KLLB SPECIAL SERIES, RELUBRICATABLE TYPES

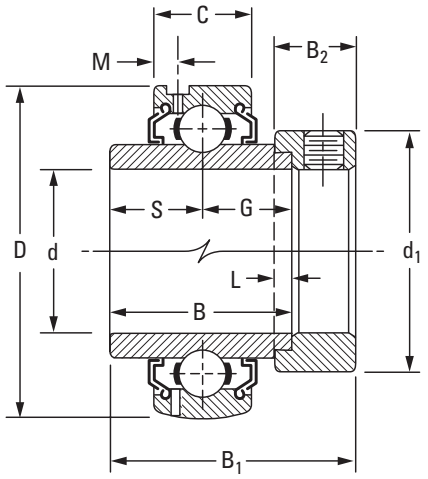
- These wide-inner-ring ball bearings have two Mechani-Seals and a provision for relubrication.
- Type G-KLL has a cylindrical outside diameter.
- Type G-KLLB has a spherical outside diameter.
- Both are generally suitable for higher-speed and/or higher-temperature applications.
- Because they incorporate non-contact seals, these bearings have very low rotational torque.
- Consult your Timken engineer for suggestions.

Suggested shaft tolerances:

½ in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify bearing number followed by "+ COL".

Example: G1015KLL + COL.



Bearing No. Cylindrical O.D.	Bearing No. Spherical O.D.	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S(G)	L	d_1	B_2	M	B_1	Brg. and Collar Wt.		Static Load Rating C_o	Extended Dynamic Load Rating C_E
				in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg	lbs.	N lbs.	N lbs.
–	G1008KLLB	S1008K	203	1/2	40 1.5748	27.78 1 3/32	12 0.4724	13.90 35/64	4.0 5/32	28.6 1 1/8	13.50 17/32	2.720 0.107	37.30 1 15/32	0.150	0.33	4700 1060	10700 2400
–	G1009KLLB	S1009K		9/16										0.136	0.30		
G1010KLL	G1010KLLB	S1010K		5/8										0.141	0.31		
G1011KLL	G1011KLLB	S1011K		11/16										0.118	0.26		
G1012KLL	G1012KLLB	S1012K	204	3/4	47 1.8504	34.13 1 11/32	14 0.5512	17.10 43/64	4.0 5/32	33.3 1 5/16	13.50 17/32	3.430 0.135	43.70 1 23/32	0.200	0.44	6200 1400	14300 3200
–	G1013KLLB	S1013K	205	13/16	52 2.0472	34.92 1 3/8	15 0.5906	17.50 11/16	4.0 5/32	38.1 1 1/2	13.50 17/32	3.860 0.152	44.45 1 3/4	0.286	0.63	7700 1730	15800 3550
G1014KLL	G1014KLLB	S1014K		7/8										0.263	0.58		
G1015KLL	G1015KLLB	S1015K		15/16										0.245	0.54		
G1100KLL	G1100KLLB	S1100K		1										0.222	0.49		
G1101KLL	–	S1101K	206	1 1/16	62 2.4409	36.51 1 7/16	18 0.7087	18.30 23/32	4.0 5/32	44.4 1 3/4	15.90 5/8	3.960 0.156	48.40 1 29/32	0.422	0.93	11100 2500	21800 4900
G1102KLL	G1102KLLB	S1102K		1 1/8										0.413	0.91		
G1103KLL	G1103KLLB	S1103K		1 3/16										0.395	0.87		
–	G1103KLLB3	S1103K3		1 1/4										0.340	0.75		
G1104KLL	G1104KLLB	S1104K	207	1 1/4	72 2.8346	37.70 1 31/64	19 0.7480	18.85 0.742	4.0 5/32	54.0 2 1/8	17.46 11/16	3.430 0.135	51.20 2 1/64	0.649	1.43	15100 3400	28500 6400
–	G1105KLLB	S1105K		1 5/16										0.622	1.37		
G1106KLL	G1106KLLB	S1106K		1 3/8										0.590	1.30		
G1107KLL	G1107KLLB	S1107K		1 7/16										0.549	1.21		
G1108KLL	G1108KLLB	S1108KT	208	1 1/2	80 3.1496	42.86 1 11/16	21 0.8268	21.40 27/32	4.8 3/16	60.3 2 3/8	18.30 23/32	4.060 0.160	56.40 2 7/32	0.826	1.82	17600 4000	36200 8130
G1109KLL	G1109KLLB	S1109KT		1 9/16										0.785	1.73		
G1110KLL	G1110KLLB	S1110K	209	1 5/8	85 3.3465	42.86 1 11/16	22 0.8661	21.40 27/32	4.8 3/16	63.5 2 1/2	18.30 23/32	4.550 0.179	56.40 2 7/32	0.949	2.09	20000 4500	36300 8160
G1111KLL	G1111KLLB	S1111K		1 11/16										0.899	1.98		
G1112KLL	G1112KLLB	S1112K		1 3/4										0.853	1.88		
–	G1113KLLB	S1113K	210	1 13/16	90 3.5433	49.21 1 15/16	23 0.9055	24.60 31/32	4.8 3/16	69.9 2 3/4	18.30 23/32	4.700 0.185	62.70 2 15/32	1.148	2.53	22700 5100	39000 8800
G1114KLL	G1114KLLB	S1114K		1 7/8										1.090	2.40		
G1115KLL	G1115KLLB	S1115K		1 15/16										1.031	2.27		
G1200KLL	G1200KLLB	S1200K	211	2	100 3.9370	55.56 2 3/16	24 0.9450	27.80 1 3/32	4.8 3/16	76.2 3	20.60 13/16	5.000 0.197	71.40 2 13/16	1.593	3.51	28500 6400	48000 10800
–	G1201KLLB	S1201K		2 1/16										1.512	3.33		
–	G1202KLLB	S1202K		2 1/8										1.416	3.12		
G1203KLL	G1203KLLB	S1203K		2 3/16										1.285	2.83		
G1204KLL	G1204KLLB	S1204K	212	2 1/4	110 4.3307	61.91 2 7/16	27 1.0630	31.00 1 7/32	6.4 1/4	84.1 3 5/16	22.20 7/8	5.130 0.202	77.80 3 1/16	2.030	4.47	35600 8000	58500 13200
–	G1205KLLB	S1205K		2 5/16										1.938	4.27		
–	G1206KLLB	S1206K		2 3/8										1.852	4.08		
–	G1207KLLB	S1207K		2 7/16										1.789	3.94		
–	G1215KLLB	S1215K	215	2 15/16	130 5.1181	74.61 2 15/16	25 0.9843	37.30 1 15/32	6.4 1/4	101.6 4	23.80 15/16	5.560 0.219	91.20 3 5/8	2.837	6.25	43600 9800	69500 15600

NOTE: Bore tolerance: ½ in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.
2 1/4 in. – 2 15/16 in., nominal to +0.015 mm, +0.0006 in.

08-19-13 DRAFT

KLLG SPECIAL SERIES WITH WIRELOC®

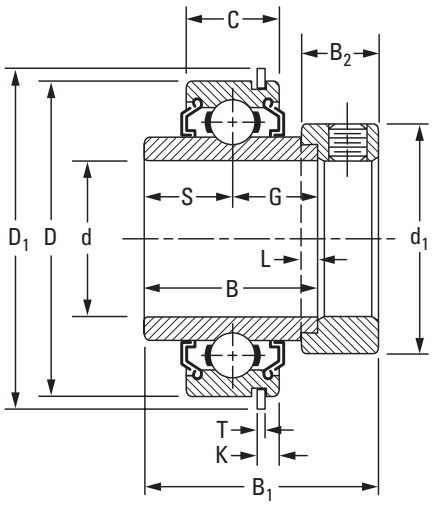
- KLLG wide-inner-ring ball bearings are the same as the KLL type, except for a snap ring, or Wireloc®, in the outer ring.
- The Wireloc mounting provides a convenient method of positively locating a bearing axially.

Suggested shaft tolerances:

½ in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 7/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify bearing number followed by "+ COL".

Example: 1008KLLG + COL.



Bearing No.	Collar No.	Basic Outer-Ring Size	Shaft Dia.	O.D.	Ring Widths								Snap Ring Dimensions			Brg. and Collar Wt.		Static Load Rating	Extended Dynamic Load Rating
					Inner	Outer	S(G)	L	d_1	B_2	B_1		D_1	T	K				
			d	D	B	C												C_o	C_E
			in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.		mm in.	mm in.	mm in.	kg	lbs.	N lbs.	N lbs.
1008KLLG	S1008K	203	½	40 1.5748	27.78 1 3/32	12 0.4724	13.90 35/64	4.0 5/32	28.6 1 1/8	13.5 17/32	37.3 1 15/32		44.45 1 3/4	1.07 0.042	3.05 0.120	0.173 0.154 0.141 0.132	0.38 0.34 0.31 0.29	4700 1060	10700 2400
1009KLLG	S1009K		9/16																
1010KLLG	S1010K		5/8																
1011KLLG	S1011K		11/16																
1012KLLG	S1012K	204	¾	47 1.8504	34.13 1 11/32	14 0.5512	17.10 43/64	4.0 5/32	33.3 1 5/16	13.5 17/32	43.7 1 23/32		52.39 2 1/16	1.07 0.042	3.45 0.136	0.204	0.45	6200 1400	14300 3200
1013KLLG	S1013K	205	13/16	52 2.0472	34.92 1 3/8	15 0.5906	17.50 11/16	4.0 5/32	38.1 1 1/2	13.5 17/32	44.1 1 47/64		57.55 2 17/64	1.07 0.042	3.45 0.136	0.272 0.263 0.245 0.227	0.60 0.58 0.54 0.50	7700 1730	15800 3550
1014KLLG	S1014K		7/8																
1015KLLG	S1015K		15/16																
1100KLLG	S1100K		1																
1101KLLG	S1101K	206	1 1/16	62 2.4409	36.51 1 7/16	16 0.6299	18.30 23/32	4.0 5/32	44.4 1 3/4	15.9 5/8	48.4 1 29/32		67.47 2 21/32	1.65 0.065	4.83 0.190	0.427 0.386 0.386	0.94 0.85 0.85	11100 2500	21800 4900
1102KLLG	S1102K		1 1/8																
1103KLLG	S1103K		1 3/16																
1104KLLG	S1104K	207	1 1/4	72 2.8346	37.70 1 31/64	17 0.6693	18.85 0.742	4.0 5/32	54.0 2 1/8	17.1 43/64	51.2 2 1/64		78.18 3 5/64	1.65 0.065	4.83 0.190	0.645 0.604 0.577 0.540	1.42 1.33 1.27 1.19	15100 3400	28500 6400
1105KLLG	S1105K		1 5/16																
1106KLLG	S1106K		1 3/8																
1107KLLG	S1107K		1 7/16																
1108KLLG	S1108KT	208	1 1/2	80 3.1496	42.86 1 11/16	18 0.7087	21.40 27/32	4.8 3/16	60.3 2 3/8	18.3 23/32	56.4 2 7/32		86.52 3 13/32	1.65 0.065	4.83 0.190	0.826 0.785	1.82 1.73	17600 4000	36200 8130
1109KLLG	S1109KT		1 9/16																
1110KLLG	S1110K	209	1 5/8	85 3.3465	42.86 1 11/16	19 0.7480	21.40 27/32	4.8 3/16	63.5 2 1/2	18.3 23/32	56.4 2 7/32		91.28 3 19/32	1.65 0.065	4.83 0.190	0.922 0.881 0.844	2.03 1.94 1.86	20000 4500	36300 8160
1111KLLG	S1111K		1 11/16																
1112KLLG	S1112K		1 3/4																
1113KLLG	S1113K	210	1 13/16	90 3.5433	49.21 1 15/16	20 0.7874	24.60 31/32	4.8 3/16	69.9 2 3/4	18.3 23/32	62.7 2 15/32		96.44 3 51/64	2.41 0.095	5.59 0.220	1.035 1.003 0.971	2.28 2.21 2.14	22700 5100	39000 8800
1114KLLG	S1114K		1 7/8																
1115KLLG	S1115K		1 15/16																
1200KLLG	S1200K	211	2	100 3.9370	55.56 2 3/16	21 0.8268	27.80 1 3/32	4.8 3/16	76.2 3	20.6 13/16	71.4 2 13/16		106.36 4 3/16	2.41 0.095	5.59 0.220	1.475 1.444 1.380 1.353	3.25 3.18 3.08 2.98	28500 6400	48000 10800
1201KLLG	S1201K		2 1/16																
1202KLLG	S1202K		2 1/8																
1203KLLG	S1203K		2 3/16																
1204KLLG	S1204K	212	2 1/4	110 4.3307	61.91 2 7/16	22 0.8661	30.96 1 7/32	6.4 1/4	84.1 3 5/16	22.2 7/8	77.8 3 1/16		116.28 4 37/64	2.41 0.095	5.59 0.220	1.793 1.743 1.711 1.684	3.95 3.84 3.77 3.71	35600 8000	58500 13200
1205KLLG	S1205K		2 5/16																
1206KLLG	S1206K		2 3/8																
1207KLLG	S1207K		2 7/16																

NOTE: Bore tolerance: ½ in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.
2 1/4 in. – 2 7/16 in., nominal to +0.015 mm, +0.0006 in.

08-19-13 DRAFT

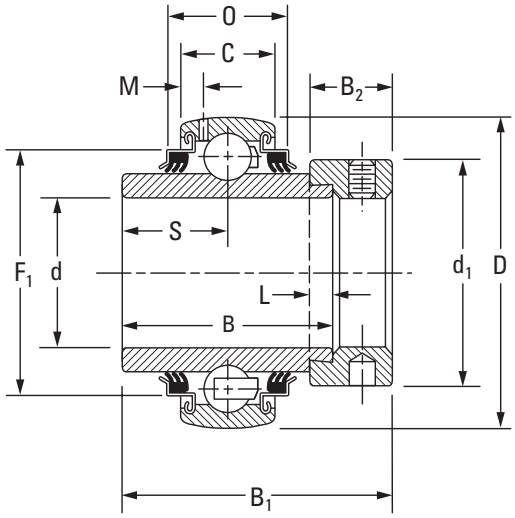
TRI-PLY SEAL INDUSTRIAL SERIES, NON-RELUBRICATABLE AND RELUBRICATABLE TYPES

- Tri-ply seal bearings are dimensionally interchangeable with KRRB bearings and can be used with standard housings.
- One-piece tri-ply seals incorporate a highly effective seal design molded to an exterior shroud cap. The shroud cap protects the seal lip from fiber wrap and abrasion.
- Supplied with a self-locking collar, the bearings are most effective in environments with severe contamination and moisture.
- Relubricatable tri-ply seal bearings are dimensionally interchangeable with G-KRRB bearings.
- This design can be used with standard housings.

Suggested shaft tolerances:

- Heavy loads – nominal to -0.025 mm, -0.001 in.;
- Light loads – nominal to -0.050 mm, -0.002 in.

To order, specify bearing number followed by "+ COL".
Example: G1115KPPB3 + COL.



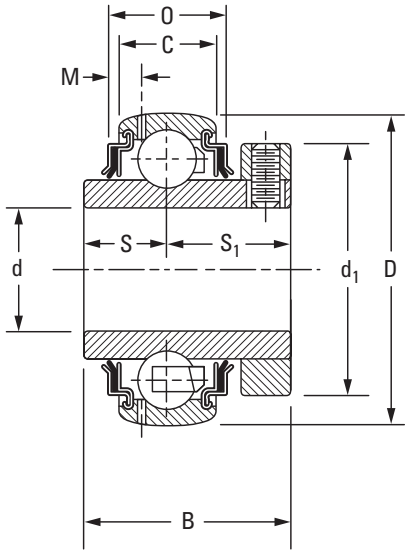
Bearing No. Spherical O.D. Relubricatable Type	Bearing No. Spherical O.D. Non-Relubricatable Type	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	L	d_1	B_2	S	B_1	M(1)	F_1	O	Brg. and Collar Wt.	Static Load Rating C_o	Extended Dynamic Load Rating C_E
			in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.	**N** lbs.	**N** lbs.
G1013KPPB3	1013KPPB3	205	13/16	52 2.0472	34.92 1 3/8	15 0.591	3.9 5/32	38.1 1 1/2	13.5 17/32	17.50 11/16	44.4 1 3/4	3.61 0.142	45.19 1.779	16.66 0.656	0.286 0.63	7700 1730	15800 3550
G1014KPPB3	1014KPPB3		7/8												0.272 0.60		
G1015KPPB3	1015KPPB3		15/16												0.254 0.56		
G1100KPPB3	1100KPPB3		1												0.231 0.51		
GE25KPPB3	E25KPPB3		**25**												0.231 0.51		
G1101KPPB3	1101KPPB3	206	1 1/16	62 2.4409	36.51 1 7/16	18 0.709	3.9 5/32	44.4 1 3/4	15.9 5/8	18.30 23/32	48.4 1 29/32	4.19 0.156	52.53 2.068	21.56 0.849	0.413 0.91	11100 2500	21800 4900
G1102KPPB3	1102KPPB3		1 1/8												0.404 0.89		
G1103KPPB3	1103KPPB3		1 3/16												0.376 0.83		
G1103KPPB4	1103KPPB4		1 1/4												0.349 0.77		
GE30KPPB3	E30KPPB3		**30**												0.376 0.83		
G1104KPPB2	1104KPPB2	207	1 1/4	72 2.8346	37.70 1 31/64	19 0.748	3.9 5/32	54.0 2 1/8	17.1 43/64	18.85 0.742	51.2 2 1/64	3.68 0.145	60.35 2.376	25.40 1.000	0.653 1.44	15100 3400	28500 6400
G1105KPPB2	1105KPPB2		1 5/16												0.603 1.33		
G1106KPPB2	1106KPPB2		1 3/8												0.572 1.26		
G1107KPPB2	1107KPPB2		1 7/16												0.544 1.20		
GE35KPPB2	E35KPPB2		**35**												0.572 1.26		
G1108KPPB3	1108KPPB3	208	1 1/2	80 3.1496	42.86 1 11/16	21 0.827	4.8 3/16	60.3 2 3/8	18.3 23/32	21.40 27/32	56.4 2 7/32	5.66 0.223	67.79 2.669	23.44 0.923	0.789 1.74	19800 4460	20500 4600
G1109KPPB3	1109KPPB3		1 9/16												0.739 1.63		
GE40KPPB3	E40KPPB3		**40**												0.739 1.63		
G1110KPPB4	1110KPPB4	209	1 5/8	85 3.3465	42.86 1 11/16	22 0.866	4.8 3/16	63.5 2 1/2	18.3 23/32	21.40 27/32	56.4 2 7/32	4.55 0.179	72.44 2.852	27.48 1.082	0.898 1.98	36200 8130	36300 8160
G1111KPPB4	1111KPPB4		1 11/16												0.848 1.87		
G1112KPPB4	1112KPPB4		1 3/4												0.826 1.82		
GE45KPPB4	E45KPPB4		**45**												0.826 1.82		
G1113KPPB3	1113KPPB3	210	1 13/16	90 3.5433	49.21 1 15/16	23 0.906	4.8 3/16	69.9 2 3/4	18.3 23/32	24.60 31/32	62.7 2 15/32	4.70 0.185	77.70 3.059	27.51 1.083	1.116 2.46	22700 5100	39200 8800
G1114KPPB3	1114KPPB3		1 7/8												1.034 2.28		
G1115KPPB3	1115KPPB3		1 15/16												1.016 2.24		
GE50KPPB3	E50KPPB3		**50**												1.016 2.24		
G1200KPPB4	1200KPPB4	211	2	100 3.9370	55.56 2 3/16	24 0.945	4.8 3/16	76.2 3	20.6 13/16	27.80 1 3/32	71.4 2 13/16	5.41 0.213	87.17 3.432	29.01 1.142	1.583 3.49	28500 6400	48100 10800
G1201KPPB4	1201KPPB4		2 1/16												1.470 3.24		
G1202KPPB4	1202KPPB4		2 1/8												1.406 3.10		
G1203KPPB4	1203KPPB4		2 3/16												1.365 3.01		
GE55KPPB4	E55KPPB4		**55**												1.365 3.01		

(1)Applies to relubricatable type only.
NOTE: Suggested max speed – 500 RPM.
NOTE: Bore tolerance: 13/16 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.

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GC-KRRB INDUSTRIAL-SERIES CONCENTRIC COLLAR, RELUBRICATABLE TYPES

- These bearing are relubricatable with spherical outside diameters and shroud seals.
- The metal shroud maintains tight seal contact against the inner ring and shields the rubber seals from damage because of dirt or fiber wrap.
- The concentric collar is locked to the shaft by two set screws located 120 degrees apart, mated with threaded holes in the collar and drilled holes in the bearing inner ring.
- The extra-wide design provides additional shaft support and extra-large grease capacity.



Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify bearing number.

Example: GC1103KRRB + COL.

Bearing No. Spherical O.D.	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	S_1	d_1	M	O	Set Screw Size	Brg. and Collar Wt.	Static Load Rating C_o	Extended Dynamic Load Rating C_E
			in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.	**N** lbs.	**N** lbs.
GC1008KRRB	C203	203	1/2	**40** 1.5748	**26.59** 1 3/64	**12** 0.4720	**11.1** 7/16	**15.5** 39/64	**34.1** 11/32	**2.72** 0.107	**14.71** 0.579	**M5x0.8** 10-32	**0.154** 0.34	**4700** 1060	**10600** 2360
GC1010KRRB			5/8										**0.145** 0.32		
GC1011KRRB			11/16										**0.122** 0.27		
GCE17KRRB			**17**										**0.122** 0.27		
GC1012KRRB	C204	204	3/4	**47** 1.8504	**30.96** 1 7/32	**14** 0.5510	**12.3** 31/64	**18.7** 47/64	**38.1** 1 1/2	**3.43** 0.135	**20.68** 0.814	**M5x0.8** 10-32	**0.204** 0.45	**6200** 1400	**14300** 3200
GCE20KRRB			**20**										**0.204** 0.45		
GC1014KRRB	C205	205	7/8	**52** 2.0472	**34.13** 1 11/32	**15** 0.5905	**13.9** 35/64	**20.2** 51/64	**44.4** 1 3/4	**3.61** 0.142	**19.74** 0.777	**M6x1** 1/4-28	**0.272** 0.60	**7700** 1730	**15800** 3550
GC1015KRRB			15/16										**0.254** 0.56		
GC1100KRRB			1										**0.231** 0.51		
GCE25KRRB			**25**										**0.231** 0.51		
GC1102KRRB	C206	206	1 1/8	**62** 2.4409	**37.31** 1 15/32	**18** 0.7090	**14.7** 37/64	**22.6** 57/64	**52.4** 2 1/16	**4.19** 0.156	**24.51** 0.965	**M6x1** 1/4-28	**0.404** 0.89	**11100** 2500	**21800** 4900
GC1103KRRB			1 3/16										**0.376** 0.83		
GC1103KRRB3			1 1/4										**0.349** 0.77		
GCE30KRRB			**30**										**0.376** 0.83		
GC1104KRRB	C207	207	1 1/4	**72** 2.8346	**41.28** 1 5/8	**19** 0.7481	**15.9** 5/8	**25.4** 1	**59.5** 2 11/32	**3.68** 0.145	**25.86** 1.018	**M6x1** 1/4-28	**0.653** 1.44	**15100** 3400	**28500** 6400
GC1106KRRB			1 3/8										**0.572** 1.26		
GC1107KRRB			1 7/16										**0.544** 1.20		
GCE35KRRB			**35**										**0.572** 1.26		
GC1108KRRB	C208	208	1 1/2	**80** 3.1496	**44.05** 1 47/64	**21** 0.8270	**16.7** 21/32	**27.4** 1 5/64	**68.3** 2 11/16	**5.66** 0.223	**28.42** 1.119	**M8x1.25** 5/16-24	**0.789** 1.74	**19800** 4460	**20500** 4600
GCE40KRRB			**40**										**0.739** 1.63		
GC1110KRRB	C209-2	209	1 5/8	**85** 3.3465	**46.83** 1 27/32	**22** 0.8660	**17.5** 1 11/16	**29.4** 1 5/32	**73.0** 2 7/8	**4.55** 0.179	**32.21** 1.268	**M8x1.25** 5/16-24	**0.898** 1.98	**36200** 8130	**36300** 8160
GC1111KRRB			1 11/16										**0.848** 1.87		
GC1112KRRB	C209		1 3/4										**0.826** 1.82		
GCE45KRRB			**45**										**0.826** 1.82		
GC1115KRRB	C210	210	1 15/16	**90** 3.5433	**48.42** 1 29/32	**23** 0.9060	**18.3** 23/32	**30.2** 1 3/16	**79.4** 3 1/8	**4.70** 0.185	**32.23** 1.269	**M8x1.25** 5/16-24	**0.990** 2.18	**22700** 5100	**39200** 8800
GCE50KRRB			**50**										**0.990** 2.18		
GC1200KRRB	C211	211	2	**100** 3.9370	**53.97** 2 1/8	**24** 0.9450	**20.6** 13/16	**33.3** 1 5/16	**88.9** 3 1/2	**5.41** 0.213	**33.73** 1.328	**M10x1.5** 3/8-24	**1.520** 3.35	**28500** 6400	**48000** 10800
GC1203KRRB			2 3/16										**1.306** 2.88		
GCE55KRRB			**55**										**1.306** 2.88		
GC1207KRRB	C212	212	2 7/16	**110** 4.3307	**60.32** 2 3/8	**27** 1.0630	**23.0** 29/32	**37.3** 1 15/32	**95.3** 3 3/4	**5.13** 0.202	**35.03** 1.379	**M10x1.5** 3/8-24	**1.565** 3.45	**35600** 8000	**58800** 13200
GCE60KRRB			**60**												
GC1215KRRB	C215	215	2 15/16	**130** 5.1181	**70.64** 2 25/32	**29** 1.1420	**27.0** 1 1/16	**43.7** 1 23/32	**114.3** 4 1/2	**5.59** 0.219	**38.25** 1.506	**M10x1.5** 3/8-20	**2.640** 5.82	**43600** 9800	**69500** 15600
GCE75KRRB			**75**												

NOTE: Bore tolerances: 1 3/16 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.
2 1/4 in. – 3 3/16 in., nominal to +0.015 mm, +0.0006 in.

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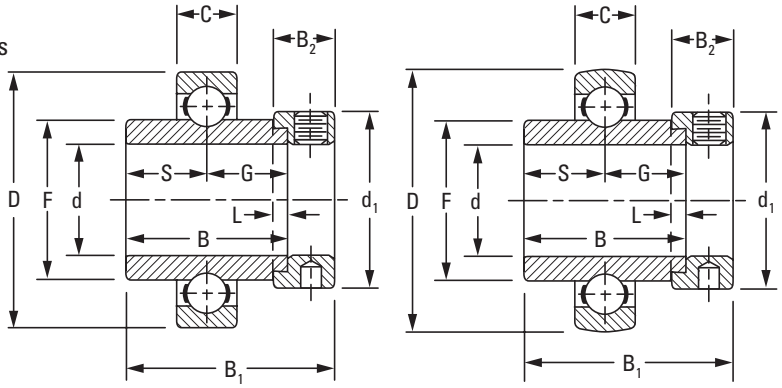
SM INDUSTRIAL SERIES A AND B TYPES/MUA-B INSERTS[1]

- Standard SM series A and B have the same ring tolerances and corner radii as equivalent 200-series single-row radial ball bearings.
- Type A has cylindrical outside diameters; type B has spherical outside diameters. The letter B appears on the outer ring only.
- The bearings are not prelubricated.

Suggested shaft tolerances:

½ in. – 1 15⁄16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 3 15⁄16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify bearing number followed by "+ COL".
Example: SM1207KB + COL.



Type A **Type B**

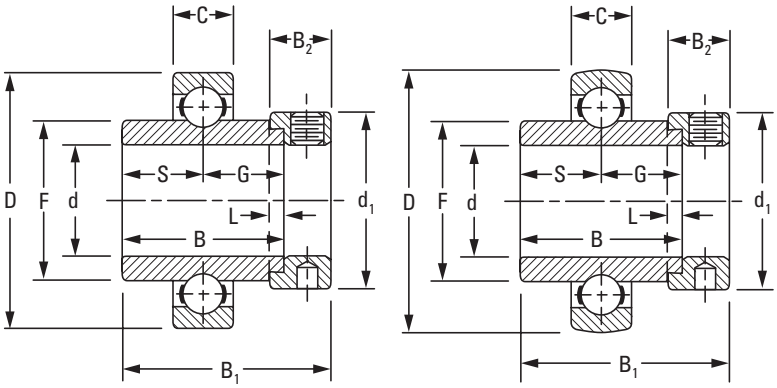
Bearing No. A Type[2]	Bearing No. B Type	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S(G)	F	L	d_1	B_1	B_2	Brg. and Collar Wt. kg	Brg. and Collar Wt. lbs.	Static Load Rating C_o	Extended Dynamic Load Rating C_E
				in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg	lbs.	N lbs.	N lbs.
SM1008K	SM1008KB	S1008K	203	½	40 1.5748	27.78 1 3⁄32	12 0.4724	13.90 35⁄64	22.86 0.900	4.0 5⁄32	28.60 1 1⁄8	13.50 17⁄32	37.30 1 15⁄32	0.145	0.32	4700 1600	10600 2360
SM1009K	SM1009KB	S1009K		9⁄16										0.131	0.29		
SM1010K	SM1010KB	S1010K		5⁄8										0.136	0.30		
SM1011K	SM1011KB	S1011K		11⁄16										0.113	0.25		
SM1012K	SM1012KB	S1012K	204	¾	47 1.8504	34.13 1 11⁄32	14 0.5512	17.10 43⁄64	27.56 1.085	4.0 5⁄32	33.30 1 5⁄16	13.50 17⁄32	48.66 1 23⁄32	0.195	0.43	6200 1400	14300 3200
SM1013K	SM1013KB	S1013K	205	13⁄16	52 2.0472	34.93 1 3⁄8	15 0.5906	17.50 11⁄16	33.83 1.332	4.0 5⁄32	38.10 1 1⁄2	13.50 17⁄32	44.45 1 3⁄4	0.276	0.61	6950 1730	15600 3450
SM1014K	SM1014KB	S1014K		7⁄8										0.254	0.56		
SM1015K	SM1015KB	S1015K		15⁄16										0.236	0.52		
SM1100K	SM1100KB	S1100K		1										0.217	0.48		
SM1101K	SM1101KB	S1101K	206	1 1⁄16	62 2.4409	36.51 1 7⁄16	16 0.6299[3]	18.30 23⁄32	40.31 1.587	4.0 5⁄32	44.40 1 3⁄4	15.90 5⁄8	48.40 1 29⁄32	0.399	0.88	11100 2500	21600 4800
SM1102K	SM1102KB	S1102K		1 1⁄8										0.367	0.81		
SM1103K	SM1103KB	S1103K		1 3⁄16										0.331	0.73		
SM1104K	SM1104KB	S1104K	207	1 1⁄4	72 2.8346	37.70 1 31⁄64	17 0.6693[4]	18.85 0.742	46.13 1.816	4.0 5⁄32	54.00 2 1⁄8	17.46 11⁄16	51.20 2 1⁄64	0.621	1.37	15100 3400	28500 6400
SM1105K	SM1105KB	S1105K		1 5⁄16										0.589	1.30		
SM1106K	SM1106KB	S1106K		1 3⁄8										0.562	1.24		
SM1107K	SM1107KB	S1107K		1 7⁄16										0.539	1.19		
SM1108KT	SM1108KB	S1108KT	208	1 1⁄2	80 3.1496	42.86 1 11⁄16	18 0.7087[5]	21.40 27⁄32	52.27 2.058	4.8 3⁄16	60.30 2 3⁄8	18.30 23⁄32	56.40 2 7⁄32	0.761	1.68	19600 4400	36000 8150
SM1109KT	–	S1109KT		1 9⁄16										0.716	1.58		
SM1110K	SM1110KB	S1110K	209	1 5⁄8	85 3.3465	42.86 1 11⁄16	19 0.7480	21.40 27⁄32	57.92 2.280	4.8 3⁄16	63.50 2 1⁄2	18.30 23⁄32	56.40 2 7⁄32	0.875	1.93	20000 4500	36000 8150
SM1111K	SM1111KB	S1111K		1 11⁄16										0.857	1.89		
SM1112K	SM1112KB	S1112K		1 3⁄4										0.803	1.77		

[1]See page A-159.
[2]Order as MUA assembly suggested.
[3]Spherical O.D. outer-ring width is 18 mm (0.7087 in.).
[4]Spherical O.D. outer-ring width is 19 mm (0.7480 in.).
[5]Spherical O.D. outer-ring width is 21 mm (0.8268 in.).
[6]For applications where thrust load exceeds 60 percent of radial load, consult your Timken engineer.
NOTE: Bore tolerance: ½ in. – 2 3⁄16 in., nominal to +0.013 mm, +0.0005 in.
2 ¼ in. – 3 3⁄16 in., nominal to +0.015 mm, +0.0006 in.
3 ¼ in. – 3 15⁄16 in., nominal to +0.018 mm, +0.0007 in.

Continued on next page.

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SM INDUSTRIAL SERIES A AND B TYPES/MUA-B INSERTS[1] – *continued*



Type A **Type B**

Continued from previous page.

Bearing No.		Collar No.	Basic Outer-Ring Size	Shaft Dia.	O.D.	Ring Widths								Brg. and Collar Wt.		Static Load Rating	Extended Dynamic Load Rating
A Type[2]	B Type					Inner	Outer	S(G)	F	L	d_1	B_1	B_2				
				d	D	B	C									C_o	C_E
				in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg	lbs.	N lbs.	N lbs.
SM1113K	SM1113KB	S1113K	210	1 13/16	90 3.5433	49.21 1 15/16	20 0.7874	24.60 31/32	62.84 2.474	4.8 3/16	69.90 2 3/4	18.30 23/32	62.70 2 15/32	1.075	2.37	22700 5100	39000 8800
SM1114K	SM1114KB	S1114K		1 7/8										1.012	2.23		
SM1115K	SM1115KB	S1115K		1 15/16										0.962	2.12		
SM1200K	SM1200KB	S1200K	211	2	100 3.9370	55.56 2 9/16	21 0.8268	27.80 1 3/32	69.77 2.747	4.8 3/16	76.20 3	20.60 13/16	71.40 2 13/16	1.51	3.33	28500 6400	48000 10800
SM1201K	SM1201KB	S1201K		2 1/16										1.397	3.08		
SM1202K	SM1202KB	S1202K		2 1/8										1.438	3.17		
SM1203K	SM1203KB	S1203K		2 3/16										1.256	2.77		
SM1204K	SM1204KB	S1204K	212	2 1/4	110 4.3307	61.91 2 7/16	22 0.8661	30.96 1 7/32	76.48 3.011	6.4 1/4	84.14 3 5/16	22.33 7/8	77.80 3 1/16	1.860	4.10	35600 8000	58500 13200
SM1205K	SM1205KB	S1205K		2 5/16										1.787	3.94		
SM1206K	SM1206KB	S1206K		2 3/8										1.692	3.73		
SM1207K	SM1207KB	S1207K		2 7/16										1.374	3.03		
SM1208K	SM1208KB	S1208K	213	2 1/2	120 4.7244	68.26 2 11/16	23 0.9055	34.13 1 11/32	84.58 3.330	6.4 1/4	96.84 3 13/16	23.81 15/16	85.73 3 3/8	2.472	5.45	39200 8800	63000 14300
SM1211KT	SM1211KTB	S1211KT	214	2 11/16	125 4.9213	68.26 2 11/16	24 0.9449	34.13 1 11/32	86.92 3.422	6.4 1/4	96.84 3 13/16	23.81 15/16	85.73 3 3/8	2.418	5.33	43000 9650	69500 15600
SM1213K	SM1213KB	S1213K	215	2 13/16	130 5.1181	74.61 2 15/16	25 0.9843	37.30 1 15/32	91.92 3.619	6.4 1/4	101.60 4	23.81 15/16	92.08 3 5/8	2.858	6.30	43600 9800	68000 15300
SM1215K	SM1215KB	S1215K		2 15/16										2.803	6.18		
SM1303K	SM1303KB	S1303K	216	3 3/16	140 5.5118	80.96 3 3/16	26 1.0236	40.48 1 19/32	98.40 3.874	6.4 1/4	111.13 4 3/8	25.40 1	100.01 3 15/16	3.452	7.61	53400 12000	80000 18000
SM1307K	SM1307KB	S1307K	217	3 7/16	150 5.9055	87.31 3 7/16	28 1.1024	43.66 1 23/32	104.83 4.127	6.4 1/4	112.71 4 7/16	25.40 1	106.36 4 3/16	3.901	8.60	61000 13700	93000 20800
SM1311W-BR	SM1311WB-BR[6]	S1311K	219	3 11/16	170 6.6929	93.66 3 11/16	32 1.2598	46.83 1 27/32	118.34 4.659	6.4 1/4	127.00 5	26.99 11/16	114.30 4 1/2	6.078	13.40	113600 25500	150000 34000
SM1315W-BR	SM1315WB-BR[6]	S1315	220	3 15/16	180 7.0866	100.01 3 15/16	34 1.3386	50.00 1 31/32	123.85 4.876	6.4 1/4	139.70 5 1/2	31.75 1 1/4	125.41 4 15/16	7.335	16.17	126900 28500	170000 38000

[1]See page A-159.
[2]Order as MUA assembly suggested.
[3]Spherical O.D. outer-ring width is 18 mm (0.7087 in.).
[4]Spherical O.D. outer-ring width is 19 mm (0.7480 in.).
[5]Spherical O.D. outer-ring width is 21 mm (0.8268 in.).
[6]For applications where thrust load exceeds 60 percent of radial load, consult your Timken engineer.
NOTE: Bore tolerance: 1/2 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.
2 1/4 in. – 3 3/16 in., nominal to +0.015 mm, +0.0006 in.
3 1/4 in. – 3 15/16 in., nominal to +0.018 mm, +0.0007 in.

08-19-13 DRAFT

SM-S INDUSTRIAL SERIES

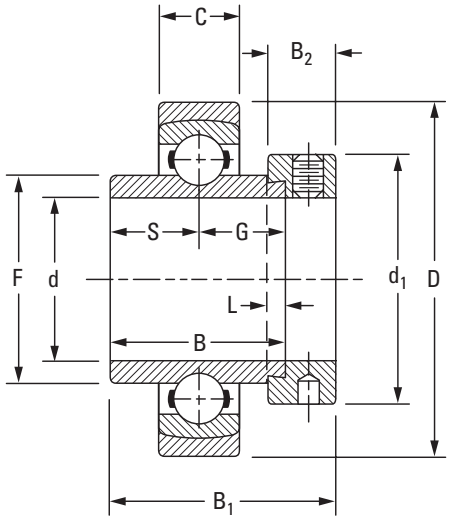
- Standard SM-S series permits the inner assembly to swivel in the outer aligning ring.
- The unrestricted self-alignment is achieved by allowing the inner ring to become square and true with the shaft and assembly.
- The external S-ring is uniquely ground and closely matched to its respective outer-bearing ring. The S-ring of one bearing will not fit the outer ring of another bearing.
- The bearings are not prelubricated.

Suggested shaft tolerances:

1 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 3 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify bearing number followed by "+ COL".

Example: SM1100KS + COL.



Bearing No.	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S(G)	F	L	d_1	B_2	B_1	Brg. and Collar Wt.		Static Load Rating C_o	Extended Dynamic Load Rating C_E
			in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg	lbs.	N lbs.	N lbs.
SM1100KS	S1100K	205	1	**57** 2.2441	**34.93** 1 3/8	**15** 0.5910	**17.46** 11/16	**33.83** 1.332	**4.0** 5/32	**38.10** 1 1/2	**13.50** 17/32	**44.10** 1 47/64	**0.263**	0.58	**7700** 1730	**15600** 3450
SM1103KS	S1103K	206	1 3/16	**68** 2.6772	**36.51** 1 7/16	**16** 0.6300	**18.30** 23/32	**39.12** 1.540	**4.0** 5/32	**44.40** 1 3/4	**15.90** 5/8	**48.40** 1 29/32	**0.418**	0.92	**11100** 2500	**21600** 4800
SM1104KS SM1107KS	S1104K S1107K	207	1 1/4 1 7/16	**79** 3.1102	**37.70** 1 31/64	**17** 0.6690	**18.85** 0.742	**46.13** 1.816	**4.0** 5/32	**54.40** 2 1/8	**17.46** 11/16	**51.20** 2 1/64	**0.726** **0.658**	1.60 1.45	**11500** 3400	**28500** 6400
SM1108KS	S1108KT	208	1 1/2	**88** 3.4646	**42.86** 1 11/16	**18** 0.7090	**21.40** 27/32	**52.27** 2.058	**4.8** 3/16	**60.30** 2 3/8	**18.30** 23/32	**56.40** 2 7/32	**0.903**	1.99	**19600** 4400	**36000** 8150
SM1115KS	S1115K	210	1 15/16	**100** 3.9370	**49.21** 1 15/16	**20** 0.7874	**24.60** 31/32	**62.84** 2.474	**4.8** 3/16	**69.90** 2 3/4	**18.30** 23/32	**62.70** 2 15/32	**1.185**	2.61	**22700** 5100	**39000** 8800
SM1203KS	S1203K	211	2 3/16	**110** 4.3307	**55.56** 2 3/16	**21** 0.8268	**27.80** 1 3/32	**69.77** 2.747	**4.8** 3/16	**76.20** 3	**20.60** 13/16	**71.40** 2 13/16	**1.748**	3.85	**28500** 6400	**48000** 10800
SM1207KS	S1207K	212	2 7/16	**120** 4.7244	**61.91** 2 7/16	**22** 0.8661	**30.96** 1 7/32	**76.48** 3.011	**6.4** 1/4	**84.14** 3 5/16	**22.20** 7/8	**77.80** 3 1/16	**1.907**	4.20	**35600** 8000	**58500** 13200
SM1211KS	S1211KT	214	2 11/16	**140** 5.5118	**68.26** 2 11/16	**24** 0.9449	**34.13** 1 11/32	**86.92** 3.422	**6.4** 1/4	**96.84** 3 13/16	**23.81** 15/16	**79.40** 3 3/8	**2.974**	6.55	**43000** 9650	**69500** 15600
SM1215KS	S1215K	215	2 15/16	**145** 5.7087	**74.61** 2 15/16	**25** 0.9843	**37.30** 1 15/32	**91.92** 3.619	**6.4** 1/4	**101.60** 4	**23.81** 15/16	**92.08** 3 5/8	**3.541**	7.80	**43600** 9800	**68000** 15300
SM1303KS	S1303K	216	3 3/16	**155** 6.1024	**80.96** 3 3/16	**26** 1.0236	**40.48** 1 19/32	**98.40** 3.874	**6.4** 1/4	**111.13** 4 3/8	**25.40** 1	**100.01** 3 15/16	**4.150**	9.14	**53400** 12000	**80000** 18000
SM1307KS	S1307K	217	3 7/16	**165** 6.4961	**87.31** 3 7/16	**28** 1.1024	**43.66** 1 23/32	**104.83** 4.127	**6.4** 1/4	**112.71** 4 7/16	**25.40** 1	**106.36** 4 3/16	**4.690**	10.33	**61000** 13700	**93000** 20800
SM1315WS[1]	S1315K	220	3 15/16	**200** 7.8740	**100.01** 3 15/16	**34** 1.3386	**50.00** 1 31/32	**123.85** 4.876	**6.4** 1/4	**139.70** 5 1/2	**31.75** 1 1/4	**125.41** 4 15/16	**8.939**	19.69	**126900** 28500	**170000** 38000

[1]For applications where thrust load exceeds 60 percent of radial load, consult your Timken engineer.
NOTE: Bore tolerance: 1 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.
2 1/4 in. – 3 3/16 in., nominal to +0.015 mm, +0.0006 in.
3 1/4 in. – 3 15/16 in., nominal to +0.018 mm, +0.0007 in.

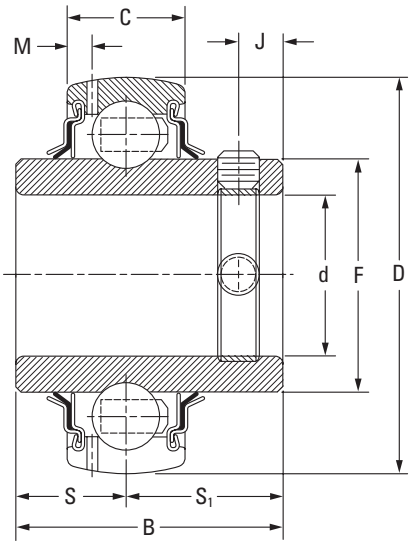
08-19-13 DRAFT

GY-KRRB SET SCREW INDUSTRIAL SERIES

- Incorporates Shaft Guarding Technology, which reduces replacement time, provides shaft protection and prolongs the life of the shaft.
- The Y-series set screw bearing has increased shaft support for HVAC and other industrial applications.
- The Y series features superfinished raceways, grade-10 balls and anti-back-out nylon-patch set screws; they are factory-prelubricated and relubricatable.
- The set screw mounting feature is ideal for reversing load applications.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

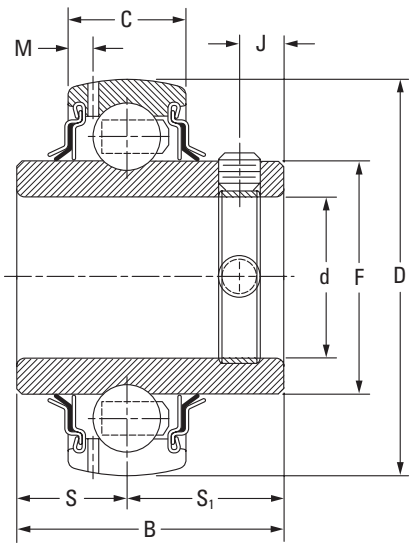


Bearing No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	S_1	F	M	J	Set Screw Size	Static Load Rating C_o	Extended Dynamic Load Rating C_E
		in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.
GY1008KRRB	203	1/2	**40** 1.5748	**27.38** 1.0780	**12** 0.0472	**11.50** 0.453	**15.88** 0.6250	**22.86** 0.900	**2.72** 0.107	**4.55** 0.179	**M5X.8** 10 – 32	**4400** 1000	**10600** 2360
GY1009KRRB		9/16											
GY1010KRRB		5/8											
GY1011KRRB		11/16											
GYE15KRRB		**15**											
GYE17KRRB		**17**											
GY1012KRRB SGT	204	3/4	**47** 1.8504	**31.80** 1.2480	**14** 0.5500	**12.70** 0.500	**19.10** 0.7480	**27.56** 1.085	**3.43** 0.135	**5.87** 0.231	**M5X.8** 10 – 32	**6200** 1400	**14300** 3200
GYE20KRRB SGT		**20**											
GY1013KRRB	205	13/16	**52** 2.0472	**34.85** 1.3717	**15** 0.5910	**14.27** 0.562	**20.56** 0.8097	**33.83** 1.332	**3.86** 0.152	**6.80** 0.267	**M6X1** 1/4 – 28	**7700** 1730	**15800** 3550
GY1014KRRB SGT		7/8											
GY1015KRRB SGT		15/16											
GY1100KRRB SGT		1											
GYE25KRRB SGT		**25**											
GY1101KRRB	206	1 1/16	**62** 2.4409	**39.10** 1.5400	**18** 0.7090	**15.88** 0.625	**23.24** 0.9150	**40.31** 1.587	**3.96** 0.156	**8.63** 0.340	**M6X1** 1/4 – 28	**11000** 2500	**21600** 4800
GY1102KRRB SGT		1 1/8											
GY1103KRRB SGT		1 3/16											
GY1103KRRB3		1 1/4											
GYE30KRRB SGT		**30**											
GY1104KRRB SGT	207	1 1/4	**72** 2.8346	**45.41** 1.7880	**19** 0.7480	**17.48** 0.688	**27.94** 1.1000	**46.18** 1.816	**3.68** 0.145	**10.36** 0.408	**M8X1.25** 5/16 – 24	**15100** 3400	**28500** 6400
GY1105KRRB		1 5/16											
GY1106KRRB SGT		1 3/8											
GY1107KRRB SGT		1 7/16											
GYE35KRRB SGT		**35**											
GY1108KRRB SGT	208	1 1/2	**80** 3.1496	**49.22** 1.9380	**21** 0.8270	**19.05** 0.750	**30.17** 1.1880	**52.27** 2.058	**4.06** 0.160	**8.00** 0.315	**M8X1.25** 5/16 – 24	**19600** 4400	**36000** 8150
GY1109KRRB		1 9/16											
GYE40KRRB SGT		**40**											

NOTE: Bore tolerances: 1/2 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.
2 1/4 in. – 3 15/16 in., nominal to +0.015 mm, +0.0006 in.

Continued on next page.

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Continued from previous page.

Bearing No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	S_1	F	M	J	Set Screw Size	Static Load Rating C_o	Extended Dynamic Load Rating C_E
		in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.
GY1110KRRB SGT	209	1 5/8	**85** 3.3465	**50.37** 1.9830	**22** 0.8661	**19.05** 0.750	**31.32** 1.2330	**57.92** 2.280	**4.55** 0.179	**9.14** 0.360	**M8X1.25** 5/16 – 24	**20000** 4500	**36000** 8150
GY1111KRRB SGT		1 11/16											
GY1112KRRB SGT		1 3/4											
GYE45KRRB SGT		**45**											
GY1113KRRB	210	1 13/16	**90** 3.5433	**51.59** 2.0310	**22** 0.8661	**19.05** 0.750	**32.54** 1.2810	**62.84** 2.474	**4.70** 0.185	**10.00** 0.394	**M10X1.5** 3/8 – 24	**22700** 5100	**39000** 8800
GY1114KRRB		1 7/8											
GY1115KRRB SGT		1 15/16											
GY1115KRRB3		2											
GYE50KRRB SGT		**50**											
GY1200KRRB SGT	211	2	**100** 3.9370	**55.55** 2.1870	**24** 0.9450	**22.22** 0.875	**33.32** 1.3120	**69.77** 2.747	**5.00** 0.197	**10.00** 0.394	**M10X1.5** 3/8 – 24	**28500** 6400	**48000** 10800
GY1201KRRB		2 1/16											
GY1202KRRB		2 1/8											
GY1203KRRB SGT		2 3/16											
GYE55KRRB SGT		**55**											
GY1204KRRB SGT	212	2 1/4	**110** 4.3307	**65.07** 2.5620	**27** 1.0630	**25.40** 1.000	**39.67** 1.5620	**76.48** 3.011	**5.13** 0.202	**10.00** 0.394	**M10X1.5** 3/8 – 24	**35600** 8000	**58500** 13200
GY1205KRRB		2 5/16											
GY1206KRRB		2 3/8											
GY1207KRRB SGT		2 7/16											
GYE60KRRB SGT		**60**											
GY1210KRRB	214	2 5/8	**125** 4.9213	**69.85** 2.7500	**28** 1.1020	**26.97** 1.062	**42.84** 1.6870	**86.92** 3.422	**5.08** 0.200	**12.00** 0.472	**M12X1.75** 7/16 – 20	**37500** 8500	**69500** 15600
GY1211KRRB		2 11/16											
GYE70KRRB		**70**											
GY1212KRRB	215	2 3/4	**130** 5.1181	**77.80** 3.0630	**29** 1.1420	**33.32** 1.312	**44.45** 1.7500	**91.92** 3.619	**5.56** 0.219	**12** 0.472	**M12X1.75** 7/16 – 20	**43600** 9800	**69500** 15600
GY1214KRRB		2 7/8											
GY1215KRRB		2 15/16											
GYE75KRRB		**75**											

NOTE: Bore tolerances: 1/2 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.
2 1/4 in. – 3 15/16 in., nominal to +0.015 mm, +0.0006 in.

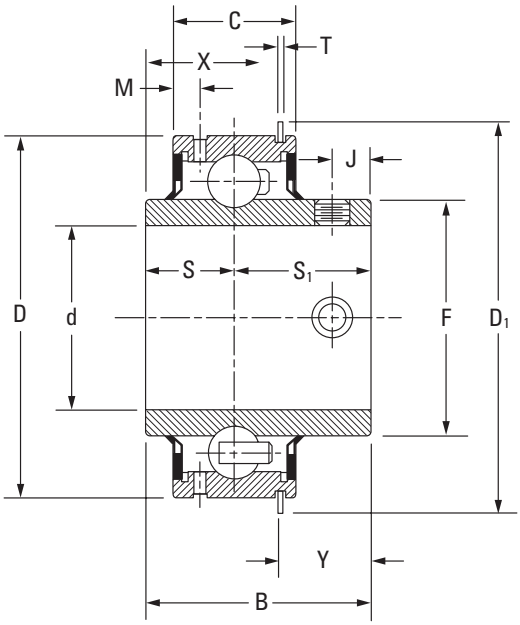
08-19-13 DRAFT

ER INDUSTRIAL SERIES, RELUBRICATABLE TYPES

- Incorporates (optional) Shaft Guarding Technology, which reduces replacement time, provides shaft protection and prolongs shaft life.
- This bearing is designed for use in applications where low-starting torque and low-running torque are necessary.
- The ER-DD series is for applications where extremely low torque is required.
- Test results indicate an average of 95 percent reduction in start-up torque when using ER-DD instead of the standard ER bearing. Running torque is reduced up to 85–90 percent.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 3 7/16 in., nominal to -0.025 mm, -0.0010 in.

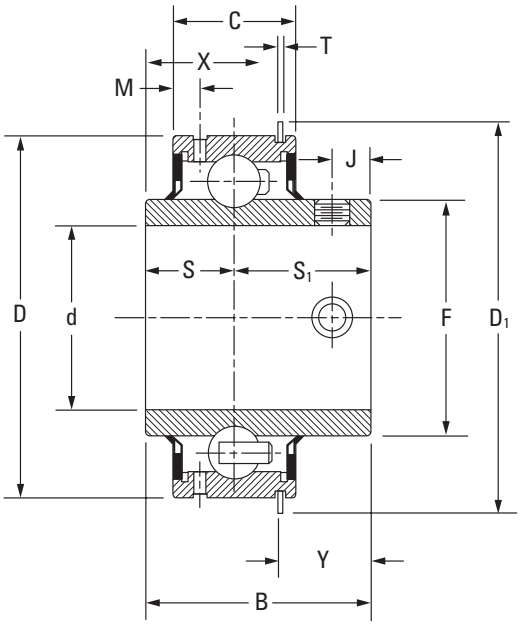


Bearing No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	S1	F	J	D1	Y	T	M	X	Set Screw Size	Brg. Wt.		Static Load Rating C_o	Extended Dynamic Load Rating C_E
		in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg	lbs.	N lbs.	N lbs.
ER08[1]	204	1/2	47 1.850	30.963 1 7/32	15.817 5/8	12.700 1/2	18.263 64/89	27.546 1 5/64	5.131 13/64	52.400 2 6/95	16.612 1/16	1.067 3/64	3.861 5/32	14.351 9/16	M5X.8 10 - 32	0.190 0.167	0.42 0.37	6571.2 1480	14163.6 3190
ER10[1]		5/8																	
ER12[1][2]		3/4														0.141	0.31		
ER14[1][2]	205	7/8	52 2.047	34.841 1 3/8	18.992 3/4	14.275 50/89	20.566 13/16	33.820 1 21/64	6.774 17/64	57.531 2 17/64	17.341 11/16	1.067 3/64	3.404 9/64	17.501 11/16	M6X1 1/4 -28	0.218 0.195	0.480 0.43	7814.4 1760	15495.6 3490
ER15[2]		15/16																	
ER16[1][2]		1														0.181	0.40		
ER18[2]	206	1 1/8	62 2.441	39.116 1 35/64	22.167 7/8	15.875 5/8	23.241 59/64	40.297 1 37/64	8.636 11/32	67.285 2 41/64	18.948 3/4	1.651 1/16	5.563 7/32	20.168 51/64	M6X1 1/4 -28	0.340 0.313	0.75 0.69	11233.2 2530	21534 4850
ER19[2]		1 3/16																	
ER20[1][2]	207	1 1/4	72 2.834	45.415 1 25/32	23.754 15/16	17.475 11/16	27.940 1 7/64	46.825 1 27/32	10.363 13/32	78.105 3 5/64	22.301 7/8	1.651 1/16	5.563 7/32	23.114 29/32	M8X1.25 5/16 -24	0.567 0.499	1.25 1.10	15273.6 3440	28416 6400
ER22[1][2]		1 3/8																	
ER23[1][2]		1 7/16														0.476	1.05		
ER24[1][2]	208	1 1/2	80 3.149	49.225 1 15/16	27.722 1 3/32	19.050 3/4	30.175 1 3/16	52.261 2 3/64	8.001 5/16	86.106 3 25/64	21.158 53/64	1.651 1/16	6.350 1/4	28.067 1 7/64	M8X1.25 5/16 - 24	0.671	1.48	19802.4 4460	36097.2 8130
ER27[2]	209	1 11/16	85 3.346	50.368 1 63/64	27.724 1 3/32	19.050 3/4	31.318 1 15/64	57.899 2 15/64	9.144 23/64	91.110 3 37/64	22.250 7/8	1.651 1/16	6.325 1/4	28.118 1 7/64	M8X1.25 5/16 - 24	0.735 0.690	1.62 1.52	20424 4600	36230.4 8160
ER28[1][2]		1 3/4																	
ER30	210	1 7/8	90 3.543	51.587 2 1/32	28.517 1 1/8	19.050 3/4	32.537 1 9/32	62.827 2 15/32	10.008 25/64	96.088 3 25/32	24.282 31/32	2.413 3/32	7.061 9/32	27.305 1 5/64	M10X1.5 3/8 - 24	0.853 0.834	1.88 1.84	23132.4 5210	38805.6 8740
ER31[2]		1 15/16																	

[1]DD low-drag/low-torque version is available.
[2]Available with Shaft Guarding Technology modification.
NOTE: Bore tolerances: 1.1874 in. – 2.1874 in. nominal to +0.013 mm, +0.0005 in.
2.2500 in. – 3.1874 in. nominal to +0.015 mm, +0.0006 in.

Continued on next page.

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Continued from previous page.

Bearing No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	S_1	F	J	D_1	Y	T	M	X	Set Screw Size	Brg. Wt.		Static Load Rating C_o	Extended Dynamic Load Rating C_E
		in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg**	lbs.	**N** lbs.	**N** lbs.
ER32[1][2]	211	2 3/16	**100**	**55.56**	**30.16**	**22.22**	**33.34**	**69.85**	**9.92**	**106.4**	**24.28**	**2.4**	**7.14**	**31.27**	**M10X1.5**	**1.300**	2.87	**29170.8**	**47952**
ER35[2]			3.9370	2 3/16	1 3/16	7/8	1 5/16	2 3/4	25/64	4 3/16	61/64	3/32	9/32	1 15/64	3/8 - 24	**1.084**	2.39	6570	10800
ER39[1][2]	212	2 7/16	**110**	**65.09**	**31.75**	**25.4**	**39.69**	**76.60**	**9.92**	**116.3**	**28.24**	**2.4**	**6.75**	**36.83**	**M10X1.5**	**1.450**	3.20	**35875.2**	**58164**
			4.331	2 9/16	1 1/4	1	1 9/16	3 1/64	25/64	4 37/64	1.11	3/32	1 7/64	1 29/64	3/8 - 24			8080	13100
ER47	215	2 15/16	**130**	**77.79**	**38.1**	**33.33**	**44.45**	**91.68**	**11.91**	**139.7**	**33.02**	**2.8**	**6.35**	**44.78**	**M12X1.75**	**2.210**	4.88	**44844**	**68820**
			5.1180	3 1/16	1 1/2	1 5/16	1 3/4	3 39/64	15/32	5 1/2	1.30	7/64	1/4	1 49/64	7/16 -20			10100	15500
ER51	216	3 3/16	**140**	**77.79**	**42.86**	**28.58**	**49.21**	**98.43**	**13.49**	**149.6**	**35.32**	**2.8**	**11.11**	**42.47**	**M12X1.75**	**3.450**	7.61	**54168**	**79476**
			5.5110	3 1/16	1 11/16	1 1/8	1 15/16	3 7/8	17/32	5 57/64	1.39	7/64	7/16	1 43/64	7/16 -20			12200	17900
ER55	217	3 7/16	**150**	**85.72**	**49.21**	**34.16**	**51.57**	**104.84**	**11.91**	**159.5**	**34.53**	**2.8**	**11.02**	**51.21**	**M12X1.75**	–	–	**61716**	**92796**
			5.905	3 3/8	1 15/16	1 11/32	2 1/32	4 1/8	7/16	6 1/4	1.36	7/64	7/16	2 1/64	7/16 -20			13900	20900

[1]DD low-drag/low-torque version is available.
[2]Available with Shaft Guarding Technology modification.
NOTE: Bore tolerances: 1.1874 in. – 2.1874 in. nominal to +0.013 mm, +0.0005 in.
2.2500 in. – 3.1874 in. nominal to +0.015 mm, +0.0006 in.

08-19-13 DRAFT

STANDARD SERIES

RA-RR, RA-RRB NON-RELUBRICATABLE TYPES

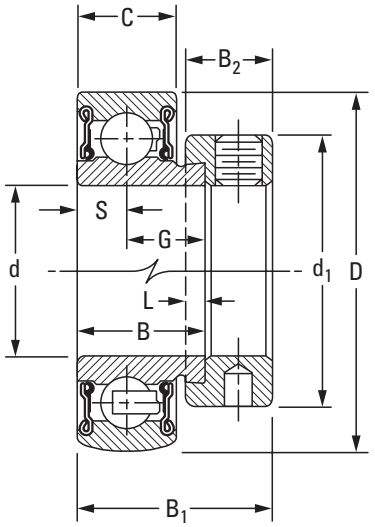
- These bearings are an extended inner-ring type with a self-locking collar.
- Due to the positive contact, the land-riding R-seal provides improved protection against harmful contaminants and retains lubricant under severe operating conditions.
- RA-RR series are factory-prelubricated and have cylindrical outside diameters.
- RA-RRB series have spherical outside diameters for use in housings with corresponding spherical inside surfaces to provide unrestricted initial alignment.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify bearing number followed by "+ COL".

Example: RA100RRB + COL.

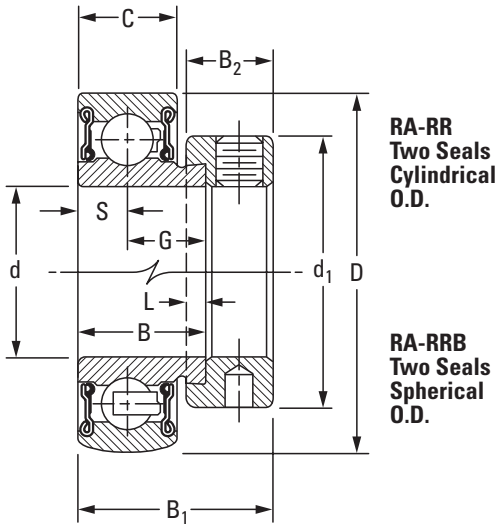


Bearing No. Cylindrical O.D.	Bearing No. Spherical O.D.	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	G	L	d_1	B_2	B_1	Brg. and Collar Wt.	Static Load Rating C_o	Extended Dynamic Load Rating C_E
				in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.	**N** lbs.	**N** lbs.
RA008RR	RA008RRB	S1008K	203	1/2	**40** 1.5748	**19.05** 0.750	**13** 0.512[1]	**6.50** 0.256	**12.55** 0.494	**4.0** 5/32	**28.60** 1 1/8	**13.5** 17/32	**28.6** 1 1/8	**0.154** 0.34	**4700** 1060	**10600** 2360
RA009RR	RA009RRB	S1009K		9/16										**0.145** 0.32		
RA010RR	RA010RRB	S1010K		5/8										**0.127** 0.28		
RAE17RR	RAE17RRB	SE17K		**17**										**0.127** 0.28		
RA012RR	RA012RRB	S1012K	204	3/4	**47** 1.8504	**21.44** 0.844	**15** 0.591[2]	**7.49** 0.295	**13.92** 0.548	**4.0** 5/32	**33.30** 1 5/16	**13.5** 17/32	**31.0** 1 7/32	**0.132** 0.29	**6200** 1400	**14300** 3200
RAE20RR	RAE20RRB	SE20K		**20**										**0.132** 0.29		
RA013RR	RA013RRB	S1013K	205	13/16	**52** 2.0472	**21.44** 0.844	**15** 0.591	**7.49** 0.295	**13.92** 0.548	**4.0** 5/32	**38.10** 1 1/2	**13.5** 17/32	**31.0** 1 7/32	**0.231** 0.51	**7700** 1730	**15800** 3550
RA014RR	RA014RRB	S1014K		7/8										**0.213** 0.47		
RA015RR	RA015RRB	S1015K		15/16										**0.200** 0.44		
RA100RR	RA100RRB	S1100K		1										**0.186** 0.41		
RAE25RR	RAE25RRB	SE25K		**25**										**0.186** 0.41		
RA101RR	RA101RRB	S1101K	206	1 1/16	**62** 2.4409	**23.82** 0.938	**18** 0.709	**8.99** 0.354	**14.81** 0.583	**4.0** 5/32	**44.10** 1 47/64	**15.9** 5/8	**35.7** 1 13/32	**0.349** 0.77	**11100** 2500	**21800** 4900
RA102RR	RA102RRB	S1102K		1 1/8										**0.327** 0.72		
RA103RR	RA103RRB	S1103K		1 3/16										**0.318** 0.70		
RA103RR2	RA103RRB2	S1103K3		1 1/4										**0.295** 0.65		
RAE30RR	RAE30RRB	SE30K		**30**										**0.318** 0.70		
RA104RR	RA104RRB	S1104K	207	1 1/4	**72** 2.8346	**25.40** 1.000	**19** 0.748	**9.50** 0.374	**15.90** 0.626	**4.0** 5/32	**54.40** 2 1/8	**17.1** 43/64	**38.9** 1 17/32	**0.562** 1.24	**15100** 3400	**28500** 6400
RA105RR	RA105RRB	S1105K		1 5/16										**0.540** 1.19		
RA106RR	RA106RRB	S1106K		1 3/8										**0.513** 1.13		
RA107RR	RA107RRB	S1107K		1 7/16										**0.476** 1.05		
RAE35RR	RAE35RRB	SE35K		**35**										**0.513** 1.13		

[1]Spherical O.D. outer-ring width is 12 mm (0.472 in.).
[2]Spherical O.D. outer-ring width is 14 mm (0.551 in.).
[3]Spherical O.D. outer-ring width is 21 mm (0.827 in.).
NOTE: Bore tolerance is nominal to +0.013 mm, +0.0005 in.

Continued on next page.

08-19-13 DRAFT



Continued from previous page.

Bearing No.		Collar No.	Basic Outer-Ring Size	Shaft Dia.	O.D.	Ring Widths								Brg. and Collar Wt.		Static Load Rating	Extended Dynamic Load Rating
Cylindrical O.D.	Spherical O.D.					Inner	Outer										
				d	D	B	C	S	G	L	d_1	B_2	B_1			C_o	C_E
				in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.		**N** lbs.	**N** lbs.
RA108RR	RA108RRB	S1108K	208	1 1/2	**80** 3.1496	**30.18** 1.188	**22** 0.866[3]	**11.00** 0.433	**19.18** 0.755	**4.8** 3/16	**60.30** 2 3/8	**18.3** 23/32	**43.7** 1 23/32	**0.694**	1.53	**19600** 4400	**36000** 8150
RA109RR	RA109RRB	S1109K		1 9/16										**0.649**	1.43		
RAE40RR	RAE40RRB	SE40K		**40**										**0.649**	1.43		
RA110RR	RA110RRB	S1110K	209	1 5/8	**85** 3.3465	**30.18** 1.188	**22** 0.866	**11.00** 0.433	**19.18** 0.755	**4.8** 3/16	**63.50** 2 1/2	**18.3** 23/32	**43.7** 1 23/32	**0.780**	1.72	**20000** 4500	**36000** 8150
RA111RR	RA111RRB	S1111K		1 11/16										**0.735**	1.62		
RA112RR	RA112RRB	S1112K		1 3/4										**0.680**	1.50		
RAE45RR	RAE45RRB	SE45K		**45**										**0.680**	1.50		
RA113RR	RA113RRB	S1113K	210	1 13/16	**90** 3.5433	**30.18** 1.188	**22** 0.866	**11.00** 0.433	**19.18** 0.755	**4.8** 3/16	**69.90** 2 3/4	**18.3** 23/32	**43.7** 1 23/32	**0.880**	1.94	**22700** 5100	**39200** 8800
RA114RR	RA114RRB	S1114K		1 7/8										**0.830**	1.83		
RA115RR	RA115RRB	S1115K		1 15/16										**0.771**	1.79		
RA115RR2	RA115RRB2	S1115K2		2										**0.717**	1.58		
RAE50RR	RAE50RRB	SE50K		**50**										**0.771**	1.79		
RA200RR	RA200RRB	S1200K	211	2	**100** 3.9370	**32.54** 1.281	**24** 0.945	**11.99** 0.472	**20.55** 0.809	**4.8** 3/16	**76.20** 3	**20.6** 13/16	**48.4** 1 29/32	**0.962**	2.12	**28500** 6400	**48000** 10800
RA201RR	RA201RRB	S1201K		2 1/16										**0.898**	1.98		
RA202RR	RA202RRB	S1202K		2 1/8										**0.857**	1.89		
RA203RR	RA203RRB	S1203K		2 3/16										**0.807**	1.78		
RAE55RR	RAE55RRB	SE55K		**55**										**0.807**	1.78		

[1]Spherical O.D. outer-ring width is 12 mm (0.472 in.).
[2]Spherical O.D. outer-ring width is 14 mm (0.551 in.).
[3]Spherical O.D. outer-ring width is 21 mm (0.827 in.).
NOTE: Bore tolerance is nominal to +0.013 mm, +0.0005 in.

08-19-13 DRAFT

GRA-RR, GRA-RRB RELUBRICATABLE TYPES

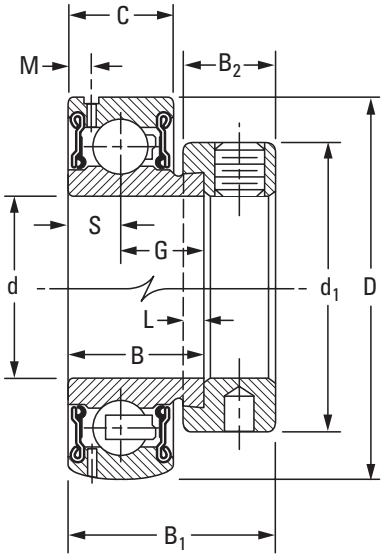
- GRA-RR-series bearings are the same as the RA-RR series and have a provision for relubrication.
- GRA-RR series have cylindrical outside diameters.
- GRA-RRB have spherical outside diameters

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.13 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify bearing number followed by "+ COL".

Example: GRA100RRB + COL.

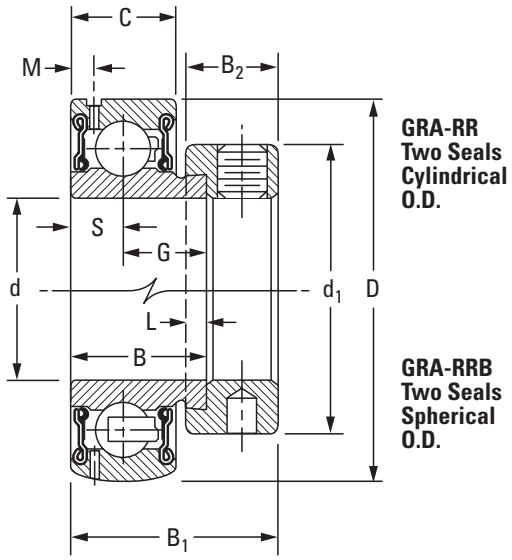


Bearing No.		Collar No.	Basic Outer-Ring Size	Shaft Dia.	O.D.	Ring Widths									Brg. and Collar Wt.		Static Load Rating	Extended Dynamic Load Rating
Cylindrical O.D.	Spherical O.D.					Inner	Outer											
				d	D	B	C	S	G	L	d_1	B_2	M	B_1			C_o	C_E
				in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg**	lbs.	**N** lbs.	**N** lbs.
GRA008RR	GRA008RRB	S1008K		1/2											**0.154**	0.34		
–	GRA009RRB	S1009K	203	9/16	**40**	**19.05**	**13**	**6.50**	**12.55**	**4.0**	**28.6**	**13.5**	**2.72**	**28.6**	**0.145**	0.32	**4700**	**10600**
GRA010RR	GRA010RRB	S1010K		5/8	1.5748	0.750	0.512[1]	0.256	0.494	5/32	1 1/8	17/32	0.107	1 1/8	**0.127**	0.28	1060	2360
GRAE17RR	GRAE17RRB	SE17K		**17**											**0.127**	0.28		
GRA012RR	GRA012RRB	S1012K	204	3/4	**47**	**21.44**	**15**	**7.49**	**13.92**	**4.0**	**33.3**	**13.5**	**3.05**	**31.0**	**0.132**	0.29	**6200**	**14300**
GRAE20RR	GRAE20RRB	SE20K		**20**	1.8504	0.844	0.591[2]	0.295	0.548	5/32	1 5/16	17/32	0.120	1 7/32	**0.132**	0.29	1400	3200
–	GRA013RRB	S1013K		13/16											**0.231**	0.51		
GRA014RR	GRA014RRB	S1014K		7/8											**0.213**	0.47		
–	GRA015RRB	S1015K	205	15/16	**52**	**21.44**	**15**	**7.49**	**13.92**	**4.0**	**38.1**	**13.5**	**3.61**	**31.0**	**0.200**	0.44	**7700**	**15800**
GRA100RR	GRA100RRB	S1100K		1	2.0472	0.844	0.591	0.295	0.548	5/32	1 1/2	17/32	0.142	1 7/32	**0.186**	0.41	1730	3550
GRAE25RR	GRAE25RRB	SE25K		**25**											**0.186**	0.41		
GRA101RR	GRA101RRB	S1101K		1 1/16											**0.349**	0.77		
GRA102RR	GRA102RRB	S1102K		1 1/8											**0.327**	0.72		
GRA103RR	GRA103RRB	S1103K	206	1 3/16	**62**	**23.83**	**18**	**8.99**	**14.81**	**4.0**	**44.1**	**15.9**	**4.17**	**35.7**	**0.318**	0.70	**11100**	**21800**
GRA103RR2	GRA103RRB2	S1103K3		1 1/4	2.4409	0.938	0.709	0.354	0.583	5/32	1 47/64	5/8	0.164	1 13/32	**0.295**	0.65	2500	4900
GRAE30RR	GRAE30RRB	SE30K		**30**											**0.318**	0.70		
GRA104RR	GRA104RRB	S1104K		1 1/4											**0.562**	1.24		
–	GRA105RRB	S1105K		1 5/16											**0.540**	1.19		
–	GRA106RRB	S1106K	207	1 3/8	**72**	**25.40**	**19**	**9.50**	**15.90**	**4.0**	**54.0**	**17.1**	**3.68**	**38.9**	**0.513**	1.13	**15100**	**28500**
–	GRA107RRB	S1107K		1 7/16	2.8346	1.000	0.748	0.374	0.626	5/32	2 1/8	43/64	0.145	1 17/32	**0.476**	1.05	3400	6400
GRAE35RR	GRAE35RRB	SE35K		**35**											**0.513**	1.13		

[1]Spherical O.D. outer-ring width is 12 mm (0.472 in.).
[2]Spherical O.D. outer-ring width is 14 mm (0.551 in.).
[3]Spherical O.D. outer-ring width is 21 mm (0.827 in.).
NOTE: Bore tolerance is nominal to +0.013 mm, +0.0005 in.

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08-19-13 DRAFT



Continued from previous page.

Bearing No.		Collar No.	Basic Outer-Ring Size	Shaft Dia.	O.D.	Ring Widths									Brg. and Collar Wt.		Static Load Rating	Extended Dynamic Load Rating
Cylindrical O.D.	Spherical O.D.					Inner	Outer											
				d	D	B	C	S	G	L	d_1	B_2	M	B_1			C_o	C_E
				in.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg		N	N
				mm	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.		lbs.	lbs.	lbs.
GRA108RR	GRA108RRB	S1108K		1 1/2											0.694	1.53		
–	GRA109RRB	S1109K	208	1 9/16	80	30.18	22	11.00	19.18	4.8	60.3	18.3	4.17	43.7	0.649	1.43	19600	36000
GRAE40RR	GRAE40RRB	SE40K		40	3.1496	1.188	0.866[3]	0.433	0.755	3/16	2 3/8	23/32	0.164	1 23/32	0.649	1.43	4400	8150
–	GRA110RRB	S1110K		1 5/8											0.780	1.72		
–	GRA111RRB	S1111K	209	1 11/16	85	30.18	22	11.00	19.18	4.8	63.5	18.3	4.55	43.7	0.735	1.62	20500	36300
–	GRA112RRB	S1112K		1 3/4	3.3465	1.188	0.866	0.433	0.755	3/16	2 1/2	23/32	0.179	1 23/32	0.680	1.50	4600	8160
–	GRAE45RRB	SE45K		45											0.680	1.50		
–	GRA113RRB	S1113K		1 13/16											0.880	1.94		
–	GRA114RRB	S1114K		1 7/8											0.830	1.83		
–	GRA115RRB	S1115K	210	1 15/16	90	30.18	22	11.00	19.18	4.8	69.9	18.3	4.44	43.7	0.771	1.79	22700	39200
–	GRA115RRB2	S1115K2		2	3.5433	1.188	0.866	0.433	0.755	3/16	2 3/4	23/32	0.175	1 23/32	0.717	1.58	5100	8800
–	GRAE50RRB	SE50K		50											0.771	1.79		
–	GRA200RRB	S1200K		2											0.962	2.12		
–	GRA201RRB	S1201K		2 1/16											0.898	1.98		
–	GRA202RRB	S1202K	211	2 1/8	100	32.54	24	11.99	20.55	4.8	76.2	20.6	4.90	48.4	0.857	1.89	28500	48000
–	GRA203RRB	S1203K		2 3/16	3.9370	1.281	0.945	0.472	0.809	3/16	3	13/16	0.193	1 29/32	0.807	1.78	6400	10800
–	GRAE55RRB	SE55K		55											0.807	1.78		

[1]Spherical O.D. outer-ring width is 12 mm (0.472 in.).
[2]Spherical O.D. outer-ring width is 14 mm (0.551 in.).
[3]Spherical O.D. outer-ring width is 21 mm (0.827 in.).
NOTE: Bore tolerance is nominal to +0.013 mm, +0.0005 in.

08-19-13 DRAFT

RA-DD NON-RELUBRICATABLE TYPES

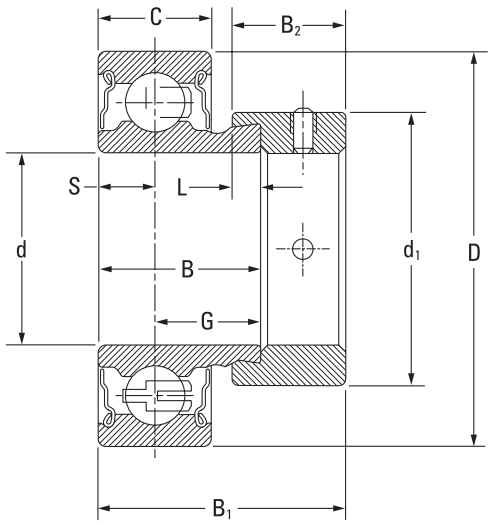
- These bearings are an extended inner-ring type with a self-locking collar.
- The two non-contact grease shields retain lubricant, provide protection against harmful contaminants and offer improved high-speed, low-torque performance.
- RA-DD series are factory-prelubricated and have cylindrical outside diameters.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify bearing number followed by "+ COL".

Example: RA100DD + COL.



Bearing No.	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	G	L	d_1	B_2	B_1	Static Load Rating C_o	Extended Dynamic Load Rating C_E
			in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.
RA008DD	S1008K	203	1/2	**40.00** 1.575	**19.05** 0.750	**13.00** 0.512	**6.50** 0.256	**12.55** 0.494	**3.97** 5/32	**28.58** 1 1/8	**13.49** 17/32	**28.58** 1 1/8	**4400** 1000	**10600** 2360
RA009DD	S1009K		9/16											
RA010DD[1]	S1010K		5/8											
RAE17DD	SE17K		**17**											
RA012DD	S1012K	204	3/4	**47.00** 1.850	**21.44** 0.844	**15.01** 0.591	**7.49** 0.295	**13.92** 0.548	**3.97** 5/32	**33.34** 1 5/16	**13.49** 17/32	**30.96** 1 7/32	**6200** 1400	**14300** 3200
RAE20DD	SE20K		**20**											
RA013DD	S1013K	205	13/16	**52.00** 2.047	**21.44** 0.844	**15.01** 0.591	**7.49** 0.295	**13.92** 0.548	**3.97** 5/32	**38.10** 1 1/2	**13.49** 17/32	**30.96** 1 7/32	**6950** 1560	**15600** 3450
RA014DD[1]	S1014K		7/8											
RA015DD	S1015K		15/16											
RA100DD	S1100K		1											
RAE25DD	SE25K		**25**											
RA101DD	S1101K	206	1 1/16	**62.00** 2.441	**23.83** 0.938	**18.01** 0.709	**8.99** 0.354	**14.81** 0.583	**3.97** 5/32	**44.45** 1 3/4	**15.88** 5/8	**35.72** 1 13/32	**10000** 2280	**21600** 4800
RA102DD	S1102K		1 1/8											
RA103DD[1]	S1103K		1 3/16											
RA103DD2	S1103K3		1 1/4S											
RAE30DD	SE30K		**30**											
RA104DD	S1104K	207	1 1/4	**72.00** 2.835	**25.40** 1.000	**19.00** 0.748	**9.50** 0.374	**15.90** 0.626	**3.97** 5/32	**53.98** 2 1/8	**17.07** 43/64	**38.89** 1 17/32	**13700** 3050	**28500** 6400
RA105DD	S1105K		1 5/16											
RA106DD	S1106K		1 3/8											
RA107DD[1]	S1107K		1 7/16											
RAE35DD	SE35K		**35**											
RA108DD[1]	S1108K	208	1 1/2	**80.00** 3.150	**30.18** 1.188	**22.00** 0.866	**11.00** 0.433	**19.18** 0.755	**4.76** 3/16	**60.33** 2 3/8	**18.26** 23/32	**43.66** 1 23/32	**17600** 4000	**36000** 8150
RA109DD	S1109K		1 9/16											
RAE40DD	SE40K		**40**											

[1]Popular sizes.
NOTE: Bore tolerance is nominal to +0.013 mm, +0.0005 in.

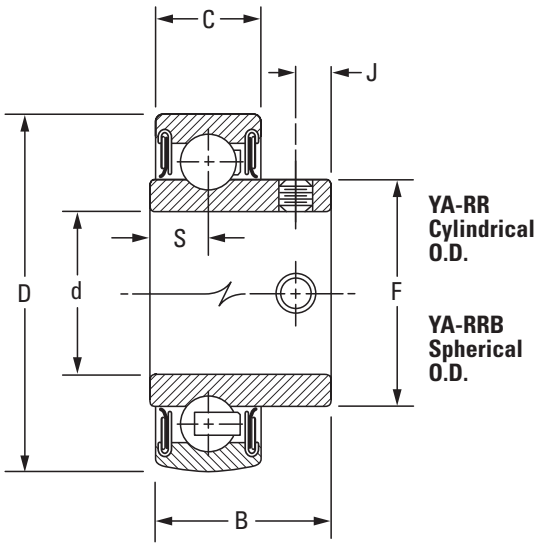
08-19-13 DRAFT

YA-RR, YA-RRB NON-RELUBRICATABLE TYPES

- These bearings are an extended inner-ring type and have specially designed set screws with unique thread form.
- The thread form in both series locks the bearing to the shaft so they are resistant to loosening during operation.
- A positive contact, land-riding R-seal provides improved protection against harmful contaminants in both series and retains lubricant under severe operating conditions.
- A 6/6 molded nylon retainer has proved effective under conditions of misalignment.
- YA-RR series has cylindrical outside diameters.
- YA-RRB series has spherical outside diameters for use in housings with corresponding spherical inside surfaces. This provides unrestricted initial self-alignment.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.



Bearing No.		Basic Outer-Ring Size	Shaft Dia.	O.D.	Ring Widths					Set Screw Size	Brg. Wt.	Static Load Rating	Extended Dynamic Load Rating
Cylindrical O.D.	Spherical O.D.				Inner	Outer							
			d	D	B	C	S	F	J			C_o	C_E
			in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.	**N** lbs.	**N** lbs.
YA008RR	YA008RRB	203	1/2	**40**	**23.8**	**13**	**7.95**	**24.6**	**4.75**	**M5X.8**	**0.09**	**4700**	**10600**
YA010RR	YA010RRB		5/8	1.5748	0.938	0.5120[1]	0.313	31/32	0.187	10 – 32	0.19	1060	2360
YAE17RR	YAE17RRB		**17**										
YA012RR	YA012RRB	204	3/4	**47**	**27.0**	**15**	**8.86**	**29.0**	**6.02**	**M6X1**	**0.14**	**6200**	**14300**
YAE20RR	YAE20RRB		**20**	1.8504	1.063	0.5910[2]	0.349	1 9/64	0.237	1/4 – 28	0.30	1400	3200
YA014RR	YA014RRB	205	7/8	**52**	**28.2**	**15**	**8.84**	**33.7**	**6.35**	**M6X1**	**0.17**	**7700**	**15800**
YA015RR	YA015RRB		15/16	2.0472	1.109	0.5910	0.348	1 21/64	0.250	1/4 – 28	0.38	1730	3550
YA100RR	YA100RRB		1										
YAE25RR	YAE25RRB		**25**										
YA102RR	YA102RRB	206	1 1/8	**62**	**32.5**	**18**	**9.65**	**40.1**	**7.87**	**M8X1.25**	**0.26**	**11100**	**21800**
YA103RR	YA103RRB		1 3/16	2.4409	1.281	0.7090	0.380	1 37/64	0.310	5/16 – 24[3]	0.58	2500	4900
YA103RR2	YA103RRB2		1 1/4										
YAE30RR	YAE30RRB		**30**										
YA104RR	YA104RRB	207	1 1/4	**72**	**36.5**	**19**	**10.85**	**46.8**	**7.87**	**M8X1.25**	**0.42**	**15100**	**28500**
YA106RR	YA106RRB		1 3/8	2.8346	1.444	0.7480	0.427	1 27/32	0.310	5/16 – 24	0.93	3400	6400
YA107RR	YA107RRB		1 7/16										
YAE35RR	YAE35RRB		**35**										
YA108RR	YA108RRB	208	1 1/2	**80**	**39.3**	**22**	**11.63**	**52.4**	**7.87**	**M8X1.25**	**0.56**	**17600**	**36000**
YAE40RR	YAE40RRB		**40**	3.1496	1.538	0.8661[4]	0.458	2 1/16	0.310	5/16 – 24	1.24	4000	8150
YA110RR	YA110RRB	209	1 5/8	**85**	**42.0**	**22**	**13.46**	**57.9**	**7.87**	**M8X1.25**	**0.54**	**20500**	**36300**
YA111RR	YA111RRB		1 11/16	3.3465	1.655	0.8861	0.530	2 9/32	0.310	5/16 – 24	1.18	4500	8160
YA112RR	YA112RRB		1 3/4										
YAE45RR	YAE45RRB		**45**										
YA115RR	YA115RRB	210	1 15/16	**90**	**44.3**	**22**	**13.46**	**62.7**	**9.02**	**M10X1.5**	**0.57**	**22700**	**39200**
YA115RR2	YA115RRB2		2	3.5433	1.746	0.8661	0.530	2 15/32	0.355	3/8 – 24	1.25	5100	8800
YAE50RR	YAE50RRB		**50**										
YA200RR	YA200RRB	211	2	**100**	**46.6**	**24**	**14.60**	**69.8**	**9.02**	**M10X1.5**	**0.58**	**28500**	**48000**
YA203RR	YA203RRB		2 3/16	3.9370	1.833	0.9449	0.575	2 3/4	0.355	3/8 – 24	1.27	6400	10800
YAE55RR	YAE55RRB		**55**										

[1]Spherical O.D. outer-ring width is 12 mm (0.4724 in.).
[2]Spherical O.D. outer-ring width is 14 mm (0.5512 in.).
[3]YA103RR2 and YA103RRB2 use 1/4 – 28 in. set screw.
[4]Spherical O.D. outer-ring width is 21 mm (0.8268 in.).
NOTE: Bore tolerance is nominal to +0.013 mm, +0.0005 in.

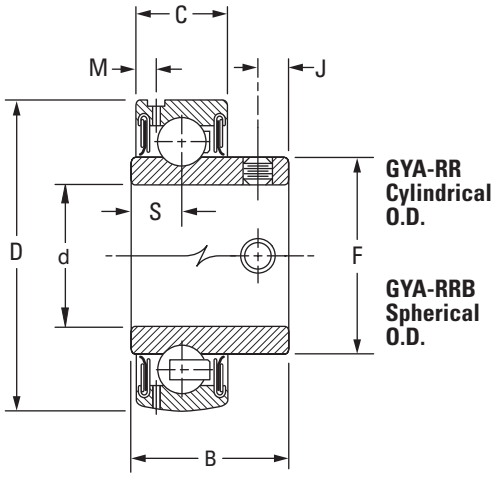
08-19-13 DRAFT

GYA-RR, GYA-RRB RELUBRICATABLE TYPES

- GYA-RR-series bearings are dimensionally interchangeable with the YA-RR series.
- Both series have cylindrical outside diameters and can be used in standard cylindrical housings.
- GYA-RRB series have spherical outside diameters, providing unrestricted initial alignment. This series is used in housings with corresponding spherical inside surfaces.

Suggested shaft tolerances:

1/2 in.- 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.



Bearing No. Cylindrical O.D.	Bearing No. Spherical O.D.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	F	M	J	Set Screw Size	Brg. Wt.	Static Load Rating C_o	Extended Dynamic Load Rating C_E
			in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.	**N** lbs.	**N** lbs.
GYA008RR	GYA008RRB	203	1/2	**40**	**23.8**	**12**	**7.95**	**24.6**	**2.72**	**4.75**	**M5X.8**	**0.09**	**4700**	**10600**
GYA010RR	GYA010RRB		5/8	1.5748	0.938	0.4720	0.313	31/32	0.107	0.187	10 – 32	0.19	1060	2360
GYAE17RR	GYAE17RRB		**17**											
GYA012RR	GYA012RRB	204	3/4	**47**	**27.0**	**14**	**8.86**	**29.0**	**3.05**	**6.02**	**M6X1**	**0.14**	**6200**	**14300**
GYAE20RR	GYAE20RRB		**20**	1.8504	1.063	0.5510	0.349	1 9/64	0.120	0.237	1/4 – 28	0.30	1400	3200
GYA014RR	GYA014RRB	205	7/8	**52**	**28.2**	**15**	**8.84**	**33.7**	**3.61**	**6.35**	**M6X1**	**0.17**	**7700**	**15800**
GYA015RR	GYA015RRB		15/16	2.0472	1.109	0.5910	0.348	1 21/64	0.142	0.250	1/4 – 28	0.38	1730	3550
GYA100RR	GYA100RRB		1											
GYAE25RR	GYAE25RRB		**25**											
GYA102RR	GYA102RRB	206	1 1/8	**62**	**32.5**	**18**	**9.65**	**40.1**	**4.17**	**7.87**	**M8X1.25**	**0.26**	**11100**	**21800**
GYA103RR	GYA103RRB		1 3/16	2.4409	1.281	0.7090	0.380	1 37/64	0.164	0.310	5/16 – 24[1]	0.58	2500	4900
GYA103RR2	GYA103RRB2		1 1/4											
GYAE30RR	GYAE30RRB		**30**											
GYA104RR	GYA104RRB	207	1 1/4	**72**	**36.5**	**19**	**10.85**	**46.8**	**3.68**	**7.87**	**M8X1.25**	**0.42**	**15100**	**28500**
GYA106RR	GYA106RRB		1 3/8	2.8346	1.444	0.7480	0.427	1 27/32	0.145	0.310	5/16 – 24	0.93	3400	6400
GYA107RR	GYA107RRB		1 7/16											
GYAE35RR	GYAE35RRB		**35**											
GYA108RR	GYA108RRB	208	1 1/2	**80**	**39.3**	**22**	**11.63**	**52.4**	**4.17**	**7.87**	**M8X1.25**	**0.56**	**17600**	**36000**
GYAE40RR	GYAE40RRB		**40**	3.1496	1.538	0.8661	0.458	2 1/16	0.164	0.310	5/16 – 24	1.24	4000	8150
GYA110RR	GYA110RRB	209	1 5/8	**85**	**42**	**22**	**13.46**	**57.9**	**4.54**	**7.87**	**M8X1.25**	**0.54**	**20000**	**36000**
GYA111RR	GYA111RRB		1 11/16	3.3465	1.655	0.8661	0.530	2 9/32	0.179	0.310	5/16 – 24	1.18	4500	8150
GYA112RR	GYA112RRB		1 3/4											
GYAE45RR	GYAE45RRB		**45**											
GYA115RR	GYA115RRB	210	1 15/16	**90**	**44.3**	**22**	**13.46**	**62.7**	**4.44**	**9.02**	**M10X1.5**	**0.57**	**22700**	**39200**
GYA115RR2	GYA115RRB2		2	3.5433	1.746	0.8661	0.530	2 15/32	0.175	0.355	3/8 – 24	1.25	5100	8800
GYAE50RR	GYAE50RRB		**50**											
GYA200RR	GYA200RRB	211	2	**100**	**46.6**	**24**	**14.60**	**69.8**	**4.90**	**9.02**	**M10X1.5**	**0.58**	**28500**	**48000**
GYA203RR	GYA203RRB		2 3/16	3.9370	1.833	0.9449	0.575	2 3/4	0.193	0.355	3/8 – 24	1.27	6400	10800
GYAE55RR	GYAE55RRB		**55**											

[1]GYA103RR2 and GYA103RRB2 use 1/4 – 28 in. set screw.
NOTE: Bore tolerance is nominal to +0.013 mm, +0.0005 in.

08-19-13 DRAFT

LIGHT SERIES

RAL-NPPB NON-RELUBRICATABLE TYPES

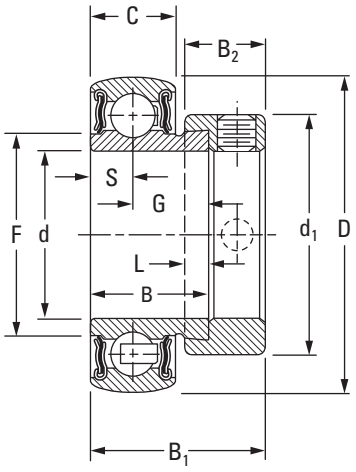
- RAL series are high-quality, compact, low-cost bearings and are intended for use in lightly loaded applications.
- RAL series are on extended inner-ring type with self-locking collars.
- Prelubricated RAL series incorporate the positive contact, land-riding R-seal. The seal has proved effective in the retention of lubricants and exclusion of foreign matter under extreme service conditions.
- RAL-NPPD-series bearings have spherical outside diameters providing unrestricted initial alignment.
- This bearing is used in housings with corresponding spherical inside surfaces.

Suggested shaft tolerances:

½ in. – 1 ¼ in., nominal to -0.013 mm, -0.0005 in.

To order, specify bearing number followed by "+ COL".

Example: RAL100NPPB + COL.



Bearing No.	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	G	F	L	d_1	B_2	B_1	Brg. and Collar Wt.		Static Load Rating C_o	Extended Dynamic Load Rating C_E
			in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg**	lbs.	**N** lbs.	**N** lbs.
RAL008NPPB[1]	LS008K	202	½	**35** 1.3780	**15.88** ⅝	**11** 0.433	**5.502** 0.2116	**10.373** 0.4084	**20.07** 0.790	**4.0** 5/32	**25.4** 1	**11.1** 7/16	**23.8** 15/16	–	–	**3000** 680	**7500** 1700
RAL009NPPB	LS009K		9/16											–	–		
RAL010NPPB[1]	LS010K		⅝											**0.06**	0.13		
RAL012NPPB[1]	LS012K	9104	¾	**42** 1.6535	**16.67** 21/32	**12** 0.472	**6.000** 0.2362	**10.663** 0.4198	**25.15** 0.990	**3.2** 1/8	**29.8** 1 11/64	**11.1** 7/16	**24.6** 31/32	**0.09**	0.20	**4400** 1000	**10400** 2320
RAL013NPPB	LS013K	9105	13/16	**47** 1.8504	**17.46** 11/16	**12** 0.472	**6.000** 0.2362	**11.476** 0.4518	**29.67** 1.168	**4.0** 5/32	**36.1** 1 27/64	**11.9** 15/32	**25.4** 1	–	–	**4900** 1120	**11000** 2500
RAL014NPPB	LS014K		⅞											**0.11**	0.24		
RAL015NPPB	LS015K		15/16											–	–		
RAL100NPPB[1]	LS100K		1											**0.10**	0.22		
RAL101NPPB	LS101K	9106	1 1/16	**55** 2.1654	**18.27** 23/32	**13** 0.512	**6.500** 0.2559	**11.755** 0.4628	**36.32** 1.430	**4.0** 5/32	**42.5** 1 43/64	**11.9** 15/32	**26.2** 1 1/32	–	–	**6950** 1560	**14600** 3350
RAL102NPPB	LS102K		1 ⅛											**0.13**	0.29		
RAL103NPPB	LS103K		1 3/16											**0.13**	0.29		
RAL103NPPB2[1]	LS103K2		1 ¼											**0.13**	0.29		

[1]Also available with cylindrical O.D. Delete suffix B.
NOTE: Bore tolerance is nominal to +0.013 mm, +0.0005 in.

08-19-13 DRAFT

MEDIUM SERIES

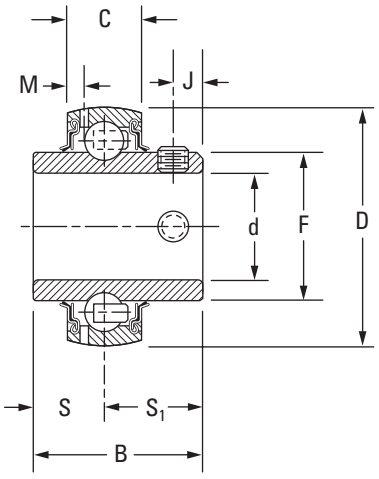
GYM-KRRB INSERTS SET SCREW LOCK

- This series is designed to offer extended bearing life despite demanding industrial environments.
- The insert features a full-width inner ring, providing extra support along the shaft.
- The extra support feature, coupled with a flexible nylon retainer, allows the inserts to operate for extended periods with undersized shafts or in misalignment conditions.
- The inserts are equipped with a three-piece seal, protecting against corrosion, contamination and fiber wrap.
- The inserts also include nylon-patch set screws, resisting set screw back-out and providing superior holding power in applications with severe vibration.

Suggested shaft tolerances:

1 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;

2 in. – 3 in., nominal to -0.025 mm, -0.0010 in.



Bearing No. Spherical O.D.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	S_1	F	M	J	Set Screw Size	Brg. Wt.	Static Load Rating C_o	Extended Dynamic Load Rating C_E
		in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.	**N** lbs.	**N** lbs.
GYM1100KRRB	206	1	**62** 2.4409	**38.10** 1.500	**18** 0.709	**15.88** 0.625	**22.22** 0.875	**40.31** 1.587	**3.96** 0.156	**7.62** 0.300	**M6 x 1** 1/4 – 28	**0.427** 0.94	**11100** 2500	**21800** 4900
GYM1103KRRB	207	1 3/16	**72** 2.8346	**42.87** 1.688	**19** 0.748	**17.48** 0.688	**25.40** 1.000	**46.18** 1.816	**3.68** 0.145	**7.82** 0.308	**M8 x 1.25** 5/16 – 24	**0.704** 1.55	**15100** 3400	**28500** 6400
GYM1107KRRB	208	1 7/16	**80** 3.1496	**49.22** 1.938	**21** 0.827	**19.05** 0.750	**30.17** 1.188	**52.27** 2.058	**4.06** 0.160	**8.00** 0.315	**M8 x 1.25** 5/16 – 24	**0.817** 1.80	**19600** 4400	**36300** 8150
GYM1108KRRB	209	1 1/2	**85** 3.3465	**49.22** 1.938	**22** 0.866	**19.05** 0.750	**30.17** 1.188	**52.27** 2.280	**4.55** 0.179	**8.00** 0.315	**M8 x 1.25** 5/16 – 24	**0.885** 1.95	**20000** 4500	**36300** 8150
GYM1111KRRB	210	1 11/16	**90** 3.5433	**51.59** 2.031	**22** 0.866	**19.05** 0.750	**32.54** 1.281	**62.84** 2.474	**4.70** 0.185	**10.00** 0.394	**M10 x 1.5** 3/8 – 24	**1.271** 2.80	**22700** 5100	**39200** 8800
GYM1112KRRB		1 3/4										**1.203** 2.65		
GYM1115KRRB	211	1 15/16	**100** 3.9370	**55.55** 2.187	**24** 0.945	**22.22** 0.875	**33.32** 1.312	**69.77** 2.747	**5.00** 0.197	**10.00** 0.394	**M10 x 1.5** 3/8 – 24	**1.634** 3.60	**28500** 6400	**48100** 10800
GY1200KRRB		2										**1.498** 3.30		
GYM1203KRRB	212	2 3/16	**110** 4.3307	**65.07** 2.562	**27** 1.063	**25.40** 1.000	**39.67** 1.562	**76.48** 3.011	**5.13** 0.202	**10.00** 0.394	**M10 x 1.5** 3/8 – 24	**2.225** 4.90	**35600** 8000	**58800** 13200
GY1204KRRB		2 1/4										**1.952** 4.30		
GYM1207KRRB	214	2 7/16	**125** 4.9213	**69.85** 2.750	**28** 1.102	**26.97** 1.062	**42.84** 1.687	**76.48** 3.422	**5.08** 0.200	**12.00** 0.472	**M12 x 1.75** 7/16 – 20	**2.996** 6.60	**43000** 9650	**69500** 15600
GYM1208KRRB		2 1/2										**2.860** 6.30		
GYM1211KRRB	215	2 11/16	**130** 5.1181	**77.80** 3.063	**29** 1.142	**33.32** 1.312	**44.45** 1.750	**91.92** 3.619	**5.56** 0.219	**12.00** 0.472	**M12 x 1.75** 7/16 – 20	**3.042** 6.70	**43600** 9800	**69500** 15600
GYM1215KRRB GYM1300KRRB	216	2 15/16 3	**140** 5.5118	**77.80** 3.063	**29** 1.142	**33.32** 1.312	**44.45** 1.750	**91.92** 3.619	**5.56** 0.219	**12.00** 0.472	**M12 x 1.75** 7/16 – 20	**3.087** 6.80	**53400** 12000	**80200** 18000

NOTE: Bore tolerance: 1/2 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.
2 1/4 in. – 3 in., nominal to +0.015 mm, +0.0006 in.

08-19-13 DRAFT

HEAVY SERIES

GN-KRRB RELUBRICATABLE TYPES

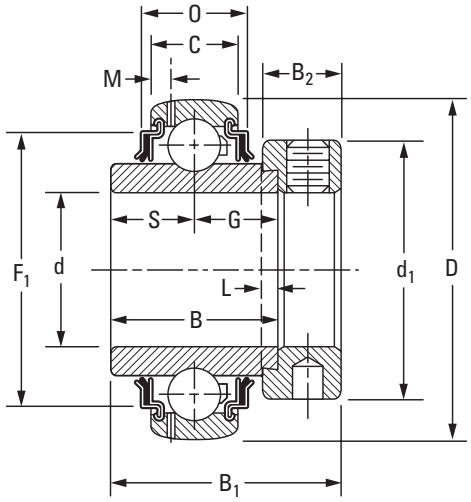
- The heavy series R-seal bearings are similar to the standard series and designed to withstand continuous, heavy or shock loads.
- This series has heavier-section 300-series bearings. They include a considerably thicker sealing member in the contact-type diaphragm seal.
- The design of the series ensures complete retention of the lubricant and positive exclusion of all contaminants.

Suggested shaft tolerances:

1 3/16 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 3 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify bearing number followed by "+ COL".

Example: GN303KRRB + COL.



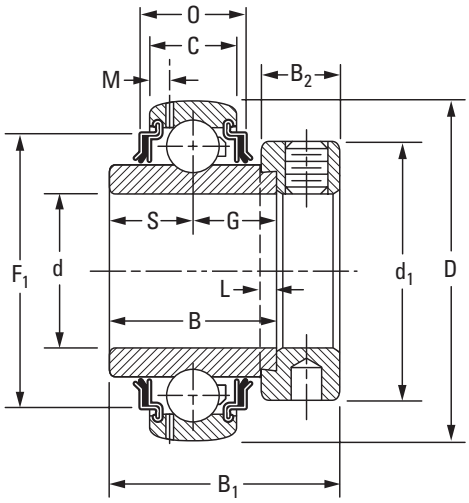
Bearing No.	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	G	L	d_1	B_2	M	B_1	F_1	O	Brg. and Collar Wt.		Static Load Rating C_o	Extended Dynamic Load Rating C_E
			in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg**	lbs.	**N** lbs.	**N** lbs.
GN103KRRB	SN103K	306	1 3/16	**72** 2.8346	**36.51** 1 7/16	**20** 0.787	**17.5** 11/16	**19.1** 3/4	**4.0** 5/32	**49.2** 1 15/16	**17.5** 11/16	**3.61** 0.142	**50.0** 1 31/32	**60.17** 2.369	**23.50** 0.925	**0.553**	1.22	**15600** 3550	**33500** 7500
GN104KRRB	SN104K	307	1 1/4	**80** 3.1496	**38.10** 1 1/2	**22** 0.866	**18.3** 23/32	**19.8** 25/32	**4.0** 5/32	**55.6** 2 3/16	**17.5** 11/16	**3.96** 0.156	**51.6** 2 1/32	**67.01** 2.638	**27.00** 1.063	**0.762**	1.68	**20000** 4500	**40500** 9150
GN105KRRB	SN105K		1 5/16													**0.744**	1.64		
GN106KRRB	SN106K		1 3/8													**0.726**	1.60		
GN107KRRB	SN107K		1 7/16													**0.708**	1.56		
GN108KRRB[1]	SN108K	308	1 1/2	**90** 3.5433	**41.28** 1 5/8	**25** 0.984	**19.8** 25/32	**21.4** 27/32	**4.8** 3/16	**63.5** 2 1/2	**20.6** 13/16	**4.62** 0.182	**57.2** 2 1/4	**75.06** 2.955	**26.67** 1.05	**1.152**	2.54	**24500** 5500	**49000** 11000
GN110KRRB	SN110K	309	1 5/8	**100** 3.9370	**42.86** 1 11/16	**27** 1.063	**19.8** 25/32	**23.0** 29/32	**4.8** 3/16	**69.9** 2 3/4	**20.6** 13/16	**5.00** 0.197	**58.7** 2 5/16	**82.58** 3.251	**28.52** 1.123	**1.656**	3.65	**30000** 6700	**58500** 13200
GN111KRRB	SN111K		1 11/16													**1.456**	3.21		
GN112KRRB[1]	SN112K		1 3/4													**1.388**	2.95		
GN114KRRB	SN114K	310	1 7/8	**110** 4.3307	**49.21** 1 15/16	**29** 1.142	**24.6** 31/32	**24.6** 31/32	**4.8** 3/16	**75.8** 2 63/64	**22.2** 7/8	**5.36** 0.211	**66.7** 2 5/8	**82.87** 3.654	**30.86** 1.215	**1.973**	4.35	**35500** 8000	**68000** 15300
GN115KRRB[1]	SN115K		1 15/16													**1.905**	4.20		
GN200KRRB	SN200K	311	2	**120** 4.7244	**55.56** 2 3/16	**31** 1.220	**27.8** 1 3/32	**27.8** 1 3/32	**4.8** 3/16	**82.6** 3 1/4	**22.2** 7/8	**5.49** 0.216	**73.0** 2 7/8	**101.78** 4.007	**37.47** 1.475	**2.132**	4.70	**41500** 9300	**80000** 18000
GN203KRRB	SN203K		2 3/16													**2.368**	5.22		

[1]Also available with cylindrical O.D. Delete suffix B. Example: GN108KRR.
NOTE: Bore tolerances: 1 3/16 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.;
2 1/4 in. – 3 3/16 in., nominal to +0.015 mm, +0.0006 in.

Continued on next page.

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GN-KRRB RELUBRICATABLE TYPES – *continued*



Continued from previous page.

Bearing No.	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	G	L	d_1	B_2	M	B_1	F_1	O	Brg. and Collar Wt.		Static Load Rating C_o	Extended Dynamic Load Rating C_E
			in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg**	lbs.	**N** lbs.	**N** lbs.
GN207KRRB	SN207K	312	2 7/16	**130** 5.1181	**61.91** 2 7/16	**33** 1.299	**31.0** 1 7/32	**31.0** 1 7/32	**6.4** 1/4	**88.9** 3 1/2	**23.8** 15/16	**5.84** 0.230	**79.4** 3 1/8	**108.52** 4.312	**38.99** 1.535	**2.839**	6.26	**48000** 10800	**90000** 20400
GN211KRRB	SO211K	314	2 11/16	**150** 5.9055	**68.26** 2 11/16	**37** 1.457	**34.1** 1 11/32	**34.1** 1 11/32	**6.4** 1/4	**101.6** 4	**27.0** 1 1/16	**6.73** 0.265	**88.9** 3 1/2	**126.31** 4.973	**44.96** 1.770	**4.509**	9.94	**63000** 14300	**116000** 26000
GN215KRRB	SN215K	315	2 15/16	**160** 6.2992	**74.61** 2 15/16	**39** 1.535	**37.3** 1 15/32	**37.3** 1 15/32	**6.4** 1/4	**112.7** 4 7/16	**31.8** 1 1/4	**6.48** 0.255	**100.0** 3 15/16	**133.02** 5.273	**51.13** 2.013	**5.634**	12.42	**71000** 16000	**125000** 28500
GN303KRRB	SN303K	316	3 3/16	**170** 6.6929	**80.96** 3 3/16	**41** 1.614	**40.5** 1 19/32	**40.5** 1 19/32	**6.4** 1/4	**119.1** 4 11/16	**31.8** 1 1/4	**7.26** 0.286	**106.4** 4 3/16	**142.82** 5.623	**51.05** 2.010	**7.126**	15.71	**80000** 18000	**137000** 30500
GN307KRRB	SN307K	318	3 7/16	**190** 7.4803	**87.31** 3 7/16	**45** 1.772	**42.1** 1 21/32	**42.1** 1 21/32	**7.9** 5/16	**133.4** 5 1/4	**36.5** 1 7/16	**8.18** 0.322	**115.9** 4 9/16	**161.37** 6.353	**52.63** 2.072	**9.190**	20.26	**98000** 22400	**156000** 33500
GN315KRRB	SN315K	320	3 15/16	**215** 8.4646	**100.01** 3 15/16	**49** 1.929	**50.0** 1 31/32	**50.0** 1 31/32	**7.9** 5/16	**146.1** 5 3/4	**36.5** 1 7/16	**7.82** 0.308	**129.6** 5 1/16	**182.85** 7.199	**59.36** 2.337	**12.233**	26.97	**132000** 22900	**193000** 43000

(1)Also available with cylindrical O.D. Delete suffix B. Example: GN108KRR.
NOTE: Bore tolerances: 1 3/16 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.;
2 1/4 in. – 3 3/16 in., nominal to +0.015 mm, +0.0006 in.

08-19-13 DRAFT

GN-KLLB SPECIAL DUTY

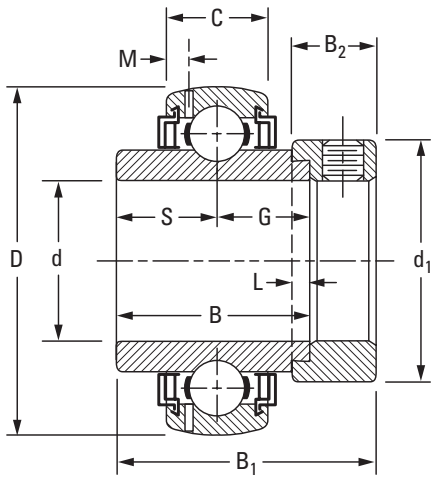
- The GN-KLLB-series ball bearings are heavy and are similar in design to the standard LL (Mechani-Seal) wide-inner-ring ball bearings.
- The GN-KLLB series have heavier-section 300-series bearings.
- Unlike standard series, the seal in this heavy series is a three-piece construction and includes two fixed inner members and an external rotation slinger.

Suggested shaft tolerances:

1/8 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify bearing number followed by "+ COL".

Example: GN104KLLB + COL.



Bearing No.	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C N-KLL	Ring Widths Outer C GN-KLLB	S	G	L	d_1	B_2	M	B_1	Brg. and Collar Wt.		Static Load Rating C_o	Extended Dynamic Load Rating C_E
			in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg	lbs.	N lbs.	N lbs.
GN102KLLB	SN102K	306	1 1/8	**72**	**36.51**	**19**	**20**	**17.46**	**19.05**	**3.9**	**49.21**	**17.46**	**3.61**	**1.97**	**0.554**	1.22	**15800**	**33500**
GN103KLLB	SN103K		1 3/16	2.8346	1 7/16	0.7480	0.7874	11/16	3/4	5/32	1 15/16	11/16	0.142	1 31/32	**0.604**	1.33	3550	7500
GN104KLLB	SN104K	307	1 1/4	**80**	**38.10**	**21**	**22**	**18.30**	**19.84**	**3.9**	**55.60**	**17.46**	**3.96**	**51.59**	**0.649**	1.43	**21200**	**40500**
GN106KLLB	SN106K		1 3/8	3.1496	1 1/2	0.8268	0.8661	23/32	25/32	5/32	2 3/16	11/16	0.156	2 1/32	**0.699**	1.54	4750	9150
GN107KLLB	SN107K		1 7/16												**0.731**	1.61		
GN108KLLB	SN108K	308	1 1/2	**90**	**41.28**	**23**	**25**	**19.84**	**21.43**	**4.8**	**63.50**	**20.64**	**4.62**	**57.15**	**1.153**	2.54	**26100**	**49000**
				3.5433	1 5/8	0.9055	0.9843	25/32	27/32	3/16	2 1/2	13/16	0.182	2 1/4			5850	11000
GN111KLLB	SN111K	309	1 11/16	**100**	**42.86**	**25**	**27**	**19.84**	**23.02**	**4.8**	**69.85**	**20.64**	**4.80**	**58.74**	**1.457**	3.21	**31600**	**58500**
GN112KLLB	SN112K		1 3/4	3.9370	1 11/16	0.9843	1.0630	25/32	29/32	3/16	2 3/4	13/16	0.189	2 5/16	**1.657**	3.65	7100	13200
GN115KLLB	SN115K	310	1 15/16	**110**	**50.00**	**27**	**29**	**24.60**	**24.60**	**4.8**	**76.20**	**22.23**	**5.16**	**66.68**	**1.907**	4.20	**37900**	**68000**
				4.3307	1 31/32	1.0630	1.1417	31/32	31/32	3/16	3	7/8	0.203	2 5/8			8500	15300
GN203KLLB	SN203K	311	2 3/16	**120**	**55.56**	**29**	**31**	**27.80**	**29.37**	**4.8**	**82.55**	**22.23**	**5.49**	**73.02**	**2.370**	5.22	**43600**	**80000**
				4.7244	2 3/16	1.1417	1.2205	1 3/32	1 5/32	3/16	3 1/4	7/8	0.216	2 7/8			9800	18000
GN207KLLB	SN207K	312	2 7/16	**130**	**61.91**	**31**	**33**	**30.96**	**30.96**	**6.4**	**88.90**	**23.80**	**5.84**	**79.38**	**2.841**	6.26	**51700**	**90000**
				5.1181	2 7/16	1.2205	1.2992	1 7/32	1 7/32	1/4	3 1/2	15/16	0.230	3 1/8			11600	20400
GN211KLLB	SN211K	314	2 11/16	**150**	**68.26**	**35**	**37**	**34.13**	**34.13**	**6.4**	**101.60**	**26.99**	**6.73**	**88.90**	**4.512**	9.94	**66800**	**116000**
				5.9055	2 11/16	1.3780	1.4567	1 11/32	1 11/32	1/4	4	1 1/16	0.265	3 1/2			15000	26000
GN215KLLB	SN215K	315	2 15/16	**160**	**74.61**	–	**39**	**37.30**	**37.30**	**6.4**	**112.71**	**31.75**	**6.48**	**100.01**	**5.638**	12.42	**75700**	**125000**
				6.2992	2 15/16		1.5354	1 15/32	1 15/32	1/4	4 7/16	1 1/4	0.255	3 15/16			17000	28500

NOTE: Bore tolerance: 1/2 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.
2 7/16 in. – 2 15/16 in., nominal to +0.015 mm, +0.0006 in.

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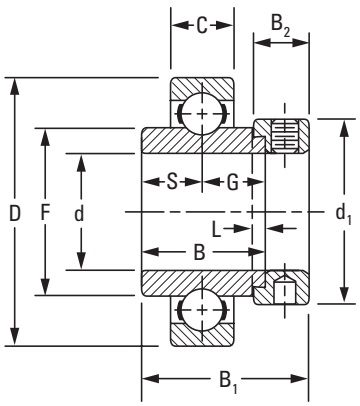
SMN A AND B TYPES/MUOA-B INSERTS[1]

- SMN series types A and B have the same ring tolerances and corner radii as equivalent 300-series single-row radial ball bearings.
- Type A has cylindrical outside diameters; type B has spherical outside diameters. The letter B appears on the outer ring only.
- The bearings are not prelubricated.

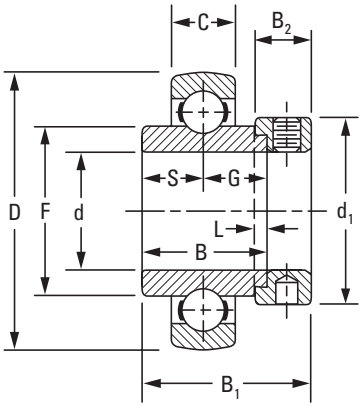
Suggested shaft tolerances:

5/8 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 3/16 in. – 3 15/16 in., nominal to -0.025 mm, -0.0010 in.
For larger sizes, contact your Timken engineer.

To order, specify bearing number followed by "+ COL".
Example: SMN102K + COL.



Type A



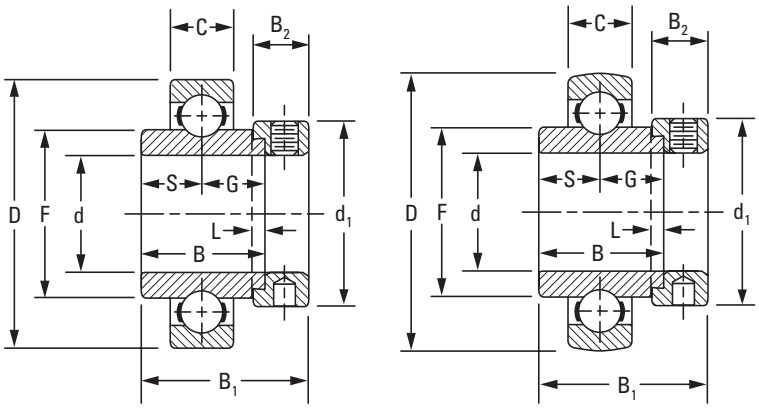
Type B

Bearing No. A Type[2]	Bearing No. B Type	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	G	F	L	d_1	B_2	B_1	Brg. and Collar Wt. kg	Brg. and Collar Wt. lbs.	Static Load Rating C_o	Extended Dynamic Load Rating C_E
				in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.			N lbs.	N lbs.
SMN010K	SMN010KB	SN010K	303	5/8	**47** 1.8504	**34.13** 1 11/32	**14** 0.5512	**17.07** 43/64	**17.07** 43/64	**25.93** 1.021	**4.00** 5/32	**34.93** 1 3/8	**15.88** 5/8	**46.05** 1 13/16	**0.240**	0.53	**6550** 1460	**15000** 3350
SMN011K	SMN011KB	SN011K		11/16											**0.218**	0.48		
SMN012K	SMN012KB	SN012K	304	3/4	**52** 2.0472	**34.93** 1 3/8	**15** 0.5906	**15.90** 5/8	**19.05** 3/4	**29.24** 1.151	**4.00** 5/32	**36.51** 1 7/16	**15.88** 5/8	**46.83** 1 27/32	**0.227**	0.50	**7800** 1760	**17600** 4000
SMN013K	SMN013KB	SN013K	305	13/16	**62** 2.4409	**34.93** 1 3/8	**17** 0.6693	**16.67** 21/32	**18.26** 23/32	**36.50** 1.437	**4.00** 5/32	**42.86** 1 11/16	**15.88** 5/8	**46.83** 1 27/32	**0.445**	0.98	**12200** 2750	**26000** 5850
SMN014K	SMN014KB	SN014K		7/8											**0.431**	0.95		
SMN015K	SMN015KB	SN015K		15/16											**0.413**	0.91		
SMN100K	SMN100KB	SN100K		1											**0.404**	0.86		
SMN101K	SMN101KB	SN101K	306	1 1/16	**72** 2.8346	**36.51** 1 7/16	**19** 0.7480	**17.46** 11/16	**19.05** 3/4	**43.23** 1.702	**4.00** 5/32	**49.21** 1 15/16	**17.46** 11/16	**50.00** 1 31/32	**0.608**	1.34	**15600** 3550	**33500** 7500
SMN102K	SMN102KB	SN102K		1 1/8											**0.585**	1.29		
SMN103K	SMN103KB	SN103K		1 3/16											**0.567**	1.25		
SMN104K	SMN104KB	SN104K	307	1 1/4	**80** 3.1496	**38.10** 1 1/2	**21** 0.8268	**18.26** 23/32	**19.84** 25/32	**48.95** 1.927	**4.00** 5/32	**55.60** 2 3/16	**17.46** 11/16	**51.59** 2 1/32	**0.803**	1.77	**21200** 4750	**40500** 9150
SMN105K	SMN105KB	SN105K		1 15/16											**0.757**	1.67		
SMN106K	SMN106KB	SN106K		1 3/8											**0.726**	1.60		
SMN107K	SMN107KB	SN107K		1 7/16											**0.721**	1.56		
SMN108K	SMN108KB	SN108K	308	1 1/2	**90** 3.5433	**41.28** 1 5/8	**23** 0.9055	**19.84** 25/32	**21.43** 27/32	**55.50** 2.185	**4.80** 3/16	**63.50** 2 1/2	**20.64** 13/16	**57.15** 2 1/4	**1.089**	2.40	**26100** 5850	**49000** 11000
SMN109K	SMN109KB	SN109K		1 9/16											**1.025**	2.26		
SMN110K	SMN110KB	SN110K	309	1 5/8	**100** 3.9370	**42.86** 1 11/16	**25** 0.9843	**19.84** 25/32	**23.02** 29/32	**62.05** 2.443	**4.80** 3/16	**69.90** 2 3/4	**20.64** 13/16	**58.74** 2 5/16	**1.433**	3.16	**31600** 7100	**58500** 13200
SMN111K	SMN111KB	SN111K		1 11/16											**1.361**	3.00		
SMN112K	SMN112KB	SN112K		1 3/4											**1.361**	3.00		
SMN113K	SMN113KB	SN113K	310	1 13/16	**110** 4.3307	**49.21** 1 15/16	**27** 1.0630	**24.61** 31/32	**24.61** 31/32	**68.78** 2.708	**4.80** 3/16	**76.20** 3	**22.20** 7/8	**66.68** 2 5/8	**1.896**	4.18	**37900** 8500	**68000** 15300
SMN114K	SMN114KB	SN114K		1 7/8											**1.805**	3.98		
SMN115K	SMN115KB	SN115K		1 15/16											**1.737**	3.83		

[1]See page A-159.
[2]Order as MUOA assembly suggested.
[3]For applications where thrust load exceeds 60 percent of radial load, consult your Timken engineer.
NOTE: Bore tolerance: 5/8 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.
3 1/4 in. – 4 3/16 in., nominal to +0.018 mm, +0.0007 in.
4 7/16 in. – 4 15/16 in., nominal to +0.020 mm, +0.0008 in.

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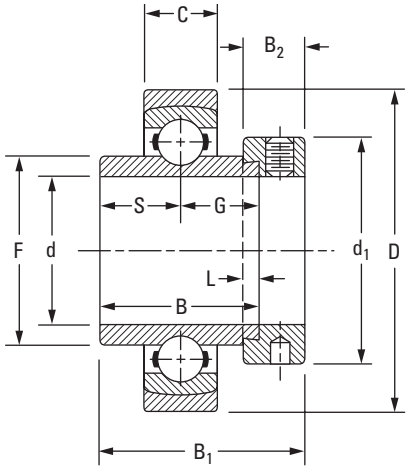
Bearing No.		Collar No.	Basic Outer-Ring Size	Shaft Dia.	O.D.	Ring Widths									Brg. and Collar Wt.		Static Load Rating	Extended Dynamic Load Rating
A Type[2]	B Type					Inner	Outer	S	G	F	L	d_1	B_2	B_1				
				d	D	B	C								kg	lbs.	C_o	C_E
				in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.			N lbs.	N lbs.
SMN200K	SMN200KB	SN200K	311	2	**120** 4.7244	**55.56** 2 3/16	**29** 1.1417	**27.78** 1 3/32	**27.78** 1 3/32	**75.01** 2.953	**4.80** 3/16	**82.55** 3 1/4	**22.20** 7/8	**73.03** 2 7/8	**2.413**	5.32		
SMN201K	SMN201KB	SN201K		2 1/16											**2.395**	5.28	**43600** 9800	**80000** 18000
SMN202K	SMN202KB	SN202K		2 1/8											**2.331**	5.14		
SMN203K	SMN203KB	SN203K		2 3/16											**2.209**	4.87		
SMN204K	SMN204KB	SN204K	312W	2 1/4	**130** 5.1181	**61.91** 2 7/16	**31** 1.2205	**31.00** 1 7/32	**31.00** 1 7/32	**81.53** 3.210	**6.40** 1/4	**88.90** 3 1/2	**23.81** 15/16	**79.38** 3 1/8	**3.084**	6.80		
SMN205K	SMN205KB	SN205K		2 5/16											**3.012**	6.64	**51480** 11700	**89800** 20400
SMN206K	SMN206KB	SN206K		2 3/8											**2.908**	6.41		
SMN207K	SMN207KB	SN207K		2 7/16											**2.812**	6.20		
SMN211K	SMN211KB	SO211K	314	2 11/16	**150** 5.9055	**2.69** 2 11/16	**35** 1.3780	**34.13** 1 11/32	**34.13** 1 11/32	**94.78** 3.731	**6.40** 1/4	**101.60** 4	**26.99** 1 1/16	**92.08** 3 5/8	**4.205**	9.27	**66800** 15000	**116000** 26000
SMN215K	SMN215KB	SN215K	315	2 15/16	**160** 6.2992	**74.61** 2 15/16	**37** 1.4567	**37.31** 1 15/32	**37.31** 1 15/32	**100.38** 3.952	**6.40** 1/4	**112.71** 4 7/16	**31.75** 1 1/4	**100.01** 3 15/16	**5.856**	12.91	**75700** 17000	**125000** 28500
SMN303K	SMN303KB	SN303K	316	3 3/16	**170** 6.6929	**80.96** 3 3/16	**39** 1.5354	**40.48** 1 19/32	**40.48** 1 19/32	**106.91** 4.209	**6.40** 1/4	**119.06** 4 11/16	**31.75** 1 1/4	**106.36** 4 3/16	**6.704**	14.78	**86000** 19300	**137000** 30500
SMN307K	SMN307KB	SN307K	318	3 7/16	**190** 7.4803	**87.31** 3 7/16	**43** 1.6929	**43.66** 1 23/32	**43.66** 123/32	**120.12** 4.729	**7.94** 5/16	**133.35** 5 1/4	**36.51** 1 7/16	**115.89** 4 9/16	**9.984**	22.01	**106900** 24000	**156000** 35500
SM0311W-BR[3]	SM0311WB-BR[3]	SO311K	319	3 11/16	**200** 7.8740	**93.66** 3 11/16	**45** 1.7717	**38.89** 1 17/32	**54.77** 2 5/32	**126.67** 4.987	**7.94** 5/16	**139.70** 5 1/2	**36.51** 1 7/16	**122.24** 4 13/16	**11.090**	24.45	**173700** 39000	**224000** 50000
SMN315K	SMN315KB	SN315K	320	3 15/16	**215** 8.4646	**100.01** 3 15/16	**47** 1.8504	**50.00** 1 31/32	**50.00** 131/32	**134.77** 5.306	**7.94** 5/16	**146.05** 5 3/4	**36.51** 1 7/16	**128.59** 5 1/16	**13.068**	28.81	**140300** 31500	**193000** 43000
SMN403W-BR[3]	SMN403WB-BR	SN403K	321	4 3/16	**225** 8.8583	**104.78** 4 1/8	**49** 1.9291	**48.42** 1 29/32	**56.36** 2 7/32	**141.22** 5.560	**7.94** 5/16	**157.16** 6 3/16	**42.86** 1 11/16	**139.70** 5 1/2	**15.508**	34.19	**202700** 45500	**250000** 56000
SMN407W-BR[3]	SMN407WB-BR[3]	SN407K	322	4 7/16	**240** 9.4488	**106.36** 4 3/16	**50** 1.9685	**49.21** 1 15/16	**57.15** 2 1/4	**142.75** 5.920	**7.94** 5/16	**165.10** 6 1/2	**42.86** 1 11/16	**141.29** 5 9/16	**19.051**	42.00	**245000** 55000	**285100** 64000
SMN415W-BR[3]	SMN415WB-BR[3]	SN415K	326	4 15/16	**280** 11.0236	**106.36** 4 3/16	**59** 2.3228	**53.98** 2 1/8	**61.91** 2 7/16	**176.56** 6.951	**7.94** 5/16	**206.38** 8 1/8	**42.86** 1 11/16	**150.81** 5 15/16	**29.660**	65.39	**327400** 73500	**347400** 78000

[1]See page A-159.
[2]Order as MUOA assembly suggested.
[3]For applications where thrust load exceeds 60 percent of radial load, consult your Timken engineer.
NOTE: Bore tolerance: 5/8 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.
3 1/4 in. – 4 3/16 in., nominal to +0.018 mm, +0.0007 in.
4 7/16 in. – 4 15/16 in., nominal to +0.020 mm, +0.0008 in.

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SMN-S SERIES

- The SMN-S heavy-series construction permits its inner assembly to swivel in the outer aligning ring.
- Unrestricted self-alignment is achieved, allowing the inner ring to become square and true with the shaft and assembly.
- The external S-ring is uniquely ground and closely matched to its respective outer-bearing ring so that the S-ring of one bearing will not fit the outer ring of another bearing.
- This bearing has the basic 300-series load capacities.
- The bearings are not prelubricated.



Suggested shaft tolerances:

1 3/16 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 3 15/16 in., nominal to -0.025 mm, -0.0010 in.
Greater than 3 15/16 in., consult your Timken engineer.

To order, specify bearing number followed by "+ COL".

Example: SMN103KS + COL.

Bearing No.	Collar No.	Basic Outer-Ring Size	Shaft Dia. d	O.D. D	Ring Widths Inner B	Ring Widths Outer C	S	G	F	L	d_1	B_2	B_1	Brg. and Collar Wt.	Static Load Rating C_o	Extended Dynamic Load Rating C_E
			in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.	**N** lbs.	**N** lbs.
SMN103KS	SN103K	306	1 3/16	**80** 3.1496	**36.51** 1 7/16	**19** 0.7480	**17.50** 11/16	**19.10** 3/4	**43.23** 1.702	**4.0** 5/32	**49.20** 1 15/16	**17.50** 11/16	**50.00** 1 31/32	**0.654** 1.44	**15600** 3550	**33500** 7550
SMN107KS	SN107K	307	1 7/16	**88** 3.4646	**38.10** 1 1/2	**21** 0.8268	**18.30** 23/32	**19.80** 25/32	**48.95** 1.927	**4.0** 5/32	**55.60** 2 3/16	**17.50** 11/16	**51.60** 2 1/32	**0.849** 1.87	**21200** 4750	**40500** 9150
SMN108KS	SN108KT	308	1 1/2	**100** 3.9370	**41.28** 1 5/8	**23** 0.9055	**19.80** 25/32	**21.40** 27/32	**55.50** 2.185	**4.8** 3/16	**63.50** 2 1/2	**20.60** 13/16	**57.20** 2 1/4	**1.344** 2.96	**26100** 5850	**49000** 11000
SMN111KS	SN111K	309	1 11/16	**110** 4.3307	**42.86** 1 11/16	**25** 0.9843	**19.80** 25/32	**23.00** 29/32	**62.05** 2.443	**4.8** 3/16	**69.90** 2 3/4	**20.60** 13/16	**58.70** 2 5/16	**1.693** 3.73	**31600** 7100	**58500** 13200
SMN115KS	SN115K	310	1 15/16	**120** 4.7244	**49.21** 1 15/16	**27** 1.0630	**24.60** 31/32	**24.60** 31/32	**68.78** 2.708	**4.8** 3/16	**76.20** 3	**22.20** 7/8	**66.70** 2 5/8	**2.147** 4.73	**37900** 8500	**68000** 15300
SMN203KS	SN203K	311	2 3/16	**130** 5.1181	**55.56** 2 3/16	**29** 1.1417	**27.80** 1 3/32	**27.80** 1 3/32	**75.01** 2.953	**4.8** 3/16	**82.60** 3 1/4	**22.20** 7/8	**73.00** 2 7/8	**2.769** 6.10	**43600** 9800	**80000** 18000
SMN207KS	SN207K	312	2 7/16	**145** 5.7087	**61.91** 2 7/16	**31** 1.2205	**31.00** 1 7/32	**31.00** 1 7/32	**81.53** 3.210	**6.4** 1/4	**88.90** 3 1/2	**23.80** 15/16	**79.40** 3 1/8	**3.405** 7.50	**51700** 11600	**90000** 20400
SMN211KS	SO211K	314	2 11/16	**165** 6.4961	**68.26** 2 11/16	**35** 1.3780	**34.10** 1 11/32	**34.10** 1 11/32	**94.70** 3.731	**6.4** 1/4	**101.60** 4	**27.00** 1 1/16	**92.10** 3 5/8	**5.185** 11.42	**66800** 15000	**116000** 26000
SMN215KS	SN215K	315	2 15/16	**175** 6.8898	**74.61** 2 15/16	**37** 1.4567	**37.30** 1 15/32	**37.30** 1 15/32	**100.38** 3.952	**6.4** 1/4	**112.70** 4 7/16	**31.80** 1 1/4	**100.00** 3 15/16	**6.456** 14.22	**75700** 17000	**125000** 28500
SMN303KS	SN303K	316	3 3/16	**190** 7.4803	**80.96** 3 3/16	**39** 1.5354	**40.50** 1 19/32	**40.50** 1 19/32	**106.91** 4.209	**6.4** 1/4	**119.10** 4 11/16	**31.80** 1 1/4	**106.40** 4 3/16	**8.040** 17.71	**86000** 19300	**137000** 30500
SMN307KS	SN307K	318	3 7/16	**210** 8.2677	**87.31** 3 7/16	**43** 1.6929	**43.70** 1 23/32	**43.70** 1 23/32	**120.12** 4.729	**7.9** 5/16	**133.40** 5 1/4	**36.50** 1 7/16	**115.90** 4 9/16	**1.790** 25.97	**106900** 24000	**156000** 35500
SMO311WS-BR	SO311K	319	3 11/16	**220** 8.6608	**93.66** 3 11/16	**45** 1.7680	**38.89** 1 17/32	**54.77** 2 5/32	**126.53** 4.982	**7.94** 5/16	**139.70** 5 1/2	**36.51** 1 7/16	**122.24** 4 13/16	**16.300** 33.00	**166000** 37500	**224000** 50000
SMN315KS	SN315K	320	3 15/16	**235** 9.2520	**100.01** 3 15/16	**47** 1.8504	**50.00** 1 31/32	**50.00** 1 31/32	**134.77** 5.306	**7.9** 5/16	**146.00** 5 3/4	**36.50** 1 7/16	**128.60** 5 1/16	**15.822** 34.85	**140300** 31500	**193000** 43000
SMN407WS-BR[1]	SN407K	322	4 7/16	**265** 10.4331	**106.36** 4 3/16	**50** 1.9685	**49.20** 1 15/16	**57.20** 2 1/4	**150.37** 5.920	**7.9** 5/16	**168.30** 6 1/2	**42.90** 1 11/16	**141.30** 5 9/16	**21.465** 47.28	**245000** 55000	**280000** 63000
SMN415WS-BR[1]	SN415K	326	4 15/16	**300** 11.8110	**115.89** 4 9/16	**59** 2.3228	**54.00** 2 1/8	**61.90** 2 7/16	**176.56** 6.951	**7.9** 5/16	**206.40** 8 1/8	**42.90** 1 11/16	**150.80** 5 15/16	**33.773** 74.39	**327400** 73500	**345000** 78000

[1]For applications where thrust load exceeds 60 percent of radial load, consult your Timken engineer.

NOTE: Bore tolerance: 15/16 in. – 2 3/16 in., nominal to +0.013 mm, +0.0005 in.
2 1/4 in. – 3 3/16 in., nominal to +0.015 mm, +0.0006 in.
3 1/4 in. – 4 3/16 in., nominal to +0.018 mm, +0.0007 in.
4 7/16 in. – 4 15/16 in., nominal to +0.020 mm, +0.0008 in.

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BALL BEARING HOUSED UNITS

Timken® housed units are available in a wide variety of types and sizes to accommodate a complete range of operating conditions.

- **Sizes:** 12.7 mm – 125.4 mm (1/2 in. – 4 15/16 in.). Size range is dependent upon duty series.
- **Industries and applications:** Agriculture, food processing, conveyors, fans and blowers.
- **Features:** Most popular design features cast-iron housing. Other material options include malleable iron, polymer, pressed-steel or rubber.
- **Benefits:** Combines bearing, housing, seal and locking system into one device for easy installation. Operates even when the shaft is not perfectly aligned with the mounting surface.



Nomenclature A-65
Introduction A-66

CAST-IRON HOUSED UNITS
RAK, TAK, LAK Industrial Series A-69
YAK Industrial-Series Set Screw Units A-71
VAK Standard Series A-72
SAK Standard Series A-73
RAS, TAS, LAS Industrial Series A-74
RASC Industrial-Series Concentric Collar A-76
YAS Industrial-Series Set Screw Units A-77
VAS Standard Series A-78
SAS Standard Series A-79
RAKH Industrial Series A-80
RAKHL Expansion Series A-81
YASM Medium-Duty Series Set Screw Lock A-82
STB Series A-83
VTB Series A-84
RAO, LAO Heavy Series A-85
RSA, LSA Industrial Series A-86
RSAO, LSAO Heavy Series A-88
SAL Industrial Series, Fixed and Floating Types A-89
SAOL Heavy Series, Fixed and Floating Types A-90
DRNR Industrial Series A-92

CAST-IRON FLANGED UNITS
RCJ, TCJ, LCJ Industrial Series A-93
RCJC Industrial-Series Concentric Collar A-95
YCJ Industrial Set Screw Series A-96
VCJ Standard Series A-98
SCJ Standard Series A-99
RCJO, LCJO Heavy Series A-100
YCJM Medium-Duty Series Set Screw Lock A-101
YCJTM Medium-Duty Series Set Screw Lock A-102
RCJT, TCJT, LCJT Industrial Series A-103
RCJTC Industrial-Series Concentric Collar A-104
VCJT Standard Series A-105
YCJT Industrial Set Screw Series A-106
SCJT Standard Series A-107
FLCT Standard Series A-108
RFC Industrial Piloted-Series Concentric Collar A-109
RC Series A-110

MALLEABLE-IRON FLANGED UNITS
GVFD, GVFDR Relubricatable Series –
VFD, VFDR Non-Relubricatable Series A-111
GRFD, GRFDR Relubricatable Series –
RFD, RFDR Non-Relubricatable Series A-112

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MALLEABLE-IRON FLANGED UNITS – *continued*
GVFTD, GVFTDR Relubricatable Series –
VFTD, VFTDR Non-Relubricatable Series A-113
GRFTD, GRFTDR Relubricatable Series –
RFTD, RFTDR Non-Relubricatable Series A-114

PRESSED-STEEL HOUSED UNITS
PBS Series A-115
PB Series – RPB Series A-116

PRESSED-STEEL FLANGED UNITS
VFMST Series A-118
LFST Series A-119

PRESSED-STEEL FLANGETTE UNITS
RR Flangette Unit A-120
RA Flangette Unit A-122
RAT, RRT Two-Bolt Flangette Units A-124
RATR, RRTR Triangle Flangette Units A-126
GRA, GRR Relubricatable Flangette Units A-128

RUBBER CARTRIDGES
RCSM, RCR, CR Series A-130
RABR HVAC Special Series A-131

TAKE-UP UNITS
NLTU Series Side-Mounted, Pressed-Steel A-132
TU Series Top-Mounted, Cast-Iron A-133
RTU Industrial Series A-134
YTU Industrial Series A-135
VTU Standard Series A-136
TTU Industrial Series A-137

TIMKEN® SURVIVOR® PS SERIES A-138
KAK/S Series A-139
KJC Series A-140
KCJT and KTB Series A-141

TIMKEN® SURVIVOR® PT SERIES A-142
YAK/S Series A-143
YJC Series A-144
YJCT Series A-145
YTB and YFB Series A-146
RAK/S Series A-147
RCJ Series A-148
RCJT and RTB Series A-149

TIMKEN® SURVIVOR® NT SERIES A-150
YJC and YJCT Series A-151
RAK/S Series A-152
RCJ Series A-153
RCJT Series A-154
RTU Series A-155

MISCELLANEOUS HOUSED UNITS
Idler Pulley Units A-156
Roller Chain Idler Sprockets A-158

REPLACEMENT BEARINGS
Housed Unit Replacement Chart A-159

MACHINE UNITS A-161

TIMKEN® BALL BEARING HOUSED UNIT SAFETY END CAPS MAKE WORKPLACE PROTECTION A SNAP A-162

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NOMENCLATURE

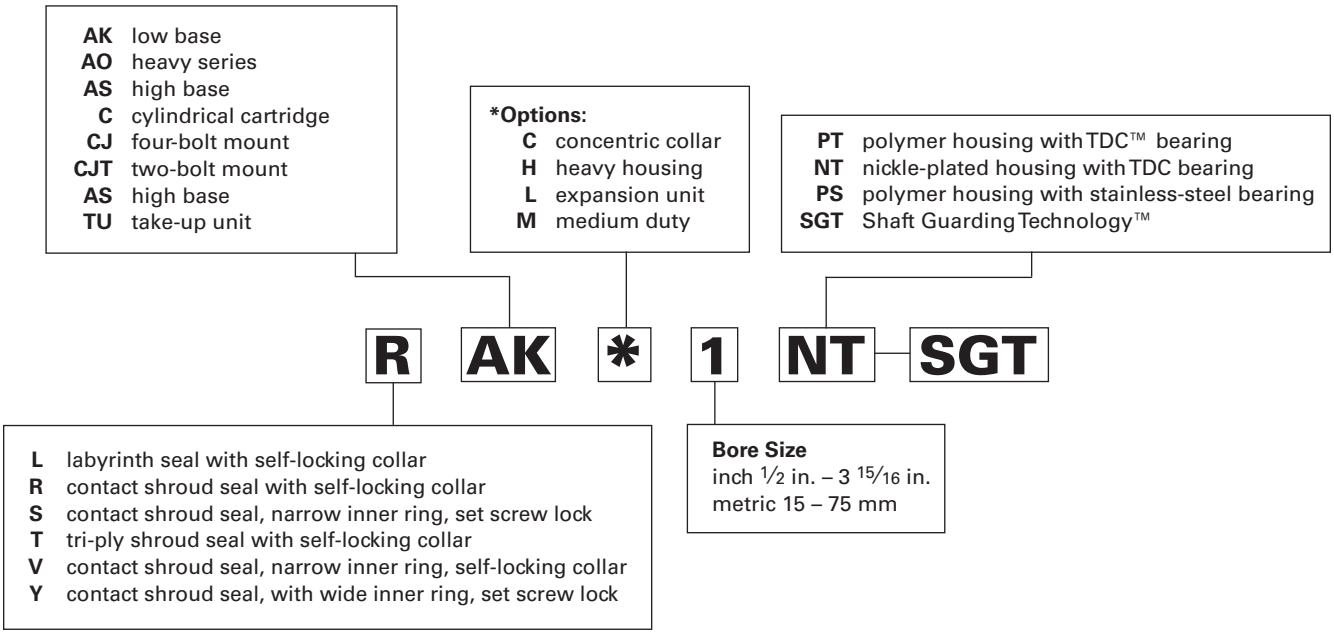


Fig. A-19. Wide-inner-ring ball bearing housed unit nomenclature.

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INTRODUCTION

Ball bearing housed units are available in a wide variety of types and sizes to accommodate a complete range of operating conditions.

These units generally have cast-iron housings and mount on straight shafts with a slip fit. The self-locking collar and the set screw inner-bearing designs make mounting easier. Many of the set screw units include Shaft Guarding Technology™ (see page A-31). Bolt holes in housings take standard bolts to attach units to machinery frames. Several series are available with the concentric locking collar. Most units have a self-aligning feature.

Units incorporating prelubricated wide-inner-ring ball bearings may be furnished without grease fittings.

Several basic types of housed units are available:

- Pillow blocks also known as housed units.
- Flanged cartridges.
- Flangette units.
- Cylindrical cartridges.
- Take-up units.

The choice is determined by application and mounting requirements. Within the basic type selected, variations are available for specific load factors, shaft sizes, mounting surface dimensions, base-to-shaft centerline heights and lubrication requirements.

PILLOW BLOCKS

Pillow blocks, the most commonly used type of mounted units, provide shaft support where the mounting surface is parallel to the shaft axis (fig. A-20). The bolt holes are usually slotted for easy adjustment during mounting.

Pillow blocks come in a variety of configurations.

- Narrow series (V and S) are lightweight, yet structurally designed to support bearing load.
- Premium width series (R and Y) are three times stronger for rougher environments. They're available in two styles that fit typical applications.
- Pressed steel and rubber pillow blocks are available for light-duty applications.



Fig. A-20. Pillow block.

FLANGED CARTRIDGES

Flanged cartridges are used where a shaft passes through the machine frame at a right angle (fig. A-21). A four-bolt mounting is the most common; however, where the mounting area is restricted, three- and two-bolt versions are available. A piloted flanged cartridge provides additional mounting accuracy and support.



Fig. A-21. Flanged cartridge.

Flanged cartridges are supplied in both standard and heavy-duty series. Iron- and rubber-flanged cartridges also are available.

A complete line of flangette units or pressed-steel flanged cartridges provides an economical solution for light-duty applications. Two-, three- and four-bolt mountings are available along with a relubricatable version.

CYLINDRICAL CARTRIDGES

Cylindrical cartridges, like flanged cartridges, provide shaft support where the shaft axis is perpendicular to and passing through a machined housing that is generally very thick (fig. A-22). The outside diameter of the cylindrical cartridges permits mounting with a press fit into a straight, through-bored housing.

Cylindrical cartridges have a machined spherical bearing seat to provide initial shaft alignment in standard-duty applications. Synthetic, conductive rubber cylindrical cartridges are available for applications where low-cost, light-duty, low-noise operation is essential.



Fig. A-22. Cylindrical cartridge.



Fig. 23. Take-up unit.

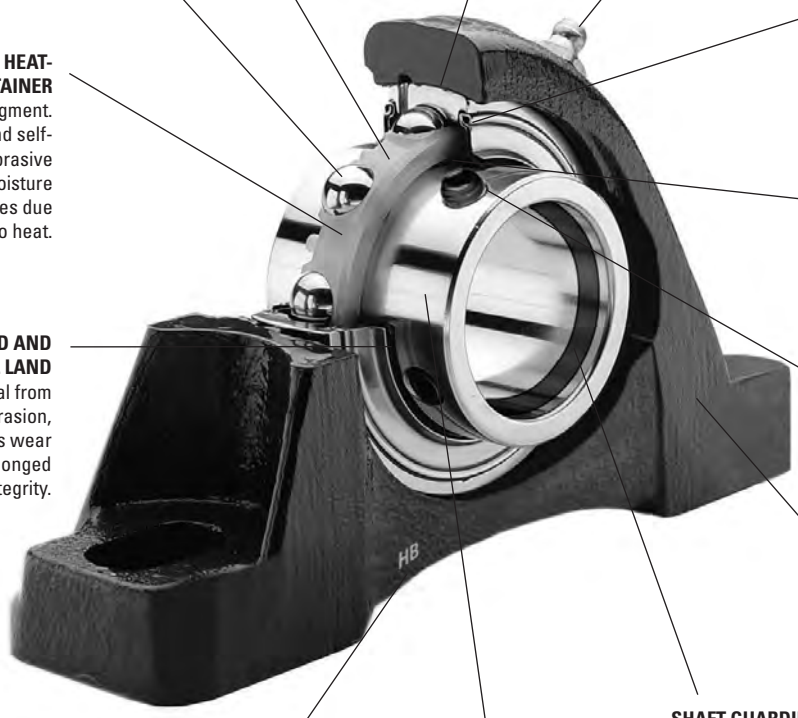
TAKE-UP UNITS

Take-up units are used where shaft adjustment and belt-tightening devices are required, such as conveyor applications (fig. A-23). Frames for take-up units provide for either side or top mounting.

Take-up units are available in cast-iron for standard-duty applications and pressed steel for economical, light-duty applications.

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FEATURES AND BENEFITS OF TIMKEN® BALL BEARING HOUSED UNITS



GRADE-10 BALLS
Quieter and smoother-running bearings due to higher-specification steel and improved roundness.

DOUBLE-FILTERED POLYUREA GREASE
Improves lubrication cleanliness for excellent performance at higher speeds.

HOUSING TOLERANCES
Provides better grease purge throughout the bearing due to reduced risk of grease purge between the bearing and housing.

GREASE FITTING OFFSET
Minimizes risk of accidental and side impact, and maintains accessibility for single-point lubricators.

SEAL CURL
Secures mechanical attachment of seal, resisting "pop-out" during relubrication and inhibiting spinning of the seal.

6/6 NYLON HEAT-STABILIZED RETAINER
Tolerates some misaligment. Non-corrosive and self-lubricating. Resistant to abrasive wear, most solvents, moisture trapping and size changes due to heat.

SEAL MATERIAL
Buna-N-Rubber using cotton fiber, embedded to wick oil, enhances lubrication and improves sealing integrity.

HARDENED AND GROUND SEAL LAND
Protects seal from inner-ring abrasion, resulting in less wear and prolonged seal integrity.

NYLON-PATCH SET SCREW
Increases bearing life by reducing the potential of the set screw backing out due to vibration.

POWDER-COAT FINISH
Reduces chipping, scratching and subsequent exposure of metals, preventing corrosion.

SHAFT GUARDING TECHNOLOGY™
Helps protect shaft and prolong life with stainless-steel band.

SUPERFINISHED RACEWAYS
Reduces friction with even surfaces, leading to cooler, quieter running and longer life.

BASE-TO-CENTER LINE HEIGHT INDICATOR
Provides a line height indicator to help you select the right base (low or high) when replacing the housed unit.

NOTE

Failure to follow the mounting/dismounting instructions of your equipment supplier can cause damage to the shaft, leading to premature failure of the equipment.

www.timken.com/warning/WIR

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TIMKEN SELF-LOCKING COLLAR INSTALLATION

Most Timken housed units come equipped with the self-locking collar to facilitate the mounting of wide-inner-ring ball bearings. This self-locking collar eliminates the need for locknuts, washers, shoulders, sleeves and adapters.

The locking collar has a counterbored recess made purposely eccentric to the bore. The collar recess and the end of the bearing inner ring with which it engages are both machined so that they act as mating cams when on the shaft.

When the collar is engaged to the inner ring, it grips the shaft tightly with a positive binding action that increases with use. No adjustments of any kind are necessary.

CONCENTRIC COLLAR

For simplified installation of Timken housed units equipped with concentric-collar bearings, the collar is normally assembled to the wide inner ring for shipment. Slip the complete unit on the shaft following steps 1 and 2 (table A-22) described for the self-locking collar procedure, and tighten both set screws.

TIMKEN SET SCREW LOCKING BEARING

Steps 1 and 2 (table A-22) can be repeated from the self-locking collar installation above. To lock the set screw bearing, simply tighten each inner ring set screw to the suggested torque listed by shaft size. See table A-21.

TABLE A-21. SET SCREW LOCKING GUIDE.

Shaft Size		SUGGESTED
in.	**mm**	Torque in. - lbs.
1/2 – 11/16	**17**	35
3/4 – 1	**20 – 25**	80
1 1/16 – 1 3/4	**30 – 45**	155
1 13/16 – 2 3/16	**50 – 55**	275

It may be necessary to rotate the shaft to provide an easy access of the set screw wrench to the set screws. To disassemble, loosen the set screws.

TABLE A-22. SELF-LOCKING COLLAR INSTALLATION



1. Slip the shaft through the pillow block or other Timken® housed unit incorporating the wide-inner-ring ball bearing. Be certain the bearing is aligned in position along the shaft to eliminate any possibility of cramping loads.



2. Fasten the unit securely to the base using the proper bolt size.



3. Place the self-locking collar on the shaft with its cam adjacent to the cam on the end of the bearing's inner ring. The eccentric recessed cam will slide over and engage the corresponding cam on the bearing inner ring. Turn the collar in the direction of shaft rotation.



4. Using a lightweight hammer and a drift pin inserted in the drift-pin hole, tap lightly in the direction of shaft rotation to positively engage the collar. The wide inner ring is now locked to the shaft.



5. As a final step, fully tighten the set screw. It exerts a wedging action to hold the collar always in the engaged position, even under shock load. This design will operate effectively after the cams are tightly locked and in most cases, with no set screws at all.

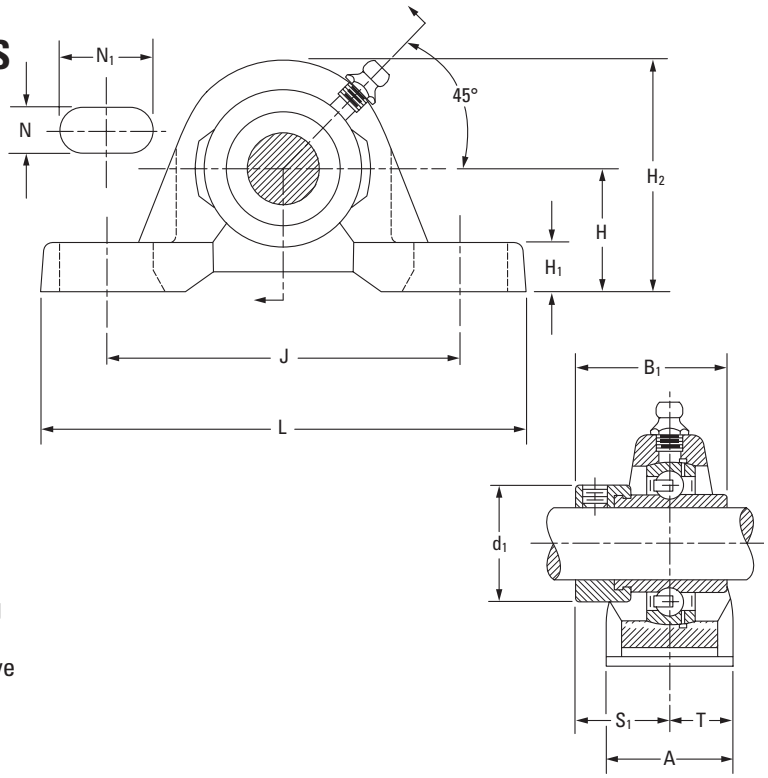
08-19-13 DRAFT

CAST-IRON HOUSED UNITS

RAK, TAK, LAK INDUSTRIAL SERIES

RAK, TAK and LAK pillow blocks are suggested for industrial applications where normal loads are encountered.

- Heavier than our standard block with solid, flat feet for increased strength.
- Compact, one-piece housing can be mounted in any position.
- Pillow blocks self-align at mounting with the spherical outside diameter of the bearing fitting into the corresponding spherical housing seat.
- Prelubricated and ready for immediate installation.
- Grease fitting for relubrication.
- Self-locking collars supplied with all units.
- RAK pillow block is equipped with G-KRRB (R-seal) wide-inner-ring ball bearings, the TAK with G-KPPB (tri-ply seal) wide-inner-ring ball bearings and the LAK with the G-KLLB (Mechani-seal) wide-inner-ring ball bearings.
- Contact a Timken engineer to discuss highly corrosive applications (food processing, chemical exposure) where Timken thin-dense chrome-coated bearings can be utilized.



Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RAK 1 7/16 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RAK	G-KRRB	Page A-34
TAK	G-KPPB	Page A-39
LAK	G-KLLB	Page A-37

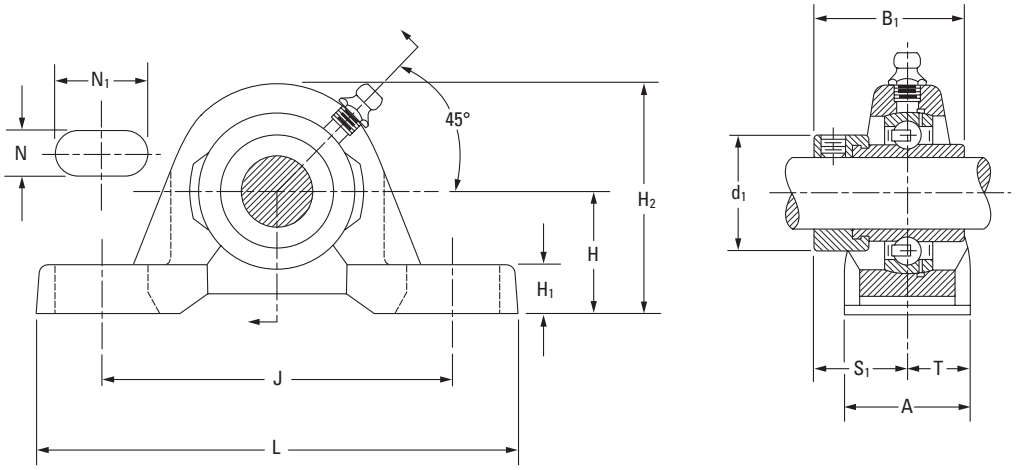
Unit	Shaft Dia.	H	H_2	B_1	J	L	A	H_1	N	N_1	d_1	S_1	T	Bolt Size	Bearing No.[1]		Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	RAK	(TAK/LAK)		New (Old)	**kg** lbs.
RAK, LAK	1/2														G1008KRRB	(KLLB)	S1008K		
RAK, LAK	5/8	**26.99**	**53.20**	**37.3**	**92.1**	**123.8**	**30.2**	**8.7**	**11.1**	**22.2**	**28.6**	**23.4**	**15.1**	**10**	G1010KRRB	(KLLB)	S1010K	T-40238	**0.454**
RAK	11/16	1 1/16	2 3/32	1 15/32	3 5/8	4 7/8	1 3/16	11/32	7/16	7/8	1 1/8	59/64	19/32	3/8	G1011KRRB		S1011K	(T-30595)	1.00
RAK	**17**														GE17KRRB		SE17K		
RAK, LAK	3/4	**31.75**	**64.30**	**43.7**	**96.0**	**127.0**	**33.3**	**13.5**	**11.1**	**20.2**	**33.3**	**26.6**	**16.7**	**10**	G1012KRRB	(KLLB)	S1012K	M96830	**0.730**
RAK	**20**	1 1/4	2 17/32	1 23/32	3 25/32	5	1 5/16	17/32	7/16	51/64	1 5/16	1 3/64	21/32	3/8	GE20KRRB		SE20K		1.61
RAK, TAK	7/8														G1014KRRB	(KPPB3)	S1014K		
RAK, TAK, LAK	15/16	**33.34**	**69.80**	**44.4**	**104.8**	**139.7**	**37.3**	**11.9**	**11.1**	**20.6**	**38.1**	**27.0**	**18.7**	**10**	G1015KRRB	(KPPB3/KLLB)	S1015K	M96833	**0.950**
RAK, TAK, LAK	1	1 5/16	2 3/4	1 3/4	4 1/8	5 1/2	1 15/32	15/32	7/16	13/16	1 1/2	1 1/16	47/64	3/8	G1100KRRB	(KPPB3/KLLB)	S1100K		2.10
RAK, TAK	**25**														GE25KRRB	(KPPB3)	SE25K		
RAK, TAK	1 1/16														G1101KRRB	(KPPB3)	S1101K		
RAK, TAK, LAK	1 1/8	**36.68**	**81.70**	**48.4**	**117.5**	**157.2**	**42.9**	**13.5**	**14.3**	**23.8**	**44.1**	**30.1**	**21.4**	**12**	G1102KRRB	(KPPB3/KLLB)	S1102K	M96836	**1.420**
RAK, TAK, LAK	1 3/16	1 9/16	3 7/32	1 29/32	4 5/8	6 3/16	1 11/16	17/32	9/16	15/16	1 47/64	1 3/16	27/32	1/2	G1103KRRB	(KPPB3/KLLB)	S1103K		3.14
RAK, TAK	**30**														GE30KRRB	(KPPB3)	SE30K		
RAK, TAK, LAK	1 1/4														G1104KRRB	(KPPB2/KLLB)	S1104K		
RAK, TAK	1 5/16	**46.04**	**93.70**	**51.2**	**130.2**	**166.7**	**46.8**	**16.7**	**14.3**	**24.6**	**53.4**	**32.5**	**23.4**	**12**	G1105KRRB	(KPPB2)	S1105K		
RAK, TAK	1 3/8	1 13/16	3 11/16	2 1/64	5 1/8	6 9/16	1 27/32	21/32	9/16	31/32	2 1/8	1 9/32	59/64	1/2	G1106KRRB	(KPPB2)	S1106K	M96839	**1.890**
RAK, TAK, LAK	1 7/16														G1107KRRB	(KPPB2/KLLB)	S1107K		4.18
RAK, TAK	**35**														GE35KRRB	(KPPB2)	SE35K		

[1]Bearing number for RAK is G-KRRB. TAK uses G-KPPB. LAK uses G-KLLB.
NOTE: All units have 1/8 pipe-thread grease fitting except 1/2 – 11/16 and 3/4 units, which have 1/4-28 fitting.

Continued on next page.

08-19-13 DRAFT

RAK, TAK, LAK INDUSTRIAL SERIES – *continued*



Continued from previous page.

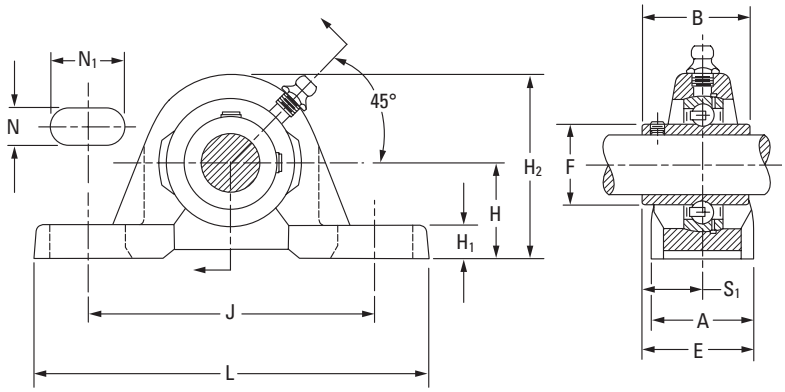
Unit	Shaft Dia.	H	H_2	B_1	J	L	A	H_1	N	N_1	d_1	S_1	T	Bolt Size	Bearing No.[1]		Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	RAK	(TAK/LAK)		New (Old)	**kg** lbs.
RAK, TAK, LAK	1 1/2														G1108KRRB	(KPPB3/KLLB)	S1108KT		
RAK, TAK	1 9/16	**49.21**	**101.60**	**56.4**	**136.5**	**179.4**	**51.6**	**19.1**	**14.3**	**26.2**	**60.3**	**34.9**	**25.8**	**12**	G1109KRRB	(KPPB3)	S1109KT	M96842	**2.490**
RAK, TAK	**40**	1 15/16	4	2 7/32	5 3/8	7 1/16	2 1/32	3/4	9/16	1 1/32	2 3/8	1 3/8	1 1/64	1/2	GE40KRRB	(KPPB3)	SE40K		5.50
RAK, TAK	1 5/8														G1110KRRB	(KPPB4)	S1110K		
RAK, TAK, LAK	1 11/16	**52.39**	**104.80**	**56.4**	**98.4**	**191.3**	**52.4**	**17.5**	**14.3**	**28.6**	**63.5**	**34.9**	**26.2**	**12**	G1111KRRB	(KPPB4/KLLB)	S1111K	M96844	**3.200**
RAK, TAK, LAK	1 3/4	2 1/16	4 1/8	2 7/32	5 7/8	7 17/32	2 1/16	11/16	9/16	1 1/8	2 1/2	1 3/8	1 1/32	1/2	G1112KRRB	(KPPB4/KLLB)	S1112K		7.06
RAK, TAK	**45**														GE45KRRB	(KPPB4)	SE45K		
RAK, TAK	1 7/8														G1114KRRB	(KPPB3)	S1114K		
RAK, TAK, LAK	1 15/16	**55.56**	**112.70**	**62.7 2**	**158.0**	**200.0**	**57.9**	**17.7**	**18.3**	**25.4**	**69.9**	**38.1**	**29.0**	**16**	G1115KRRB	(KPPB3/KLLB)	S1115K	M96847	**4.010**
RAK, TAK	**50**	2 3/16	4 7/16	15/32	6 7/32	7 7/8	2 9/32	11/16	23/32	1	2 3/4	1 1/2	1 9/64	5/8	GE50KRRB	(KPPB3)	SE50K		8.86
RAK, TAK	2														G1200KRRB	(KPPB4)	S1200K		
RAK, TAK	2 1/8	**61.91**	**126.20**	**71.4**	**176.2**	**222.3**	**60.3**	**19.0**	**18.3**	**29.4**	**76.2**	**43.7**	**30.2**	**16**	G1202KRRB	(KPPB4)	S1202K	T-40246	**3.901**
RAK, TAK, LAK	2 3/16	2 7/16	4 31/32	2 13/16	6 15/16	8 3/4	2 3/8	3/4	23/32	1 5/32	3	1 23/32	1 3/16	5/8	G1203KRRB	(KPPB4/KLLB)	S1203K	(M96850)	8.60
RAK, TAK	**55**														GE55KRRB	(KPPB4)	SE55K		
RAK	2 1/4														G1204KRRB		S1204K		
RAK	2 3/8	**68.26**	**137.30**	**77.8**	**188.1**	**239.7**	**60.3**	**22.2**	**18.3**	**29.4**	**84.1**	**46.8**	**30.2**	**16**	G1206KRRB		S1206K	T-40247	**5.511**
RAK, LAK	2 7/16	2 11/16	5 13/32	3 1/16	7 13/32	9 7/16	2 3/8	7/8	23/32	1 5/32	3 5/16	1 27/32	1 3/16	5/8	G1207KRRB	(KLLB)	S1207K	(M99647)	12.15
RAK	**60**														GE60KRRB		SE60K		
RAK	2 11/16	**76.20**	**154.00**	**85.7**	**203.2**	**266.7**	**73.0**	**33.3**	**20.6**	**34.9**	**96.8**	**45.2**	**36.5**	**20**	G1211KRRB		S1211KT	T-22503	**7.920**
RAK	**70**	3	6 1/16	3 3/8	8	10 1/2	2 7/8	1 5/16	13/16	1 3/8	3 13/16	1 25/32	1 7/16	3/4	GE70KRRB		SE70K		17.46
RAK	2 15/16	**84.14**	**163.50**	**92.1**	**241.3**	**304.8**	**82.6**	**38.1**	**22.2**	**31.8**	**101.6**	**54.8**	**41.3**	**20**	G1215KRRB		S1215K	T-20134	**9.026**
RAK	**75**	3 5/16	6 7/16	3 5/8	9 1/2	12	3 1/4	1 1/2	7/8	1 1/4	4	2 5/32	1 5/8	3/4	GE75KRRB		SE75K		19.90

[1]Bearing number for RAK is G-KRRB. TAK uses G-KPPB. LAK uses G-KLLB.
NOTE: All units have 1/8 pipe-thread grease fitting except 1/2 – 11/16 and 3/4 units, which have 1/4-28 fitting.

08-19-13 DRAFT

YAK INDUSTRIAL-SERIES SET SCREW UNITS

- Incorporates Shaft Guarding Technology, which reduces replacement time, provides shaft protection and prolongs the life of the shaft.
- Heavier than our standard block with solid, flat feet for increased strength.
- Timken series low-base set screw pillow blocks feature the GY-KRRB bearing.
- Well-suited for industrial applications with normal loads due to its full-width inner-ring set screw.
- Contact a Timken engineer to discuss highly corrosive applications (food processing, chemical exposure) where Timken thin-dense chrome-coated bearings can be utilized.



Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: YAK 1 7/16 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
YAK	GY-KRRB	Page A-44

Unit	Shaft Dia.	H	H_2	B	J	L	A	H_1	N	N_1	F	S_1	E	Bolt Size	Bearing No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**kg** lbs.
YAK	1/2	**26.99**	**53.2**	**27.4**	**92.1**	**123.8**	**30.2**	**8.7**	**11.1**	**22.2**	**22.9**	**15.9**	**31.0**	**10**	GY1008KRRB	T40238	**0.4536**
YAK	5/8	1 1/16	2 3/32	1 5/64	3 5/8	4 7/8	1 3/16	11/32	7/16	7/8	0.900	5/8	1 7/32	3/8	GY1010KRRB		1.0000
YAK	**17**														GYE17KRRB		
YAK	3/4 SGT	**31.75**	**64.3**	**31.8**	**96.4**	**127.0**	**33.3**	**13.5**	**11.1**	**20.2**	**27.6**	**19.1**	**35.7**	**10**	GY1012KRRB SGT	M96830	**0.6775**
YAK	**20 SGT**	1 1/4	2 17/32	1 1/4	3 51/64	5	1 5/16	17/32	7/16	51/64	1.085	3/4	1 13/32	3/8	GYE20KRRB SGT		1.4937
YAK	7/8 SGT														GY1014KRRB SGT		
YAK	15/16 SGT	**33.34**	**70.0**	**34.9**	**104.8**	**139.7**	**37.3**	**11.9**	**11.1**	**20.6**	**33.8**	**20.6**	**39.3**	**10**	GY1015KRRB SGT	M96833	**0.8924**
YAK	1 SGT	1 5/16	2 3/4	1 3/8	4 1/8	5 1/2	1 15/32	15/32	7/16	13/16	1.332	13/16	1 35/64	3/8	GY1100KRRB SGT		1.9673
YAK	**25 SGT**														GYE25KRRB SGT		
YAK	1 1/8 SGT														GY1102KRRB SGT		
YAK	1 3/16 SGT	**39.69**	**81.8**	**39.3**	**117.5**	**157.2**	**42.9**	**13.5**	**14.3**	**23.8**	**40.3**	**23.4**	**44.8**	**12**	GY1103KRRB SGT	M96836	**1.3541**
YAK	1 1/4S	1 9/16	3 7/32	1 35/64	4 5/8	6 3/16	1 11/16	17/32	9/16	15/16	1.587	59/64	1 49/64	1/2	GY1103KRRB3 SGT		2.9853
YAK	**30 SGT**														GYE30KRRB SGT		
YAK	1 1/4 SGT														GY1104KRRB SGT		
YAK	1 3/8 SGT	**46.04**	**93.7**	**45.2**	**130.2**	**166.7**	**46.8**	**16.7**	**14.3**	**24.6**	**46.8**	**28.2**	**51.6**	**12**	GY1106KRRB SGT	M96839	**1.8434**
YAK	1 7/16 SGT	1 13/16	3 11/16	1 25/32	5 1/8	6 9/16	1 27/32	21/32	9/16	31/32	1.844	1 7/64	2 1/32	1/2	GY1107KRRB SGT		4.0639
YAK	**35 SGT**														GYE35KRRB SGT		
YAK	1 1/2 SGT	**49.21**	**101.6**	**49.2**	**136.5**	**179.4**	**51.6**	**19.1**	**14.3**	**26.2**	**52.3**	**30.2**	**56.0**	**12**	GY1108KRRB SGT	M96842	**2.4763**
YAK	**40 SGT**	1 15/16	4	1 15/16	5 3/8	7 1/16	2 1/32	3/4	9/16	1 1/32	2.058	1 3/16	2 13/34	1/2	GYE40KRRB SGT		5.4592
YAK	1 5/8 SGT														GY1110KRRB SGT		
YAK	1 11/16 SGT	**52.39**	**104.8**	**50.4**	**149.2**	**191.3**	**52.4**	**17.5**	**14.3**	**28.6**	**57.9**	**31.4**	**57.5**	**12**	GY1111KRRB SGT	M96844	**2.6311**
YAK	1 3/4 SGT	2 1/16	4 1/8	1 63/64	5 7/8	7 17/32	2 1/16	11/16	9/16	1 1/8	2.280	1 15/64	2 17/64	1/2	GY1112KRRB SGT		5.8005
YAK	**45 SGT**														GYE45KRRB SGT		
YAK	1 15/16 SGT	**55.56**	**112.7**	**51.6**	**158.0**	**200.2**	**57.9**	**17.5**	**18.3**	**25.4**	**62.8**	**32.5**	**61.5**	**16**	GY1115KRRB SGT	M96847	**3.2579**
YAK	2 S	2 3/16	4 7/16	2 1/32	6 7/32	7 7/8	2 9/32	11/16	23/32	1	2.474	1 9/32	2 27/64	5/8	GY1115KRRB2 SGT		7.1824
YAK	**50 SGT**														GYE50KRRB SGT		
YAK	2 SGT	**61.91**	**126.2**	**55.6**	**176.2**	**222.3**	**60.3**	**19.1**	**18.3**	**29.4**	**69.8**	**33.3**	**61.9**	**16**	GY1200KRRB SGT	M96850	**3.9009**
YAK	2 3/16 SGT	2 7/16	4 31/32	2 3/16	6 15/16	8 3/4	2 3/8	3/4	23/32	1 5/32	2.747	1 5/16	2 7/16	5/8	GY1203KRRB SGT		8.6000
YAK	**55 SGT**														GYE55KRRB SGT		
YAK	2 1/4 SGT	**68.26**	**137.3**	**65.1**	**188.1**	**239.7**	**60.3**	**22.2**	**18.3**	**29.4**	**76.5**	**39.7**	**69.9**	**16**	GY1204KRRB SGT	M99647	**4.7718**
YAK	2 7/16 SGT	2 11/16	5 13/32	2 9/16	7 13/32	9 7/16	2 3/8	7/8	23/32	1 5/32	3.011	1 9/16	2 3/4	5/8	GY1207KRRB SGT		10.5200
YAK	**60 SGT**														GYE60KRRB SGT		
YAK	2 11/16	**76.20**	**154.0**	**69.9**	**203.2**	**266.7**	**73.0**	**33.3**	**20.6**	**34.9**	**86.9**	**42.9**	**79.4**	**20**	GY1211KRRB	T22503	**7.1259**
YAK	**70**	3	6 1/16	2 3/4	8	10 1/2	2 7/8	1 5/16	13/16	1 3/8	3.422	1 11/16	3 1/8	3/4	GYE70KRRB		15.7100
YAK	2 15/16	**84.14**	**163.5**	**77.8** 3	**241.3**	**304.8**	**82.6**	**38.1**	**22.2**	**31.8**	**91.9**	**44.5**	**85.7**	**20**	GY1215KRRB	T20134	**8.5185**
YAK	**75**	3 5/16	6 7/16	1/16	9 1/2	12	3 1/4	1 1/2	7/8	1 1/4	3.619	1 3/4	3 3/8	3/4	GY75KRRB		18.7800

NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

VAK STANDARD SERIES

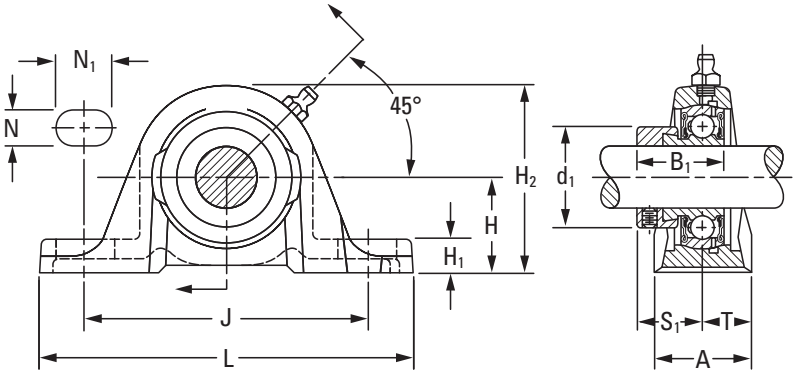
- The streamlined and rugged VAK pillow block unit combines an engineered housing and an RA-RR extended inner ring bearing.
- RA-RR bearing employs a positive-contact, land-riding seal and a Timken self-locking collar. Collar ensures positive shaft retention.
- The pillow block can be mounted to operate in any position.
- Bearing housed units are factory-prelubricated, but a grease fitting is provided to allow for relubrication if required.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: VAK 1 7/16 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
VAK	GRA-RRB	Page A-50

Unit	Shaft Dia.	H	H_2	B_1	J	L	A	H_1	N	N_1	d_1	S_1	T	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			New (Old)	**kg** lbs.
VAK	1/2														GRA008RRB	S1008K		
VAK	5/8	**26.99** 1 1/16	**53.2** 2 3/32	**28.6** 1 1/8	**92.1** 3 5/8	**123.8** 4 7/8	**30.2** 1 3/16	**8.7** 11/32	**11.1** 7/16	**22.2** 7/8	**28.6** 1 1/8	**22.2** 7/8	**15.1** 19/32	**10** 3/8	GRA010RRB	S1010K	T-40238 (T-30595)	**0.454** 1.00
VAK	**17**														GRAE17RRB	SE17K		
VAK	3/4	**31.75** 1 1/4	**62.7** 2 15/32	**31.0** 1 7/32	**96.0** 3 25/32	**127.0** 5	**31.8** 1 1/4	**11.9** 15/32	**11.1** 7/16	**19.8** 25/32	**33.3** 1 5/16	**23.4** 59/64	**15.9** 5/8	**10** 3/8	GRA012RRB	S1012K	T-40239 (T-30555)	**0.563** 1.24
VAK	**20**														GRAE20RRB	SE20K		
VAK	7/8														GRA014RRB	S1014K		
VAK	15/16	**33.34** 1 5/16	**68.3** 2 11/16	**31.0** 1 7/32	**104.8** 4 1/8	**139.7** 5 1/2	**35.7** 1 13/32	**11.9** 15/32	**11.1** 7/16	**20.6** 13/16	**38.1** 1 1/2	**23.4** 59/64	**17.9** 45/64	**10** 3/8	GRA015RRB	S1015K	T-30365	**0.758** 1.67
VAK	1														GRA100RRB	S1100K		
VAK	**25**														GRAE25RRB	SE25K		
VAK	1 1/8														GRA102RRB	S1102K		
VAK	1 3/16	**39.69** 1 9/16	**80.2** 3 5/32	**35.7** 1 13/32	**117.5** 4 5/8	**157.2** 6 3/16	**39.7** 1 9/16	**13.5** 17/32	**14.3** 9/16	**23.8** 15/16	**44.1** 1 47/64	**27.0** 1 1/16	**19.9** 25/32	**12** 1/2	GRA103RRB	S1103K	T-40241 (T-30300)	**1.235** 2.72
VAK	1 1/4 S														GRA103RRB2	S1103K3		
VAK	**30**														GRAE30RRB	SE30K		
VAK	1 1/4														GRA104RRB	S1104K		
VAK	1 3/8	**46.04** 1 13/16	**92.1** 3 5/8	**38.9** 1 17/32	**130.2** 5 1/8	**166.7** 6 9/16	**45.2** 1 25/32	**16.7** 21/32	**14.3** 9/16	**24.6** 31/32	**54.0** 2 1/8	**29.4** 1 5/32	**22.7** 57/64	**12** 1/2	GRA106RRB	S1106K	T-40242 (T-30410)	**1.594** 3.51
VAK	1 7/16														GRA107RRB	S1107K		
VAK	**35**														GRAE35RRB	SE35K		
VAK	1 1/2														GRA108RRB	S1108KT		
VAK	1 9/16	**49.21** 1 15/16	**100.0** 3 15/16	**43.7** 1 23/32	**136.5** 5 3/8	**179.4** 7 1/16	**47.6** 1 7/8	**19.0** 3/4	**14.3** 9/16	**26.2** 1 1/32	**60.3** 2 3/8	**32.5** 1 9/32	**23.8** 15/16	**12** 1/2	GRA109RRB	S1109KT	T-40243 (T-30484)	**2.034** 4.48
VAK	**40**														GRAE40RRB	SE40K		
VAK	1 5/8														GRA110RRB	S1110K		
VAK	1 11/16	**52.39** 2 1/16	**104.8** 4 1/8	**43.7** 1 23/32	**149.2** 5 7/8	**191.3** 7 17/32	**50.8** 2	**17.5** 11/16	**14.3** 9/16	**28.6** 1 1/8	**63.5** 2 1/2	**32.5** 1 9/32	**25.4** 1	**12** 1/2	GRA111RRB	S1111K	T-40244 (T-30682)	**2.261** 4.98
VAK	1 3/4														GRA112RRB	S1112K		
VAK	**45**														GRAE45RRB	SE45K		
VAK	1 7/8														GRA114RRB	S1114K		
VAK	1 15/16	**55.56** 2 3/16	**112.7** 4 7/16	**43.7** 1 23/32	**158.0** 6 7/32	**200.0** 7 7/8	**55.6** 2 3/16	**17.5** 11/16	**17.5** 11/16	**23.8** 15/16	**69.8** 2 3/4	**32.5** 1 9/32	**27.8** 1 3/32	**16** 5/8	GRA115RRB	S1115K	T-40245 (T-30706)	**2.774** 6.11
VAK	2 S														GRA115RRB2	S1115K2		
VAK	**50**														GRAE50RRB	SE50K		
VAK	2														GRA200RRB	S1200K		
VAK	2 3/16	**61.91** 2 7/16	**124.6** 4 29/32	**48.4** 1 29/32	**176.2** 6 15/16	**222.3** 8 3/4	**58.7** 2 5/16	**19.0** 3/4	**18.3** 23/32	**29.4** 1 5/32	**76.2** 3	**36.5** 1 7/16	**29.4** 1 5/32	**16** 5/8	GRA203RRB	S1203K	T-40246 (T-30738)	**3.328** 7.33
VAK	**55**														GRAE55RRB	SE55K		

NOTE: All units have 1/8 pipe-thread grease fitting except 1/2 – 1 1/16 and 3/4 units, which have 1/4-28 fitting.
NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

SAK STANDARD SERIES

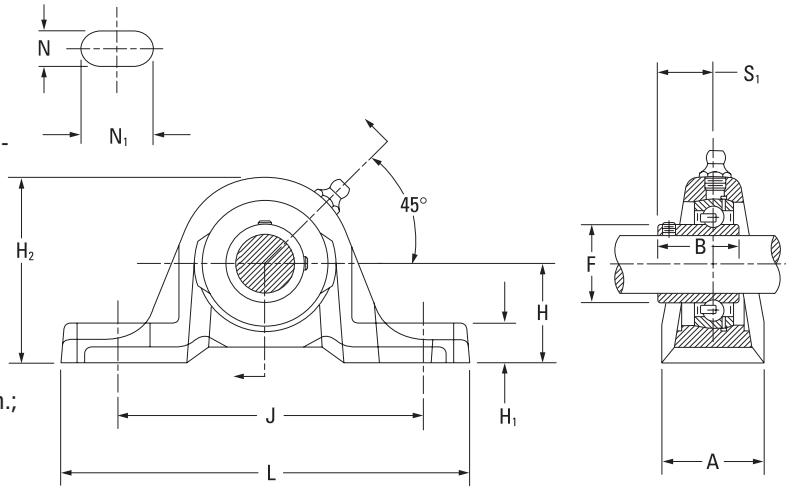
- The streamlined, rugged, one-piece pillow block combines an RAK housing and GYA-RRB set screw bearing.
- GYA-RRB bearing employs a positive-contact, land-riding seal and specially designed set screws.
- This pillow block can be mounted to operate in any position.
- Bearing housed units are factory-prelubricated, but a grease fitting is provided to allow for relubrication if required.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: SAK 1 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
SAK	GYA-RRB	Page A-54

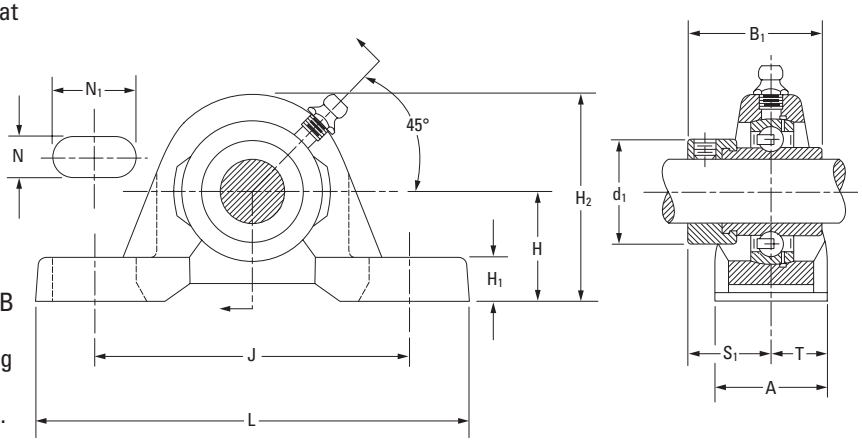
Unit	Shaft Dia.	Basic Bearing No.	H	H_2	S_1	J	L	A	H_1	N	N_1	F	B	Bolt Size	Bearing No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			New (Old)	**kg** lbs.
SAK	1/2	203	**26.99**	**53.2**	**15.9**	**92.1**	**123.8**	**30.2**	**8.7**	**11.1**	**22.2**	**24.6**	**23.8**	10	GYA008RRB	T40238	**0.42**
SAK	5/8		1 1/16	2 3/32	5/8	3 5/8	4 7/8	1 3/16	11/32	7/16	7/8	31/32	15/16	3/8	GYA010RRB	(T30595)	0.92
SAK	**17**														GYAE17RRB		
SAK	3/4	204	**31.75**	**62.7**	**18.3**	**96.0**	**127**	**31.8**	**11.9**	**11.1**	**19.8**	**29.0**	**31.8**	10	GYA012RRB	T40239	**0.57**
SAK	**20**		1 1/4	2 15/32	23/32	3 25/32	5	1 1/4	15/32	7/16	25/32	1 9/64	1 1/16	3/8	GYAE20RRB	(T30555)	1.25
SAK	7/8	205	**33.34**	**68**	**19.4**	**104.8**	**139.7**	**35.7**	**11.9**	**11.1**	**20.6**	**33.7**	**34.9**	10	GYA014RRB	T30365	**0.76**
SAK	15/16		1 5/16	2 11/16	49/64	4 1/8	5 1/2	1 13/32	15/32	7/16	13/16	1 21/64	1 7/64	3/8	GYA015RRB		1.67
SAK	1														GYA100RRB		
SAK	**25**														GYAE25RRB		
SAK	1 1/8	206	**39.69**	**80.2**	**23.0**	**117.5**	**157.2**	**39.7**	**13.5**	**14.3**	**23.8**	**40.1**	**32.5**	12	GYA102RRB	T40241	**1.14**
SAK	1 3/16		1 9/16	3 5/32	29/32	4 5/8	6 3/16	1 9/16	17/32	9/16	15/16	1 37/64	1 9/32	1/2	GYA103RRB	(T30300)	2.52
SAK	1 1/4 S														GYA103RRB2		
SAK	**30**														GYAE30RRB		
SAK	1 1/4	207	**46.04**	**92.1**	**25.8**	**130.2**	**166.7**	**45.2**	**16.7**	**14.3**	**24.6**	**46.8**	**36.5**	12	GYA104RRB	T40242	**1.52**
SAK	1 3/8		1 13/16	3 5/8	1 1/64	5 1/8	6 9/16	1 25/32	21/32	9/16	31/32	1 70/83	1 7/16	1/2	GYA106RRB	(T30410)	3.35
SAK	1 7/16														GYA107RRB		
SAK	**35**														GYAE35RRB		
SAK	1 1/2	208	**49.21**	**100.0**	**27.8**	**136.5**	**179.4**	**47.6**	**19.1**	**14.3**	**26.2**	**52.4**	**39.3**	12	GYA108RRB	T40243	**1.85**
SAK	**40**		1 15/16	3 15/16	1 3/32	5 3/8	7 1/16	1 7/8	3/4	9/16	1 1/32	2 1/16	1 35/64	1/2	GYAE40RRB	(T30484)	4.08
SAK	1 5/8	209	**52.39**	**104.8**	**28.6**	**149.2**	**191.3**	**50.8**	**17.5**	**14.3**	**28.6**	**57.9**	**42.1**	12	GYA110RRB	T40244	**2.06**
SAK	1 11/16		2 1/16	4 1/8	1 1/8	5 7/8	7 17/32	2	11/16	9/16	1 1/8	2 9/32	1 21/32	1/2	GYA111RRB	(T30682)	4.55
SAK	1 3/4														GYA112RRB		
SAK	**45**														GYAE45RRB		
SAK	1 15/16	210	**55.56**	**112.7**	**31.0**	**158.0**	**200.2**	**55.6**	**17.5**	**17.5**	**23.8**	**62.7**	**44.5**	16	GYA115RRB	T40245	**2.54**
SAK	2S		2 3/16	4 7/16	1 7/32	6 7/32	7 7/8	2 3/16	11/16	11/16	15/16	2 15/32	1 3/4	5/8	GYA115RRB2	(T30706)	5.60
SAK	**50**														GYAE50RRB		
SAK	2	211	**61.91**	**124.6**	**31.8**	**176.2**	**222.3**	**58.7**	**19.1**	**18.3**	**29.4**	**69.9**	**46.4**	16	GYA200RRB	T40246	**3.02**
SAK	2 3/16		2 7/16	4 29/32	1 1/4	6 15/16	8 3/4	2 5/16	3/4	23/32	1 5/32	2 3/4	1 53/64	5/8	GYA203RRB	(T30738)	6.66
SAK	**55**														GYAE55RRB		

NOTE: All units have a 1/8 pipe-thread grease fitting except 1/2 – 1 1/16 and 3/4 units which have 1/4-28 fitting.

08-19-13 DRAFT

RAS, TAS, LAS INDUSTRIAL SERIES

- Heavier than our standard block with solid, flat feet for increased strength.
- Timken RAS, TAS and LAS pillow blocks are similar in design and equal in load-carrying capacity to the RAK, TAK and LAK types.
- RAS, TAS and LAS types have a slightly higher base-to-center height dimension than the RAK, TAK and LAK types, making them interchangeable with other competitive designs.
- The RAS pillow block is equipped with G-KRRB (R-seal) wide-inner-ring ball bearings, the TAS with G-KPPB (tri-ply seal) wide-inner-ring ball bearings, and the LAS with the G-KLLB (Mechani-seal) wide-inner-ring ball bearings.
- Contact your Timken engineer to discuss highly corrosive applications (food processing, chemical exposure) where Timken thin-dense chrome-coated bearings can be utilized.



Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;

2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RAS 1 3/16 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RAS	G-KRRB	Page A-34
TAS	G-KPPB	Page A-39
LAS	G-KLLB	Page A-37

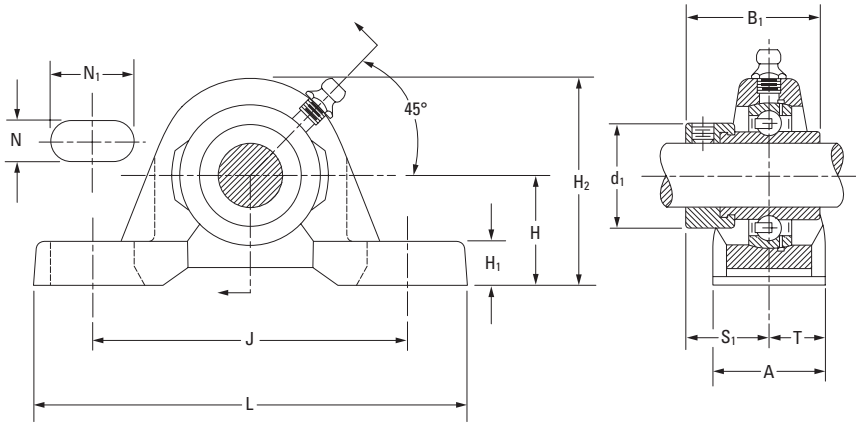
Unit	Shaft Dia.	H	H_2	B_1	J	L	A	H_1	N	N_1	d_1	S_1	T	Bolt Size	Bearing No.[1]		Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	RAS	(TAS)		New (Old)	**kg** lbs.
RAS	1/2														G1008KRRB		S1008K		
RAS	5/8	**30.16**	**56.4**	**37.3**	**92.1**	**123.8**	**30.2**	**11.9**	**11.1**	**22.2**	**28.6**	**23.4**	**15.1**	**10**	G1010KRRB		S1010K	T-40238	**0.454**
RAS	11/16	1 3/16	2 7/32	1 15/32	3 5/8	4 7/8	1 3/16	15/32	7/16	7/8	1 1/8	59/64	19/32	3/8	G1011KRRB		S1011K	(T-30595)	1.00
RAS	**17**														GE17KRRB		SE17K		
RAS	3/4	**33.34**	**65.9**	**43.7**	**96.4**	**127.0**	**33.3**	**15.1**	**11.1**	**20.2**	**33.3**	**26.6**	**16.7**	**10**	G1012KRRB		S1012K	M96830	**0.730**
RAS	**20**	1 5/16	2 19/32	1 23/32	3 51/64	5	1 5/16	19/32	7/16	51/64	1 5/16	1 3/64	21/32	3/8	GE20KRRB		SE20K		
RAS,TAS	7/8														G1014KRRB	(KPPB3)	S1014K		
RAS,TAS	15/16	**36.51**	**73.0**	**44.4**	**104.8**	**139.7**	**37.3**	**15.1**	**11.1**	**20.6**	**38.1**	**27.0**	**18.7**	**10**	G1015KRRB	(KPPB3)	S1015K	M96833	**1.610**
RAS,TAS,LAS	1	1 7/16	2 7/8	1 3/4	4 1/8	5 1/2	1 15/32	19/32	7/16	13/16	1 1/2	1 1/16	47/64	3/8	G1100KRRB	(KPPB3)	S1100K		0.95
RAS,TAS	**25**														GE25KRRB	(KPPB3)	SE25K		2.10
RAS,TAS	1 1/16														G1101KRRB	(KPPB3)	S1101K		
RAS,TAS	1 1/8	**42.86**	**84.9**	**48.4**	**117.5**	**157.2**	**42.9**	**16.7**	**14.3**	**23.8**	**44.1**	**30.1**	**21.4**	**12**	G1102KRRB	(KPPB3)	S1102K	M96836	**1.420**
RAS,TAS,LAS	1 3/16	1 11/16	3 11/32	1 29/32	4 5/8	6 3/16	1 11/16	21/32	9/16	15/16	1 47/64	1 3/16	27/32	1/2	G1103KRRB	(KPPB3)	S1103K		3.14
RAS,TAS	**30**														GE30KRRB	(KPPB3)	SE30K		
RAS,TAS	1 1/4														G1104KRRB	(KPPB2)	S1104K		
RAS,TAS	1 5/16														G1105KRRB	(KPPB2)	S1105K		
RAS,TAS	1 3/8	**47.63**	**95.3**	**51.2**	**130.2**	**166.7**	**46.8**	**18.3**	**14.3**	**24.6**	**54.0**	**32.5**	**23.4**	**12**	G1106KRRB	(KPPB2)	S1106K	M96839	**1.890**
RAS,TAS,LAS	1 7/16	1 7/8	3 3/4	2 1/64	5 1/8	6 9/16	1 27/32	23/32	9/16	31/32	2 1/8	1 9/32	59/64	1/2	G1107KRRB	(KPPB2)	S1107K		4.18
RAS,TAS	**35**														GE35KRRB	(KPPB2)	SE35K		
RAS,TAS	1 1/2														G1108KRRB	(KPPB3)	S1108KT		
RAS,TAS	1 9/16	**49.21**	**101.6**	**56.4**	**136.5**	**179.4**	**51.6**	**19.1**	**14.3**	**26.2**	**60.3** 2	**34.9**	**25.8**	**12**	G1109KRRB	(KPPB3)	S1109KT	M96842	**2.490**
RAS,TAS	**40**	1 15/16	4	2 7/32	5 3/8	7 1/16	2 1/32	3/4	9/16	1 1/32	3/8	1 3/8	1 1/64	1/2	GE40KRRB	(KPPB3)	SE40K		5.50

[1]Bearing number for RAS is G-KRRB. TAS uses G-KPPB. LAS uses G-KLLB.

NOTE: All units have 1/8 pipe-thread grease fitting except 1/2 – 1 1/16 and 3/4 units, which have 1/4-28 fitting.

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08-19-13 DRAFT



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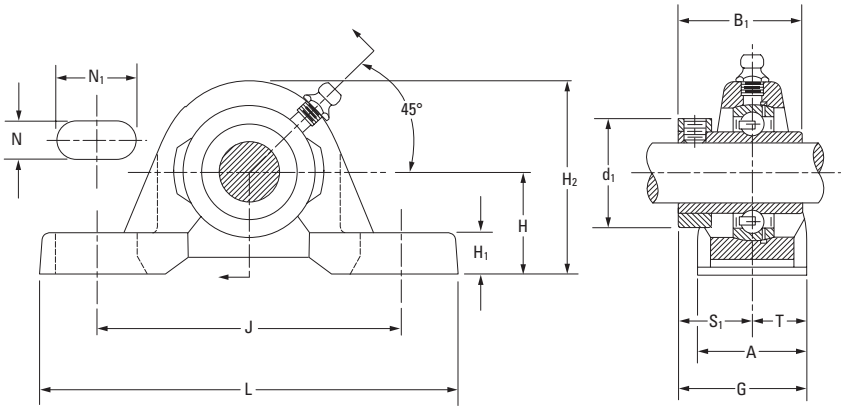
Unit	Shaft Dia.	H	H_2	B_1	J	L	A	H_1	N	N_1	d_1	S_1	T	Bolt Size	Bearing No.[1]		Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	RAS	(TAS)		New (Old)	**kg** lbs.
RAS,TAS	1 5/8																		
RAS,TAS	1 11/16	**53.98**	**106.4**	**56.4**	**149.2**	**191.3**	**52.4**	**19.1**	**14.3**	**28.6**	**63.5**	**34.9**	**26.2**	**12**	G1111KRRB	(KPPB4)	S1111K	M96844	**3.200**
RAS,TAS	1 3/4	2 1/8	4 3/16	2 7/32	5 7/8	7 17/32	2 1/16	3/4	9/16	1 1/8	2 1/2	1 3/8	1 1/32	1/2	G1112KRRB	(KPPB4)	S1112K		7.06
RAS,TAS	**45**														GE45KRRB	(KPPB4)	SE45K		
RAS,TAS	1 7/8														G1114KRRB	(KPPB3)	S1114K		
RAS,TAS,LAS	1 15/16	**57.15**	**114.3**	**62.7**	**158.0**	**200.0**	**57.9**	**19.1**	**18.3**	**25.4**	**69.9**	**38.1**	**29.0**	**16**	G1115KRRB	(KPPB3)	S1115K	M96847	**4.010**
RAS,TAS	**50**	2 1/4	4 1/2	2 15/32	6 7/32	7 7/8	2 9/32	3/4	23/32	1	2 3/4	1 1/2	1 9/64	5/8	GE50KRRB	(KPPB3)	SE50K		8.86
RAS,TAS	2														G1200KRRB	(KPPB4)	S1200K		
RAS,TAS	2 1/8	**63.50**	**127.8**	**71.4**	**176.2**	**222.3**	**60.3**	**20.6**	**18.3**	**29.4**	**76.2**	**43.7**	**30.2**	**16**	G1202KRRB	(KPPB4)	S1202K	M96850	**3.901**
RAS,TAS	2 3/16	2 1/2	5 1/32	2 13/16	6 15/16	8 3/4	2 3/8	13/16	23/32	1 5/32	3	1 23/32	1 3/16	5/8	G1203KRRB	(KPPB4)	S1203K		8.60
RAS,TAS	**55**														GE55KRRB	(KPPB4)	SE55K		
RAS	2 1/4														G1204KRRB		S1204K		
RAS	2 3/8	**69.85**	**138.9**	**77.8**	**188.1**	**239.7**	**60.3**	**23.8**	**18.3**	**29.4**	**84.1**	**46.8**	**30.2**	**16**	G1206KRRB		S1206K	M99647	**5.511**
RAS,LAS	2 7/16	2 3/4	5 15/32	3 1/16	7 13/32	9 7/16	2 3/8	15/16	23/32	1 5/32	3 5/16	1 27/32	1 3/16	5/8	G1207KRRB		S1207K		12.15
RAS	**60**														GE60KRRB		SE60K		
RAS	2 15/16	**82.55**	**164.3**	**92.1**	**215.9**	**269.9**	**69.9**	**25.4**	**22.2**	**31.8**	**101.6**	**54.8**	**34.9**	**20**	G1215KRRB		S1215K	T-23423	**9.026**
RAS	**75**	3 1/4	6 15/32	3 5/8	8 1/2	10 5/8	2 3/4	1	7/8	1 1/4	4	2 5/32	1 3/8	3/4	GE75KRRB		SE75K		19.90

[1]Bearing number for RAS is G-KRRB. TAS uses G-KPPB. LAS uses G-KLLB.
NOTE: All units have 1/8 pipe-thread grease fitting except 1/2 – 1 1/16 and 3/4 units, which have 1/4-28 fitting.

08-19-13 DRAFT

RASC INDUSTRIAL-SERIES CONCENTRIC COLLAR

- Heavier than our standard block with solid, flat feet for increased strength.
- All RASC pillow blocks are equipped with GC-KRRB (R-seal) wide-inner-ring ball bearings with concentric collars.
- Pillow blocks self-align at mounting with the spherical outside diameter of the bearing fitting into a corresponding spherical housing seat.
- Units are prelubricated and ready for immediate installation.
- Grease fitting provides for relubrication if required.
- Concentric collars are supplied with all units.



Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;

2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RASC 1 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RASC	GC-KRRB	Page A-40

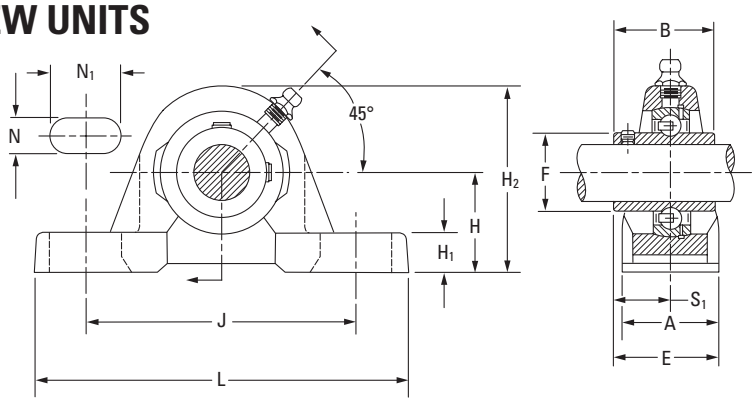
Unit	Shaft Dia.	H	H_2	B_1	J	L	A	H_1	N	N_1	d_1	S_1	T	G	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.			New (Old)	kg lbs.
RASC	5/8	**30.16** 1 3/16	**56.4** 2 7/32	**26.6** 1 3/64	**92.1** 3 5/8	**123.8** 4 7/8	**30.2** 1 3/16	**11.9** 15/32	**11.1** 7/16	**22.2** 7/8	**34.1** 1 11/32	**15.5** 39/64	**15.08** 19/32	**30.53** 1 13/64	**10** 3/8	GC1010KRRB	C203	T-40238 (T-30595)	**0.454** 1.00
RASC	3/4	**33.34** 1 5/16	**65.9** 2 19/32	**31.0** 1 7/32	**96.0** 3 25/32	**127.0** 5	**33.3** 1 5/16	**15.1** 19/32	**11.1** 7/16	**19.8** 25/32	**38.1** 1 1/2	**18.7** 47/64	**16.70** 21/32	**35.32** 1 25/64	**10** 3/8	GC1012KRRB	C204	M96830	**0.635** 1.40
RASC	1	**36.51** 1 7/16	**73.0** 2 7/8	**34.1** 1 11/32	**104.8** 4 1/8	**139.7** 5 1/2	**37.3** 1 15/32	**15.1** 19/32	**11.1** 7/16	**20.2** 13/16	**44.4** 1 3/4	**20.2** 51/64	**18.70** 47/64	**38.89** 1 17/32	**10** 3/8	GC1100KRRB	C205	M96833	**0.803** 1.77
RASC RASC RASC	1 1/8 1 3/16 1 1/4 S	**42.86** 1 11/16	**84.9** 3 11/32	**37.3** 1 15/32	**117.5** 4 5/8	**157.2** 6 3/16	**42.9** 1 11/16	**16.7** 21/32	**14.3** 9/16	**23.8** 15/16	**52.4** 2 1/16	**22.6** 57/64	**21.40** 27/32	**44.05** 1 47/64	**12** 1/2	GC1102KRRB GC1103KRRB GC1103KRRB3	C206	M96836	**1.297** 2.86
RASC RASC RASC	1 1/4 1 3/8 1 7/16	**47.62** 1 7/8	**95.3** 3 3/4	**41.3** 1 5/8	**130.2** 5 1/8	**166.7** 6 9/16	**46.8** 1 27/32	**18.3** 23/32	**14.3** 9/16	**24.6** 31/32	**59.5** 2 11/32	**25.4** 1	**23.40** 59/64	**48.81** 1 59/64	**12** 1/2	GC1104KRRB GC1106KRRB GC1107KRRB	C207	M96839	**1.674** 3.69
RASC	1 1/2	**49.21** 1 15/16	**101.6** 4	**44.1** 1 47/64	**136.5** 5 3/8	**179.4** 7 1/16	**51.6** 2 1/32	**19.1** 3/4	**14.3** 9/16	**26.2** 1 1/32	**68.3** 2 11/16	**27.4** 1 5/64	**25.80** 1 1/64	**53.16** 2 15/16	**12** 1/2	GC1108KRRB	C208	M96842	**2.150** 4.74
RASC RASC	1 11/16 1 3/4	**53.98** 2 1/8	**106.4** 4 3/16	**46.8** 1 27/32	**149.2** 5 7/8	**191.3** 7 17/32	**52.4** 2 1/16	**19.1** 3/4	**14.3** 9/16	**23.0** 29/32	**73.0** 2 7/8	**29.4** 1 5/32	**26.20** 1 1/32	**55.55** 2 3/16	**12** 1/2	GC1111KRRB GC1112KRRB	C209	M96844	**2.409** 5.31
RASC	1 15/16	**57.15** 2 1/4	**114.3** 4 1/2	**48.4** 1 29/32	**158.0** 6 7/32	**200.0** 7 7/8	**57.9** 2 9/32	**19.1** 3/4	**17.5** 11/16	**23.8** 15/16	**79.4** 3 1/8	**30.2** 1 3/16	**29.00** 1 9/64	**59.13** 2 21/64	**16** 5/8	GC1115KRRB	C210	M96847	**3.003** 6.62
RASC RASC	2 2 3/16	**63.50** 2 1/2	**127.8** 5 1/32	**54.0** 2 1/8	**176.2** 6 15/16	**222.3** 8 3/4	**60.3** 2 3/8	**20.6** 13/16	**18.3** 23/32	**29.4** 1 5/32	**88.9** 3 1/2	**33.3** 1 5/16	**30.20** 1 3/16	**62.70** 2 15/32	**16** 5/8	GC1200KRRB GC1203KRRG	C211	M96850	**3.901** 8.60
RASC	2 7/16	**69.85** 2 3/4	**138.9** 5 15/32	**60.3** 2 3/8	**188.1** 7 13/32	**239.7** 9 7/16	**60.3** 2 3/8	**23.8** 15/16	**18.3** 23/32	**29.4** 1 5/32	**95.2** 3 3/4	**37.3** 1 15/32	**30.20** 1 3/16	**67.46** 2 21/32	**16** 5/8	GC1207KRRB	C212	M99647	**5.511** 12.15
RASC	2 15/16	**82.55** 3 1/4	**164.3** 6 15/32	**70.6** 2 25/32	**215.9** 8 1/2	**269.9** 10 5/8	**69.9** 2 3/4	**25.4** 1	**22.2** 7/8	**31.8** 1 1/4	**114.3** 4 1/2	**43.7** 1 23/32	**34.90** 1 3/8	**78.60** 3 3/32	**20** 3/4	GC1215KRRB	C215	T 23423	**9.060** 19.91

NOTE: All units have 1/8 pipe-thread grease fitting except RASC 1/2 – 1 1/16 and 3/4 units, which have 1/4-28 fitting.

08-19-13 DRAFT

YAS INDUSTRIAL-SERIES SET SCREW UNITS

- Incorporates Shaft Guarding Technology, which reduces replacement time, provides shaft protection and prolongs the life of the shaft.
- Heavier than our standard block with solid, flat feet for increased strength.
- Timken YAS-series high-base, set screw pillow blocks feature the GY-KRRB bearing.
- This full-width inner ring set screw is well-suited for industrial applications involving wet or dirty environments.
- Housing is designed for two-bolt mounting in any position.
- Contact your Timken engineer to discuss highly corrosive applications (food processing, chemical exposure) where Timken thin-dense chrome-coated bearings can be utilized.



Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: YAS 1 7/16 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
YAS	GY-KRRB	Page A-44

Unit	Shaft Dia.	H	H_2	B	L	J	A	H_1	N	N_1	F	S_1	E	Bolt Size	Bearing No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**kg** lbs.
YAS	1/2														GY1008KRRB		
YAS	5/8	**30.16** 1 3/16	**56.4** 2 7/32	**27.4** 1 5/64	**123.8** 4 7/8	**92.1** 3 5/8	**30.2** 1 3/16	**11.9** 15/32	**11.1** 7/16	**22.2** 7/8	**22.9** 0.900	**15.9** 5/8	**31.0** 1 7/32	**10** 3/8	GY1010KRRB	T40238	**0.4536** 1.0000
YAS	**17**														GYE17KRRB		
YAS	3/4 SGT	**33.34**	**65.9**	**31.8**	**127.0**	**96.4**	**33.3**	**15.1**	**11.1**	**20.2**	**27.6**	**19.1**	**35.7**	**10**	GY1012KRRB SGT	M96830	**0.7027**
YAS	**20 SGT**	1 5/16	2 19/32	1 1/4	5	3 51/64	1 5/16	19/32	7/16	51/64	1.085	3/4	1 13/32	3/8	GYE20KRRB SGT		1.5491
YAS	7/8 SGT														GY1014KRRB SGT		
YAS	15/16 SGT	**36.51**	**73.0**	**34.9**	**139.7**	**104.8**	**37.3**	**15.1**	**11.1**	**20.6**	**33.8**	**20.6**	**39.3**	**10**	GY1015KRRB SGT	M96833	**0.9535**
YAS	1 SGT	1 7/16	2 7/8	1 3/8	5 1/2	4 1/8	1 15/32	19/32	7/16	13/16	1.332	13/16	1 35/64	3/8	GY1100KRRB SGT		2.1022
YAS	**25 SGT**														GYE25KRRB SGT		
YAS	1 1/8 SGT														GY1102KRRB SGT		
YAS	1 3/16 SGT	**42.86**	**84.9**	**39.3**	**157.2**	**117.5**	**42.9**	**16.7**	**14.3**	**23.8**	**40.3**	**23.4**	**44.8**	**12**	GY1103KRRB SGT	M96836	**1.4275**
YAS	1 1/4 S	1 11/16	3 11/32	1 35/64	6 3/16	4 5/8	1 11/16	21/32	9/16	15/16	1.587	59/64	1 49/64	1/2	GY1103KRRB3 SGT		3.1472
YAS	**30 SGT**														GYE30KRRB SGT		
YAS	1 1/4 SGT														GY1104KRRB SGT		
YAS	1 3/8 SGT	**47.63**	**95.3**	**45.2**	**166.7**	**130.2**	**46.8**	**18.3**	**14.3**	**24.6**	**46.8**	**28.2**	**51.6**	**12**	GY1106KRRB SGT	M96839	**1.8981**
YAS	1 7/16 SGT	1 7/8	3 3/4	1 25/32	6 9/16	5 1/8	1 27/32	23/32	9/16	31/32	1.844	1 7/64	2 1/32	1/2	GY1107KRRB SGT		4.1847
YAS	**35 SGT**														GYE35KRRB SGT		
YAS	1 1/2 SGT	**49.21**	**101.6**	**49.2**	**179.4**	**136.5**	**51.6**	**19.1**	**14.3**	**26.2**	**52.3**	**30.2**	**56.0**	**12**	GY1108KRRB SGT	M96842	**2.4763**
YAS	**40 SGT**	1 15/16	4	1 15/16	7 1/16	5 3/8	2 1/32	3/4	9/16	1 1/32	2.058	1 3/16	2 13/34	1/2	GYE40KRRB SGT		5.4592
YAS	1 5/8 SGT														GY1110KRRB SGT		
YAS	1 11/16 SGT	**53.98**	**106.4**	**50.4**	**191.3**	**149.2**	**52.4**	**19.1**	**14.3**	**28.6**	**57.9**	**31.4**	**57.5**	**12**	GY1111KRRB SGT	M96844	**2.681**
YAS	1 3/4 SGT	2 1/8	4 3/16	1 63/64	7 17/32	5 7/8	2 1/16	3/4	9/16	1 1/8	2.280	1 15/64	2 17/64	1/2	GY1112KRRB SGT		5.9107
YAS	**45 SGT**														GYE45KRRB SGT		
YAS	1 15/16 SGT	**57.15**	**114.3**	**51.6**	**200.2**	**158.0**	**57.9**	**19.1**	**18.3**	**25.4**	**62.8**	**32.5**	**61.5**	**16**	GY1115KRRB SGT	M96847	**3.3136**
YAS	2S	2 1/4	4 1/2	2 1/32	7 7/8	6 7/32	2 9/32	3/4	23/32	1	2.474	1 9/32	2 27/64	5/8	GY1115KRRB2		7.3053
YAS	**50 SGT**														GYE50KRRB SGT		
YAS	2 SGT	**63.50**	**127.8**	**55.6**	**222.3**	**176.2**	**60.3**	**20.6**	**18.3**	**29.4**	**69.8**	**33.3**	**61.9**	**16**	GY1200KRRB SGT	M96850	**3.9009**
YAS	2 3/16 SGT	2 1/2	5 1/32	2 3/16	8 3/4	6 15/16	2 3/8	13/16	23/32	1 5/32	2.747	1 5/16	2 7/16	5/8	GY1203KRRB SGT		8.6000
YAS	**55 SGT**														GYE55KRRB SGT		
YAS	2 1/4 SGT	**69.85**	**138.9**	**65.1**	**239.7**	**188.1**	**60.3**	**23.8**	**18.3**	**29.4**	**76.5**	**39.7**	**69.9**	**16**	GY1204KRRB SGT	M99647	**4.7718**
YAS	2 7/16 SGT	2 3/4	5 15/32	2 9/16	9 7/16	7 13/32	2 3/8	15/16	23/32	1 5/32	3.011	1 9/16	2 3/4	5/8	GY1207KRRB SGT		10.5200
YAS	**60 SGT**														GYE60KRRB SGT		
YAS	2 15/16	**82.55**	**164.3**	**69.9**	**269.9**	**215.9**	**69.4**	**25.4**	**14.3**	**34.9**	**91.9**	**30.2**	**79.4**	**20**	GY1215KRRB	T23423	**7.9197**
YAS	**75**	3 1/4	6 15/32	2 3/4	10 5/8	8 1/2	2 3/4	1	7/8	1 3/8	3.618	1 3/4	3 1/8	3/4	GYE75KRRB		17.4600
YAS	2 15/16 H	**88.40** 3 1/2	**177.8** 7	**77.8** 3 1/16	**330.2** 13	**241.3** 9 1/2	**88.9** 3 1/2	**31.8** 1 1/4	**23.8** 15/16	**31.8** 1 1/4	**91.9** 3.619	**30.2** 1 3/4	**88.9** 3 1/2	20 3/4	GY1215KRRB	T22305	**8.4187** 18.5600

NOTE: Shaft diameter with an S = Smaller housing; Shaft diameter with an H = heavier housing.

08-19-13 DRAFT

VAS STANDARD SERIES

- Timken VAS pillow blocks are similar in design and features, and equal in load-carrying capacity, to the VAK series.
- The slightly different base-to-center height dimension makes them interchangeable with certain other competitive designs.
- The units are prelubricated and ready for immediate installation.
- A grease fitting is provided for relubrication if required.

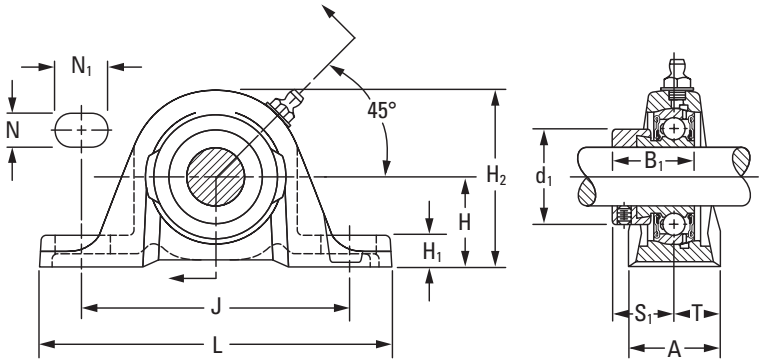
Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;

2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: VAS 1 3/16 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
VAS	GRA-RRB	Page A-50

Unit	Shaft Dia.	H	H_2	B_1	J	L	A	H_1	N	N_1	d_1	S_1	T	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			New (Old)	**kg** lbs.
VAS	1/2														GRA008RRB	S1008K		
VAS	5/8	**30.16**	**56.4**	**28.6**	**92.1**	**123.8**	**30.2**	**11.9**	**11.1**	**22.2**	**28.6**	**22.2**	**15.1**	**10**	GRA010RRB	S1010K	T-40238	**0.454**
VAS	**17**	1 3/16	2 7/32	1 1/8	3 5/8	4 7/8	1 3/16	15/32	7/16	7/8	1 1/8	7/8	19/32	3/8	GRAE17RRB	SE17K	(T-30595)	1.00
VAS	3/4														GRA012RRB	S1012K	T-40239	**0.563**
VAS	**20**	**33.34**	**64.3**	**31.0**	**96.0**	**127.0**	**31.8**	**13.5**	**11.1**	**19.8**	**33.3**	**23.4**	**15.9**	**10**	GRAE20RRB	SE20K	(T-30555)	1.24
VAS	7/8	1 5/16	2 17/32	1 7/32	3 25/32	5	1 1/4	17/32	7/16	25/32	1 5/16	59/64	5/8	3/8	GRA014RRB	S1014K		
VAS	15/16														GRA015RRB	S1015K	T-30365	**0.758**
VAS	1	**36.51**	**71.4**	**31.0**	**104.8**	**139.7**	**35.7**	**15.1**	**11.1**	**20.6**	**38.1**	**23.4**	**17.9**	**10**	GRA100RRB	S1100K		1.67
VAS	**25**	1 7/16	2 13/16	1 7/32	4 1/8	5 1/2	1 13/32	19/32	7/16	13/16	1 1/2	59/64	45/64	3/8	GRAE25RRB	SE25K		
VAS	1 1/8														GRA102RRB	S1102K		
VAS	1 3/16	**42.86**	**83.3**	**35.7**	**117.5**	**157.2**	**39.7**	**16.7**	**14.3**	**23.8**	**44.1**	**27.0**	**19.9**	**12**	GRA103RRB	S1103K	T-40241	**1.235**
VAS	1 1/4 S	1 11/16	3 9/32	1 13/32	4 5/8	6 3/16	1 9/16	21/32	9/16	15/16	1 47/64	1 1/16	25/32	1/2	GRA103RRB2	S1103K3	(T-30300)	2.72
VAS	**30**														GRAE30RRB	SE30K		
VAS	1 1/4														GRA104RRB	S1104K		
VAS	1 3/8	**47.62**	**93.7**	**38.9**	**130.2**	**166.7**	**45.2**	**18.3**	**14.3**	**24.6**	**54.0**	**29.4**	**22.7**	**12**	GRA106RRB	S1106K	T-40242	**1.594**
VAS	1 7/16	1 7/8	3 11/16	1 17/32	5 1/8	6 9/16	1 25/32	23/32	9/16	31/32	2 1/8	1 5/32	57/64	1/2	GRA107RRB	S1107K	(T-30410)	3.51
VAS	**35**														GRAE35RRB	SE35K		
VAS	1 1/2	**49.21**	**100.0**	**43.7**	**136.5**	**179.4**	**47.6**	**19.0**	**14.3**	**26.2**	**60.3**	**32.5**	**23.8**	**12**	GRA108RRB	S1108KT	T-40243	**2.034**
VAS	**40**	1 15/16	3 15/16	1 23/32	5 3/8	7 1/16	1 7/8	3/4	9/16	1 1/32	2 3/8	1 9/32	15/16	1/2	GRAE40RRB	SE40K	(T-30484)	4.48
VAS	1 5/8														GRA110RRB	S1110K		
VAS	1 11/16	**53.98**	**106.4**	**43.7**	**149.2**	**191.3**	**50.8**	**19.0**	**14.3**	**28.6**	**63.5** 2	**32.5**	**25.4**	**12**	GRA111RRB	S1111K	T-40244	**2.261**
VAS	1 3/4	2 1/8	4 3/16	1 23/32	5 7/8	7 17/32	2	3/4	9/16	1 1/8	1/2	1 9/32	1	1/2	GRA112RRB	S1112K	(T-30682)	4.98
VAS	**45**														GRAE45RRB	SE45K		
VAS	1 7/8														GRA114RRB	S1114K		
VAS	1 15/16	**57.15**	**114.3**	**43.7**	**158.0**	**200.0**	**55.6**	**19.0**	**18.3**	**29.4**	**69.8**	**32.5**	**27.8**	**16**	GRA115RRB	S1115K	T-40245	**2.774**
VAS	2 S	2 1/4	4 1/2	1 23/32	6 7/32	7 7/8	2 3/16	3/4	23/32	1 5/32	2 3/4	1 9/32	1 3/32	5/8	GRA115RRB2	S1115K2	(T-30706)	6.11
VAS	**50**														GRAE50RRB	SE50K		
VAS	2														GRA200RRB	S1200K		
VAS	2 3/16	**63.50**	**126.2**	**48.4**	**176.2**	**222.3**	**58.7**	**20.6**	**18.3**	**29.4**	**76.2**	**36.5**	**29.4**	**16**	GRA203RRB	S1203K	T-40246	**3.328**
VAS	**55**	2 1/2	4 31/32	1 29/32	6 15/16	8 3/4	2 5/16	13/16	23/32	1 5/32	3	1 7/16	1 5/32	5/8	GRAE55RRB	SE55K	(T-30738)	7.33

NOTE: All units have 1/8 pipe-thread grease fitting except 1/2 – 1 1/16 and 3/4 units, which have 1/4-28 fitting.

08-19-13 DRAFT

SAS STANDARD SERIES

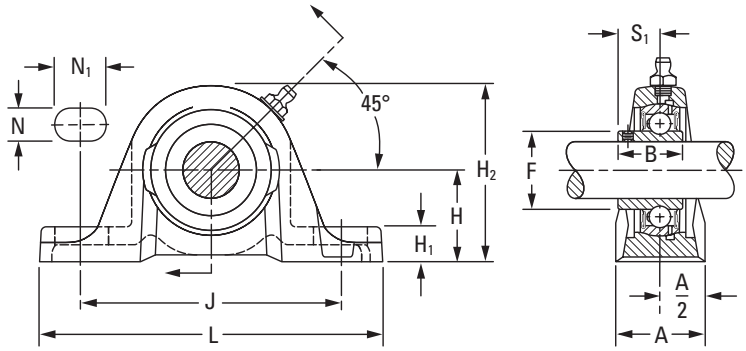
- The SAS is a streamlined and rugged one-piece pillow block unit that combines the Timken engineered housing and a GYA-RRB set screw bearing.
- GYA-RRB bearing employs a positive-contact, land-riding seal and specially designed set screws.
- SAS pillow block can be mounted in any position.
- Bearing housed units are factory-prelubricated, but a grease fitting is provided to allow for relubrication if required.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: SAS 1 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
SAS	GYA-RRB	Page A-54

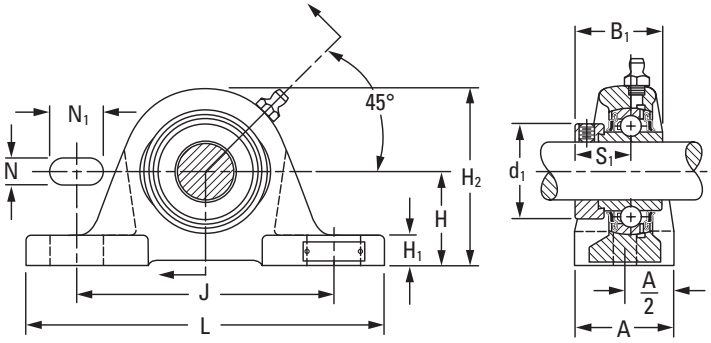
Unit	Shaft Dia.	H	H_2	S_1	J	L	A	H_1	N	N_1	F	B	Bolt Size	Bearing No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.		New (Old)	**kg** lbs.
SAS	1/2													GYA008RRB		
SAS	5/8	**30.16** 1 3/16	**56.4** 2 7/32	**15.9** 5/8	**92.1** 3 5/8	**123.8** 4 7/8	**30.2** 1 3/16	**11.9** 15/32	**11.1** 7/16	**22.2** 7/8	**24.6** 31/32	**23.8** 15/16	**10** 3/8	GYA010RRB	T-40238 (T-30595)	**0.42** 0.92
SAS	**17**													GYAE17RRB		
SAS	3/4	**33.34** 1 5/16	**64.3** 2 17/32	**18.3** 23/32	**96.0** 3 25/32	**127.0** 5	**31.8** 1 1/4	**13.5** 17/32	**11.1** 7/16	**19.8** 25/32	**29.0** 1 9/64	**27.0** 1 1/16	**10** 3/8	GYA012RRB	T-40239 (T-30555)	**0.57** 1.25
SAS	**20**													GYAE20RRB		
SAS	7/8													GYA014RRB		
SAS	15/16	**36.51** 1 7/16	**71.4** 2 13/16	**19.4** 49/64	**104.8** 4 1/8	**139.7** 5 1/2	**35.7** 1 13/32	**15.1** 19/32	**11.1** 7/16	**20.6** 13/16	**33.7** 1 21/64	**28.2** 1 7/64	**10** 3/8	GYA015RRB	T-30365	**0.75** 1.67
SAS	1													GYA100RRB		
SAS	**25**													GYAE25RRB		
SAS	1 1/8													GYA102RRB		
SAS	1 3/16	**42.86** 1 11/16	**83.3** 3 9/32	**23.0** 29/32	**117.5** 4 5/8	**157.2** 6 3/16	**39.7** 1 9/16	**16.7** 21/32	**14.3** 9/16	**23.8** 15/16	**40.1** 1 37/64	**32.5** 1 9/32	**12** 1/2	GYA103RRB	T-40241 (T-30300)	**1.14** 2.52
SAS	1 1/4 S													GYA103RRB2		
SAS	**30**													GYAE30RRB		
SAS	1 1/4													GYA104RRB		
SAS	1 3/8	**47.62** 1 7/8	**93.6** 3 11/16	**25.8** 1 1/64	**130.2** 5 1/8	**166.7** 6 9/16	**45.2** 1 25/32	**18.3** 23/32	**14.3** 9/16	**24.6** 31/32	**46.8** 1 27/32	**36.5** 1 7/16	**12** 1/2	GYA106RRB	T-40242 (T-30410)	**1.52** 3.35
SAS	1 7/16													GYA107RRB		
SAS	**35**													GYAE35RRB		
SAS	1 1/2	**49.21** 1 15/16	**100.0** 3 15/16	**27.8** 1 3/32	**136.5** 5 3/8	**179.4** 7 1/16	**47.6** 1 7/8	**19.0** 3/4	**14.3** 9/16	**26.2** 1 1/32	**52.4** 2 1/16	**39.3** 1 35/64	**12** 1/2	GYA108RRB	T-40243 (T-30484)	**1.85** 4.08
SAS	**40**													GYAE40RRB		
SAS	1 1/2 H	**53.90** 2 1/8	**100.0** 3 15/16	**27.8** 1 3/32	**136.5** 5 3/8	**179.4** 7 1/16	**47.6** 1 7/8	**19.0** 3/4	**14.3** 9/16	**26.2** 1 1/32	**52.4** 2 1/16	**39.3** 1 35/64	**12** 1/2	GYA108RRB	T-39528	**1.85** 4.08
SAS	1 5/8													GYA110RRB		
SAS	1 11/16	**53.90** 2 1/8	**106.3** 4 3/16	**28.6** 1 1/8	**149.2** 5 7/8	**191.3** 7 17/32	**51.0** 2	**19.0** 3/4	**14.3** 9/16	**28.6** 1 1/8	**57.9** 2 9/32	**42.1** 1 21/32	**12** 1/2	GYA111RRB	T-40244 (T-30682)	**2.06** 4.55
SAS	1 3/4													GYA112RRB		
SAS	**45**													GYAE45RRB		
SAS	1 15/16	**57.20** 2 1/4	**114.3** 4 1/2	**30.9** 1 7/32	**158.0** 6 7/32	**200.0** 7 7/8	**55.6** 2 3/16	**19.0** 3/4	**17.5** 11/16	**23.8** 15/16	**62.7** 2 15/32	**44.4** 1 3/4	**16** 5/8	GYA115RRB	T-40245 (T-30706)	**2.54** 5.60
SAS	2 S													GYA115RRB2		
SAS	**50**													GYAE50RRB		
SAS	2	**63.50** 2 1/2	**126.2** 4 31/32	**31.7** 1 1/4	**176.2** 6 15/16	**222.3** 8 3/4	**58.7** 2 5/16	**20.6** 13/16	**18.3** 23/32	**29.4** 1 5/32	**69.8** 2 3/4	**46.4** 1 53/64	**16** 5/8	GYA200RRB	T-40246 (T-30738)	**3.02** 6.66
SAS	2 3/16													GYA203RRB		
SAS	**55**													GYAE55RRB		

NOTE: All units have 1/8 pipe-thread grease fitting except 1/2 – 1 1/16 and 3/4 units, which have 1/4-28 fitting.
NOTE: Shaft diameter with an S = smaller housing; Shaft diameter with an H = heavier housing.

08-19-13 DRAFT

RAKH INDUSTRIAL SERIES

- Timken pillow blocks are similar in design to other standard series, but have slightly different dimensions to allow interchangeability with competitive designs.
- These pillow blocks may be used independently or in connection with the RAKHL expansion unit shown at right. Used in this capacity, the RAKH pillow blocks provide fixed shaft location while the RAKHL expansion units allow for axial movement. Maximum operating temperature for the RAKH units is 121° C (250° F).
- The units are supplied with self-locking collars.
- Contact your Timken engineer to discuss highly corrosive applications (food processing, chemical exposure) where Timken thin-dense chrome-coated bearings can be utilized.



Suggested shaft tolerances:

13/16 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;

2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RAKH 1 7/16 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RAKH	G-KRRB	Page A-34

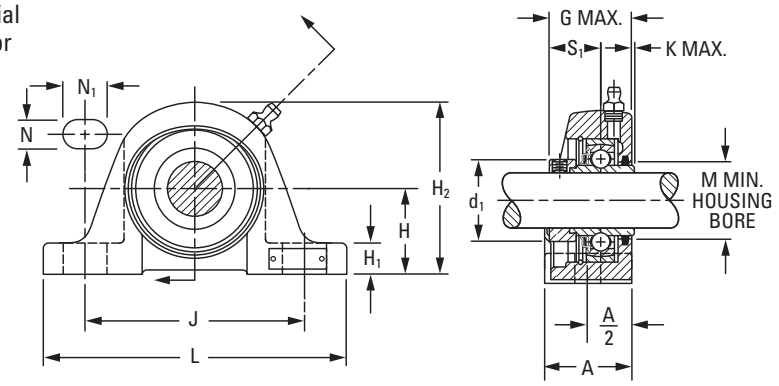
Unit[1]	Shaft Dia.	H	H_2	B_1	J	L	A	H_1	N	N_1	d_1	S_1	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			New	**kg** lbs.
RAKH	1	**44.45** 1 3/4	**82.6** 3 1/4	**44.4** 1 3/4	**119.1** 4 11/16	**158.8** 6 1/4	**50.8** 2	**15.9** 5/8	**14.3** 9/16	**25.4** 1	**38.1** 1 1/2	**27.0** 1 1/16	**12** 1/2	G1100KRRB	S1100K	T-22295	**1.689** 3.720
RAKH	1 3/16	**47.63** 1 7/8	**90.5** 3 9/16	**48.4** 1 29/32	**127.0** 5	**174.6** 6 7/8	**57.2** 2 1/4	**17.5** 11/16	**14.3** 9/16	**25.4** 1	**44.1** 1 47/64	**30.2** 1 3/16	**12** 1/2	G1103KRRB	S1103K	T-22216	**2.184** 4.810
RAKH RAKH	1 1/4 1 7/16	**53.98** 2 1/8	**101.6** 4	**51.2** 2 1/64	**144.5** 5 11/16	**203.2** 8	**57.2** 2 1/4	**19.0** 3/4	**14.3** 9/16	**30.2** 1 3/16	**54.0** 2 1/8	**32.5** 1 9/32	**12** 1/2	G1104KRRB G1107KRRB	S1104K S1107K	T-22212	**2.915** 6.420
RAKH	1 1/2	**58.74** 2 5/16	**111.1** 4 3/8	**56.4** 2 7/32	**155.6** 6 1/8	**222.2** 8 3/4	**66.7** 2 5/8	**20.6** 13/16	**17.5** 11/16	**31.8** 1 1/4	**60.3** 2 3/8	**34.9** 1 3/8	**16** 5/8	G1108KRRB	S1108KT	T-22291	**4.004** 8.820
RAKH RAKH	1 11/16 1 3/4	**58.74** 2 5/16	**114.3** 4 1/2	**56.4** 2 7/32	**155.6** 6 1/8	**222.2** 8 3/4	**66.7** 2 5/8	**20.6** 13/16	**17.5** 11/16	**33.3** 1 5/16	**63.5** 2 1/2	**34.9** 1 3/8	**16** 5/8	G1111KRRB G1112KRRB	S1111K S1112K	T-22293	**4.032** 8.880
RAKH	1 15/16	**63.50** 2 1/2	**122.2** 4 13/16	**62.7** 2 15/32	**171.4** 6 3/4	**241.3** 9 1/2	**73.0** 2 7/8	**22.2** 7/8	**17.5** 11/16	**36.5** 1 7/16	**69.8** 2 3/4	**38.1** 1 1/2	**16** 5/8	G1115KRRB	S1115K	T-22214	**5.098** 11.230
RAKH RAKH	2 3/16 **55**	**69.85** 2 3/4	**136.5** 5 3/8	**71.4** 2 13/16	**184.2** 7 1/4	**260.4** 10 1/4	**79.4** 3 1/8	**27.0** 1 1/16	**20.6** 13/16	**36.5** 1 7/16	**76.2** 3	**43.7** 1 23/32	**16** 5/8	G1203KRRB GE55KRRB	S1203K SE55K	T-22297	**6.728** 14.820
RAKH	2 7/16	**76.20** 3	**150.8** 5 15/16	**77.8** 3 1/16	**203.2** 8	**285.8** 11 1/4	**82.6** 3 1/4	**27.0** 1 1/16	**20.6** 13/16	**41.3** 1 5/8	**84.1** 3 5/16	**46.8** 1 27/32	**16** 5/8	G1207KRRB	S1207K	T-22299	**8.2170** 18.115
RAKH	2 11/16	**88.90** 3 1/2	**171.4** 6 3/4	**85.7** 3 3/8	**228.6** 9	**330.2** 13	**88.9** 3 1/2	**28.6** 1 1/8	**23.8** 15/16	**50.8** 2	**96.8** 3 13/16	**45.2** 1 25/32	**20** 3/4	G1211KRRB	S1211K	T-22303	**11.495** 25.320
RAKH	2 15/16	**88.90** 3 1/2	**177.8** 7	**92.1** 3 5/8	**228.6** 9	**330.2** 13	**88.9** 3 1/2	**31.8** 1 1/4	**23.8** 15/16	**50.8** 2	**101.6** 4	**54.8** 2 5/32	**20** 3/4	G1215KRRB	S1215K	T-22305	**11.795** 25.980

[1]When used with the expansion unit, specify both units, shaft diameter and suffix.

08-19-13 DRAFT

RAKHL EXPANSION SERIES

- The RAKH expansion series is designed to allow axial shaft expansion caused by elevated temperatures or other conditions that lead to shaft movement.
- The RAKH expansion-series bearings are designed for use with the RAKH pillow blocks.
- RAKH units provide axial shaft location and the RAKHL allows shaft floatation.
- Due to limitations of the lubricant and seal material, the maximum operating temperature for the RAKHL units is 121° C (250° F).
- Units are supplied with self-locking collars.
- Steel S-ring ensures axial expansion.



Suggested shaft tolerances:

13/16 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;

2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RAKHL 2 7/16 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RAKHL	KRS	Page A-43

Unit	Shaft Dia.	Total Float	H	H_2	G	J	L	A	H_1	N	N_1	K	d_1	S_1	M	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in.	mm in.	mm in	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.			New	kg lbs.
RAKHL	1 3/16	3.2 1/8	47.63 1 7/8	96.8 3 13/16	49.2 1 15/16	127.0 5	174.6 6 7/8	50.8 2	17.5 11/16	14.3 9/16	25.4 1	2.4 3/32	44.5 1 3/4	30.2 1 3/16	41.70 1 41/64	12 1/2	1103KRS	S1103K	A11414	2.182 4.81
RAKHL RAKHL	1 3/8 1 7/16	4.8 3/16	53.98 2 1/8	106.4 4 3/16	55.2 2 11/64	144.5 5 11/16	201.6 7 15/16	51.6 2 1/32	19.0 3/4	14.3 9/16	30.2 1 3/16	3.2 1/8	54.0 2 1/8	32.5 1 9/32	48.02 1 57/64	12 1/2	1106KRS 1107KRS	S1106K S1107K	A11199	2.912 6.42
RAKHL	1 15/16	6.4 1/4	63.50 2 1/2	129.4 5 3/32	65.1 2 9/16	171.4 6 3/4	241.3 9 1/2	63.5 2 1/2	22.2 7/8	17.5 11/16	36.5 1 7/16	4.0 5/32	69.8 2 3/4	38.1 1 1/2	63.90 2 33/64	16 5/8	1115KRS	S1115K	A11357	5.094 11.23
RAKHL	2 3/16	6.4 1/4	69.85 2 3/4	142.9 5 5/8	73.4 2 57/64	184.2 7 1/4	260.4 10 1/4	76.2 3	27.0 1 1/16	20.6 13/16	36.5 1 7/16	4.4 11/64	76.2 3	43.7 1 23/32	71.00 2 51/64	16 5/8	1203KRS	S1203K	A11358	6.722 14.82
RAKHL[1]	2 7/16	6.4 1/4	76.20 3	158.8 6 1/4	78.6 3 3/32	203.2 8	285.8 11 1/4	82.6 3 1/4	27.0 1 1/16	20.6 13/16	41.3 1 5/8	4.8 3/16	84.1 3 5/16	46.8 1 27/32	78.20 3 5/64	16 5/8	1207KRS	S1207K	–	8.210 18.10
RAKHL	2 15/16	6.4 1/4	88.90 3 1/2	181.0 7 1/4	113.5 3 15/32	228.6 9	330.2 13	88.9 3 1/2	31.8 1 1/4	23.8 15/16	50.8 2	8.7 11/32	101.6 4	54.8 2 5/32	118.70 3 43/64	20 3/4	1215KRS	S1215K	T-28261	11.785 25.98

[1]Special order.

08-19-13 DRAFT

YASM MEDIUM-DUTY SERIES SET SCREW LOCK

- Timken YASM medium-duty pillow blocks feature the GYM-KRRB bearing inserts.
- Timken YASM medium-duty pillow blocks are ideal for conveyer, fan and blower, sawmill, and feed and grain handling applications.
- The cast-iron housings are durable, powder-coated and maintain an excellent finish, while resisting corrosion, chemicals and weather exposure.
- These pillow blocks incorporate premium features designed to extend bearing life.

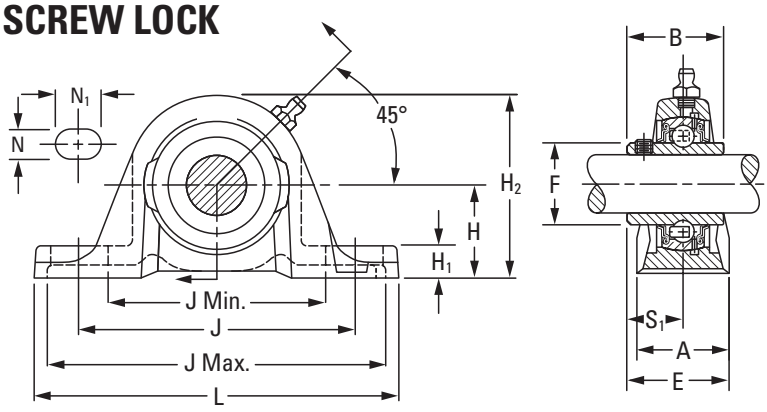
Suggested shaft tolerances:

1 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;

2 in. – 3 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: YASM 1 7/16 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
YASM	GYM-KRRB	Page A-56

Unit	Shaft Dia.	H	H_2	B	L	J	J min.	J max.	A	H_1	F	N	N_1	S_1	E	Bolt Size	Bearing No.
	in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	
YASM	1	42.86 1 11/16	83.30 3 9/32	38.10 1 1/2	157.2 6 3/16	117.5 4 5/8	93.70 3 11/16	141.30 5 9/16	39.70 1 9/16	16.70 21/32	40.31 1.587	14.22 9/16	23.88 15/16	22.20 7/8	42.070 1 21/32	12 1/2	GYM1100KRRB
YASM	1 3/16	47.62 1 7/8	93.60 3 11/16	42.90 1 11/16	166.7 6 9/16	130.2 5 1/8	105.60 4 5/32	154.80 6 3/32	45.20 1 25/32	18.30 23/32	48.84 1.844	14.22 9/16	24.64 31/32	25.40 1	48.020 1 57/64	12 1/2	GYM1103KRRB
YASM	1 7/16	53.98 2 1/8	104.80 4 1/8	49.20 1 15/16	179.4 7 1/16	136.5 5 3/8	110.30 4 11/32	162.70 6 13/16	47.60 1 7/8	23.00 29/32	52.27 2.058	14.22 9/16	26.16 1 1/32	30.20 1 3/16	53.980 2 1/8	12 1/2	GYM1107KRRB
YASM	1 1/2	53.98 2 1/8	106.30 4 3/16	49.20 1 15/16	191.3 7 17/32	149.2 5 7/8	120.70 4 3/4	177.80 7	50.80 2	19.10 3/4	57.92 2.280	14.22 9/16	28.45 1 1/8	30.20 1 3/16	55.560 2 3/16	12 1/2	GYM1108KRRB
YASM	1 11/16	57.15	114.30	51.60	200.0	157.9	134.10	183.40	55.60	19.10	62.84	17.53	23.88	32.50	60.330	16	GYM1111KRRB
YASM	1 3/4	2 1/4	4 1/2	2 1/32	7 7/8	6 7/32	5 9/32	7 5/32	2 3/16	3/4	2.474	11/16	15/16	1 9/32	2 3/8	5/8	GYM1112KRRB
YASM	1 15/16	63.50	126.20	55.60	222.3	176.2	146.90	205.60	54.80	20.60	69.77	18.26	29.46	33.30	61.910	16	GYM1115KRRB
YASM	2	2 1/2	4 31/32	2 3/16	8 3/4	6 15/16	5 25/32	8 3/32	2 5/32	13/16	2.747	23/32	1 5/32	1 5/16	2 7/16	5/8	GYM1200KRRB
YASM	2 3/16	69.85	138.90	65.10	239.7	188.1	158.80	217.50	60.30	23.80	76.48	18.26	29.46	39.10	69.850	16	GYM1203KRRB
YASM	2 1/4	2 3/4	5 15/32	2 9/16	9 7/16	7 13/32	6 1/4	8 9/16	2 3/8	15/16	3.011	23/32	1 5/32	1 9/16	2 3/4	5/8	GYM1204KRRB
YASM	2 7/16	76.20	153.99	77.78	266.7	203.2	168.28	238.13	73.02	33.34	86.92	20.57	35.05	42.86	79.375	20	GYM1207KRRB
YASM	2 1/2	3	6 1/16	3 1/16	10 1/2	8	6 5/8	9 3/8	2 7/8	1 5/16	3.422	13/16	1 3/8	1 11/16	3 1/8	3/4	GYM1208KRRB
YASM	2 11/16	88.90 3 1/2	177.80 7	93.66 3 11/16	330.2 13	228.6 9	177.80 7	279.40 11	88.90 3 1/2	31.75 1 1/4	91.90 3.618	23.88 15/16	50.08 2	44.45 1 3/4	93.660 3 11/16	20 3/4	GYM1211KRRB
YASM	2 15/16	88.90	177.80	93.66	330.2	228.6	177.80	279.40	88.90	31.75	91.90	23.88	50.08	44.45	93.660	20	GYM1215KRRB
YASM	3	3 1/2	7	3 11/16	13	9	7	11	3 1/2	1 1/4	3.618	15/16	2	1 3/4	3 11/16	3/4	GYM1300KRRB

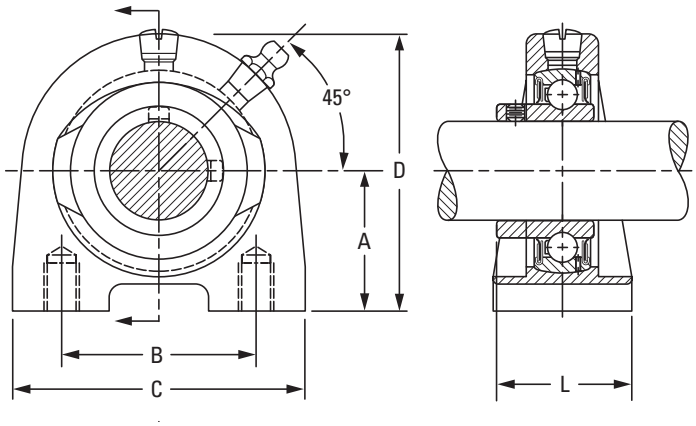
08-19-13 DRAFT

STB SERIES

- STB two-bolt housed units come assembled and ready for mounting.
- These housed units are ideal for applications where space is limited, bolt screws are accessed from the bottom of the unit, loads are not severe and reversing moments do not occur.
- The units are assembled with GYA-RRB bearings with positive-contact, land-riding seals and set screw locking.
- The units are factory-prelubricated, but a grease fitting is provided for relubrication if required.

To order, specify UNIT and SHAFT DIAMETER.

Example: STB 1 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
STB	GYA-RRB	Page A-54

Unit	Shaft Dia.	A	B	C	D	F	H	N	L	Bearing No.	Housing No.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.		
STB	3/4	**32.3** 1 5/16	**50.80** 2	**73.03** 2 7/8	**71.12** 2 13/32	**18.30** 23/32	**36.50** 1 7/16	**3/8-16**	**36.50** 1 7/16	GYA012RRB	T-90001
STB	**20**									GYAE20RRB	
STB	7/8									GYA014RRB	T-39343
STB	15/16	**36.5** 1 7/16	**50.80** 2	**76.20** 3	**71.44** 2 13/16	**18.30** 23/32	**36.50** 1 7/16	**3/8-16**	**37.70** 1 31/64	GYA015RRB	
STB	1									GYA100RRB	
STB	**25**									GYAE25RRB	
STB	1 1/8									GYA102RRB	T-90003
STB	1 3/16	**42.9** 1 11/16	**76.20** 3	**101.60** 4	**82.60** 3 1/4	**19.05** 3/4	**38.10** 1 1/2	**7/16-14**	**42.07** 1 21/32	GYA103RRB	
STB	1 1/4 S									GYA103RRB2	
STB	**30**									GYAE30RRB	
STB	1 1/4									GYA104RRB	T-40256
STB	1 3/8	**47.6** 1 7/8	**82.60** 3 1/4	**107.95** 4 1/4	**93.66** 3 11/16	**22.23** 7/8	**44.45** 1 3/4	**1/2-13**	**48.02** 1 57/64	GYA106RRB	
STB	1 7/16									GYA107RRB3	
STB	**35**									GYAE35RRB	
STB	1 1/2	**49.2** 1 15/16	**88.90** 3 1/2	**117.48** 4 5/8	**100.01** 3 15/16	**23.81** 15/16	**47.63** 1 7/8	**1/2-13**	**51.20** 2 1/64	GYA108RRB	T-90005
STB	**40**									GYAE40RRB	
STB	1 5/8									GYA110RRB	T-90008
STB	1 11/16	**54.0** 2 1/8	**95.25** 3 3/4	**127.00** 5	**107.95** 4 1/4	**25.40** 1	**50.80** 2	**1/2-13**	**53.98** 2 1/8	GYA111RRB	
STB	1 3/4									GYA112RRB	
STB	**45**									GYAE45RRB	
STB	1 15/16	**57.2** 2 1/4	**101.60** 4	**139.70** 5 1/2	**114.30** 4 1/2	**25.40** 1	**50.80** 2	**5/8-11**	**56.36** 2 7/32	GYA115RRB	T-90010
STB	2									GYA200RRB	
STB	**50**									GYAE50RRB	

NOTE: Shaft diameter with an S = smaller housing.

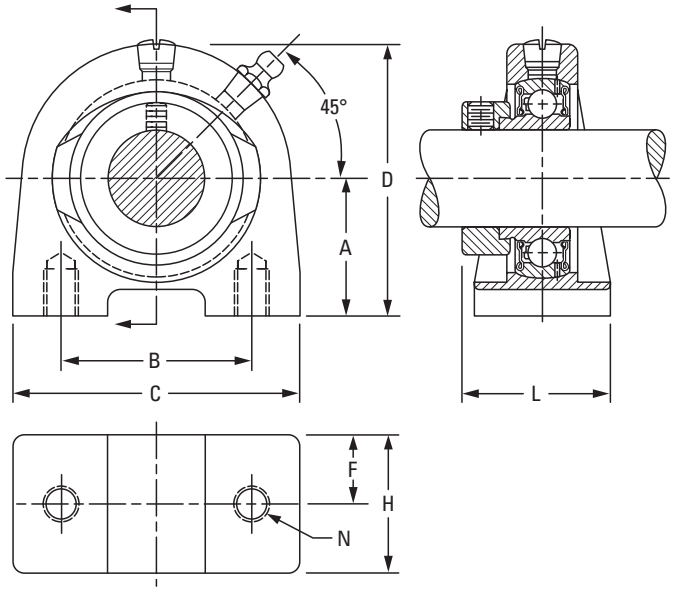
08-19-13 DRAFT

VTB SERIES

- VTB two-bolt housed units are nearly identical to the STB unit, except they are assembled with the GRA-RRB bearings and positive-contact R-seals and locking collar.

To order, specify UNIT and SHAFT DIAMETER.

Example: VTB 1 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
VTB	GRA-RRB	Page A-50

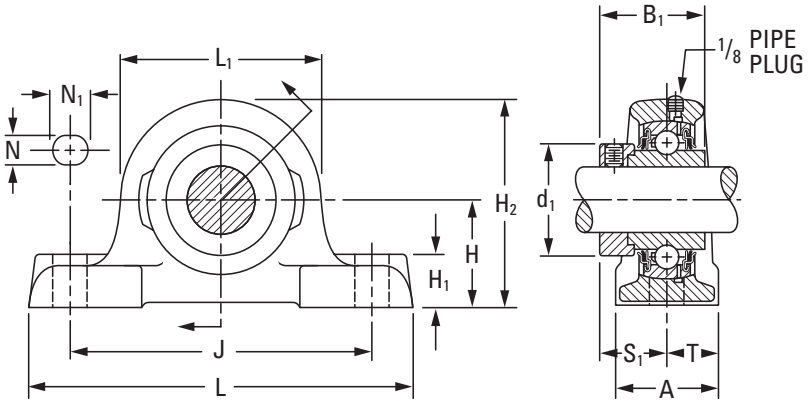
Unit	Shaft Dia.	A	B	C	D	F	H	N	L	Bearing No.	Collar No.	Housing No.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			
VTB	3/4	**32.3**	**50.80**	**73.03**	**71.12**	**18.30**	**36.50**	**3/8-16**	**41.67**	GRA012RRB	S1012K	T-90001
VTB	**20**	1 5/16	2	2 7/8	2 13/32	23/32	1 7/16		1 41/64	GRAE20RRB	SE20K	
VTB	7/8									GRA014RRB	S1014K	
VTB	15/16	**36.5**	**50.80**	**76.20**	**71.44**	**18.30**	**36.50**	**3/8-16**	**41.67**	GRA015RRB	S1015K	T-39343
VTB	1	1 7/16	2	3	2 13/16	23/32	1 7/16		1 41/64	GRA100RRB	S1100K C2	
VTB	**25**									GRAE25RRB	SE25K	
VTB	1 1/8									GRA102RRB	S1102K	
VTB	1 3/16	**42.9**	**76.20**	**101.60**	**82.60**	**19.05**	**38.10**	**7/16-14**	**45.64**	GRA103RRB	S1103K	T-90003
VTB	1 1/4 S	1 11/16	3	4	3 1/4	3/4	1 1/2		1 51/64	GRA103RRB2	S1103K3	
VTB	**30**									GRAE30RRB	SE30K	
VTB	1 1/4									GRA104RRB	S1104K C1	
VTB	13/8	**47.6**	**82.60**	**107.95**	**93.66**	**22.23**	**44.45**	**1/2-13**	**51.60**	GRA106RRB	S1106K C1	T-40256
VTB	1 7/16	1 7/8	3 1/4	4 1/4	3 11/16	7/8	1 3/4		2 1/32	GRA107RRB3	S1107K C1	
VTB	**35**									GRAE35RRB	SE35K	
VTB	1 1/2	**49.2**	**88.90**	**117.48**	**100.01**	**23.81**	**47.63**	**1/2-13**	**56.36**	GRA108RRB	S1108KT	T-90005
VTB	**40**	1 15/16	3 1/2	4 5/8	3 15/16	15/16	1 7/8		2 7/32	GRAE40RRB	SE40K	
VTB	1 5/8									GRA110RRB	S1110K	
VTB	1 11/16	**54.0**	**95.25**	**127.00**	**107.95**	**25.40**	**50.80**	**1/2-13**	**57.94**	GRA111RRB	S1111K	T-90008
VTB	1 3/4	2 1/8	3 3/4	5	4 1/4	1	2		2 9/32	GRA112RRB	S1112K	
VTB	**45**									GRAE45RRB	SE45K	
VTB	1 15/16									GRA115RRB	S1115K	
VTB	2 S	**57.2**	**101.60**	**139.70**	**114.30**	**25.40**	**50.80**	**5/8-11**	**57.94**	GRA200RRB	S1115K2	T-90010
VTB	**50**	2 1/4	4	5 1/2	4 1/2	1	2		2 9/32	GRAE50RRB	SE50K	

NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

RAO, LAO HEAVY SERIES

- This is a compact, economic, heavy-duty ball bearing housed unit.
- This series incorporates the tested and proven features of the Timken standard RAK-series pillow block.
- RAO-series bearings are equipped to handle heavy capacity.
- LAO-series bearings are equipped with heavy-series GN-KLLB wide-inner-ring ball bearings.
- The units are supplied with a self-locking collar that eliminates shaft shoulders, machining adapters and sleeves, and locknuts that provide easy mounting.



Suggested shaft tolerances:

1 3/16 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RAO 1 7/16 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RAO	GN-KRRB	Page A-57
LAO	GN-KLLB	Page A-59

Unit[1]	Shaft Dia.	H	H_2	B_1	L_1	J	L	A	H_1	N	N_1	d_1	S_1	T	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in.	mm in	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.			New	kg lbs.
RAO	1 3/16	**47.63** 1 7/8	**93.7** 3 11/16	**50.0** 1 31/32	**90.5** 3 9/16	**136.5** 5 3/8	**173.0** 6 13/16	**49.2** 1 15/16	**22.2** 7/8	**15.9** 5/8	**19.0** 3/4	**49.2** 1 15/16	**32.5** 1 9/32	**24.6** 31/32	**12** 1/2	GN103KRRB	SN103K	T-18798	**1.898** 4.18
RAO	1 7/16	**53.98** 2 1/8	**104.0** 4 3/32	**51.6** 2 1/32	**101.6** 4	**152.4** 6	**192.1** 7 9/16	**54.0** 2 1/8	**23.8** 15/16	**15.9** 5/8	**19.0** 3/4	**55.6** 2 3/16	**33.3** 1 5/16	**27.0** 1 1/16	**12** 1/2	GN107KRRB	SN107K	T-18626	**2.406** 5.30
RAO	1 1/2	**60.33** 2 3/8	**117.5** 4 5/8	**57.2** 2 1/4	**114.3** 4 1/2	**171.4** 6 3/4	**215.9** 8 1/2	**60.3** 2 3/8	**27.0** 1 1/16	**19.0** 3/4	**25.4** 1	**63.5** 2 1/2	**37.3** 1 15/32	**30.2** 1 3/16	**16** 5/8	GN108KRRB	SN108K	T-18800	**3.755** 8.27
RAO	1 11/16	**66.68** 2 5/8	**130.2** 5 1/8	**58.7** 2 5/16	**127.0** 5	**190.5** 7 1/2	**239.7** 9 7/16	**66.7** 2 5/8	**30.2** 1 3/16	**19.0** 3/4	**25.4** 1	**69.8** 2 3/4	**38.9** 1 17/32	**33.3** 1 5/16	**16** 5/8	GN111KRRB	SN111K	T-18802	**5.030** 11.08
RAO	1 15/16	**71.44** 2 13/16	**141.3** 5 9/16	**66.7** 2 5/8	**138.1** 5 7/16	**209.6** 8 1/4	**265.1** 10 7/16	**73.0** 2 7/8	**33.3** 1 5/16	**19.0** 3/4	**25.4** 1	**76.2** 3	**42.1** 1 21/32	**36.5** 1 7/16	**16** 5/8	GN115KRRB	SN115K	T-18804	**6.265** 13.80
RAO	2 3/16	**77.79** 3 1/16	**153.2** 6 1/32	**73.0** 2 7/8	**150.8** 5 15/16	**228.6** 9	**287.3** 11 5/16	**79.4** 3 1/8	**36.5** 1 7/16	**22.2** 7/8	**28.6** 1 1/8	**82.6** 3 1/4	**45.2** 1 25/32	**39.7** 1 9/16	**20** 3/4	GN203KRRB	SN203K	T-18806	**7.940** 17.49
RAO	2 7/16	**84.14** 3 5/16	**165.9** 6 17/32	**79.4** 3 1/8	**163.5** 6 7/16	**247.6** 9 3/4	**312.7** 12 5/16	**84.1** 3 5/16	**38.1** 1 1/2	**22.2** 7/8	**28.6** 1 1/8	**88.9** 3 1/2	**48.4** 1 29/32	**42.1** 1 21/32	**20** 3/4	GN207KRRB	SN207K	T-18808	**9.761** 21.50
RAO	2 11/16	**96.84** 3 13/16	**192.1** 7 9/16	**88.9** 3 1/2	**188.9** 7 7/16	**285.8** 11 1/4	**360.4** 14 3/16	**96.0** 3 13/16	**44.4** 1 3/4	**25.4** 1	**33.3** 1 5/16	**101.6** 4	**54.8** 2 5/32	**48.4** 1 29/32	**22** 7/8	GN211KRRB	SO211K	T-18810	**15.322** 33.75
RAO	2 15/16	**104.78** 4 1/8	**204.8** 8 1/16	**100.0** 3 15/16	**201.6** 7 15/16	**304.8** 12	**384.2** 15 1/8	**103.2** 4 1/16	**47.6** 1 7/8	**25.4** 1	**33.3** 1 5/16	**112.7** 4 7/16	**62.7** 2 15/32	**51.6** 2 1/32	**22** 7/8	GN215KRRB	SN215K	T-18601	**18.205** 40.10

[1]LAO assembled with GN-KLLB bearing.

08-19-13 DRAFT

RSA, LSA INDUSTRIAL SERIES

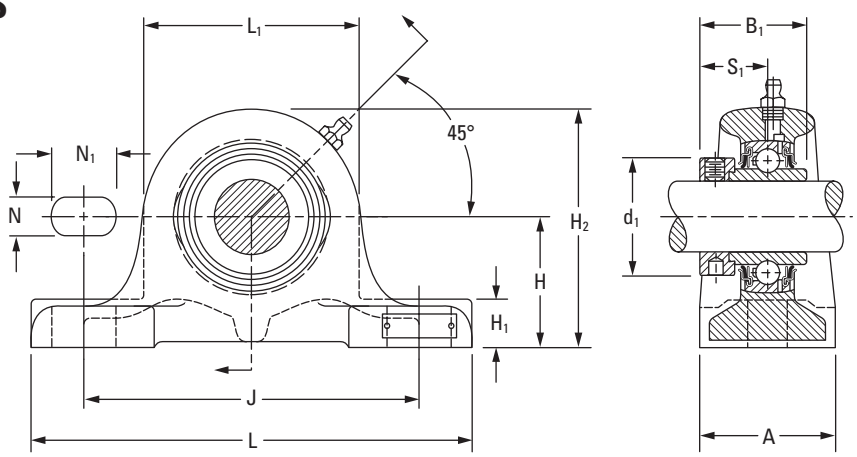
- RSA series is equipped with G-KRRB wide inner ring ball bearings.
- LSA series is equipped with G-KLLB wide inner ring bearings.
- Pillow blocks are prelubricated and ready for immediate use.
- A grease fitting is provided for relubrication if required.
- All units are supplied with a self-locking collar.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in.,
nominal to -0.013 mm, -0.0005 in.;
2 in. – 3 15/16 in.,
nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RSA 1 7/16 in.



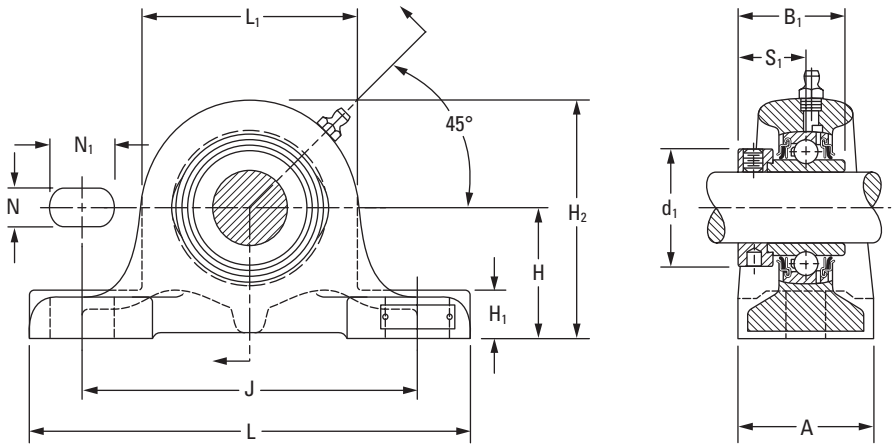
BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RSA	G-KRRB	Page A-34
LSA	G-KLLB	Page A-37

Unit	Shaft Dia.	H	H_2	B_1	L_1	J	L	A	H_1	N	N_1	d_1	S_1	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			New	**kg** lbs.
RSA	1/2														G1008KRRB	S1008K		
RSA	5/8	**31.75**	**58.7**	**37.3**	**54.0**	**96.8**	**122.2**	**31.8**	**12.7**	**11.1**	**14.3**	**30.2**	**23.4**	**10**	G1010KRRB	S1010K	T-22784	**0.681**
RSA	11/16	1 1/4	2 5/16	1 15/32	2 1/8	3 13/16	4 13/16	1 1/4	1/2	7/16	9/16	1 3/16	59/64	3/8	G1011KRRB	S1011K		1.50
RSA	**17**														GE17KRRB	SE17K		
RSA	3/4	**44.45**	**76.2**	**43.7**	**63.5**	**127.0**	**165.1**	**50.8**	**14.3**	**14.3**	**19.0**	**33.3**	**26.6**	**12**	G1012KRRB	S1012K	T-22741	**1.226**
RSA	**20**	1 3/4	3	1 23/32	2 1/2	5	6 1/2	2	9/16	9/16	3/4	1 5/16	1 3/64	1/2	GE20KRRB	SE20K		2.70
RSA	7/8														G1014KRRB	S1014K		
RSA	15/16	**50.80**	**85.7**	**44.4**	**69.8**	**139.7**	**177.8**	**54.0**	**15.9**	**14.3**	**19.0**	**38.1**	**27.0**	**12**	G1015KRRB	S1015K	T-22716	**1.521**
RSA	1	2	3 3/8	1 3/4	2 3/4	5 1/2	7	2 1/8	5/8	9/16	3/4	1 1/2	1 1/16	1/2	G1100KRRB	S1100K		3.35
RSA	**25**														GE25KRRB	SE25K		
RSA	1 1/16														G1101KRRB	S1101K		
RSA	1 1/8	**50.80**	**91.3**	**48.4**	**81.0**	**139.7**	**177.8**	**54.0**	**17.5**	**15.9**	**20.6**	**44.1**	**30.2**	**12**	G1102KRRB	S1102K	T-22725	**1.789**
RSA, LSA	1 3/16	2	3 19/32	1 29/32	3 3/16	5 1/2	7	2 1/8	11/16	5/8	13/16	1 47/64	1 3/16	1/2	G1103KRRB	S1103K		3.94
RSA	**30**														GE30KRRB	SE30K		
RSA, LSA	1 1/4														G1104KRRB	S1104K		
RSA	1 5/16														G1105KRRB	S1105K		
RSA	1 3/8	**60.33**	**111.1**	**51.2**	**101.6**	**158.8**	**209.6**	**66.7**	**22.2**	**19.0**	**31.8**	**54.0**	**32.5**	**16**	G1106KRRB	S1106K	T-22382	**3.260**
RSA, LSA	1 7/16	2 3/8	4 3/8	2 1/64	4	6 1/4	8 1/4	2 5/8	7/8	3/4	1 1/4	2 1/8	1 9/32	5/8	G1107KRRB	S1107K		7.18
RSA	**35**														GE35KRRB	SE35K		
RSA	1 1/2														G1108KRRB	S1108KT		
RSA	1 9/16	**60.33**	**111.1**	**56.4**	**101.6**	**168.3**	**209.6**	**60.3**	**19.0**	**19.0**	**22.2**	**60.3**	**34.9**	**16**	G1109KRRB	S1109KT	T-22752	**2.928**
RSA	**40**	2 3/8	4 3/8	2 7/32	4	6 5/8	8 1/4	2 3/8	3/4	3/4	7/8	2 3/8	1 3/8	5/8	GE40KRRB	SE40K		6.45

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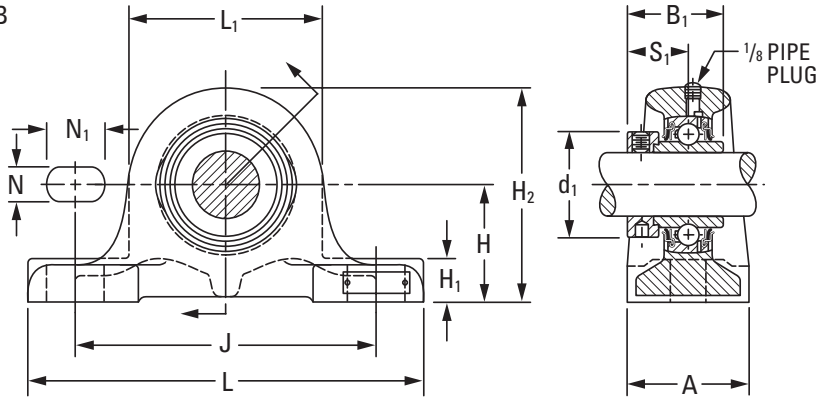
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Unit	Shaft Dia.	H	H_2	B_1	L_1	J	L	A	H_1	N	N_1	d_1	S_1	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			New	**kg** lbs.
RSA	1 5/8														G1110KRRB	S1110K		
RSA, LSA	1 11/16	**60.33**	**114.3**	**56.4**	**108.0**	**168.3**	**209.6**	**60.3**	**20.6**	**19.0**	**23.8**	**63.5**	**34.9**	**16**	G1111KRRB	S1111K	T-22701	**3.064**
RSA	1 3/4	2 3/8	4 1/2	2 7/32	4 1/4	6 5/8	8 1/4	2 3/8	13/16	3/4	15/16	2 1/2	1 3/8	5/8	G1112KRRB	S1112K		6.75
RSA	**45**														GE45KRRB	SE45K		
RSA	1 7/8														G1114KRRB	S1114K		
RSA, LSA	1 15/16	**69.85**	**130.2**	**62.7**	**120.6**	**209.6**	**269.9**	**69.8**	**26.2**	**19.0**	**34.9**	**69.8**	**38.1**	**16**	G1115KRRB	S1115K	T-22384	**4.885**
RSA	**50**	2 3/4	5 1/8	2 15/32	4 3/4	8 1/4	10 5/8	2 3/4	1 1/32	3/4	1 3/8	2 3/4	1 1/2	5/8	GE50KRRB	SE50K		10.76
RSA	2														G1200KRRB	S1200K		
RSA	2 1/8	**79.38**	**142.1**	**71.4**	**125.4**	**228.6**	**288.9**	**79.4**	**25.4**	**19.0**	**33.3**	**76.2**	**43.7**	**16**	G1202KRRB	S1202K	T-22696	**6.022**
RSA, LSA	2 3/16	3 1/8	5 19/32	2 13/16	4 15/16	9	11 3/8	3 1/8	1	3/4	1 5/16	3	1 23/32	5/8	G1203KRRB	S1203K		13.22
RSA	**55**														GE55KRRB	SE55K		
RSA	2 1/4														G1204KRRB	S1204K		
RSA	2 3/8	**79.38**	**149.2**	**77.8**	**139.7**	**228.6**	**288.9**	**79.4**	**28.6**	**22.2**	**28.6**	**84.1**	**46.8**	**20**	G1206KRRB	S1206K	T-22743	**6.901**
RSA, LSA	2 7/16	3 1/8	5 7/8	3 1/16	5 1/2	9	11 3/8	3 1/8	1 1/8	7/8	1 1/8	3 5/16	1 27/32	3/4	G1207KRRB	S1207K		15.20
RSA	**60**														GE60KRRB	SE60K		
RSA	2 11/16	**95.25**	**173.0**	**82.6**	**155.6**	**260.4**	**320.7**	**88.9**	**33.3**	**22.2**	**34.9**	**96.8**	**45.2**	**20**	G1211KRRB	S1211KT	T-22748	**9.997**
RSA	**70**	3 3/4	6 13/16	3 1/4	6 1/8	10 1/4	12 5/8	3 1/2	1 5/16	7/8	1 3/8	3 13/16	1 25/32	3/4	GE70KRRB	SE70K		22.02
RSA	2 15/16	**95.25**	**177.8**	**92.1**	**196.1**	**206.4**	**320.7**	**88.9**	**38.1**	**22.2**	**31.8**	**101.6**	**54.8**	**20**	G1215KRRB	S1215K	T-22386	**10.683**
RSA	**75**	3 3/4	7	3 5/8	7 23/32	10 1/4	12 5/8	3 1/2	1 1/2	7/8	1 1/4	4	2 5/32	3/4	GE75KRRB	SE75K		23.53

08-19-13 DRAFT

RSAO, LSAO HEAVY SERIES

- RSAO pillow blocks are equipped with GN-KRRB wide-inner-ring ball bearings.
- LSAO pillow blocks are equipped with GN-KLLB wide-inner-ring ball bearings.
- All units are suited for installations where the load is heavy in proportion to the shaft diameter or where considerable shock loads exist.
- All units are for use in wet or extremely dirty conditions.
- These units are prelubricated and ready for immediate use. A grease fitting is also provided for relubrication if required.
- All units are supplied with a self-locking collar.



Suggested shaft tolerances:

1 1/16 in., nominal to -0.013 mm, -0.0005 in.;

2 in. – 3 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RSAO 1 7/16 in.

BEARING DATA

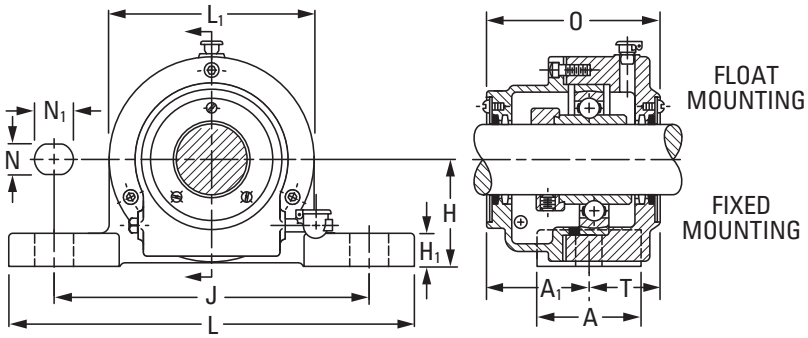
Unit	Bearing No.	Dimensions and Load Ratings
RSAO	GN-KRRB	Page A-57
LSAO	GN-KLLB	Page A-59

Unit	Shaft Dia.	H	H_2	B_1	L_1	J	L	A	H_1	N	N_1	d_1	S_1	Bolt Size	Bearing No.		Collar No.	Housing No.	Unit Wt.
	in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	RSAO	LSAO		New	kg lbs.
RSAO, LSAO	1 3/16	**60.33** 2 3/8	**108.0** 4 1/4	**50.0** 1 31/32	**95.2** 3 3/4	**168.3** 6 5/8	**209.6** 8 1/4	**60.3** 2 3/8	**22.2** 7/8	**15.9** 5/8	**25.4** 1	**48.7** 1.918	**32.5** 1.280	**12** 1/2	GN103KRRB	(KLLB)	SN103K	T-22678	**2.937** 6.47
RSAO, LSAO	1 7/16	**69.85** 2 3/4	**122.2** 4 13/16	**51.6** 2 1/32	**104.8** 4 1/8	**209.6** 8 1/4	**269.9** 10 5/8	**69.8** 2 3/4	**23.8** 15/16	**19.0** 3/4	**28.6** 1 1/8	**55.1** 2.168	**33.3** 1 5/16	**16** 5/8	GN107KRRB	(KLLB)	SN107K	T-22496	**4.154** 9.15
RSAO, LSAO	1 1/2	**79.38** 3 1/8	**136.6** 5 3/8	**57.2** 2 1/4	**114.3** 4 1/2	**228.6** 9	**288.9** 11 3/8	**79.4** 3 1/8	**27.0** 1 1/16	**19.0** 3/4	**28.6** 1 1/8	**63.0** 2.480	**37.3** 1 15/32	**16** 5/8	GN108KRRB	(KLLB)	SN108K	T-22672	**5.857** 12.90
RSAO, LSAO	1 11/16	**79.38**	**142.9**	**58.7**	**127.0**	**228.6**	**288.9**	**79.4**	**30.2**	**19.0**	**28.6**	**69.3**	**38.9**	**16**	GN111KRRB	(KLLB)	SN111K	T-22498	**6.560**
RSAO	1 3/4	3 1/8	5 5/8	2 5/16	5	9	11 3/8	3 1/8	1 3/16	3/4	1 1/8	2.730	1 17/32	5/8	GN112KRRB	–	SN112K	–	14.45
RSAO, LSAO	1 15/16	**79.38** 3 1/8	**148.4** 5 27/32	**66.7** 2 5/8	**138.1** 5 7/16	**228.6** 9	**288.9** 11 3/8	**79.4** 3 1/8	**33.3** 1 5/16	**19.0** 3/4	**28.6** 1 1/8	**75.7** 2.980	**42.1** 1 21/32	**16** 5/8	GN115KRRB	(KLLB)	SN115K	T-22502	**7.246** 15.96
RSAO	2	**95.25**	**170.7**	**73.0**	**150.8**	**260.4**	**320.7**	**88.9**	**36.5**	**22.2**	**34.9**	**82.0**	**45.2**	**20**	GN200KRRB	–	SN200K	T-22500	**10.192**
RSAO, LSAO	2 3/16	3 3/4	6 23/32	2 7/8	5 15/16	10 1/4	12 5/8	3 1/2	1 7/16	7/8	1 3/8	3.230	1 25/32	3/4	GN203KRRB	(KLLB)	SN203K	–	22.45
RSAO, LSAO	2 7/16	**104.78** 4 1/8	**186.5** 7 11/32	**79.4** 3 1/8	**163.5** 6 7/16	**285.8** 11 1/4	**349.2** 13 3/4	**101.6** 4	**38.1** 1 1/2	**22.2** 7/8	**34.9** 1 3/8	**88.4** 3.480	**48.4** 1 29/32	**20** 3/4	GN207KRRB	(KLLB)	SN207K	T-22494	**16.144** 35.56
RSAO, LSAO	2 11/16	**115.89** 4 9/16	**210.3** 8 9/32	**88.9** 3 1/2	**188.9** 7 7/16	**304.8** 12	**390.5** 15 3/8	**111.1** 4 3/8	**44.4** 1 3/4	**25.4** 1	**34.9** 1 3/8	**101.1** 3.980	**54.8** 2 5/32	**22** 7/8	GN211KRRB	(KLLB)	SO211K	T-22492	**19.295** 42.50
RSAO, LSAO	2 15/16	**115.89** 4 9/16	**217.5** 8 9/16	**100.0** 3 15/16	**203.2** 8	**314.3** 12 3/8	**390.5** 15 3/8	**111.1** 4 3/8	**47.6** 1 7/8	**25.4** 1	**34.9** 1 3/8	**112.2** 4.418	**62.7** 2 15/32	**22** 7/8	GN215KRRB	(KLLB)	SN215K	T-22490	**20.090** 44.25
RSAO	3 3/16	**115.89** 4 9/16	**223.0** 8 25/32	**106.4** 4 3/16	**214.3** 8 7/16	**314.3** 12 3/8	**390.5** 15 3/8	**111.1** 4 3/8	**49.2** 1 15/16	**25.4** 1	**44.4** 1 3/4	**119.1** 4.688	**65.9** 2 19/32	**22** 7/8	GN303KRRB	–	SN303K	T-22444	**22.814** 50.25
RSAO	3 7/16	**130.18** 5 1/8	**250.8** 9 7/8	**115.9** 4 9/16	**241.3** 9 1/2	**339.7** 13 3/8	**409.6** 16 1/8	**120.6** 4 3/4	**57.2** 2 1/4	**28.6** 1 1/8	**54.0** 2 1/8	**133.4** 5.250	**73.8** 2 29/32	**24** 1	GN307KRRB	–	SN307K	T-22446	**30.986** 68.25
RSAO	3 15/16	**144.46** 5 11/16	**281.0** 11 1/16	**128.6** 5 1/16	**273.0** 10 3/4	**374.6** 14 3/4	**439.7** 17 5/16	**130.2** 5 1/8	**65.1** 2 9/16	**28.6** 1 1/8	**44.4** 1 3/4	**146.0** 5.750	**78.6** 3 3/32	**24** 1	GN315KRRB	–	SN315K	T-22448	**40.633** 89.50

08-19-13 DRAFT

SAL INDUSTRIAL SERIES, FIXED AND FLOATING TYPES

- These types are designed for applications where normal to high temperatures are encountered and applications where one or more floating bearing units are required.
- The floating unit allows the bearing to move axially as the shaft expands from rising temperatures. The fixed unit maintains shaft location.
- The bearings have a loose internal fit.
- The SAL unit is equipped with a self-aligning SM wide-inner-ring bearing and a self-locking collar.
- The external aligning ring is fitted to the spherical surface of the outer ring.
- These types are equipped with oil-tight seals. They're normally fitted for oil lubrication, but they can be equipped for grease lubrication when specified.
- Before installation, lubricate with high-grade automotive oil, turbine oil or ball-bearing grease.
- The units are assembled with a spacer ring (fixed type). By removing the spacer ring, the assembly becomes a floating unit.



Suggested shaft tolerances:

1 3/16 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 3 7/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER and whether fixed or floating.

Example: SAL 1 7/16 in. (one fixed, one floating).

BEARING DATA

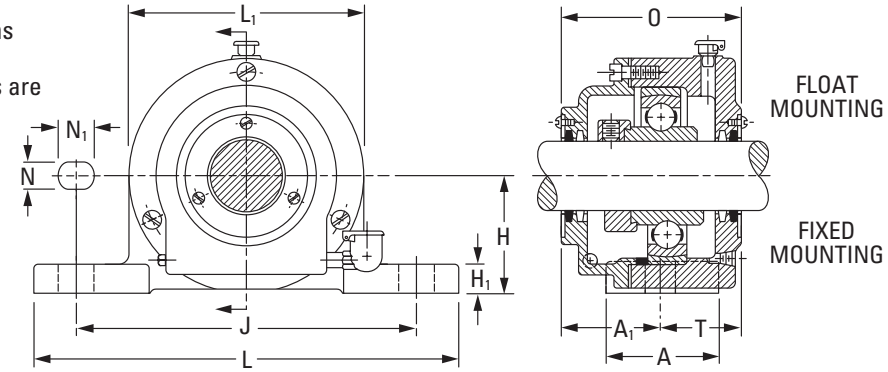
Unit	Bearing No.	Dimensions and Load Ratings
SAL	SM-KS	Page A-43

Unit	Shaft Dia.	Total Float	H	O	L_1	A	J	L	N	N_1	H_1	A_1	T	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in.	**mm** in.	**mm** in	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			New	**kg** lbs.
SAL	1 3/16	**6.4** 1/4	**50.80** 2	**97.6** 3 27/32	**96.8** 3 13/16	**54.0** 2 1/8	**139.7** 5 1/2	**177.8** 7	**15.9** 5/8	**19.0** 3/4	**17.5** 11/16	**56.4** 2 7/32	**41.3** 1 5/8	**12** 1/2	SM1103KS	S1103K	T-12127	**3.768** 8.30
SAL	1 1/4	**6.4** 1/4	**60.33** 2 3/8	**104.8** 4 1/8	**108.0** 4 1/4	**60.3** 2 3/8	**158.8** 6 1/4	**210.0** 8 1/4	**19.0** 3/4	**25.4** 1	**19.0** 3/4	**62.7** 2 15/32	**42.1** 1 21/32	**16** 5/8	SM1104KS	S1104K	T-13108	**5.239** 11.54
SAL	1 7/16	**6.4** 1/4	**60.33** 2 3/8	**104.8** 4 1/8	**108.0** 4 1/4	**60.3** 2 3/8	**158.8** 6 1/4	**210.0** 8 1/4	**19.0** 3/4	**25.4** 1	**19.0** 3/4	**62.7** 2 15/32	**42.1** 1 21/32	**16** 5/8	SM1107KS	S1107K	T-13108	**5.239** 11.54
SAL	1 1/2	**7.9** 5/16	**60.33** 2 3/8	**108.0** 4 1/4	**120.6** 4 3/4	**60.3** 2 3/8	**168.3** 6 5/8	**210.0** 8 1/4	**19.0** 3/4	**25.4** 1	**19.0** 3/4	**63.5** 2 1/2	**44.4** 1 3/4	**16** 5/8	SM1108KTS	S1108KT	T-12121	**6.143** 13.53
SAL	1 11/16	**7.9** 5/16	**60.33** 2 3/8	**110.3** 4 11/32	**120.6** 4 3/4	**60.3** 2 3/8	**168.3** 6 5/8	**210.0** 8 1/4	**19.0** 3/4	**25.4** 1	**19.0** 3/4	**65.9** 2 19/32	**44.4** 1 3/4	**16** 5/8	SM1111KS	S1111K	T-12121	**5.866** 12.92
SAL	1 15/16	**7.9** 5/16	**69.85** 2 3/4	**116.7** 4 19/32	**133.4** 5 1/4	**69.8** 2 3/4	**210.0** 8 1/4	**269.9** 10 5/8	**19.0** 3/4	**25.4** 1	**22.2** 7/8	**69.1** 2 23/32	**47.6** 1 7/8	**16** 5/8	SM1115KS	S1115K	T-12313	**8.113** 17.87
SAL	2 3/16	**7.9** 5/16	**79.38** 3 1/8	**137.3** 5 13/32	**146.0** 5 3/4	**79.4** 3 1/8	**228.6** 9	**288.9** 11 3/8	**19.0** 3/4	**25.4** 1	**22.2** 7/8	**79.4** 3 1/8	**57.9** 2 9/32	**16** 5/8	SM1203KS	S1203K	A-5845	**10.978** 24.18
SAL	2 7/16	**9.5** 3/8	**79.38** 3 1/8	**150.0** 5 29/32	**158.8** 6 1/4	**79.4** 3 1/8	**228.6** 9	**288.9** 11 3/8	**19.0** 3/4	**25.4** 1	**22.2** 7/8	**88.9** 3 1/2	**61.1** 2 13/32	**16** 5/8	SM1207KS	S1207K	A-5083	**12.894** 28.40
SAL	2 11/16	**7.1** 9/32	**95.25** 3 3/4	**156.4** 6 5/32	**171.4** 6 3/4	**88.9** 3 1/2	**259.7** 10 1/4	**320.7** 12 5/8	**22.2** 7/8	**28.6** 1 1/8	**27.0** 1 1/16	**92.1** 3 5/8	**64.3** 2 17/32	**20** 3/4	SM1211KTS	S1211K	T-18940	**15.889** 35.02
SAL	2 15/16	**9.9** 25/64	**95.25** 3 3/4	**173.8** 6 27/32	**190.5** 7 1/2	**88.9** 3 1/2	**259.7** 10 1/4	**320.7** 12 5/8	**22.2** 7/8	**28.6** 1 1/8	**27.0** 1 1/16	**100.8** 3 31/32	**73.0** 2 7/8	**20** 3/4	SM1215KS	S1215K	A-5088	**20.203** 44.50
SAL	3 7/16	**9.5** 3/8	**115.89** 4 9/16	**186.5** 7 11/32	**212.7** 8 3/8	**111.1** 4 3/8	**314.3** 12 3/8	**390.6** 15 3/8	**25.4** 1	**31.8** 1 1/4	**31.8** 1 1/4	**107.2** 4 7/32	**79.4** 3 1/8	**22** 7/8	SM1307KS	S1307K	A-5206	**33.482** 73.75

08-19-13 DRAFT

SAOL HEAVY SERIES, FIXED AND FLOATING TYPES

- These types are designed for applications with higher- than-usual temperatures or where one or more floating bearing units are required.
- The floating unit allows the bearing to move axially as the shaft expands from rising temperatures. The fixed unit maintains shaft location.
- The bearings have a loose internal fit.
- The SAOL unit is equipped with a self-aligning SMN wide-inner-ring ball bearing and a self-locking collar.
- The external aligning ring is fitted to the spherical surface of the outer ring.
- These types are equipped with oil-type seals. They're normally fitted for oil lubrication, but they can be equipped for grease lubrication when specified.
- Before installation, lubricate with high-grade automotive oil, turbine oil or ball-bearing grease.
- The units are assembled with a spacer ring (fixed type). By removing the spacer ring, the assembly becomes a floating unit.



Suggested shaft tolerances:

1 3/16 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 3 15/16 in., nominal to -0.025 mm, -0.0010 in.
Larger sizes, consult your Timken engineer.

To order, specify UNIT and SHAFT DIAMETER and whether fixed or floating.

Example: SAOL 1 7/16 in. (one fixed, one floating).

BEARING DATA

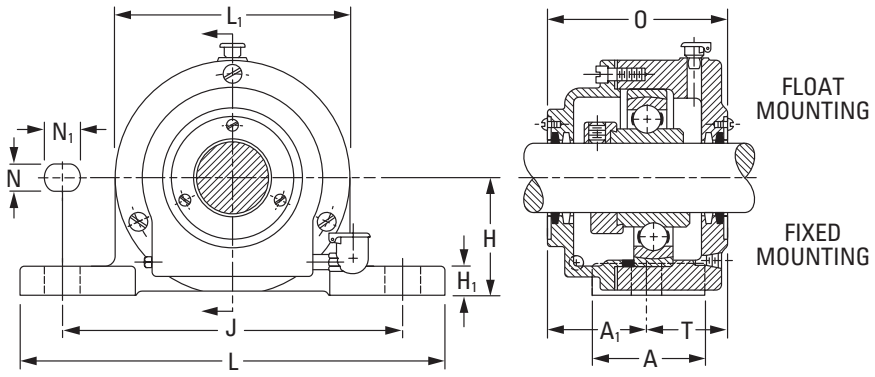
Unit	Bearing No.	Dimensions and Load Ratings
SAOL	SMN-KS	Page A-62

Unit	Shaft Dia.	Total Float	H	O	L_1	A	J	L	N	N_1	H_1	A_1	T	J_1[1]	Bolt		Bearing No.	Collar No.	Housing No.	Unit Wt.
															No.	Size				
	in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.		**mm** in.			New	**kg** lbs.
SAOL	1 3/16	**7.9** 5/16	**60.33** 2 3/8	**103.2** 4 1/16	**111.1** 4 3/8	**60.3** 2 3/8	**168.3** 6 5/8	**210.0** 8 1/4	**15.9** 5/8	**22.2** 7/8	**17.5** 11/16	**60.3** 2 3/8	**42.9** 1 11/16	–	2	**12** 1/2	SMN103KS	SN103K	T-12389	**5.521** 12.16
SAOL	1 7/16	**9.1** 23/64	**69.80** 2 3/4	**111.1** 4 3/8	**120.6** 4 3/4	**69.8** 2 3/4	**209.6** 8 1/4	**269.9** 10 5/8	**19.0** 3/4	**25.4** 1	**20.6** 13/16	**69.1** 2 23/32	**42.1** 1 21/32	–	2	**16** 5/8	SMN107KS	SN107K	A-4779	**7.037** 15.50
SAOL	1 1/2	**9.5** 3/8	**79.40** 3 1/8	**123.8** 4 7/8	**146.0** 5 3/4	**79.4** 3 1/8	**228.6** 9	**288.9** 11 3/8	**19.0** 3/4	**25.4** 1	**20.6** 13/16	**74.6** 2 15/16	**49.2** 1 15/16	–	2	**16** 5/8	SMN108KS	SN108K	A-4778A	**11.350** 25.00
SAOL	1 11/16	**9.5** 3/8	**79.40** 3 1/8	**123.8** 4 7/8	**146.0** 5 3/4	**79.4** 3 1/8	**228.6** 9	**288.9** 11 3/8	**19.0** 3/4	**25.4** 1	**20.6** 13/16	**74.6** 2 15/16	**49.2** 1 15/16	–	2	**16** 5/8	SMN111KS	SN111K	A-4778	**11.150** 24.56
SAOL	1 15/16	**9.5** 3/8	**79.40** 3 1/8	**122.2** 4 13/16	**158.8** 6 1/4	**79.4** 3 1/8	**228.6** 9	**288.9** 11 3/8	**19.0** 3/4	**25.4** 1	**20.6** 13/16	**73.8** 2 29/32	**48.4** 1 29/32	–	2	**16** 5/8	SMN115KS	SN115K	A-3818	**12.462** 27.45
SAOL	2 3/16	**9.1** 23/64	**95.25** 3 3/4	**139.7** 5 1/2	**171.4** 6 3/4	**88.9** 3 1/2	**259.7** 10 1/4	**320.7** 12 5/8	**22.2** 7/8	**31.8** 1 1/4	**27.0** 1 1/16	**82.6** 3 1/4	**57.2** 2 1/4	–	2	**20** 3/4	SMN203KS	SN203K	A-4755	**15.409** 33.94
SAOL	2 7/16	**8.7** 11/32	**104.80** 4 1/8	**150.0** 5 29/32	**190.5** 7 1/2	**101.6** 4	**285.8** 11 1/4	**349.2** 13 3/4	**22.2** 7/8	**31.8** 1 1/4	**27.0** 1 1/16	**91.3** 3 19/32	**58.7** 2 5/16	–	2	**20** 3/4	SMN207KS	SN207K	A-3819	**18.841** 41.50
SAOL	2 11/16	**9.5** 3/8	**115.89** 4 9/16	**174.6** 6 7/8	**215.9** 8 1/2	**111.1** 4 3/8	**304.8** 12	**390.6** 15 3/8	**25.4** 1	**31.8** 1 1/4	**31.8** 1 1/4	**109.5** 4 5/16	**65.1** 2 9/16	–	2	**22** 7/8	SMN211KS	SO211K	A-4709	**26.332** 58.00
SAOL	2 15/16	**12.7** 1/2	**115.89** 4 9/16	**177.8** 7	**225.4** 8 7/8	**111.1** 4 3/8	**314.3** 12 3/8	**390.6** 15 3/8	**25.4** 1	**31.8** 1 1/4	**31.8** 1 1/4	**104.8** 4 1/8	**73.0** 2 7/8	–	2	**22** 7/8	SMN215KS	SN215K	A-4798	**33.823** 74.50

[1]When four bolts are used, dimension J_1 is the distance between centers, and A_1 and T are measured from the center of the base.

Continued on next page.

08-19-13 DRAFT



Continued from previous page.

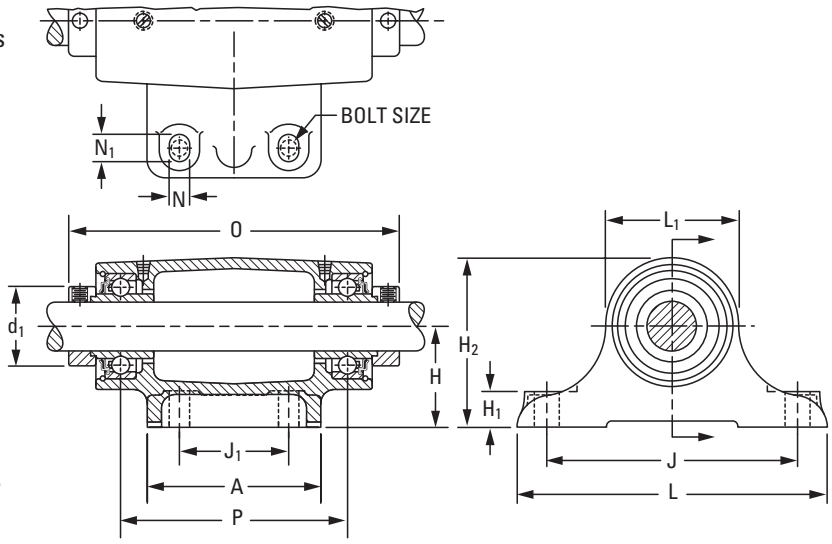
Unit	Shaft Dia.	Total Float	H	O	L_1	A	J	L	N	N_1	H_1	A_1	T	J_1[1]	Bolt		Bearing No.	Collar No.	Housing No.	Unit Wt.
															No.	Size				
	in.	**mm** in.	**mm** in	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.		**mm** in.			New	**kg** lbs.
SAOL	3 3/16	**13.1** 33/64	**115.89** 4 9/16	**184.2** 7 1/4	**241.3** 9 1/2	**111.1** 4 3/8	**314.3** 12 3/8	**390.6** 15 3/8	**25.4** 1	**31.8** 1 1/4	**31.8** 1 1/4	**108.0** 4 1/4	**76.2** 3	**57.2** 2 1/4	4	**22** 7/8	SMN303KS	SN303K	A-4780	**35.298** 77.75
SAOL	3 7/16	**13.5** 17/32	**130.2** 5 1/8	**190.5** 7 1/2	**260.4** 10 1/4	**120.6** 4 3/4	**339.7** 13 3/8	**409.6** 16 1/8	**25.4** 1	**31.8** 1 1/4	**31.8** 1 1/4	**111.1** 4 3/8	**79.4** 3 1/8	**76.2** 3	4	**22** 7/8	SMN307KS	SN307K	A-4155	**48.805** 107.5
SAOL	3 11/16	**12.7** 1/2	**144.5** 5 11/16	**213.5** 8 13/32	**279.4** 11	**125.4** 4 15/16	**374.6** 14 3/4	**439.7** 17 5/16	**28.6** 1 1/8	**38.1** 1 1/2	**31.8** 1 1/4	**133.4** 5 1/4	**80.2** 3 5/32	–	2	**24** 1	SMO311WS	SO311K	A-4156	**54.48** 120.0
SAOL	3 15/16	**17.5** 11/16	**152.4** 6	**219.9** 8 21/32	**298.4** 11 3/4	**133.4** 5 1/4	**393.1** 15 1/2	**469.9** 18 1/2	**28.6** 1 1/8	**38.1** 1 1/2	**34.9** 1 3/8	**127.0** 5	**92.9** 3 21/32	**82.6** 3 1/4	4	**24** 1	SMN315KS	SN315K	A-4795	**70.824** 156.0
SAOL	4 3/16	**15.9** 5/8	**165.1** 6 1/2	**225.4** 8 7/8	**317.5** 12 1/2	**158.8** 6 1/4	**449.3** 17 11/16	**539.8** 21 1/4	**28.6** 1 1/8	**38.1** 1 1/2	**38.1** 1 1/2	**134.1** 5 9/32	**91.3** 3 19/32	**101.6** 4	4	**24** 1	SMN403WS	SN403K	T-14342	**88.076** 194.0
SAOL	4 7/16	**14.3** 9/16	**177.8** 7	**228.6** 9	**327.0** 12 7/8	**171.4** 6 3/4	**449.3** 17 11/16	**539.8** 21 1/4	**31.8** 1 1/4	**44.4** 1 3/4	**44.4** 1 3/4	**134.9** 5 5/16	**93.6** 3 11/16	**108.0** 4 1/4	4	**27** 1 1/8	SMN407WS	SN407K	T-11469	**95.34** 210.0
SAOL	4 15/16	**31.4** 1 15/64	**209.6** 8 1/4	**261.9** 10 5/16	**381.0** 15	**184.2** 7 1/4	**514.4** 20 1/4	**630.2** 24 13/16	**31.8** 1 1/4	**44.4** 1 3/4	**50.8** 2	**152.4** 6	**109.5** 4 5/16	**120.6** 4 3/4	4	**27** 1 1/8	SMN415WS	SN415K	T-11783	**160.262** 353.0

[1]When four bolts are used, dimension J_1 is the distance between centers, and A_1 and T are measured from the center of the base.

08-19-13 DRAFT

DRNR INDUSTRIAL SERIES

- This rigid double pillow block is designed to provide a sturdy two-bearing mounting for fans and blowers, bench grinders, buffers, vertical shafts and similar heavy-duty applications.
- The compact, one-piece housing is equipped with two wide-inner-ring ball bearings with integral R-seals and a self-locking collar.
- Individual grease chambers are provided for both bearings.
- The close clearance baffles allow excess grease to work into the center chamber of the housing.
- The grease fittings that take the place of standard pipe plugs provide the means of relubrication.
- This pillow block can be mounted in any position, with ample radial and thrust capacity.



Suggested shaft tolerances:

15/16 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;

2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: DRNR 1 7/16 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
DRNR	KR	Page A-32

Unit	Shaft Dia.	H	H_2	O	L_1	J	L	A	H_1	N	N_1	J_1	d_1	P	Bolt (4 req'd)	Bearing No. (2 req'd)	Collar No.	Housing No.	Unit Wt.
	in.	**mm** in	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			New	**kg** lbs.
DRNR	15/16	**63.5** 2 1/2	**99.2** 3 29/32	**200.0** 7 7/8	**71.4** 2 13/16	**158.8** 6 1/4	**196.8** 7 3/4	**108.0** 4 1/4	**19.0** 3/4	**12.7** 1/2	**15.9** 5/8	**69.8** 2 3/4	**38.1** 1 1/2	**146.0** 5 3/4	**10** 3/8	1015KR	S1015K	T-19189	**4.812** 10.60
DRNR	1 3/16	**63.5** 2 1/2	**105.6** 4 5/32	**203.2** 8	**84.1** 3 5/16	**158.8** 6 1/4	**196.8** 7 3/4	**108.0** 4 1/4	**22.2** 7/8	**12.7** 1/2	**15.9** 5/8	**69.8** 2 3/4	**44.1** 1 47/64	**142.9** 5 5/8	**10** 3/8	1103KR	S1103K	T-19191	**5.167** 11.38
DRNR	1 7/16	**76.2** 3	**123.8** 4 7/8	**276.2** 10 7/8	**95.2** 3 3/4	**203.2** 8	**254.0** 10	**139.7** 5 1/2	**25.4** 1	**15.9** 5/8	**22.2** 7/8	**88.9** 3 1/2	**54.0** 2 1/8	**211.5** 8 21/64	**12** 1/2	1107KR	S1107K	T-19193	**9.625** 21.20
DRNR	1 11/16	**76.2** 3	**133.4** 5 1/4	**279.4** 11	**114.3** 4 1/2	**203.2** 8	**254.0** 10	**139.7** 5 1/2	**25.4** 1	**15.9** 5/8	**22.2** 7/8	**88.9** 3 1/2	**63.5** 2 1/2	**209.6** 8 1/4	**12** 1/2	1111KR	S1111K	T-19197	**11.690** 25.75
DRNR	1 15/16	**88.9** 3 1/2	**150.8** 5 5/16	**352.4** 13 7/8	**123.8** 4 7/8	**241.3** 9 1/2	**304.8** 12	**177.8** 7	**28.5** 1 1/8	**17.5** 11/16	**28.5** 1 1/8	**114.3** 4 1/2	**69.8** 2 3/4	**276.2** 10 7/8	**16** 5/8	1115KR	S1115K	T-19195	**18.841** 41.50
DRNR	2 3/16	**88.9** 3 1/2	**158.8** 6 1/4	**355.6** 14	**133.4** 5 1/4	**241.3** 9 1/2	**304.8** 12	**177.8** 7	**31.8** 1 1/4	**17.5** 11/16	**28.5** 1 1/8	**114.3** 4 1/2	**76.2** 3	**268.3** 10 9/16	**16** 5/8	1203KR	S1203K	A-9598	**23.608** 52.00

08-19-13 DRAFT

CAST-IRON FLANGED UNITS

RCJ, TCJ, LCJ INDUSTRIAL SERIES

- Timken cartridges are used in applications where a minimum amount of machining is to be done.
- Each unit comes assembled and ready for mounting, with bolts through the flange.
- These are wide-inner-ring ball bearings, self-aligning B-types, which compensate for shaft misalignment.
- The RCJ flange cartridge is equipped with G-KRRB (R-seal) wide-inner-ring ball bearings. The TCJ is equipped with G-KPPB (tri-ply seal) wide-inner-ring ball bearings. The LCJ is equipped with the G-KLLB (Mechani-seal) wide-inner-ring ball bearings.
- The TCJ flange cartridges are identical to RCJ units, except they use the tri-ply seal bearing. Tri-ply units offer the best protection in dirty environments.
- The units are factory-prelubricated, but a grease fitting is provided for relubrication if required. The units are supplied with self-locking collars.
- Contact a Timken engineer to discuss highly corrosive applications (food processing, chemical exposure) where Timken thin-dense chrome-coated bearings can be used.
- Safety end caps are available for selected sizes.

Suggested shaft tolerances:

1 13/16 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

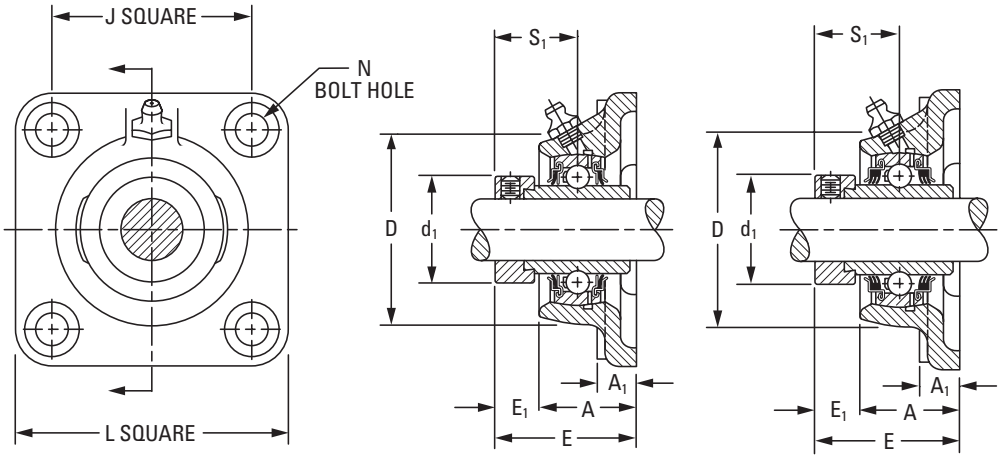
For larger sizes, consult your Timken engineer.

To order, specify UNIT and SHAFT DIAMETER.

Example: RCJ 1 3/16 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RCJ	G-KRRB	Page A-34
TCJ	G-KPPB	Page A-39
LCJ	G-KLLB	Page A-37



RCJ, LCJ **TCJ**

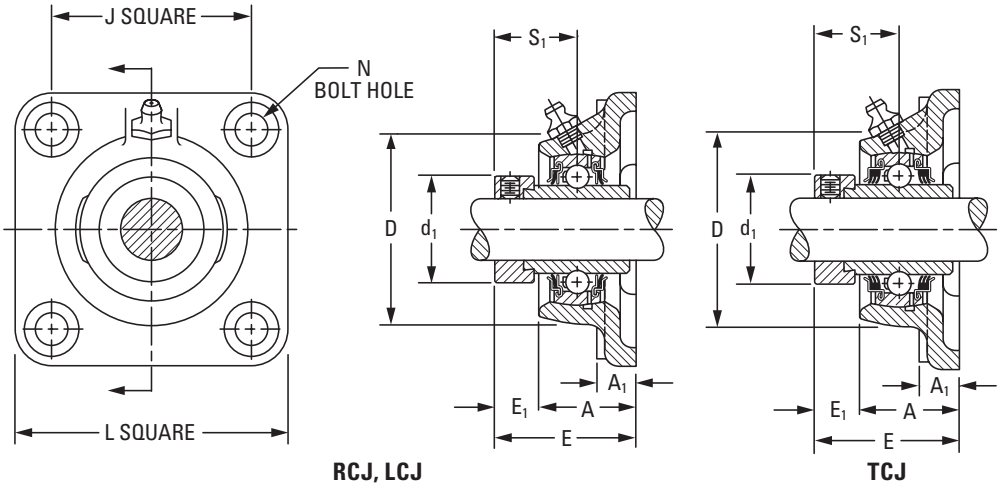
Unit[1]	Shaft Dia.	L	J	A_1	A	E	N	E_1	S_1	D	d_1	Bolt Size	Bearing No.[2]		Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	RCJ	(TCJ)		New (Old)	**kg** lbs.
RCJ	1/2												G1008KRRB		S1008K		
RCJ	5/8	**76.2**	**54.0**	**9.5**	**23.6**	**40.6**	**10.7**	**13.9**	**23.4**	**52.4**	**28.1**	**10**	G1010KRRB		S1010K	T-40278	**0.526**
RCJ	11/16	3	2 1/8	13/32	0.929	1.599	27/64	35/64	59/64	2 1/16	1.105	3/8	G1011KRRB	–	S1011K	(T-16659)	1.16
RCJ	**17**												GE17KRRB		SE17K		
RCJ	3/4	**85.7**	**63.5**	**11.1**	**27.8**	**46.4**	**10.7**	**16.3**	**26.6**	**60.3**	**32.8**	**10**	G1012KRRB		S1012K	T-40267	**0.726**
RCJ	**20**	3 3/8	2 1/2	7/16	1.094	1.828	27/64	41/64	1 3/64	2 3/8	1.292	3/8	GE20KRRB	–	SE20K	(T-16661)	1.60
RCJ, TCJ	7/8												G1014KRRB	(KPPB3)	S1014K		
RCJ, TCJ	15/16	**95.2**	**69.8**	**12.7**	**27.9**	**46.6**	**11.5**	**15.9**	**27.0**	**65.1**	**37.6**	**10**	G1015KRRB	(KPPB3)	S1015K	T-40262	**0.939**
RCJ, TCJ	1	3 3/4	2 3/4	1/2	1.100	1.834	29/64	5/8	1 1/16	2 9/16	1.480	3/8	G1100KRRB	(KPPB3)	S1100K	(T-16663)	2.07
RCJ, TCJ	**25**												GE25KRRB	(KPPB3)	SE25K		
RCJ, TCJ	1 1/16												G1101KRRB	(KPPB3)	S1101K		
RCJ, TCJ	1 1/8	**107.9**	**82.6**	**13.5**	**29.9**	**50.5**	**11.5**	**17.5**	**30.2**	**76.2**	**43.9**	**10**	G1102KRRB	(KPPB3)	S1102K	T-40266	**1.302**
RCJ, TCJ	1 3/16	4 1/4	3 1/4	17/32	1.178	1.990	29/64	11/16	1 3/16	3	1.730	3/8	G1103KRRB	(KPPB3)	S1103K	(T-16664)	2.87
RCJ, TCJ	**30**												GE30KRRB	(KPPB3)	SE30K		

[1]Type LCJ uses G-KLLB.
[2]Bearing number for RCJ is G-KRRB. TCJ uses G-KPPB.

Continued on next page.

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RCJ, TCJ, LCJ INDUSTRIAL SERIES – *continued*



Continued from previous page.

Unit[1]	Shaft Dia.	L	J	A_1	A	E	N	E_1	S_1	D	d_1	Bolt Size	Bearing No.[2]		Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	RCJ	(TCJ)		New (Old)	**kg** lbs.
RCJ, TCJ	1 1/4												G1104KRRB	(KPPB2)	S1104K		
RCJ, TCJ	1 5/16												G1105KRRB	(KPPB2)	S1105K		
RCJ, TCJ	1 3/8	**117.5**	**92.1**	**13.5**	**31.8**	**53.5**	**13.1**	**19.0**	**32.5**	**88.9**	**53.6**	**12**	G1106KRRB	(KPPB2)	S1106K	T-40253	**1.787**
RCJ, TCJ	1 7/16	4 5/8	3 5/8	17/32	1.254	2.106	33/64	3/4	1 9/32	3 1/2	2.112	1/2	G1107KRRB	(KPPB2)	S1107K	(T-16617)	3.94
RCJ, TCJ	**35**												GE35KRRB	(KPPB2)	SE35K		
RCJ, TCJ	1 1/2												G1108KRRB	(KPPB3)	S1108KT		
RCJ, TCJ	1 9/16	**130.2**	**101.6**	**14.3**	**38.1**	**59.3**	**13.1**	**20.6**	**34.9**	**98.4**	**58.2**	**12**	G1109KRRB	(KPPB3)	S1109KT	T-40263	**2.291**
RCJ, TCJ	**40**	5 1/8	4	9/16	1.500	2.334	33/64	13/16	1 3/8	3 7/8	2.292	1/2	GE40KRRB	(KPPB3)	SE40K	(T-16666)	5.05
RCJ, TCJ	1 5/8												G1110KRRB	(KPPB4)	S1110K		
RCJ, TCJ	1 11/16	**136.5**	**104.8**	**14.3**	**38.9**	**59.3**	**13.1**	**19.8**	**34.9**	**104.8**	**63.0**	**12**	G1111KRRB	(KPPB4)	S1111K	T-40264	**2.585**
RCJ, TCJ	1 3/4	5 3/8	4 1/8	9/16	1.531	2.334	33/64	25/32	1 3/8	4 1/8	2.480	1/2	G1112KRRB	(KPPB4)	S1112K	(T-16667)	5.70
RCJ, TCJ	**45**												GE45KRRB	(KPPB4)	SE45K		
RCJ, TCJ	1 7/8												G1114KRRB	(KPPB3)	S1114K		
RCJ, TCJ	1 15/16	**142.9**	**111.1**	**14.3**	**42.9**	**66.4**	**17.1**	**23.0**	**38.1**	**112.7**	**69.3**	**16**	G1115KRRB	(KPPB3)	S1115K	T-40265	**3.016**
RCJ, TCJ	**50**	5 5/8	4 3/8	9/16	1.688	2.615	43/64	29/32	1 1/2	4 7/16	2.730	5/8	GE50KRRB	(KPPB3)	SE50K	(T-16668)	6.65
RCJ, TCJ	2												G1200KRRB	(KPPB4)	S1200K		
RCJ, TCJ	2 1/8	**161.9**	**130.2**	**16.7**	**46.8**	**75.1**	**17.1**	**27.8**	**43.7**	**120.6**	**75.7**	**16**	G1202KRRB	(KPPB4)	S1202K	T-40268	**3.842**
RCJ, TCJ	2 3/16	6 3/8	5 1/8	21/32	1.844	2.958	43/64	1 3/32	1 23/32	4 3/4	2.980	5/8	G1203KRRB	(KPPB4)	S1203K	(T-16683)	8.47
RCJ, TCJ	**55**												GE55KRRB	(KPPB4)	SE55K		
RCJ	2 1/4												G1204KRRB		S1204K		
RCJ	2 3/8	**174.6**	**142.9**	**17.5**	**49.2**	**81.6**	**17.1**	**31.8**	**46.8**	**136.5**	**83.6**	**16**	G1206KRRB	–	S1206K	T-40269	**5.048**
RCJ	2 7/16	6 7/8	5 5/8	11/16	1.937	3.214	43/64	1 1/4	1 27/32	5 3/8	3.292	5/8	G1207KRRB		S1207K	(T-17648)	11.13
RCJ	**60**												GE60KRRB		SE60K		
RCJ	2 11/16	**187.3**	**149.2**	**19.1**	**63.5**	**90.3**	**16.3**	**25.4**	**45.2**	**152.4**	**96.3**	**16**	G1211KRRB	–	S1211K	T-22530	**6.885**
RCJ	**70**	7 3/8	5 7/8	3/4	2.500	3.557	41/64	1	1 25/32	6	3.792	5/8	GE70KRRB		SE70K	(T-22270)	15.18
RCJ	2 15/16	**196.8**	**152.4**	**22.2**	**66.7**	**96.7**	**19.8**	**26.2**	**54.8**	**161.9**	**101.1**	**16**	G1215KRRB	–	S1215K	T-21620	**8.210**
RCJ	**75**	7 3/4	6	7/8	2.625	3.807	25/32	1 1/32	2 5/32	6 3/8	3.980	5/8	GE75KRRB		SE75K	(T-21620)	18.100

[1]Type LCJ uses G-KLLB.
[2]Bearing number for RCJ is G-KRRB. TCJ uses G-KPPB.

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RCJC INDUSTRIAL-SERIES CONCENTRIC COLLAR

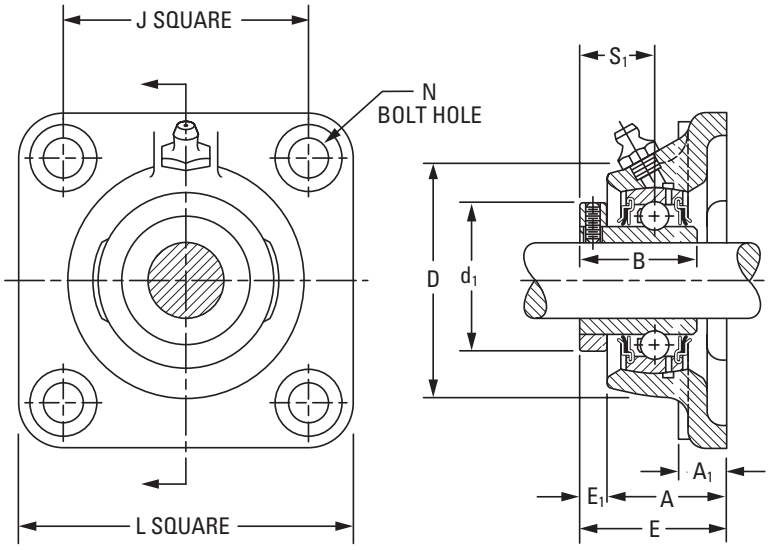
- These units have the same basic design as the RCJ series, except a concentric collar is used as the shaft-locking device instead of a self-locking cam collar.
- All RCJC units are equipped with GC-KRRB wide inner ring, concentric-collar bearings.
- The spherical outside diameter of the bearings is mounted in corresponding machined housing seats to provide the initial self-alignment.
- The bolt-hole spacing dimensions are interchangeable with the RCJ series and most competitive units.
- The units are factory-prelubricated, but a grease fitting is provided for relubrication if required.
- Concentric collars are supplied with all units.
- Safety end caps are available for selected sizes.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RCJC 1 3/16 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RCJC	GC-KRRB	Page A-40

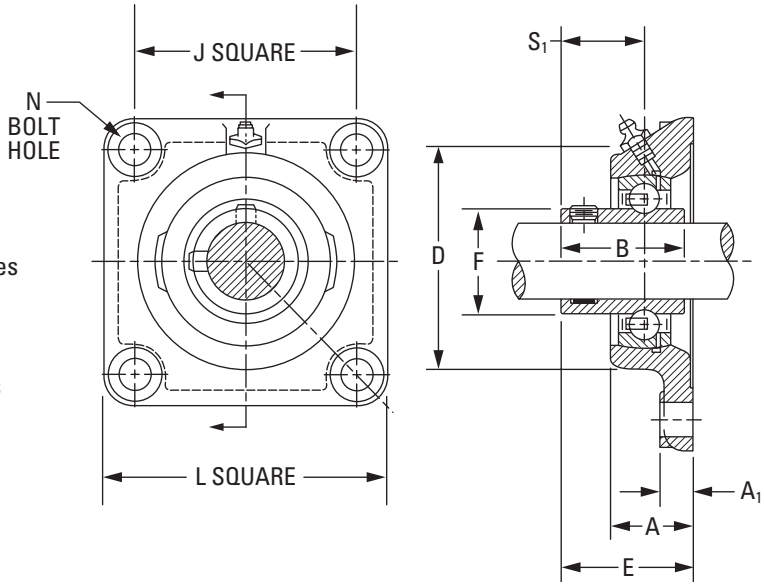
Unit	Shaft Dia.	L	J	A_1	A	E	N	E_1	B	D	d_1	S_1	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in.	mm in	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.					kg lbs.
RCJC	5/8	76.2 3	53.98 2 1/8	11.1 7/16	22.2 7/8	30.2 1 3/16	9.9 25/64	7.9 5/16	26.6 1 3/64	52.4 2 1/16	34.1 1 11/32	15.5 39/64	10 3/8	GC1010KRRB	C203	T-27113	0.486 1.07
RCJC	3/4	85.7 3 3/8	63.5 2 1/2	11.1 7/16	25.8 1 1/64	32.5 1 9/32	9.9 25/64	6.7 17/64	31.0 1 7/32	60.3 2 3/8	38.1 1 1/2	18.7 47/64	10 3/8	GC1012KRRB	C204	T-26605	0.645 1.42
RCJC	1	95.2 3 3/4	69.85 2 3/4	11.1 7/16	28.6 1 1/8	36.1 1 27/64	11.5 29/64	7.5 19/64	34.1 1 11/32	65.1 2 9/16	44.4 1 3/4	20.2 51/64	10 3/8	GC1100KRRB	C205	T-26614	0.781 1.72
RCJC RCJC RCJC	1 1/8 1 3/16 1 1/4 S	107.9 4 1/4	82.55 3 1/4	12.7 1/2	30.2 1 3/16	39.3 1 35/64	11.5 29/64	9.1 23/64	37.3 1 15/32	76.2 3	52.4 2 1/16	22.6 57/64	10 3/8	GC1102KRRB GC1103KRRB GC1103KRRB3	C206	T-26630	1.135 2.50
RCJC RCJC RCJC	1 1/4 1 3/8 1 7/16	117.5 4 5/8	92.08 3 5/8	14.3 9/16	34.1 1 11/32	44.4 1 3/4	13.1 33/64	10.3 13/32	41.3 1 5/8	88.9 3 1/2	59.5 2 11/32	25.4 1	12 1/2	GC1104KRRB GC1106KRRB GC1107KRRB	C207	T-26665	1.707 3.76
RCJC	1 1/2	130.2 5 1/8	101.60 4	17.5 11/16	40.5 1 19/32	51.2 2 1/64	13.1 33/64	10.7 27/64	44.1 1 47/64	98.4 3 7/8	68.3 2 11/16	27.4 1 5/64	12 1/2	GC1108KRRB	C208	T-16666A	2.238 4.93
RCJC RCJC	1 11/16 1 3/4	136.5 5 3/8	104.78 4 1/8	17.5 11/16	41.3 1 5/8	53.2 2 3/32	13.1 33/64	11.9 15/32	46.8 1 27/32	104.8 4 1/8	73.0 2 7/8	29.4 1 5/32	12 1/2	GC1111KRRB GC1112KRRB	C209	T-16667A	2.538 5.59
RCJC	1 15/16	142.9 5 5/8	111.12 4 3/8	15.9 5/8	42.1 1 21/32	54.8 2 5/32	17.1 43/64	12.7 1/2	48.4 1 29/32	112.7 4 7/16	79.4 3 1/8	30.2 1 3/16	16 5/8	GC1115KRRB	C210	T-26700	2.797 6.16
RCJC RCJC	2 2 3/16	161.9 6 3/8	130.18 5 1/8	19.0 3/4	44.4 1 3/4	58.7 2 5/16	17.1 43/64	14.3 9/16	54.0 2 1/8	120.6 4 3/4	88.9 3 1/2	33.33 1 5/16	16 5/8	GC1200KRRB GC1203KRRB	C211	T-26712	4.036 8.89
RCJC	2 7/16	174.6 6 7/8	142.88 5 5/8	19.0 3/4	47.6 1 7/8	65.9 2 19/32	16.3 41/64	18.3 23/32	60.3 2 3/8	136.5 5 3/8	95.2 3 3/4	37.3 1 15/32	16 5/8	GC1207KRRB	C212	T-26726	4.926 10.85
RCJC	2 15/16	196.8 7 3/4	152.40 6	22.2 7/8	54.0 2 1/8	75.4 2 31/32	19.8 25/32	21.4 27/32	70.6 2 25/32	161.9 6 3/8	114.3 4 1/2	43.7 1 23/32	16 5/8	GC1215KRRB	C215	T-27128	7.473 16.46

NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

YCJ INDUSTRIAL SET SCREW SERIES

- Incorporates Shaft Guarding Technology, which reduces replacement time, provides shaft protection and prolongs the life of the shaft.
- The same basic design as the RCJ series, except specially designed set screws are used as the locking device instead of an eccentric collar.
- All units are equipped with GY-KRRB wide-inner-ring set screw bearings.
- Spherical outside diameter of the bearings mounted in the corresponding machined housing seats provides the initial self-alignment.
- Bolt-hole spacing dimensions are interchangeable with the RCJ series and most competitive units.
- Units are factory-prelubricated, but a grease fitting is provided for relubrication if required.
- Safety end caps are available for selected sizes.



Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: YCJ 1 7/16 in.

BEARING DATA

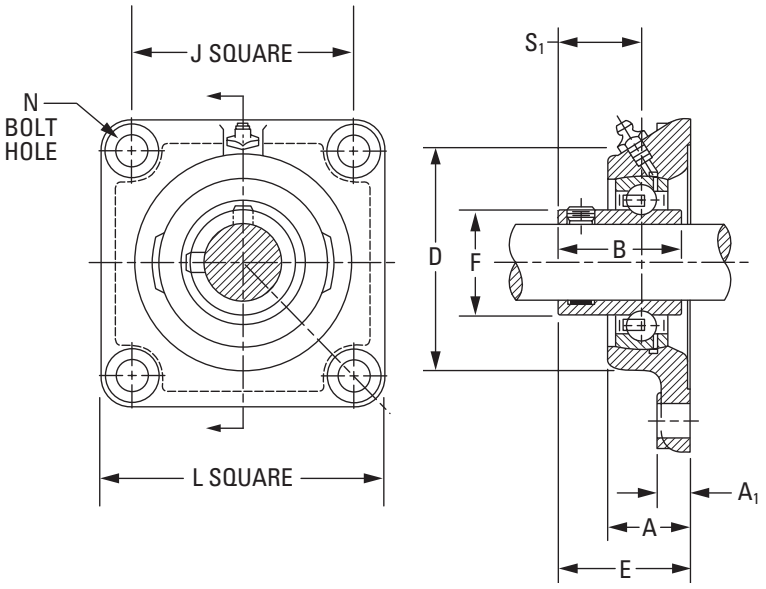
Unit	Bearing No.	Dimensions and Load Ratings
YCJ	GY-KRRB	Page A-44

Unit	Shaft Dia.	L	J	A_1	A	E	N	B	D	F	S_1	Bolt Size	Bearing No.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	
YCJ	1/2												GY1008KRRB
YCJ	5/8	**76.2** 3	**54.0** 2 1/8	**10.3** 13/32	**23.6** 0.929	**32.50** 1.296	**10.72** 27/64	**27.40** 1 5/64	**52.4** 2 1/16	**23.90** 0.941	**15.9** 5/8	**10** 3/8	GY1010KRRB
YCJ	**17**												GYE17KRRB
YCJ SGT	3/4												GY1012KRRB SGT
YCJ SGT	**20**	**85.7** 3 3/8	**63.5** 2 1/2	**11.1** 7/16	**27.8** 1.094	**38.40** 1.513	**10.72** 27/64	**31.80** 1 1/4	**60.3** 2 3/8	**27.56** 1.085	**19.1** 3/4	**10** 3/8	GYE20KRRB SGT
YCJ SGT	7/8												GY1014KRRB SGT
YCJ SGT	15/16	**95.2** 3 3/4	**69.8** 2 49/64	**12.7** 1/2	**27.9** 1.100	**40.00** 1.575	**11.51** 29/64	**34.90** 1 3/8	**65.1** 2 9/16	**33.88** 1.331	**20.6** 13/16	**10** 3/8	GY1015KRRB SGT
YCJ SGT	1												GY1100KRRB SGT
YCJ SGT	**25**												GYE25KRRB SGT
YCJ SGT	1 1/8												GY1102KRRB SGT
YCJ SGT	1 3/16	**107.9** 4 1/4	**82.6** 3 1/4	**13.5** 17/32	**29.9** 1.178	**43.46** 1.711	**11.51** 29/64	**39.29** 1 35/64	**76.2** 3	**40.31** 1.587	**23.4** 59/64	**10** 3/8	GY1103KRRB SGT
YCJ	1 1/4 S												GY1103KRRB3
YCJ SGT	**30**												GYE30KRRB SGT
YCJ SGT	1 1/4												GY1104KRRB SGT
YCJ SGT	1 3/8	**117.5** 4 5/8	**92.1** 3 5/8	**13.5** 17/32	**31.8** 1.254	**48.95** 1.927	**13.10** 33/64	**45.20** 1 25/32	**88.9** 3 1/2	**46.81** 1.843	**28.2** 1 7/16	**12** 1/2	GY1106KRRB SGT
YCJ SGT	1 7/16												GY1107KRRB SGT
YCJ SGT	**35**												GYE35KRRB SGT
YCJ SGT	1 1/2	**130.2** 5 1/8	**101.6** 4	**14.3** 9/16	**38.1** 1.500	**54.40** 2.141	**13.10** 33/64	**49.20** 1 15/16	**98.4** 3 7/8	**52.27** 2.057	**30.2** 1 3/16	**12** 1/2	GY1108KRRB SGT
YCJ SGT	**40**												GYE40KRRB SGT

NOTE: Shaft diameter with an S = smaller housing.

Continued on next page.

08-19-13 DRAFT



Continued from previous page.

Unit	Shaft Dia.	L	J	A_1	A	E	N	B	D	F	S_1	Bolt Size	Bearing No.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	
YCJ SGT	1 5/8												GY1110KRRB SGT
YCJ SGT	1 11/16	**136.5**	**104.8**	**14.3**	**38.9**	**55.52**	**13.10**	**50.40**	**104.8**	**57.92**	**31.4**	**12**	GY1111KRRB SGT
YCJ SGT	1 3/4	5 3/8	4 1/8	9/16	1.531	2.186	33/64	1 63/64	4 1/8	2.279	1 15/16	1/2	GY1112KRRB SGT
YCJ SGT	**45**												GYE45KRRB SGT
YCJ SGT	1 15/16												GY1115KRRB SGT
YCJ	2 S	**142.9**	**111.1**	**14.3**	**42.9**	**60.70**	**17.07**	**51.60**	**112.7**	**62.84**	**32.5**	**16**	GY1115KRRB3
YCJ SGT	**50**	5 5/8	4 3/8	9/16	1.688	2.390	43/64	2 1/32	4 7/16	2.473	1 9/32	5/8	GYE50KRRB SGT
YCJ SGT	2												GY1200KRRB SGT
YCJ SGT	2 3/16	**161.9**	**130.2**	**16.7**	**46.8**	**64.70**	**17.07**	**55.60**	**120.7**	**69.77**	**33.3**	**16**	GY1203KRRB SGT
YCJ SGT	**55**	6 3/8	5 1/8	21/32	1.844	2.546	43/64	2 3/16	4 3/4	2.747	1 5/16	5/8	GYE55KRRB SGT
YCJ SGT	2 7/16	**174.6**	**142.9**	**17.5**	**49.2**	**74.20**	**17.07**	**65.10**	**136.5**	**76.48**	**39.1**	**16**	GY1207KRRB SGT
YCJ SGT	**60**	6 7/8	5 5/8	11/16	1.937	2.921	43/64	2 9/16	5 3/8	3.011	1 9/16	5/8	GYE60KRRB SGT
YCJ	2 11/16	**187.3**	**149.2**	**19.0**	**63.5**	**81.40**	**16.27**	**69.90**	**152.4**	**86.92**	**42.9**	**16**	GY1211KRRB
YCJ	**70**	7 3/8	5 7/8	3/4	2.500	3.204	41/64	2 3/4	6	3.422	1 11/16	5/8	GYE70KRRB
YCJ	2 15/16	**196.8**	**152.4**	**23.8**	**66.7**	**86.20**	**19.84**	**77.80**	**161.9**	**91.92**	**44.4**	**20**	GY1215KRRB
YCJ	**75**	7 3/4	6	15/16	2.625	3.392	25/32	3 1/16	6 3/8	3.619	1 3/4	3/4	GYE75KRRB

NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

VCJ STANDARD SERIES

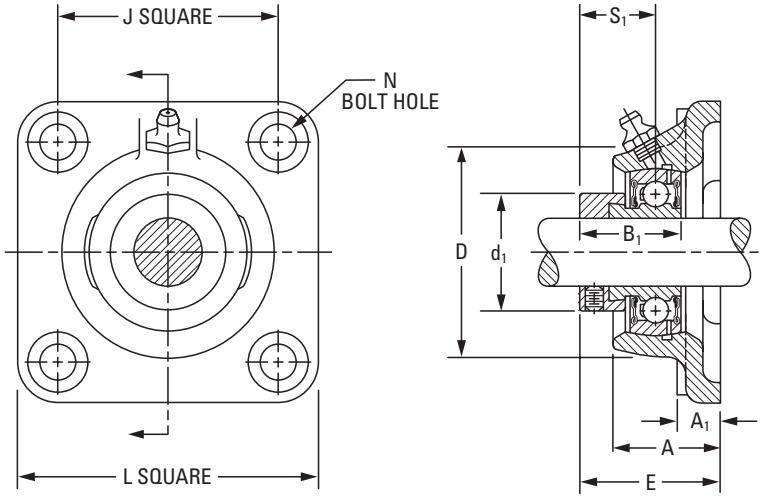
- The flange cartridges come assembled and ready for mounting by using four bolts through the flange.
- The VCJ-series flange cartridges require minimal machining.
- The units are assembled with GRA-RRB bearings with positive-contact, land-riding seals and self-locking collars.
- The units are factory-prelubricated, but a grease fitting is provided for relubrication if required.
- Safety end caps are available for selected sizes.

Suggested shaft tolerances:

½ in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: VCJ 1 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
VCJ	GRA-RRB	Page A-50

Unit	Shaft Dia.	L	J	A_1	A	E	N	B_1	D	d_1	S_1	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			New (Old)	**kg** lbs.
VCJ	1/2												GRA008RRB	S1008K		
VCJ	5/8	**76.2** 3	**53.98** 2 1/8	**10.3** 13/32	**23.6** 0.929	**39.3** 1.548	**10.7** 27/64	**28.6** 1 1/8	**52.4** 2 1/16	**28.1** 1.105	**22.2** 7/8	**10** 3/8	GRA010RRB	S1010K	T-40278 (T-16659)	**0.527** 1.16
VCJ	**17**												GRAE17RRB	SE17K		
VCJ	3/4	**85.7**	**63.50**	**11.1**	**27.8**	**43.3**	**10.7**	**31.0**	**60.3**	**32.8**	**23.4**	**10**	GRA012RRB	S1012K	T-40267	**0.654**
VCJ	**20**	3 3/8	2 1/2	7/16	1.094	1.706	27/64	1 7/32	2 3/8	1.292	59/64	3/8	GRAE20RRB	SE20K	(T-16661A)	1.44
VCJ	7/8												GRA014RRB	S1014K		
VCJ	15/16	**95.2**	**69.85**	**12.7**	**27.9**	**43.1**	**11.5**	**31.0**	**65.1**	**37.6**	**23.4**	**10**	GRA015RRB	S1015K	T-40262	**0.894**
VCJ	1	3 3/4	2 3/4	1/2	1.100	1.696	29/64	1 7/32	2 9/16	1.480	59/64	3/8	GRA100RRB	S1100K	(T-16663A)	1.97
VCJ	**25**												GRAE25RRB	SE25K		
VCJ	1 1/8												GRA102RRB	S1102K		
VCJ	1 3/16	**107.9**	**82.55**	**13.5**	**29.9**	**47.1**	**11.5**	**35.7**	**76.2**	**43.9**	**27.0**	**10**	GRA103RRB	S1103K	T-40266	**1.239**
VCJ	1 1/4 S	4 1/4	3 1/4	17/32	1.178	1.856	29/64	1 13/32	3	1.730	1 1/16	3/8	GRA103RRB2	S1103K3	(T-16664A)	2.73
VCJ	**30**												GRAE30RRB	SE30K		
VCJ	1 1/4												GRA104RRB	S1104K		
VCJ	1 3/8	**117.5**	**92.08**	**13.5**	**31.8**	**50.5**	**13.1**	**38.9**	**88.9**	**53.6**	**29.4**	**12**	GRA106RRB	S1106K	T-40253	**1.707**
VCJ	1 7/16	4 5/8	3 5/8	17/32	1.254	1.989	33/64	1 17/32	3 1/2	2.112	1 5/32	1/2	GRA107RRB	S1107	(T-16617A)	3.76
VCJ	**35**												GRAE35RRB	SE35K		
VCJ	1 1/2	**130.2**	**101.60**	**14.3**	**38.1**	**58.3**	**13.1**	**43.7**	**98.4**	**58.2**	**32.5**	**12**	GRA108RRB	S1108KT	T-40263	**2.175**
VCJ	**40**	5 1/8	4	9/16	1.500	2.297	33/64	1 23/32	3 7/8	2.292	1 9/32	1/2	GRAE40RRB	SE40K	(T-16666A)	4.79
VCJ	1 5/8												GRA110RRB	S1110K		
VCJ	1 11/16	**136.5**	**104.78**	**14.3**	**38.9**	**57.0**	**13.1**	**43.7**	**104.8**	**63.0**	**32.5**	**12**	GRA111RRB	S1111K	T-40264	**2.438**
VCJ	1 3/4	5 3/8	4 1/8	9/16	1.531	2.244	33/64	1 23/32	4 1/8	2.480	1 9/32	1/2	GRA112RRB	S1112K	(T-16667A)	5.37
VCJ	**45**												GRAE45RRB	SE45K		
VCJ	1 7/8												GRA114RRB	S1114K		
VCJ	1 15/16	**142.9**	**111.12**	**14.3**	**42.9**	**61.0**	**17.1**	**43.7**	**112.7**	**69.3**	**32.5**	**16**	GRA115RRB	S1115K	T-40265	**2.788**
VCJ	2 S	5 5/8	4 3/8	9/16	1.688	2.400	43/64	1 23/32	4 7/16	2.730	1 9/32	5/8	GRA115RRB2	S1115K2	(T-16668A)	6.14
VCJ	**50**												GRAE50RRB	SE50K		
VCJ	2												GRA200RRB	S1200K		
VCJ	2 3/16	**161.9**	**130.18**	**16.7**	**46.8**	**67.9**	**17.1**	**48.4**	**120.6**	**75.7**	**36.5**	**16**	GRA203RRB	S1203K	T-40236	**3.269**
VCJ	**55**	6 3/8	5 1/8	21/32	1.844	2.672	43/64	1 29/32	4 3/4	2.980	1 7/16	5/8	GRAE55RRB	SE55K	(T-16683A)	7.20

NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

SCJ STANDARD SERIES

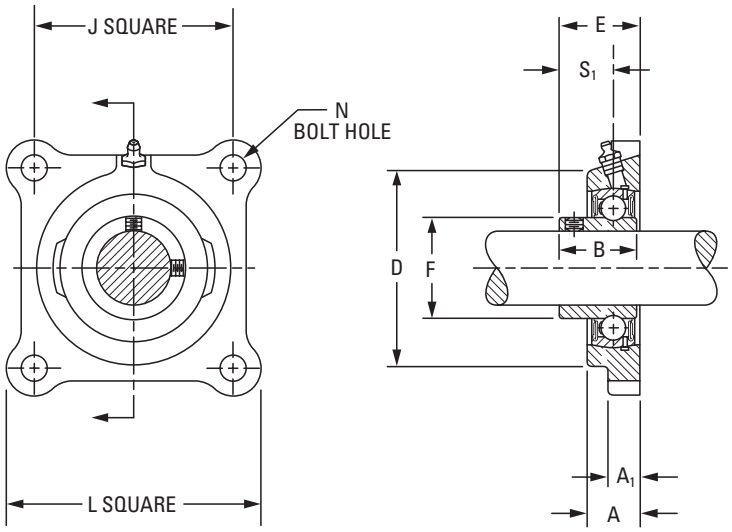
- The flange cartridges come assembled and ready for mounting by using four bolts through the flange.
- The units are ideal for applications where minimum shaft length is required.
- The units are assembled with GYA-RRB bearings with positive-contact, land-riding seals and set screw locking.
- The units are factory-prelubricated, but a grease fitting is provided for relubrication if required.
- Safety end caps are available for selected sizes.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in.,
nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: SCJ 1 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
SCJ	GYA-RRB	Page A-54

Unit	Shaft Dia.	L	J	A_1	A	E	N	B	D	F	S_1	Bolt Size	Bearing No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**kg** lbs.
SCJ	1/2												GYA008RRB		
SCJ	5/8	**76.2** 3	**53.98** 2 1/8	**11.1** 7/16	**17.9** 45/64	**25.4** 1	**10.7** 27/64	**23.8** 15/16	**52.4** 2 1/16	**24.6** 31/32	**15.9** 5/8	**10** 3/8	GYA010RRB	T-40124	**0.47** 1.03
SCJ	**17**												GYAE17RRB		
SCJ	3/4	**85.7**	**63.50**	**11.1**	**19.0**	**28.6**	**10.7**	**27.0**	**60.3**	**29.0**	**18.3**	**10**	GYA012RRB	T-40126	**0.52**
SCJ	**20**	3 3/8	2 1/2	7/16	3/4	1 1/8	27/64	1 1/16	2 3/8	1 9/64	23/32	3/8	GYAE20RRB		1.14
SCJ	7/8												GYA014RRB		
SCJ	15/16	**95.2**	**69.85**	**13.5**	**19.8**	**29.8**	**11.5**	**28.2**	**65.1**	**33.7**	**19.4**	**10**	GYA015RRB	T-40128	**0.68**
SCJ	1	3 3/4	2 3/4	17/32	25/32	1 11/64	29/64	1 7/64	2 9/16	1 21/64	49/64	3/8	GYA100RRB		1.50
SCJ	**25**												GYAE25RRB		
SCJ	1 1/8												GYA102RRB		
SCJ	1 3/16	**107.9**	**82.55**	**14.3**	**21.4**	**34.1**	**11.5**	**32.5**	**76.2**	**40.1**	**23.0**	**10**	GYA103RRB	T-40130	**1.19**
SCJ	1 1/4 S	4 1/4	3 1/4	9/16	27/32	1 11/32	29/64	1 9/32	3	1 37/64	29/32	3/8	GYA103RRB2		2.62
SCJ	**30**												GYAE30RRB		
SCJ	1 1/4												GYA104RRB		
SCJ	1 3/8	**117.5**	**92.08**	**15.1**	**24.6**	**38.1**	**13.1**	**36.5**	**88.9**	**46.8**	**25.8**	**12**	GYA106RRB	T-40132	**1.35**
SCJ	1 7/16	4 5/8	3 5/8	19/32	31/32	1 1/2	33/64	1 7/16	3 1/2	1 27/32	1 1/64	1/2	GYA107RRB		2.98
SCJ	**35**												GYAE35RRB		
SCJ	1 1/2	**130.2**	**101.60**	**15.9**	**26.2**	**40.9**	**13.1**	**39.3**	**98.4**	**52.4**	**27.8**	**12**	GYA108RRB	T-40134	**2.10**
SCJ	**40**	5 1/8	4	5/8	1 1/32	1 39/64	33/64	1 35/64	3 7/8	2 1/16	1 3/32	1/2	GYAE40RRB		4.63
SCJ	1 5/8												GYA110RRB		
SCJ	1 11/16	**136.5**	**104.78**	**15.9**	**28.6**	**43.6**	**13.1**	**42.1**	**104.8**	**57.9**	**28.6**	**12**	GYA111RRB	T-40164	**2.24**
SCJ	1 3/4	5 3/8	4 1/8	5/8	1 1/8	1 23/32	33/64	1 21/32	4 1/8	2 9/32	1 1/8	1/2	GYA112RRB		4.94
SCJ	**45**												GYAE45RRB		
SCJ	1 15/16												GYA115RRB		
SCJ	2 S	**142.9**	**111.12**	**16.7**	**28.6**	**46.0**	**17.1**	**44.4**	**112.7**	**62.6**	**30.9**	**16**	GYA115RRB2	T-40166	**2.55**
SCJ	**50**	5 5/8	4 3/8	21/32	1 1/8	1 13/16	43/64	1 3/4	4 7/16	2 15/32	1 7/32	5/8	GYAE50RRB		5.63
SCJ	2												GYA200RRB		
SCJ	2 3/16	**161.9**	**130.18**	**18.2**	**30.9**	**48.0**	**17.1**	**46.4**	**120.6**	**69.8**	**31.7**	**16**	GYA203RRB	T-40168	**2.96**
SCJ	**55**	6 3/8	5 1/8	23/32	1 7/32	1 57/64	43/64	1 53/64	4 3/4	2 3/4	1 1/4	5/8	GYAE55RRB		6.53

NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

RCJO, LCJO HEAVY SERIES

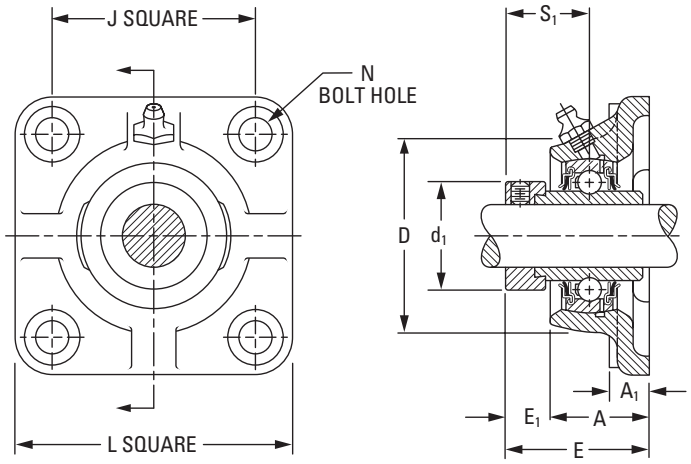
- The flange cartridges are similar in design to the standard series.
- The units are ideal for applications where minimum machining is to be done.
- The units come assembled and ready for mounting by using four bolts through the flange.
- The RCJO units are assembled with GN-KRRB (R-seal) wide-inner-ring bearings. LCJO units are equipped with GN-KLLB (L-seal) wide-inner-ring ball bearings.
- The units are factory-prelubricated, but a grease fitting is provided for relubrication if required.
- The units are supplied with self-locking collars and are dimensionally interchangeable.

Suggested shaft tolerances:

1 3/16 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 3 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RCJO 1 7/16 in., LCJO 1 11/16 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RCJO	GN-KRRB	Page A-57
LCJO	GN-KLLB	Page A-59

Unit	Shaft Dia.	L	J	A_1	A	E	N	E_1	S_1	D	d_1	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	RCJO LCJO			**kg** lbs.
RCJO, LCJO	1 3/16	**120.6** 4 3/4	**92.1** 3 5/8	**14.3** 9/16	**38.1** 1.500	**53.7** 2.115	**14.3** 9/16	**15.1** 19/32	**32.5** 1 9/32	**96.8** 3 13/16	**48.7** 1.918	**12** 1/2	GN103KRRB (KLLB)	SN103K	T-19165	**1.816** 4.00
RCJO, LCJO	1 7/16	**130.2** 5 1/8	**101.6** 4	**15.9** 5/8	**40.5** 1.594	**55.3** 2.177	**14.3** 9/16	**14.3** 9/16	**33.3** 1 5/16	**104.8** 4 1/8	**55.1** 2.168	**12** 1/2	GN107KRRB (KLLB)	SN107	T-19167	**2.497** 5.50
RCJO, LCJO	1 1/2	**136.5** 5 3/8	**104.8** 4 1/8	**15.9** 5/8	**44.4** 1.750	**60.8** 2.396	**15.9** 5/8	**15.9** 5/8	**37.3** 1 15/32	**114.3** 4 1/2	**63.0** 2.480	**14** 9/16	GN108KRRB (KLLB)	SN108K	T-19169	**3.133** 6.90
RCJO, LCJO	1 11/16	**142.9** 5 5/8	**111.1** 4 3/8	**17.5** 11/16	**46.8** 1.844	**62.4** 2.458	**15.9** 5/8	**15.1** 19/32	**38.9** 1 17/32	**123.8** 4 7/8	**69.3** 2.730	**14** 9/16	GN111KRRB (KLLB)	SN111K	T-19171	**3.573** 7.87
RCJO	1 15/16	**165.1** 6 1/2	**130.2** 5 1/8	**17.5** 11/16	**53.2** 2.094	**70.4** 2.771	**17.5** 11/16	**16.7** 21/32	**42.1** 1 21/32	**141.3** 5 9/16	**75.7** 2.980	**16** 5/8	GN115KRRB	SN115K	T-19173	**5.185** 11.42
RCJO	2 3/16	**177.8** 7	**142.9** 5 5/8	**17.5** 11/16	**58.7** 2.312	**76.7** 3.021	**17.5** 11/16	**17.5** 11/16	**45.2** 1 25/32	**154.0** 6 1/16	**82.0** 3.230	**16** 5/8	GN203KRRB	SN203K	T-19175	**6.424** 14.15
RCJO	2 7/16	**190.5** 7 1/2	**149.2** 5 7/8	**19.0** 3/4	**65.1** 2.562	**84.7** 3.333	**20.6** 13/16	**19.0** 3/4	**48.4** 1 29/32	**160.3** 6 5/16	**88.4** 3.480	**20** 3/4	GN207KRRB	SN207K	T-19177	**7.409** 16.32
RCJO	2 11/16	**225.4** 8 7/8	**177.8** 7	**22.2** 7/8	**72.2** 2.844	**89.4** 3.521	**23.8** 15/16	**21.4** 27/32	**54.8** 2 5/32	**185.7** 7 5/16	**101.1** 3.980	**22** 7/8	GN211KRRB	SO211K	T-19179	**9.534** 21.00
RCJO	2 15/16	**231.8** 9 1/8	**184.2** 7 1/4	**22.2** 7/8	**77.8** 3.062	**105.3** 4.146	**23.8** 15/16	**27.0** 1 1/16	**62.7** 2 15/32	**198.4** 7 13/16	**112.2** 4.418	**22** 7/8	GN215KRRB	SN215K	T-19181	**14.128** 31.12
RCJO	3 7/16	**279.4** 11	**215.9** 8 1/2	**28.6** 1 1/8	**84.1** 3.312	**121.2** 4.770	**27.0** 1 1/16	**36.5** 1 7/16	**73.8** 2 29/32	**228.6** 9	**132.3** 5.210	**24** 1	GN307KRRB	SN307K	T-24475	**21.474** 47.30
RCJO	3 15/16	**317.5** 12 1/2	**241.3** 9 1/2	**31.8** 1 1/4	**96.8** 3.812	**133.6** 5.260	**30.2** 1 3/16	**36.5** 1 7/16	**78.6** 3 3/32	**266.7** 10 1/2	**145.5** 5.730	**27** 1 1/8	GN315KRRB	SN315K	T-24477	**30.645** 67.50

08-19-13 DRAFT

YCJM MEDIUM-DUTY SERIES SET SCREW LOCK

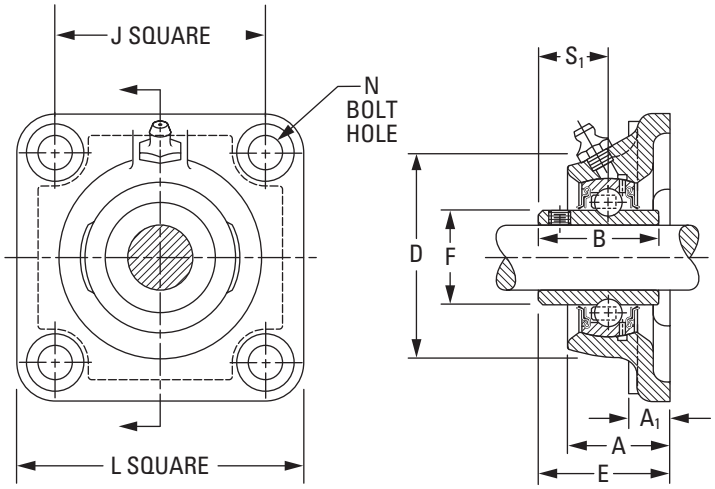
- This series includes four-bolt flanged cartridges featuring GYM-KRRB bearing inserts.
- This series is ideal for conveyor, fan and blower, sawmill, and feed and grain-handling applications.
- The durable cast-iron housings are powder-coated and maintain an excellent finish while resisting corrosion, chemicals and weather exposure.
- The industrial-duty flanged cartridges incorporate premium features designed to extend bearing life.

Suggested shaft tolerances:

1 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 3 15/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: YCJM 1 7/16 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
YCJM	GYM-KRRB	Page A-56

Unit	Shaft Dia.	L	J	A_1	A	E	N	B	D	F	S_1	Bolt Size	Bearing No.
	in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	
YCJM	1	**107.9** 4 1/4	**82.6** 3 1/4	**13.5** 17/32	**29.9** 1.178	**42.4** 1.671	**11.51** 29/64	**38.10** 1 1/2	**76.2** 3	**40.31** 1.587	**22.2** 7/8	**10** 3/8	GYM1100KRRB
YCJM	1 3/16	**117.5** 4 5/8	**92.1** 3 5/8	**13.5** 17/32	**31.8** 1.254	**46.4** 1.827	**13.10** 33/64	**42.90** 1 11/16	**88.9** 3 1/2	**46.81** 1.843	**25.4** 1	**12** 1/2	GYM1103KRRB
YCJM	1 7/16	**130.2** 5 1/8	**101.6** 4	**14.8** 9/16	**38.1** 1.500	**54.4** 2.141	**13.10** 33/64	**49.20** 1 15/16	**98.4** 3 7/8	**52.27** 2.058	**30.2** 1 3/16	**12** 1/2	GYM1107KRRB
YCJM	1 1/2	**136.5** 5 3/8	**104.8** 4 1/8	**14.3** 9/16	**38.9** 1.531	**54.4** 2.141	**13.10** 33/64	**49.20** 1 15/16	**104.8** 4 1/8	**57.92** 2.280	**30.2** 1 3/16	**12** 1/2	GYM1108KRRB
YCJM YCJM	1 11/16 1 3/4	**142.9** 5 5/8	**111.1** 4 3/8	**14.3** 9/16	**42.9** 1.688	**60.7** 2.390	**17.07** 43/64	**51.60** 2 1/32	**112.7** 4 7/16	**62.84** 2.474	**32.5** 1 9/32	**16** 5/8	GYM1111KRRB GYM1112KRRB
YCJM YCJM	1 15/16 2	**161.9** 6 3/8	**130.2** 5 1/8	**16.7** 21/32	**46.8** 1.844	**64.7** 2.546	**17.07** 43/64	**55.60** 2 3/16	**120.7** 4 3/4	**69.77** 2.747	**33.3** 1 15/16	**16** 5/8	GYM1115KRRB GY1200KRRB
YCJM YCJM	2 3/16 2 1/4	**174.6** 6 7/8	**142.9** 5 5/8	**17.5** 11/16	**49.2** 1.937	**74.3** 2.926	**17.07** 43/64	**65.10** 2 9/16	**136.5** 5 3/8	**76.48** 3.011	**39.1** 1 9/16	**16** 5/8	GYM1203KRRB GY1204KRRB
YCJM YCJM	2 7/16 2 1/2	**187.3** 7 3/8	**149.2** 5 7/8	**19.0** 3/4	**63.5** 2.500	**81.5** 3.208	**17.07** 43/64	**69.90** 2 3/4	**152.4** 6	**86.92** 3.422	**42.9** 1 11/16	**16** 5/8	GYM1207KRRB GYM1208KRRB
YCJM	2 11/16	**196.8** 7 3/4	**152.4** 6	**22.2** 7/8	**66.7** 2.625	**86.2** 3.396	**19.84** 25/32	**77.80** 3 1/16	**161.9** 6 3/8	**91.92** 3.619	**44.4** 1 3/4	**20** 3/4	GYM1211KRRB
YCJM YCJM	2 15/16 3	**196.8** 7 3/4	**152.4** 6	**22.2** 7/8	**66.7** 2.625	**90.8** 3.576	**19.84** 25/32	**77.80** 3 1/16	**179.4** 7 1/16	**98.37** 3.873	**44.4** 1 15/16	**20** 3/4	GYM1215KRRB GYM1300KRRB
YCJM	3 7/16	**214.3** 8 7/16	**171.4** 6 3/4	**25.4** 1	**70.5** 2.776	**101.1** 3.981	**19.84** 25/32	**95.94** 3 25/32	**196.8** 7 3/4	**111.68** 4.397	**56.4** 2 7/32	**20** 3/4	GYM1307KRRB
YCJM	3 15/16	**268.3** 10 9/16	**211.1** 8 5/16	**31.8** 1 1/4	**95.4** 3.755	**127.3** 5.014	**26.19** 1 1/32	**117.35** 4 5/8	**235.0** 9 1/4	**131.30** 5.171	**68.3** 2 11/16	**24** 1	GYM1315KRRB

08-19-13 DRAFT

YCJTM MEDIUM-DUTY SERIES SET SCREW LOCK

- The medium-duty, two-bolt flanged cartridges feature GYM-KRRB bearing inserts.
- This series is ideal for conveyor, fan and blower, sawmill, and feed and grain-handling applications.
- The durable cast-iron housings are powder-coated and maintain an excellent finish while resisting corrosion, chemicals and weather exposure.
- The industrial-duty flanged cartridge units incorporate premium features designed to extend bearing life. They can replace competitive designs.

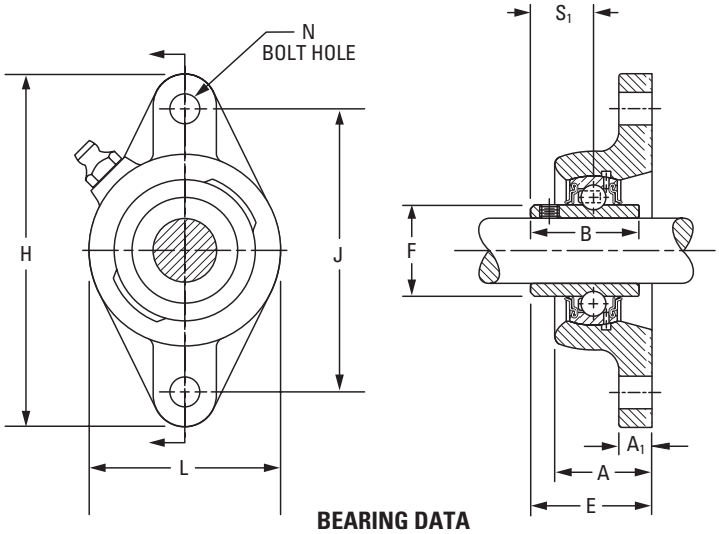
Suggested shaft tolerances:

1 – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;

2 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: YCJTM 1 7/16 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
YCJTM	GYM-KRRB	Page A-56

Unit	Shaft Dia.	H	J	L	A	E	N	B	A_1	F	S_1	Bolt Size	Bearing No.
	in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	
YCJTM	1	**141.3** 5 9/16	**116.7** 4 19/32	**79.5** 3 1/8	**29.9** 1.178	**42.4** 1.671	**11.51** 29/64	**38.1** 1 1/2	**13.5** 17/32	**40.31** 1.587	**22.2** 7/8	**10** 3/8	GYM1100KRRB
YCJTM	1 3/16	**155.6** 6 1/8	**130.2** 5 1/8	**92.1** 3 5/8	**31.8** 1.254	**46.4** 1.827	**13.10** 33/64	**42.9** 1 11/16	**11.9** 15/32	**46.79** 1.843	**25.4** 1	**12** 1/2	GYM1103KRRB
YCJTM	1 7/16	**171.5** 6 3/4	**143.7** 5 21/32	**104.8** 4 1/8	**38.1** 1.500	**54.4** 2.141	**13.10** 33/64	**49.2** 1 15/16	**12.7** 1/2	**52.27** 2.058	**30.2** 1 3/16	**12** 1/2	GYM1107KRRB
YCJTM	1 1/2	**179.4** 7 1/16	**148.4** 5 27/32	**111.1** 4 3/8	**38.9** 1.531	**54.4** 2.141	**13.10** 33/64	**49.2** 1 15/16	**12.7** 1/2	**57.92** 2.280	**30.2** 1 3/16	**12** 1/2	GYM1108KRRB
YCJTM	1 11/16	**188.9** 7 7/16	**157.2** 6 3/16	**115.9** 4 9/16	**42.9** 1.688	**60.7** 2.390	**17.07** 43/64	**51.6** 2 1/32	**12.7** 1/2	**62.81** 2.473	**32.5** 1 9/32	**16** 5/8	GYM1111KRRB
YCJTM	1 3/4												GYM1112KRRB
YCJTM	1 15/16	**215.9** 8 1/2	**184.2** 7 1/4	**127.0** 5	**46.8** 1.844	**64.7** 2.546	**17.07** 43/64	**55.6** 2 3/16	**16.7** 21/32	**69.77** 2.747	**33.3** 1 15/16	**16** 5/8	GYM1115KRRB
YCJTM	2												GY1200KRRB

08-19-13 DRAFT

RCJT, TCJT, LCJT INDUSTRIAL SERIES

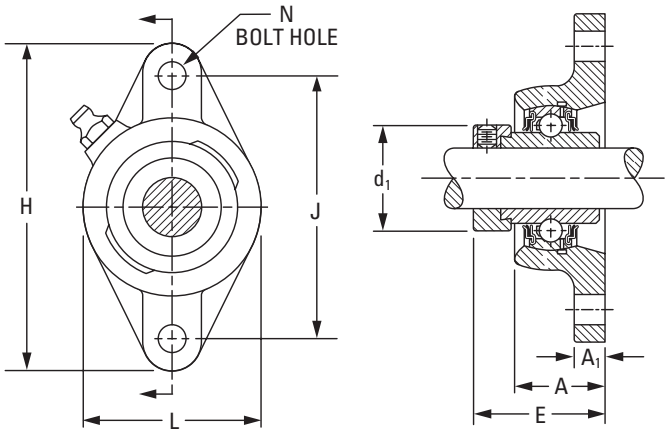
- The cartridges are the same basic design as RCJ, TCJ, and LCJ types, except they have two bolt holes instead of four.
- This series is primarily designed for applications where the mounting area is restricted.
- The RCJT cartridge is equipped with G-KRRB (R-seal) wide-inner-ring ball bearings. The TCJT is equipped with G-KPPB (tri-ply seal) wide-inner-ring ball bearings. The LCJT is equipped with the G-KLLB (Mechani-seal) wide-inner-ring ball bearings.
- The units are factory-prelubricated, but a grease fitting is provided for relubrication.
- Safety end caps are available for selected sizes.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RCJT 1 3/16 in., TCJT 1 3/16 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RCJT	G-KRRB	Page A-34
TCJT	G-KPPB	Page A-39
LCJT	G-KLLB	Page A-37

Unit	Shaft Dia.	H	J	L	A	N	E	A_1	d_1	Bolt Size	Bearing No.			Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	RCJT	TCJT	LCJT		New (Old)	**kg** lbs.
RCJT	1/2										G1008KRRB			S1008K		
RCJT	5/8	**98.4**	**76.2**	**54.0**	**23.6**	**10.7**	**40.6**	**10.3**	**28.1**	**10**	G1010KRRB	–	–	S1010K	T-40219	**0.590**
RCJT	11/16	3 7/8	3	2 1/8	0.929	27/64	1.599	13/32	1.105	3/8	G1011KRRB			S1011K		1.30
RCJT	**17**										GE17KRRB			SE17K		
RCJT	3/4	**111.9**	**89.7**	**60.5**	**27.8**	**10.7**	**46.4**	**11.1**	**32.8**	**10**	G1012KRRB	–	–	S1012K	T-40220	**0.590**
RCJT	**20**	4 13/32	3 17/32	2 3/8	1.094	27/64	1.828	7/16	1.292	3/8	GE20KRRB			SE20K		1.30
RCJT, TCJT, LCJT	13/16										G1013KRRB	G1013KPPB3	G1013KLLB	S1013K		
RCJT, TCJT, LCJT	7/8	**123.8**	**99.2**	**69.8**	**27.9**	**11.5**	**46.7**	**11.1**	**23.9**	**10**	G1014KRRB	G1014KPPB3	G1014KLLB	S1014K	T-40221	**0.785**
RCJT, TCJT, LCJT	15/16	4 7/8	3 29/32	2 3/4	1.100	29/64	1.839	7/16	1.480	3/8	G1015KRRB	G1015KPPB3	G1015KLLB	S1015K	(T-21412P)	1.73
RCJT, TCJT, LCJT	1										G1100KRRB	G1100KPPB3	G1100KLLB	S1100K		
RCJT, TCJT, LCJT	**25**										GE25KRRB	GE25KPPB3	GE25KLLB	SE25K		
RCJT, TCJT, LCJT	1 1/16										G1101KRRB	G1101KPPB3	G1101KLLB	S1101K		
RCJT, TCJT, LCJT	1 1/8	**141.3**	**116.7**	**79.4**	**29.9**	**11.5**	**50.5**	**11.9**	**43.7**	**10**	G1102KRRB	G1102KPPB3	G1102KLLB	S1102K	T-40222	**1.090**
RCJT, TCJT, LCJT	1 3/16	5 9/16	4 19/32	3 1/8	1.178	29/64	1.990	15/32	1.730	3/8	G1103KRRB	G1103KPPB3	G1103KLLB	S1103K	(T-21548P)	2.40
RCJT, TCJT, LCJT	1 1/4 S										G1103KRRB3	G1103KPPB4	G1103KLLB3	S1103K3		
RCJT, TCJT, LCJT	**30**										GE30KRRB	GE30KPPB3	GE30KLLB	SE30K		
RCJT, TCJT, LCJT	1 1/4										G1104KRRB	G1104KPPB2	G1104KLLB	S1104K[1]		
RCJT, TCJT, LCJT	1 5/16	**155.6**	**130.2**	**92.1**	**31.8**	**13.1**	**53.5**	**11.9**	**53.6**	**12**	G1105KRRB	G1105KPPB2	G1105KLLB	S1105K[1]	T-40223	**1.444**
RCJT, TCJT, LCJT	1 3/8	6 1/8	5 1/8	3 5/8	1.254	33/64	2.106	15/32	2.112	1/2	G1106KRRB	G1106KPPB2	G1106KLLB	S1106K[1]	(T-21414)	3.18
RCJT, TCJT, LCJT	1 7/16										G1107KRRB	G1107KPPB2	G1107KLLB	S1107K[1]		
RCJT, TCJT, LCJT	**35**										GE35KRRB	GE35KPPB2	GE35KLLB	SE35K		
RCJT, TCJT, LCJT	1 1/2										G1108KRRB	G1108KPPB3	G1108KLLB	S1108KT		
RCJT, TCJT, LCJT	1 9/16	**171.4**	**143.6**	**104.7**	**38.1**	**13.1**	**59.3**	**12.7**	**58.2**	**12**	G1109KRRB	G1109KPPB3	G1109KLLB	S1109KT	T-40224	**2.193**
RCJT, TCJT, LCJT	**40**	6 3/4	5 21/32	4 1/8	1.500	33/64	2.334	1/2	2.292	1/2	GE40KRRB	GE40KPPB3	GE40KLLB	SE40K	(T-22529)	4.83
RCJT, TCJT, LCJT	1 5/8										G1110KRRB	G1110KPPB4	G1110KLLB	S1110K		
RCJT, TCJT, LCJT	1 11/16	**179.4**	**148.0**	**111.1**	**38.9**	**13.1**	**59.3**	**12.7**	**63.0**	**12**	G1111KRRB	G1111KPPB4	G1111KLLB	S1111K	T-40225	**2.379**
RCJT, TCJT, LCJT	1 3/4	7 1/16	5 27/32	4 3/8	1.531	33/64	2.334	1/2	2.480	1/2	G1112KRRB	G1112KPPB4	G1112KLLB	S1112K	(T-21416)	5.24
RCJT, TCJT, LCJT	**45**										GE45KRRB	GE45KPPB4	GE45KLLB	SE45K		
RCJT, TCJT, LCJT	1 7/8	**188.9**	**157.2**	**115.9**	**42.9**	**17.1**	**66.4**	**12.7**	**69.3**	**16**	G1114KRRB	G1114KPPB3	G1114KLLB	S1114K	T-40226	**2.724**
RCJT, TCJT, LCJT	1 15/16	7 7/16	6 3/16	4 9/16	1.688	43/64	2.615	1/2	2.730	5/8	G1115KRRB	G1115KPPB3	G1115KLLB	S1115K	(T-21418)	6.00
RCJT, TCJT, LCJT	**50**										GE50KRRB	GE50KPPB3	GE50KLLB	SE50K		
RCJT, TCJT, LCJT	2										G1200KRRB	G1200KPPB4	G1200KLLB	S1200K		
RCJT, TCJT, LCJT	2 1/8	**215.9**	**184.1**	**127.0**	**46.8**	**17.1**	**75.1**	**16.7**	**75.7**	**16**	G1202KRRB	G1202KPPB4	G1202KLLB	S1202K	T-40227	**3.668**
RCJT, TCJT, LCJT	2 3/16	8 1/2	7 1/4	5	1.844	43/64	2.958	21/32	2.980	5/8	G1203KRRB	G1203KPPB4	G1203KLLB	S1203K	(T-23788)	8.08
RCJT, TCJT, LCJT	**55**										GE55KRRB	GE55KPPB4	GE55KLLB	SE55K		

[1]Add C1 suffix to collar numbers for G-KPPB2 bearings (TCJT).
NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

RCJTC INDUSTRIAL-SERIES CONCENTRIC COLLAR

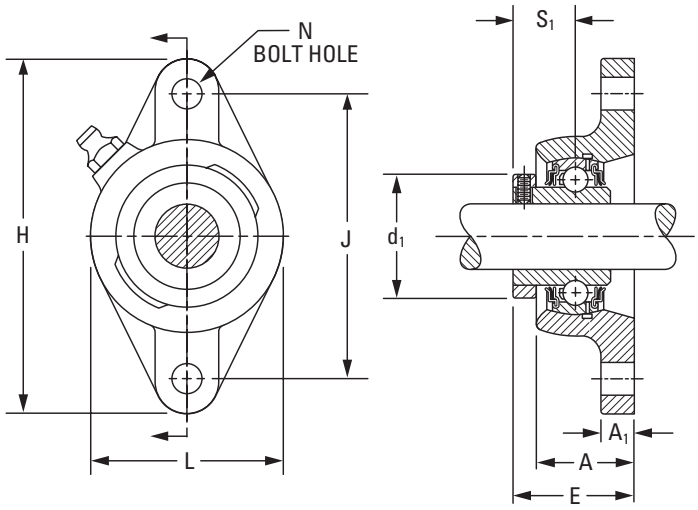
- This series has the same basic design as RCJT, except it uses the concentric collar rather than the self-locking eccentric collar as the shaft-locking device.
- All units are equipped with GC-KRRB wide inner ring concentric collars.
- The spherical outside diameter mounted in the corresponding machined housing seats provides the initial self-alignment.
- The bolt-hole spacing dimensions are interchangeable with the RCJT series and most competitive units.
- The units are factory-prelubricated. A grease fitting is provided for relubrication.
- Safety end caps are available for selected sizes.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;

To order, specify UNIT and SHAFT DIAMETER.

Example: RCJTC 1 3/16 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RCJTC	GC-KRRB	Page A-40

Unit	Shaft Dia.	H	J	L	A	E	N	A_1	d_1	S_1	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			New (Old)	**kg** lbs.
RCJTC	5/8	**98.4** 3 7/8	**76.20** 3	**60.3** 2 3/8	**23.6** 0.929	**32.7** 1.287	**9.9** 25/64	**8.3** 21/64	**33.8** 1.329	**15.5** 39/64	**10** 3/8	GC1010KRRB	C203	T-40270 (T-27181)	**0.368** 0.81
RCJTC	3/4	**111.9** 4 13/32	**89.70** 3 17/32	**60.3** 2 3/8	**27.8** 1.094	**38.2** 1.502	**9.9** 25/64	**11.1** 7/16	**37.7** 1.485	**18.7** 47/64	**10** 3/8	GC1012KRRB	C204	T-40271 (T-27183)	**0.545** 1.20
RCJTC	1	**123.8** 4 7/8	**98.81** 3 57/64	**69.8** 2 3/4	**27.9** 1.100	**39.8** 1.569	**11.9** 15/32	**13.5** 17/32	**44.1** 1.735	**20.2** 51/64	**10** 3/8	GC1100KRRB	C205	T-40272 (T-27200)	**0.717** 1.58
RCJTC RCJTC RCJTC	1 1/8 1 3/16 1 1/4 S	**141.3** 5 9/16	**116.70** 4 19/32	**81.0** 3 3/16	**29.9** 1.178	**43.0** 1.693	**11.5** 29/64	**13.5** 17/32	**52.3** 2.058	**22.6** 57/64	**10** 3/8	GC1102KRRB GC1103KRRB GC1103KRRB3	C206	T-401273 (T-27197)	**1.035** 2.28
RCJTC RCJTC RCJTC	1 1/4 1 3/8 1 7/16	**155.6** 6 1/8	**130.20** 5 1/8	**92.1** 3 5/8	**31.8** 1.254	**46.6** 1.834	**13.1** 33/64	**14.3** 9/16	**58.2** 2.292	**25.4** 1	**12** 1/2	GC1104KRRB GC1106KRRB GC1107KRRB	C207	T-40252	**1.498** 3.30
RCJTC	1 11/16	**179.4** 7 1/16	**148.40** 5 27/32	**111.1** 4 3/8	**38.9** 1.531	**53.7** 2.116	**13.1** 33/64	**14.3** 9/16	**72.9** 2.871	**29.4** 1 5/32	**12** 1/2	GC1111KRRB	C209	T-40275	**2.097** 4.62
RCJTC	1 15/16	**188.9** 7 7/16	**157.20** 6 3/16	**115.9** 4 9/16	**42.9** 1.688	**58.5** 2.303	**17.1** 43/64	**14.3** 9/16	**79.3** 3.121	**30.2** 1 3/16	**16** 5/8	GC1115KRRB	C210	T-40276	**2.497** 5.50

NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

VCJT STANDARD SERIES

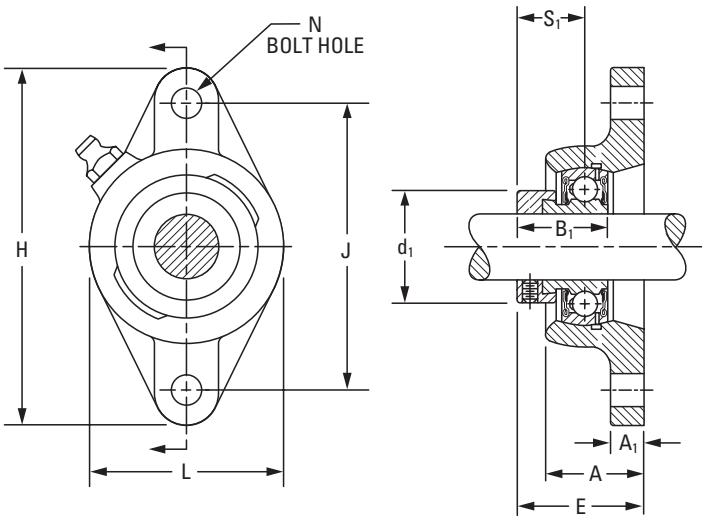
- This series has the same design and features as the VCJ type, but has two bolt holes instead of four. This allows mounting in restricted areas.
- This series is assembled with GRA-RRB bearings with positive-contact, land-riding seals and self-locking collars.
- The units are factory-prelubricated. A grease fitting is provided for relubrication.
- Safety end caps are available for selected sizes.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: VCJT 1 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
VCJT	GRA-RRB	Page A-50

Unit	Shaft Dia.	H	J	L	A	E	N	B_1	A_1	d_1	S_1	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			New (Old)	**kg** lbs.
VCJT	1/2												GRA008RRB	S1008K		
VCJT	5/8	**98.4** 3 7/8	**76.2** 3	**53.9** 2 1/8	**23.6** 0.929	**39.3** 1.548	**10.7** 27/64	**28.6** 1 1/8	**10.3** 13/32	**28.1** 1.105	**22.2** 7/8	**10** 3/8	GRA010RRB	S1010K	T-40219 (T-22244P)	**0.590** 1.30
VCJT	**17**												GRAE17RRB	SE17K		
VCJT	3/4	**111.9** 4 13/32	**89.7** 3 17/32	**60.3** 2 3/8	**27.8** 1.094	**43.3** 1.706	**9.9** 25/64	**31.0** 1 7/32	**11.1** 7/16	**32.8** 1.292	**23.4** 59/64	**10** 3/8	GRA012RRB	S1012K	T-40220 (T-21409P)	**0.518** 1.44
VCJT	**20**												GRAE20RRB	SE20K		
VCJT	7/8												GRA014RRB	S1014K		
VCJT	15/16	**123.8** 4 7/8	**99.2** 3 29/32	**69.8** 2 3/4	**27.9** 1.100	**43.2** 1.701	**11.5** 29/64	**31.0** 1 7/32	**11.1** 7/16	**23.9** 1.480	**23.4** 59/64	**10** 3/8	GRA015RRB	S1015K	T-40221 (T-21412P)	**0.740** 1.63
VCJT	1												GRA100RRB	S1100K		
VCJT	**25**												GRAE25RRB	SE25K		
VCJT	1 1/8												GRA102RRB	S1102K		
VCJT	1 3/16	**141.3** 5 9/16	**116.7** 4 19/32	**79.4** 3 1/8	**29.9** 1.178	**47.1** 1.856	**11.5** 29/64	**35.7** 1 13/32	**11.9** 15/32	**43.7** 1.730	**27.0** 1 1/16	**10** 3/8	GRA103RRB	S1103K	T-40222 (T-21548P)	**1.026** 2.26
VCJT	1 1/4 S												GRA103RRB2	S1103K3		
VCJT	**30**												GRAE30RRB	SE30K		
VCJT	1 1/4												GRA104RRB	S1104K		
VCJT	1 3/8	**155.6** 6 1/8	**130.2** 5 1/8	**92.1** 3 5/8	**31.8** 1.254	**50.5** 1.989	**13.1** 33/64	**38.9** 1 17/32	**11.9** 15/32	**53.6** 2.112	**29.4** 1 5/32	**12** 1/2	GRA106RRB	S1106K	T-40223 (T-21414)	**1.362** 3.00
VCJT	1 7/16												GRA107RRB	S1107K		
VCJT	**35**												GRAE35RRB	SE35K		
VCJT	1 1/2	**171.4** 6 3/4	**143.6** 5 21/32	**104.7** 4 1/8	**38.1** 1.500	**56.9** 2.243	**13.1** 33/64	**43.7** 1 23/32	**12.7** 1/2	**58.2** 2.292	**32.5** 1 9/32	**12** 1/2	GRA108RRB	S1108KT	T-40224 (T-22529)	**2.075** 4.57
VCJT	**40**												GRAE40RRB	SE40K		
VCJT	1 5/8												GRA110RRB	S1110K		
VCJT	1 11/16	**179.4** 7 1/16	**148.0** 5 27/32	**111.1** 4 3/8	**38.9** 1.531	**57.0** 2.244	**13.1** 33/64	**43.7** 1 23/32	**12.7** 1/2	**63.0** 2.480	**32.5** 1 9/32	**12** 1/2	GRA111RRB	S1111K	T-40225 (T-21416)	**2.229** 4.91
VCJT	1 3/4												GRA112RRB	S1112K		
VCJT	**45**												GRAE45RRB	SE45K		
VCJT	1 7/8												GRA114RRB	S1114K		
VCJT	1 15/16	**188.9** 7 7/16	**157.2** 6 3/16	**115.8** 4 9/16	**42.9** 1.688	**61.0** 2.400	**17.1** 43/64	**43.7** 1 23/32	**12.7** 1/2	**69.3** 2.730	**32.5** 1 9/32	**16** 5/8	GRA115RRB	S1115K	T-40226 (T-21418)	**2.492** 5.49
VCJT	2 S												GRA115RRB2	S1115K2		
VCJT	**50**												GRAE50RRB	SE50K		
VCJT	2												GRA200RRB	S1200K		
VCJT	2 3/16	**215.9** 8 1/2	**184.1** 7 1/4	**127.0** 5	**46.8** 1.844	**67.9** 2.672	**17.1** 43/64	**48.4** 1 29/32	**16.7** 21/32	**75.7** 2.980	**36.5** 2 7/16	**16** 5/8	GRA203RRB	S1203K	T-40227 (T-23788)	**3.092** 6.81
VCJT	**55**												GRAE55RRB	SE55K		

NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

YCJT INDUSTRIAL SET SCREW SERIES

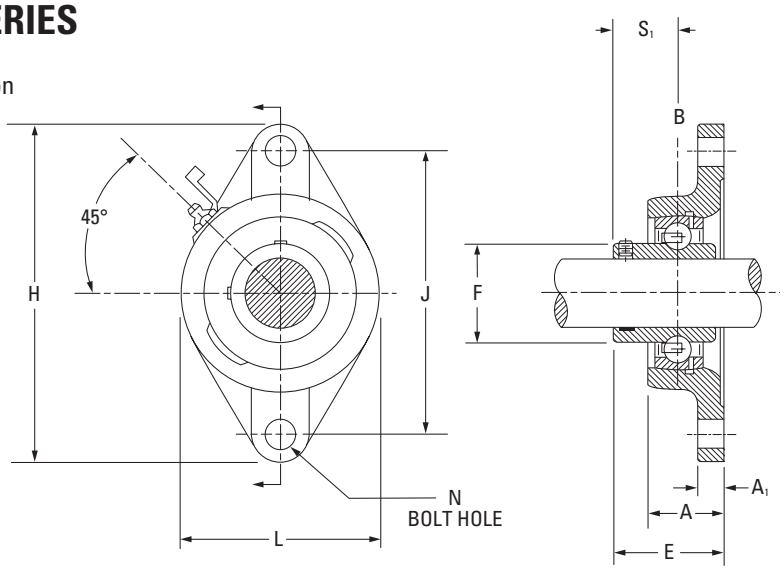
- Incorporates Shaft Guarding Technology, which reduces replacement time, provides shaft protection and prolongs the life of the shaft.
- This series has the same design as the YCJ series, but is mounted with two bolts instead of four.
- All units are equipped with GY-KRRB wide inner ring, set screw bearings.
- The spherical outside diameter mounted in the corresponding machined housings seats provides the initial self-alignment.
- The units are factory-prelubricated. A grease fitting is provided for relubrication.
- Safety end caps are available for selected sizes.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: YCJT 1 7/16 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
YCJT	GY-KRRB	Page A-44

Unit	Shaft Dia.	H	J	L	A	E	B	A_1	F	N	S_1	Bolt Size	Bearing No.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	
YCJT	1/2												GY1008KRRB
YCJT	5/8	**98.4** 3 7/8	**76.2** 3	**54.00** 2 1/8	**23.6** 0.929	**32.90** 1.296	**27.40** 1 5/64	**11.1** 7/16	**23.9** 0.941	**10.0** 27/64	**15.9** 5/8	**10** 3/8	GY1010KRRB
YCJT	**17**												GYE17KRRB
YCJT SGT	3/4	**111.9** 4 13/32	**89.7** 3 17/32	**60.30** 2 3/8	**27.8** 1.094	**38.40** 1.513	**31.80** 1 1/4	**11.1** 7/16	**27.6** 1.085	**10.0** 27/64	**19.1** 3/4	**10** 3/8	GY1012KRRB SGT
YCJT SGT	**20**												GYE20KRRB SGT
YCJT SGT	7/8												GY1014KRRB SGT
YCJT SGT	15/16	**123.8** 4 7/8	**99.2** 3 29/32	**69.90** 2 3/4	**27.9** 1.100	**40.00** 1.575	**34.90** 1 3/8	**12.7** 1/2	**33.8** 1.331	**11.5** 29/64	**20.6** 13/16	**12** 1/2	GY1015KRRB SGT
YCJT SGT	1												GY1100KRRB SGT
YCJT SGT	**25**												GYE25KRRB SGT
YCJT SGT	1 1/8												GY1102KRRB SGT
YCJT SGT	1 3/16	**141.3** 5 9/16	**116.7** 4 19/32	**79.45** 3 1/8	**29.9** 1.178	**43.46** 1.711	**39.29** 1 35/64	**13.5** 17/32	**40.3** 1.587	**11.5** 29/64	**23.4** 59/64	**12** 1/2	GY1103KRRB SGT
YCJT	1 1/4 S												GY1103KRRB3
YCJT SGT	**30**												GYE30KRRB SGT
YCJT SGT	1 1/4												GY1104KRRB SGT
YCJT SGT	1 3/8	**155.6** 6 1/8	**130.2** 5 1/8	**92.10** 3 5/8	**31.8** 1.254	**48.95** 1.927	**45.20** 1 25/32	**13.5** 17/32	**46.8** 1.843	**13.0** 33/64	**27.9** 1 1/10	**12** 1/2	GY1106KRRB SGT
YCJT SGT	1 7/16												GY1107KRRB SGT
YCJT SGT	**35**												GYE35KRRB SGT
YCJT SGT	1 1/2	**171.5** 6 3/4	**143.7** 5 21/32	**104.80** 4 1/8	**38.1** 1.500	**54.40** 2.141	**49.20** 1 15/16	**14.3** 9/16	**52.2** 2.057	**13.0** 33/64	**30.2** 1 3/16	**12** 1/2	GY1108KRRB SGT
YCJT SGT	**40**												GYE40KRRB SGT
YCJT SGT	1 5/8												GY1110KRRB SGT
YCJT SGT	1 11/16	**179.4** 7 1/16	**148.4** 5 27/32	**111.10** 4 3/8	**38.9** 1.531	**55.52** 2.186	**50.40** 1 63/64	**14.3** 9/16	**57.9** 2.279	**13.0** 33/64	**31.4** 1 15/64	**12** 1/2	GY1111KRRB SGT
YCJT SGT	1 3/4												GY1112KRRB SGT
YCJT SGT	**45**												GYE45KRRB SGT
YCJT SGT	1 15/16												GY1115KRRB SGT
YCJT	2 S	**188.9** 7 7/16	**157.2** 6 3/16	**115.90** 4 9/16	**42.9** 1.688	**60.70** 2.390	**51.60** 2 1/32	**14.3** 9/16	**62.8** 2.473	**17.0** 43/64	**32.5** 1 9/32	**12** 1/2	GY1115KRRB3
YCJT SGT	**50**												GYE50KRRB SGT
YCJT SGT	2												GY1200KRRB SGT
YCJT SGT	2 3/16	**215.9** 8 1/2	**184.2** 7 1/4	**127.00** 5	**46.8** 1.844	**64.70** 2.547	**55.60** 2 3/16	**16.7** 21/32	**69.7** 2.745	**17.0** 43/64	**33.3** 1 5/16	**16** 5/8	GY1203KRRB SGT
YCJT SGT	**55**												GYE55KRRB SGT

NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

SCJT STANDARD SERIES

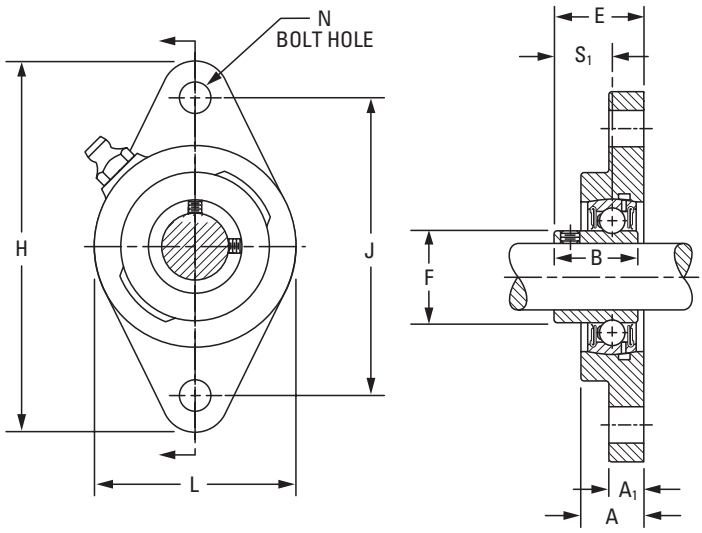
- This series has the same construction and design as SCJ type, but is mounted with two bolts instead of four.
- This series is assembled with GYA-RRB bearings with positive-contact, land-riding seals and set screw locking.
- The units are factory-prelubricated. A grease fitting is provided for relubrication.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: SCJT 1 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
SCJT	GYA-RRB	Page A-54

Unit	Shaft Dia.	H	J	L	A	E	N	B	A_1	F	S_1	Bolt Size	Bearing No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**kg** lbs.
SCJT	1/2												GYA008RRB		
SCJT	5/8	**98.4**	**76.20**	**60.3**	**17.9**	**25.4**	**9.9**	**23.8**	**11.1**	**24.6**	**15.9**	**10**	GYA010RRB	T-40136	**0.34**
SCJT	**17**	3 7/8	3	2 3/8	45/64	1	25/64	15/16	7/16	31/32	5/8	3/8	GYAE17RRB		0.75
SCJT	3/4	**111.9**	**89.69**	**65.1**	**19.0**	**28.6**	**9.9**	**27.0**	**11.1**	**29.0**	**18.3**	**10**	GYA012RRB	T-40138	**0.43**
SCJT	**20**	4 13/32	3 17/32	2 9/16	3/4	1 1/8	25/64	1 1/16	7/16	1 9/64	23/32	3/8	GYAE20RRB		0.94
SCJT	7/8												GYA014RRB		
SCJT	15/16	**123.8**	**98.82**	**69.9**	**19.8**	**29.8**	**11.9**	**28.2**	**11.1**	**33.7**	**19.4**	**10**	GYA015RRB	T-40140	**0.48**
SCJT	1	4 7/8	3 57/64	2 3/4	25/32	1 11/64	15/32	1 7/64	7/16	1 21/64	49/64	3/8	GYA100RRB		1.07
SCJT	**25**												GYAE25RRB		
SCJT	1 1/8												GYA102RRB		
SCJT	1 3/16	**141.3**	**116.68**	**79.4**	**21.4**	**34.1**	**11.5**	**32.5**	**13.5**	**40.1**	**23.0**	**10**	GYA103RRB	T-40142	**0.72**
SCJT	1 1/4 S	5 9/16	4 19/32	3 1/8	27/32	1 11/32	29/64	1 9/32	17/32	1 37/64	29/32	3/8	GYA103RRB3		1.58
SCJT	**30**												GYAE30RRB		
SCJT	1 1/4												GYA104RRB		
SCJT	1 3/8	**155.6**	**130.18**	**92.1**	**24.6**	**38.1**	**13.1**	**36.5**	**14.3**	**46.8**	**25.8**	**12**	GYA106RRB	T-40144	**1.08**
SCJT	1 7/16	6 1/8	5 1/8	3 5/8	31/32	1 1/2	33/64	1 7/16	9/16	1 27/32	1 1/64	1/2	GYA107RRB		2.37
SCJT	**35**												GYAE35RRB		
SCJT	1 1/2	**171.5**	**143.67**	**104.8**	**26.2**	**40.9**	**13.1**	**39.3**	**14.3**	**52.4**	**27.8**	**12**	GYA108RRB	T-40146	**1.97**
SCJT	**40**	6 3/4	5 21/32	4 1/8	1 1/32	1 39/64	33/64	1 35/64	9/16	2 1/16	1 3/32	1/2	GYAE40RRB		4.34
SCJT	1 5/8												GYA110RRB		
SCJT	1 11/16	**179.4**	**148.00**	**111.1**	**28.6**	**43.6**	**13.1**	**42.1**	**15.8**	**57.9**	**28.6**	**12**	GYA111RRB	T-40170	**2.03**
SCJT	1 3/4	7 1/16	5 27/32	4 3/8	1 1/8	1 23/32	33/64	1 21/32	5/8	2 5/32	1 7/8	1/2	GYA112RRB		4.48
SCJT	**45**												GYAE45RRB		
SCJT	1 15/16												GYA115RRB		
SCJT	2 S	**189.9**	**157.16**	**115.8**	**28.6**	**46.0**	**17.1**	**44.4**	**16.6**	**62.7**	**30.9**	**16**	GYA115RRB2	T-40172	**2.26**
SCJT	**50**	7 7/16	6 3/16	4 9/16	1 1/8	1 13/16	43/64	1 3/4	21/32	2 15/32	1 7/32	5/8	GYAE50RRB		4.98
SCJT	2												GYA200RRB		
SCJT	2 3/16	**215.9**	**184.15**	**127.0**	**30.9**	**48.0**	**17.1**	**46.4**	**18.2**	**69.8**	**31.7**	**16**	GYA203RRB	T-40174	**2.79**
SCJT	**55**	8 1/2	7 1/4	5	1 7/32	1 57/64	43/64	1 53/64	23/32	2 3/4	1 1/4	5/8	GYAE55RRB		6.14

NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

FLCT STANDARD SERIES

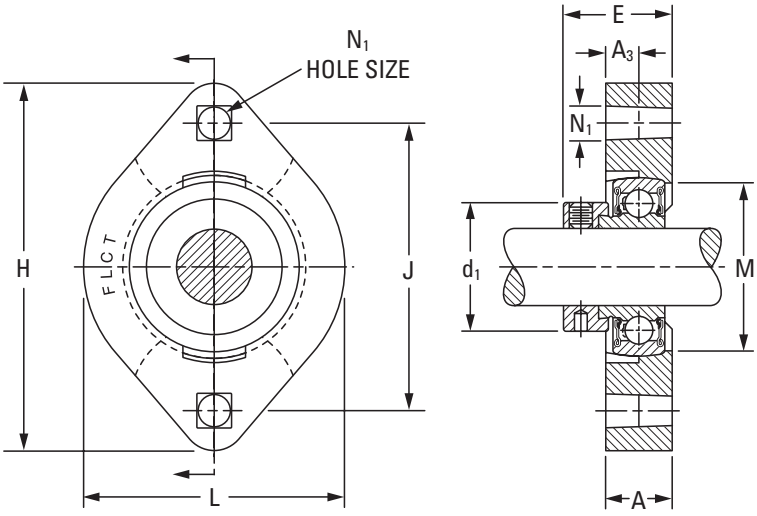
- These versatile power-transmission units are designed to provide sturdy shaft support in minimum space at minimum cost.
- The space-saving, two-bolt unit mounts flush against the frame.
- The bolt-hole spacing and size is the same as the pressed-steel flangette unit.
- The series is equipped with RA-RRB extended inner ring ball bearings with positive-contact, land-riding seals.
- The series is permanently prelubricated.

Suggested shaft tolerances:

½ in. – 1 7/16 in., nominal to -0.013 mm, -0.0005 in.;

To order, specify UNIT and SHAFT DIAMETER.

Example: FLCT 1 3/16 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
FLCT	RA-RRB	Page A-48

Unit	Shaft Dia.	H	J	L	E	A	A_3	N_1 Sq.	d_1	M	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**kg** lbs.
FLCT	½											RA008RRB	S1008K		
FLCT	5/8	**81.0** 3 3/16	**63.5** 2 ½	**58.7** 2 5/16	**30.2** 1 3/16	**14.7** 37/64	**7.1** 9/32	**7.1** 9/32	**28.6** 1 1/8	**38.1** 1 ½	**6** ¼	RA010RRB	S1010K	T-34124	**0.322** 0.71
FLCT	**17**											RAE17RRB	SE17K		
FLCT	¾	**90.5** 3 9/16	**71.4** 2 13/16	**66.7** 2 5/8	**32.9** 1 19/64	**17.1** 43/64	**8.7** 11/32	**8.7** 11/32	**33.3** 1 5/16	**45.2** 1 25/32	**8** 5/16	RA012RRB	S1012K	T-34122	**0.445** 0.98
FLCT	**20**											RAE20RRB	SE20K		
FLCT	7/8											RA014RRB	S1014K		
FLCT	15/16	**95.2** 3 3/4	**76.2** 3	**71.0** 2 51/64	**34.5** 1 23/64	**17.5** 11/16	**8.7** 11/32	**8.7** 11/32	**38.1** 1 ½	**50.4** 1 63/64	**8** 5/16	RA015RRB	S1015K	T-33753	**0.499** 1.10
FLCT	1											RA100RRB	S1100K		
FLCT	**25**											RAE25RRB	SE25K		
FLCT	1 1/8											RA102RRB	S1102K		
FLCT	1 3/16	**112.7** 4 7/16	**90.5** 3 9/16	**84.1** 3 5/16	**38.5** 1 33/64	**20.6** 13/16	**10.3** 13/32	**10.3** 13/32	**44.4** 1 3/4	**59.5** 2 11/32	**10** 3/8	RA103RRB	S1103K	T-34120	**0.835** 1.84
FLCT	1 1/4 S											RA103RRB2	S1103K3		
FLCT	**30**											RAE30RRB	SE30K		
FLCT	1 1/4											RA104RRB	S1104K		
FLCT	1 3/8	**125.4** 4 15/16	**100.0** 3 15/16	**93.7** 3 11/16	**41.1** 1 21/32	**22.2** 7/8	**11.1** 7/16	**10.3** 13/32	**54.0** 2 1/8	**69.5** 2 47/64	**10** 3/8	RA106RRB	S1106K	T-34118	**1.075** 2.37
FLCT	1 7/16											RA107RRB	S1107K		
FLCT	**35**											RAE35RRB	SE35K		

NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

RFC INDUSTRIAL PILOTED-SERIES CONCENTRIC COLLAR

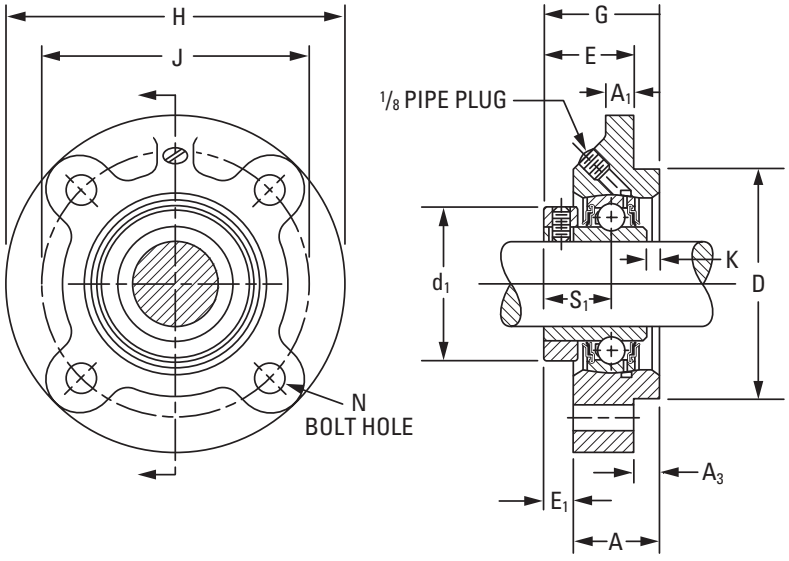
- The piloted flange cartridges ensure accurate mounting fits and provide better support for heavy loads.
- The cast-iron units are suited for applications such as material handling, industrial conveyor equipment, and farm and construction equipment.
- This series is assembled with R-seal (GC-KRRB) bearings with a concentric-locking collar.
- The units are factory-prelubricated. A grease fitting is provided for relubrication if required.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RFC 1 7/16 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RFC	GC-KRRB	Page A-40

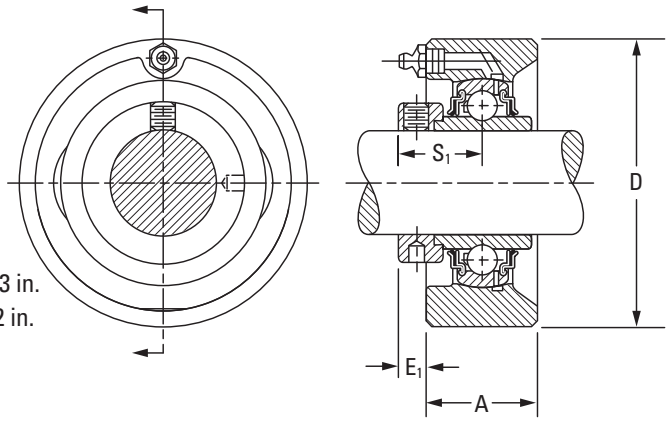
Unit	Shaft Dia.	D	J	H	S_1	K	N	G	A	E_1	A_3	E	A_1	d_1	Bolt Size	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**kg** lbs.
RFC	1	**76.20** 3.000	**92.1** 3 5/8	**111.1** 4 3/8	**20.2** 51/64	**3.6** 9/64	**10.3** 13/32	**37.7** 1 31/64	**28.2** 1 7/64	**9.5** 3/8	**6.4** 1/4	**31.4** 1 15/64	**9.5** 3/8	**44.4** 1 3/4	**10** 3/8	GC1100KRRB	C205	T-27031	**1.152** 2.54
RFC	1 1/8	**85.72** 3.375	**104.8** 4 1/8	**127.0** 5	**22.6** 57/64	**3.6** 9/64	**11.9** 15/32	**40.9** 1 39/64	**30.6** 1 13/64	**10.3** 13/32	**10.7** 27/64	**30.2** 1 3/16	**9.5** 3/8	**52.4** 2 1/16	**10** 3/8	GC1102KRRB	C206	T-27021	**1.742** 3.84
RFC	1 3/16															GC1103KRRB			
RFC	1 1/4 S															GC1103KRRB3			
RFC	1 1/4	**92.08** 3.625	**111.1** 4 3/8	**133.4** 5 1/4	**25.4** 1	**3.2** 1/8	**11.9** 15/32	**44.4** 1 3/4	**34.1** 1 11/32	**10.3** 13/32	**11.9** 15/32	**32.5** 1 9/32	**12.7** 1/2	**59.5** 2 11/32	**10** 3/8	GC1104KRRB	C207	T-26730	**1.864** 4.11
RFC	1 3/8															GC1106KRRB			
RFC	1 7/16															GC1107KRRB			
RFC	1 1/2	**92.08** 3.625	**111.1** 4 3/8	**133.4** 5 1/4	**27.4** 1 5/64	**4.8** 3/16	**11.9** 15/32	**48.8** 1 59/64	**38.1** 1 1/2	**10.7** 27/64	**11.9** 15/32	**36.9** 1 29/64	**12.7** 1/2	**68.3** 2 11/16	**10** 3/8	GC1108KRRB	C208	T-26587	**2.141** 4.72
RFC	1 11/16	**107.95** 4.250	**130.2** 5 1/8	**155.6** 6 1/8	**29.4** 1 5/32	–	**13.5** 17/32	**46.8** 1 27/32	**34.1** 1 11/32	**12.7** 1/2	**11.9** 15/32	**34.9** 1 3/8	**11.5** 29/64	**73.0** 2 7/8	**12** 1/2	GC1111KRRB	C209	T-27276	**2.817** 6.21
RFC	1 3/4															GC1112KRRB			
RFC	1 15/16	**114.30** 4.500	**136.5** 5 3/8	**161.9** 6 3/8	**30.2** 1 3/16	**6.4** 1/4	**13.5** 17/32	**54.8** 2 5/32	**42.9** 1 11/16	**11.9** 15/32	**15.9** 5/8	**38.9** 1 17/32	**12.7** 1/2	**79.4** 3 1/8	**12** 1/2	GC1115KRRB	C210	T-26743	**3.211** 7.08
RFC	2	**127.00** 5.000	**152.4** 6	**181.0** 7 1/8	**33.3** 1 5/16	**7.1** 9/32	**15.1** 19/32	**61.1** 2 13/32	**44.4** 1 3/4	**16.7** 21/32	**22.2** 7/8	**38.9** 1 17/32	**12.7** 1/2	**88.9** 3 1/2	**12** 1/2	GC1200KRRB	C211	T-28287	**4.082** 9.00
RFC	2 3/16															GC1203KRRB			

NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

RC SERIES

- The RC series is convenient for mounting in straight-bore housings.
- The bearing features a self-locking collar and spherical outside diameter fitted to a corresponding spherical seat in the cartridge that provides self-alignment.
- The unit is equipped with a G-KRRB (R-seal) bearing.



Suggested housing bore:

Shaft Rotating: nominal +.025 mm to +.076 mm, +.001 in. to +.003 in.
Shaft Stationary: nominal +.00 mm to -.050 mm, +.000 in. to -.002 in.
Avoid excessive tightening of anchor bolts.

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 7/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RC 1 3/16 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RC	G-KRRB	Page A-34

Unit[1]	Shaft Dia.	D	A	E_1	S_1	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**kg** lbs.
RC	1/2					G1008KRRB	S1008K		
RC	5/8	**68.27**	**30.2**	**8.3**	**23.4**	G1010KRRB	S1010K	T-16793	**0.549**
RC	11/16	2 11/16	1 3/16	21/64	59/64	G1011KRRB	S1011K		1.21
RC	**17**					GE17KRRB	SE17K		
RC	3/4	**74.61**	**36.5**	**8.3**	**26.6**	G1012KRRB	S1012K	T-16795	**0.804**
RC	**20**	2 15/16	1 7/16	21/64	1 3/64	GE20KRRB	SE20K		1.77
RC	7/8					G1014KRRB	S1014K		
RC	15/16	**79.38**	**38.1**	**7.9**	**27.0**	G1015KRRB	S1015K	T-16797	**0.876**
RC	1	3 1/8	1 1/2	5/16	1 1/16	G1100KRRB	S1100K		1.93
RC	**25**					GE25KRRB	SE25K		
RC	1 1/16					G1101KRRB	S1101K		
RC	1 1/8	**88.90**	**38.1**	**11.1**	**30.2**	G1102KRRB	S1102K	T-16798	**1.171**
RC	1 3/16	3 1/2	1 1/2	7/16	1 3/16	G1103KRRB	S1103K		2.58
RC	**30**					GE30KRRB	SE30K		
RC	1 1/4					G1104KRRB	S1104K		
RC	1 5/16					G1105KRRB	S1105K		
RC	1 3/8	**98.43**	**39.7**	**12.7**	**32.5**	G1106KRRB	S1106K	T-16686	**1.448**
RC	1 7/16	3 7/8	1 9/16	1/2	1 9/32	G1107KRRB	S1107K		3.19
RC	**35**					GE35KRRB	SE35K		
RC	1 1/2					G1108KRRB	S1108KT		
RC	1 9/16	**106.36**	**44.4**	**12.7**	**34.9**	G1109KRRB	S1109KT	T-16800	**1.870**
RC	**40**	4 3/16	1 3/4	1/2	1 3/8	GE40KRRB	SE40K		4.12
RC	1 5/8					G1110KRRB	S1110K		
RC	1 11/16	**111.13**	**44.4**	**12.7**	**34.9**	G1111KRRB	S1111K	T-16687	**1.970**
RC	1 3/4	4 3/8	1 3/4	1/2	1 3/8	G1112KRRB	S1112K		4.34
RC	**45**					GE45KRRB	SE45K		
RC	1 7/8	**115.89**	**52.4**	**11.9**	**38.1**	G1114KRRB	S1114K	T-16802	**2.452**
RC	1 15/16	4 9/16	2 1/16	15/32	1 1/2	G1115KRRB	S1115K		5.40
RC	**50**					GE50KRRB	SE50K		
RC	2					G1200KRRB	S1200K		
RC	2 1/8	**125.41**	**58.7**	**14.3**	**43.7**	G1202KRRB	S1202K	T-16804	**3.164**
RC	2 3/16	4 15/16	2 5/16	9/16	1 23/32	G1203KRRB	S1203K		6.97
RC	**55**					GE55KRRB	SE55K		
RC	2 7/16	**149.23**	**65.1**	**14.3**	**46.8**	G1207KRRB	S1207K	T-17927	**5.130**
RC	**60**	5 7/8	2 9/16	9/16	1 27/32	GE60KRRB	SE60K		11.30

[1]All units have 1/4-28 grease fittings.

08-19-13 DRAFT

MALLEABLE-IRON FLANGED UNITS

GVFD, GVFDR RELUBRICATABLE SERIES – VFD, VFDR NON-RELUBRICATABLE SERIES

- The malleable-iron flange cartridges provide self-alignment and rigid support for medium-duty applications.
- The mounting bolt holes are interchangeable with pressed-steel flangette units of corresponding size.

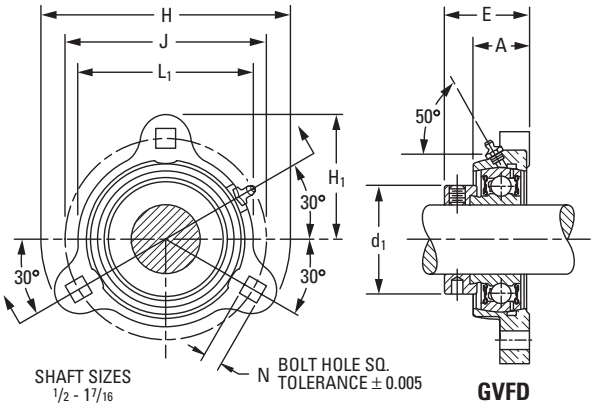
Suggested shaft tolerances: nominal to -0.013 mm, -0.0005 in.

To order, specify UNIT and SHAFT DIAMETER.
For the non-relubricatable series, omit the G prefix on the unit and bearing number.

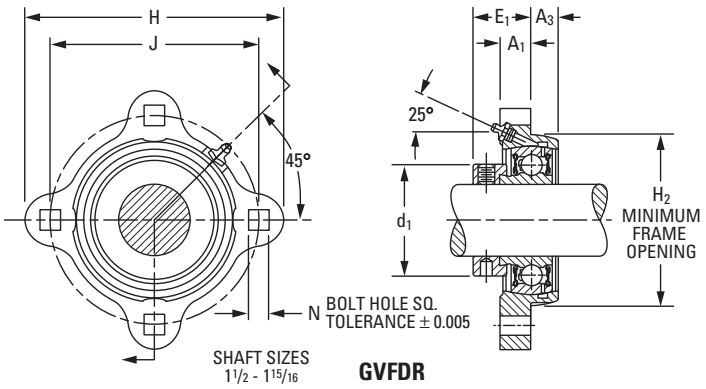
Example: VFD 1 3/16 in. or VFDR 1 3/16 in.; GVFD 1 3/16 in. or GVFDR 1 3/16 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
VFD, VFDR	RA-RRB	Page A-48
GVFD, GVFDR	GRA-RRB	Page A-50



GVFD



GVFDR

Unit		Shaft Dia.	H_1	L_1	H	J	N	H_2	E	A	E_1	A_3	A_1	d_1	Bearing No.	Collar No.	Unit Wt.
Face Mounted	Reverse Mounted	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**kg** lbs.
RELUBRICATABLE SERIES[1]																	
GVFD[2]	GVFDR[2]	1/2	**40.5** 1 19/32	**53.2** 2 3/32	**81.0** 3 3/16	**63.5** 2 1/2	**7.1** 9/32	**47.6** 1 7/8	**31.8** 1 1/4	**17.5** 11/16	**22.2** 7/8	**7.9** 5/16	**9.5** 3/8	**28.6** 1 1/8	GRA008RRB	S1008K	**2.63**
GVFD[2]	GVFDR[2]	5/8													GRA010RRB	S1010K	0.58
GVFD[2]	GVFDR[2]	**17**													GRAE17RRB	SE17K	
GVFD[2]	GVFDR	3/4	**45.2** 1 25/32	**60.3** 2 3/8	**90.5** 3 9/16	**71.4** 2 13/16	**8.7** 11/32	**54.8** 2 5/32	**34.1** 1 11/32	**19.8** 25/32	**23.4** 59/64	**9.1** 23/64	**10.7** 27/64	**33.3** 1 5/16	GRA012RRB	S1012K	**0.336**
GVFD[2]	GVFDR	**20**													GRAE20RRB	SE20K	0.74
GVFD	GVFDR	7/8													GRA014RRB	S1014K	
GVFD	GVFDR	15/16	**47.6** 1 7/8	**66.7** 2 5/8	**95.2** 3 3/4	**76.2** 3	**8.7** 11/32	**60.3** 2 3/8	**34.1** 1 11/32	**19.8** 25/32	**23.4** 59/64	**9.1** 23/64	**10.7** 27/64	**38.1** 1 1/2	GRA015RRB	S1015K	**0.386**
GVFD	GVFDR	1													GRA100RRB	S1100K	0.85
GVFD	GVFDR	**25**													GRAE25RRB	SE25K	
GVFD	GVFDR	1 1/8													GRA102RRB	S1102K	
GVFD	GVFDR	1 3/16	**56.4** 2 7/32	**78.6** 3 3/32	**112.7** 4 7/16	**90.5** 3 9/16	**10.3** 13/32	**71.4** 2 13/16	**38.9** 1 17/32	**22.2** 7/8	**26.6** 1 3/64	**10.7** 27/64	**11.9** 15/32	**44.5** 1 3/4	GRA103RRB	S1103K	**0.608**
GVFD	GVFDR	1 1/4 S													GRA103RRB2	S1103K3	1.34
GVFD	GVFDR	**30**													GRAE30RRB	SE30K	
GVFD	GVFDR	1 1/4													GRA104RRB	S1104K	
GVFD	GVFDR	1 3/8	**61.1** 2 13/32	**88.9** 3 1/2	**122.2** 4 13/16	**100.0** 3 15/16	**10.3** 13/32	**81.8** 3 7/32	**42.1** 1 21/32	**23.8** 15/16	**29.4** 1 5/32	**11.1** 7/16	**12.7** 1/2	**54.0** 2 1/8	GRA106RRB	S1106K	**0.821**
GVFD	GVFDR	1 7/16													GRA107RRB	S1107	1.81
GVFD	GVFDR	**35**													GRAE35RRB	SE35K	
GVFD	GVFDR	1 1/2	**73.8** 2 29/32	**98.4** 3 7/8	**147.6** 5 13/16	**119.1** 4 11/16	**13.5** 17/32	**89.7** 3 17/32	**48.4** 1 29/32	**28.6** 1 1/8	**32.5** 1 9/32	**12.7** 1/2	**15.9** 5/8	**60.3** 2 3/8	GRA108RRB	S1108KT	**1.334**
GVFD	GVFDR	**40**													GRAE40RRB	SE40K	2.94
GVFD	GVFDR	1 5/8													GRA110RRB	S1110K	
GVFD	GVFDR	1 11/16	**74.6** 2 15/16	**107.2** 4 7/32	**149.2** 5 7/8	**120.6** 4 3/4	**13.5** 17/32	**96.0** 3 25/32	**48.4** 1 29/32	**28.6** 1 1/8	**32.5** 1 9/32	**12.7** 1/2	**15.9** 5/8	**63.5** 2 1/2	GRA111RRB	S1111K	**1.361**
GVFD	GVFDR	1 3/4													GRA112RRB	S1112K	3.00
GVFD	GVFDR	**45**													GRAE45RRB	SE45K	
GVFD	GVFDR	1 7/8	**77.8** 3 1/16	**113.5** 4 15/32	**155.6** 6 1/8	**127.0** 5	**13.5** 17/32	**100.8** 3 31/32	**48.4** 1 29/32	**28.6** 1 1/8	**32.5** 1 9/32	**12.7** 1/2	**15.9** 5/8	**69.8** 2 3/4	GRA114RRB	S1114K	**1.451**
GVFD	GVFDR	1 15/16													GRA115RRB	S1115K	3.20
GVFD	GVFDR	**50**													GRAE50RRB	SE50K	

[1]All units have a 1/4-28 grease fitting, except as noted.
[2]10-32 grease fitting.
NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

GRFD, GRFDR RELUBRICATABLE SERIES – RFD, RFDR NON-RELUBRICATABLE SERIES

- The malleable-iron flange cartridges provide self-alignment and rigid support for medium-duty applications.

Suggested shaft tolerances: nominal to -0.013 mm, -0.0005 in.

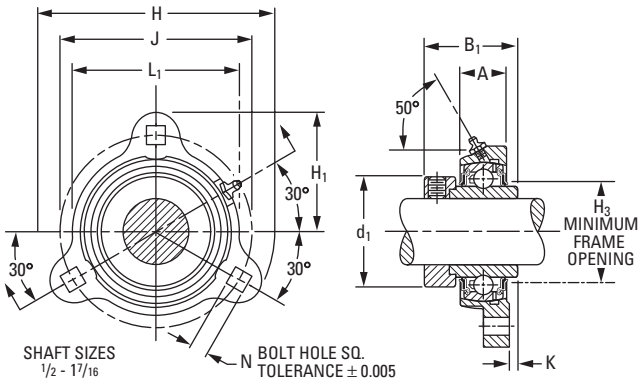
To order, specify UNIT and SHAFT DIAMETER.

For the non-relubricatable series, omit G prefix on unit and bearing number.

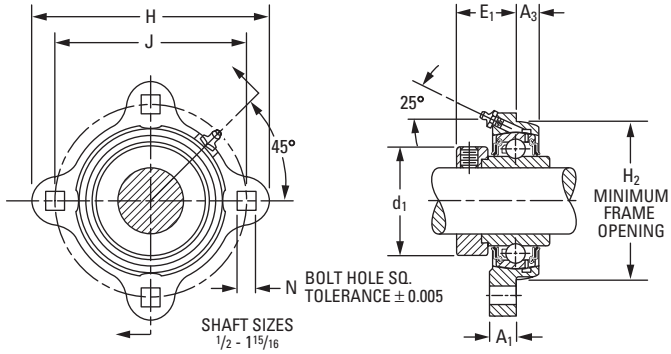
Example: GRFD 1 3/16 in. or GRFDR 1 3/16 in.; RFD 1 3/16 in. or RFDR 1 3/16 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RFD, RFDR	-KRRB	Page A-32
GRFD, GRFDR	G-KRRB	Page A-34



GRFD



GRFDR

Unit		Shaft Dia.	H_1	L_1	H	J	N	H_2	B_1	A	E_1	A_3	A_1	d_1	H_3	K	Bearing No.	Collar No.	Unit Wt.
Face Mounted	Reverse Mounted	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**kg** lbs.
RELUBRICATABLE SERIES[1]																			
GRFD[2]	GRFDR[2]	1/2															G1008KRRB	S1008K	
GRFD[2]	GRFDR[2]	5/8	**40.5**	**53.2**	**81.0**	**63.5**	**7.1**	**47.6**	**37.3**	**17.5**	**23.4**	**7.9**	**9.5**	**28.6**	**29.4**	**4.4**	G1010KRRB	S1010K	**0.259**
GRFD[2]	GRFDR[2]	11/16	1 19/32	2 3/32	3 3/16	2 1/2	9/32	1 7/8	1 15/32	11/16	59/64	5/16	3/8	1 1/8	1 5/32	11/64	G1011KRRB	S1011K	0.57
GRFD[2]	GRFDR[2]	**17**															GE17KRRB	SE17K	
GRFD[2]	GRFDR	3/4	**45.2**	**60.3**	**90.5**	**71.4**	**8.7**	**54.8**	**43.7**	**19.8**	**26.6**	**9.1**	**10.7**	**33.3**	**34.1**	**6.4**	G1012KRRB	S1012K	**0.395**
GRFD[2]	GRFDR	**20**	1 25/32	2 3/8	3 9/16	2 13/16	11/32	2 5/32	1 23/32	25/32	1 3/64	23/64	27/64	1 5/16	1 11/32	1/4	GE20KRRB	SE20K	0.87
GRFD	GRFDR	7/8															G1014KRRB	S1014K	
GRFD	GRFDR	15/16	**47.6**	**66.7**	**95.2**	**76.2**	**8.7**	**60.3**	**44.4**	**19.8**	**27.0**	**9.1**	**10.7**	**38.1**	**38.9**	**6.7**	G1015KRRB	S1015K	**0.463**
GRFD	GRFDR	1	1 7/8	2 5/8	3 3/4	3	11/32	2 3/8	1 3/4	25/32	1 1/16	23/64	27/64	1 1/2	1 17/32	17/64	G1100KRRB	S1100K	1.02
GRFD	GRFDR	**25**															GE25KRRB	SE25K	
GRFD	GRFDR	1 1/16															G1101KRRB	S1101K	
GRFD	GRFDR	1 1/8															G1102KRRB	S1102K	
GRFD	GRFDR	1 3/16	**56.4**	**78.6**	**112.7**	**90.5**	**10.3**	**71.4**	**48.4**	**22.2**	**30.2**	**10.7**	**11.9**	**44.5**	**46.0**	**6.4**	G1103KRRB	S1103K	**6.260**
GRFD	GRFDR	1 1/4 S	2 7/32	3 3/32	4 7/16	3 9/16	13/32	2 13/16	1 29/32	7/8	1 3/16	27/64	15/32	1 3/4	1 13/16	1/4	G1103KRRB3	S1103K3	1.38
GRFD	GRFDR	**30**															GE30KRRB	SE30K	
GRFD	GRFDR	1 1/4															G1104KRRB	S1104K	
GRFD	GRFDR	1 5/16															G1105KRRB	S1105K	
GRFD	GRFDR	1 3/8	**61.1**	**88.9**	**122.2**	**100.0**	**10.3**	**81.8**	**51.2**	**23.8**	**32.5**	**11.1**	**12.7**	**54.0** 2	**53.2**	**6.4**	G1106KRRB	S1106K	**0.857**
GRFD	GRFDR	1 7/16	2 13/32	3 1/2	4 13/16	3 15/16	13/32	3 7/32	2 1/64	15/16	1 9/32	7/16	1/2	1/8	2 3/32	1/4	G1107KRRB	S1107K	1.89
GRFD	GRFDR	**35**															GE35KRRB	SE35K	
GRFD	GRFDR	1 1/2															G1108KRRB	S1108KT	
GRFD	GRFDR	1 9/16	**73.8**	**98.4**	**147.6**	**119.1**	**13.5**	**89.7**	**56.4**	**28.6**	**34.9**	**12.7**	**15.9**	**60.3**	**59.5**	**5.6**	G1109KRRB	S1109KT	**1.138**
GRFD	GRFDR	**40**	2 29/32	3 7/8	5 13/16	4 11/16	17/32	3 17/32	2 7/32	1 1/8	1 3/8	1/2	5/8	2 3/8	2 11/32	7/32	GE40KRRB	SE40K	2.50
GRFD	GRFDR	1 5/8															G1110KRRB	S1110K	
GRFD	GRFDR	1 11/16	**74.6**	**107.2**	**149.2**	**120.6**	**13.5**	**96.0**	**56.4**	**28.6**	**34.9**	**12.7**	**15.9**	**63.5**	**65.1**	**5.6**	G1111KRRB	S1111K	**1.488**
GRFD	GRFDR	1 3/4	2 15/16	4 7/32	5 7/8	4 3/4	17/32	3 25/32	2 7/32	1 1/8	1 3/8	1/2	5/8	2 1/2	2 9/16	7/32	G1112KRRB	S1112K	3.28
GRFD	GRFDR	**45**															GE45KRRB	SE45K	
GRFD	GRFDR	1 7/8															G1114KRRB	S1114K	
GRFD	GRFDR	1 15/16	**77.8**	**113.5**	**155.6**	**127.0**	**13.5**	**100.8**	**62.7**	**28.6**	**38.1**	**12.7**	**15.9**	**69.8** 2	**69.8**	**8.7**	G1115KRRB	S1115K	**1.692**
GRFD	GRFDR	**50**	3 1/16	4 15/32	6 1/8	5	17/32	3 31/32	2 15/32	1 1/8	1 1/2	1/2	5/8	3/4	2 3/4	11/32	GE50KRRB	SE50K	3.73

[1]All units have a 1/4-28 grease fitting, except as noted.
[2]10-32 grease fitting.
NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

GVFTD, GVFTDR RELUBRICATABLE SERIES – VFTD, VFTDR NON-RELUBRICATABLE SERIES

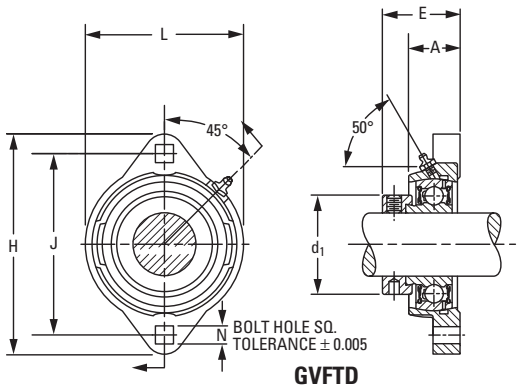
- The malleable-iron flange cartridges provide self-alignment and rigid support for medium-duty applications.

Suggested shaft tolerances: nominal to -0.013 mm, -0.0005 in.

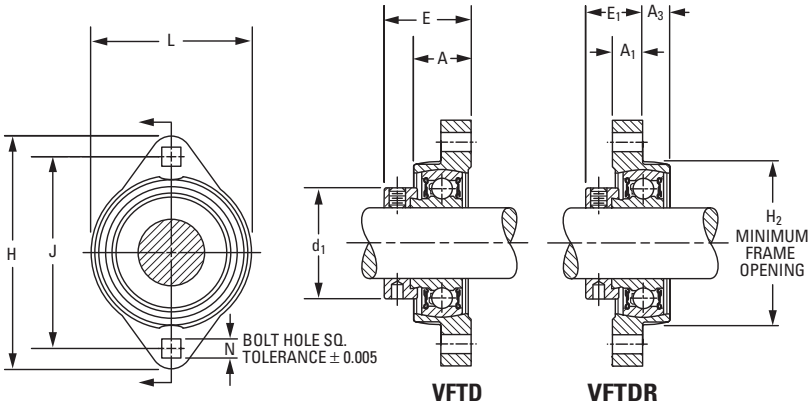
To order, specify UNIT and SHAFT DIAMETER.

For the non-relubricatable series, omit G prefix on unit and bearing number.

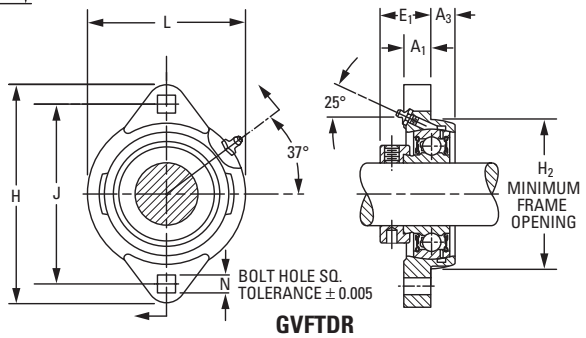
Example: VFTD 1 3⁄16 in. or VFTDR 1 3⁄16 in.; GVFTD 1 3⁄16 in. or GVFTDR 1 3⁄16 in.



GVFTD



VFTD VFTDR



GVFTDR

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
VFTD, VFTDR	RA-RRB	Page A-48
GVFTD, GVFTDR	GRA-RRB	Page A-50

Unit		Shaft Dia.	H	J	L	N	H_2	E	A	E_1	A_3	A_1	d_1	Bearing No.	Collar No.	Unit Wt.
Face Mounted	Reverse Mounted	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**kg** lbs.
RELUBRICATABLE SERIES[1]																
GVFTD	GVFTDR	1⁄2												GRA008RRB	S1008K	
GVFTD	GVFTDR	5⁄8	**81.0** 3 3⁄16	**63.5** 2 1⁄2	**53.2** 2 3⁄32	**7.1** 9⁄32	**47.6** 1 7⁄8	**31.8** 1 1⁄4	**17.5** 11⁄16	**22.2** 7⁄8	**7.9** 5⁄16	**9.5** 3⁄8	**28.6** 1 1⁄8	GRA010RRB	S1010K	**0.245** 0.54
GVFTD	GVFTDR	**17**												GRAE17RRB	SE17K	
GVFTD	GVFTDR	3⁄4	**90.5** 3 9⁄16	**71.4** 2 13⁄16	**60.3** 2 3⁄8	**8.7** 11⁄32	**54.8** 2 5⁄32	**34.1** 1 11⁄32	**19.8** 25⁄32	**23.4** 59⁄64	**9.1** 23⁄64	**10.7** 27⁄64	**33.3** 1 5⁄16	GRA012RRB	S1012K	**0.331** 0.73
GVFTD	GVFTDR	**20**												GRAE20RRB	SE20K	
GVFTD	GVFTDR	7⁄8												GRA014RRB	S1014K	
GVFTD	GVFTDR	15⁄16	**95.2** 3 3⁄4	**76.2** 3	**66.7** 2 5⁄8	**8.7** 11⁄32	**60.3** 2 3⁄8	**34.1** 1 11⁄32	**19.8** 25⁄32	**23.4** 59⁄64	**9.1** 23⁄64	**10.7** 27⁄64	**38.1** 1 1⁄2	GRA015RRB	S1015K	**0.363** 0.80
GVFTD	GVFTDR	1												GRA100RRB	S1100K	
GVFTD	GVFTDR	**25**												GRAE25RRB	SE25K	
GVFTD	GVFTDR	1 1⁄8												GRA102RRB	S1102K	
GVFTD	GVFTDR	1 3⁄16	**112.7** 4 7⁄16	**90.5** 3 9⁄16	**78.6** 3 3⁄32	**10.3** 13⁄32	**71.4** 2 13⁄16	**38.9** 1 17⁄32	**22.2** 7⁄8	**26.6** 1 3⁄64	**10.7** 27⁄64	**11.9** 15⁄32	**44.5** 1 3⁄4	GRA103RRB	S1103K	**0.608** 1.34
GVFTD	GVFTDR	1 1⁄4 S												GRA103RRB2	S1103K3	
GVFTD	GVFTDR	**30**												GRAE30RRB	SE30K	
GVFTD	GVFTDR	1 1⁄4												GRA104RRB	S1104K	
GVFTD	GVFTDR	1 3⁄8	**122.2** 4 13⁄16	**100.0** 3 15⁄16	**88.9** 3 1⁄2	**10.3** 13⁄32	**81.8** 3 7⁄32	**42.1** 1 21⁄32	**23.8** 15⁄16	**29.4** 1 5⁄32	**11.1** 7⁄16	**12.7** 1⁄2	**54.0** 2 1⁄8	GRA106RRB	S1106K	**0.862** 1.90
GVFTD	GVFTDR	1 7⁄16												GRA107RRB	S1107K	
GVFTD	GVFTDR	**35**												GRAE35RRB	SE35K	

[1]All units have a 1⁄4-28 grease fitting.

NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

GRFTD, GRFTDR RELUBRICATABLE SERIES – RFTD, RFTDR NON-RELUBRICATABLE SERIES

- The malleable-iron flange cartridges provide self-alignment and rigid support for medium-duty applications.

Suggested shaft tolerances: nominal to -0.013 mm, -0.0005 in.

BEARING DATA

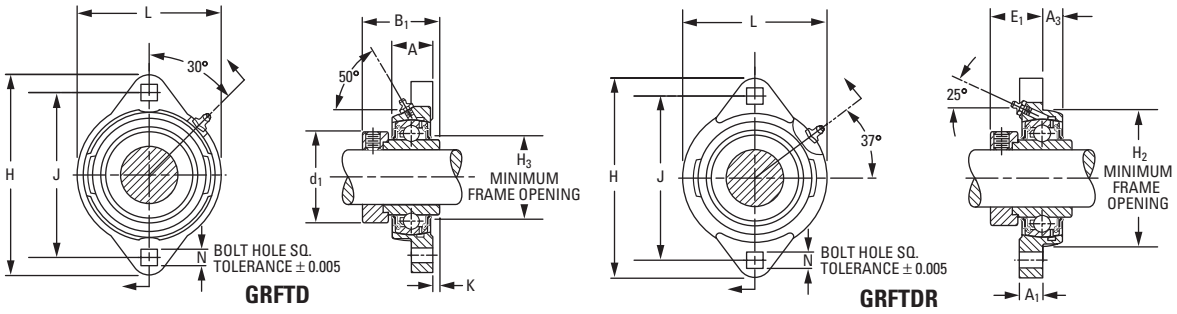
Unit	Bearing No.	Dimensions and Load Ratings
RFTD, RFTDR	-KRRB	Page A-32
GRFTD, GRFTDR	G-KRRB	Page A-34

To order, specify UNIT and SHAFT DIAMETER.

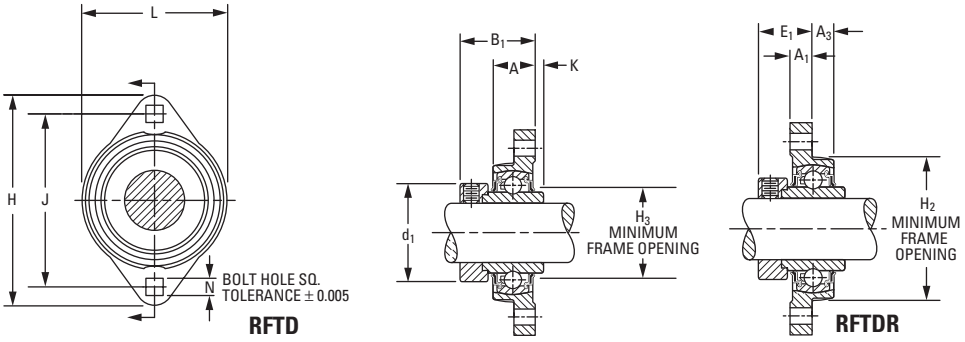
For the non-relubricatable series, omit G prefix on unit and bearing number.

Example: RFTD 1 3/16 in. or RFTDR 1 3/16 in.; GRFTD 1 3/16 in. or GRFTDR 1 3/16 in.

Relubricatable series



Non-relubricatable series



Unit		Shaft Dia.	H	J	L	N	H_2	B_1	A	E_1	A_3	A_1	d_1	H_3	K	Bearing No.	Collar No.	Unit Wt.
Face Mounted	Reverse Mounted	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**kg** lbs.
RELUBRICATABLE SERIES[1]																		
GRFTD	GRFTDR	1/2														G1008KRRB	S1008K	
GRFTD	GRFTDR	5/8	**81.0**	**63.5**	**53.2**	**7.1**	**47.6**	**37.3**	**15.9**	**23.4**	**7.9**	**9.5**	**28.6**	**29.4**	**4.4**	G1010KRRB	S1010K	**0.254**
GRFTD	GRFTDR	11/16	3 3/16	2 1/2	2 3/32	9/32	1 7/8	1 15/32	5/8	59/64	5/16	3/8	1 1/8	1 5/32	11/64	G1011KRRB	S1011K	0.56
GRFTD	GRFTDR	**17**														GE17KRRB	SE17K	
GRFTD	GRFTDR	3/4	**90.5**	**71.4**	**60.3**	**8.7**	**54.8**	**43.7**	**19.8**	**26.6**	**9.1**	**10.7**	**33.3**	**34.1**	**6.4**	G1012KRRB	S1012K	**0.386**
GRFTD	GRFTDR	**20**	3 9/16	2 13/16	2 3/8	11/32	2 5/32	1 23/32	25/32	1 3/64	23/64	27/64	1 5/16	1 11/32	1/4	GE20KRRB	SE20K	0.85
GRFTD	GRFTDR	7/8														G1014KRRB	S1014K	
GRFTD	GRFTDR	15/16	**95.2**	**76.2**	**66.7**	**8.7**	**60.3**	**44.4**	**19.8**	**27.0**	**9.1**	**10.7**	**38.1**	**38.9**	**6.7**	G1015KRRB	S1015K	**0.386**
GRFTD	GRFTDR	1	3 3/4	3	2 5/8	11/32	2 3/8	1 3/4	25/32	1 1/16	23/64	27/64	1 1/2	1 17/32	17/64	G1100KRRB	S1100K	0.85
GRFTD	GRFTDR	**25**														GE25KRRB	SE25K	
GRFTD	GRFTDR	1 1/16														G1101KRRB	S1101K	
GRFTD	GRFTDR	1 1/8														G1102KRRB	S1102K	
GRFTD	GRFTDR	1 3/16	**112.7**	**90.5**	**78.6**	**10.3**	**71.4**	**48.4**	**22.2**	**30.2**	**10.7**	**11.9**	**44.5**	**46.0**	**6.4**	G1103KRRB	S1103K	**0.712**
GRFTD	GRFTDR	1 1/4 S	4 7/16	3 9/16	3 3/32	13/32	2 13/16	1 29/32	7/8	1 3/16	27/64	15/32	1 3/4	1 13/16	1/4	G1103KRRB3	S1103K3	1.57
GRFTD	GRFTDR	**30**														GE30KRRB	SE30K	
GRFTD	GRFTDR	1 1/4														G1104KRRB	S1104K	
GRFTD	GRFTDR	1 5/16														G1105KRRB	S1105K	
GRFTD	GRFTDR	1 3/8	**122.2**	**100.0**	**88.9**	**10.3**	**81.8**	**51.2**	**23.8**	**32.5**	**11.1**	**12.7**	**54.0**	**53.2**	**6.4**	G1106KRRB	S1106K	**0.962**
GRFTD	GRFTDR	1 7/16	4 13/16	3 15/16	3 1/2	13/32	3 7/32	2 1/64	15/16	1 9/32	7/16	1/2	2 1/8	2 3/32	1/4	G1107KRRB	S1107K	2.12
GRFTD	GRFTDR	**35**														GE35KRRB	SE35K	

[1]All units have a 1/4-28 grease fitting.

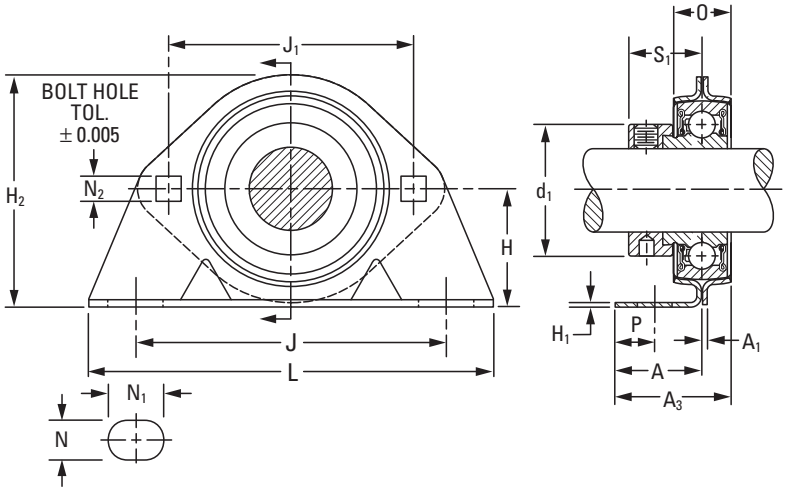
NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

PRESSED-STEEL HOUSED UNITS

PBS SERIES

- The PBS series has an economical transmission unit for light-duty, moderate-speed requirements.
- The housing includes two heavy-gage, zinc-plated steel stampings. One is a standard stamping used in the MST two-bolt flangette unit.
- The RA-RRB (extended inner-ring) bearings are regularly furnished with this bearing. RR wide inner rings also can be used.
- The Timken self-locking collar completes the assembly.
- This series is made with a precision bearing seat and dimensions are held to close tolerances. This provides an accurate bearing-to-housing fit and ensures proper alignment of parts.
- The RA-RRB bearing used in the PBS pillow block has positive-contact land-riding seals. It includes a shroud cap design and is permanently prelubricated.
- The base-to-center height and bolt spacing are interchangeable with many other pillow blocks on the market.



Suggested shaft tolerances: nominal to -0.013 mm, -0.0005 in.

To order, specify UNIT and SHAFT DIAMETER.
Example: PBS 1 7/16 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
PBS	RA-RRB	Page A-48

Unit	Shaft Dia.	H	J	N_1	L	H_2	J_1	d_1	S_1	O	A	H_1	A_1	A_3	N_2	P	N	Bearing No.	Flangette No.	Stamping Radial Load Rating[1]	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**N** lbs.	**kg** lbs.
PBS	1/2																	RA008RRB			
PBS	5/8	**30.2**	**92.1**	**15.9**	**123.8**	**59.5**	**63.5**	**28.6**	**22.2**	**14.3**	**25.4**	**2.64**	**1.90**	**32.5**	**7.1**	**10.3**	**10.3**	RA010RRB	40	**2650**	**0.340**
PBS	**17**	1 3/16	3 5/8	5/8	4 7/8	2 11/32	2 1/2	1 1/8	7/8	9/16	1	0.104	0.075	1 9/32	9/32	13/32	13/32	RAE17RRB	MST-(ZP)	600	0.75
PBS	3/4	**33.3**	**96.8**	**15.9**	**127.0**	**68.3**	**71.4**	**33.3**	**23.4**	**15.9**	**25.4**	**3.02**	**2.11**	**33.3**	**8.7**	**10.3**	**10.3**	RA012RRB	47	**3100**	**0.440**
PBS	**20**	1 5/16	3 13/16	5/8	5	2 11/16	2 13/16	1 5/16	59/64	5/8	1	0.119	0.083	1 5/16	11/32	13/32	13/32	RAE20RRB	MST-(ZP)	700	0.97
PBS	7/8																	RA014RRB			
PBS	15/16	**36.5**	**95.2**	**20.6**	**133.4**	**72.2**	**76.2**	**38.1**	**23.4**	**17.5**	**25.4**	**3.40**	**2.11**	**34.1**	**8.7**	**11.1**	**11.1**	RA015RRB	52	**3550**	**0.544**
PBS	1	1 7/16	3 3/4	13/16	5 1/4	2 27/32	3	1 1/2	59/64	11/16	1	0.134	0.083	1 11/32	11/32	7/16	7/16	RA100RRB	MST-(ZP)	800	1.20
PBS	**25**																	RAE25RRB			
PBS	1 1/8																	RA102RRB			
PBS	1 3/16	**42.9**	**119.1**	**22.2**	**158.8**	**84.9**	**90.5**	**44.4**	**26.6**	**17.5**	**30.2**	**3.40**	**2.64**	**37.3**	**10.3**	**14.3**	**14.3**	RA103RRB	62	**3550**	**0.744**
PBS	1 1/4 S	1 11/16	4 11/16	7/8	6 1/4	3 11/32	3 9/16	1 3/4	1 3/64	11/16	1 3/16	0.134	0.104	1 15/32	13/32	9/16	9/16	RA103RRB2	MST-(ZP)	800	1.64
PBS	**30**																	RAE30RRB			
PBS	1 1/4																	RA104RRB			
PBS	1 3/8	**47.6**	**127.0**	**22.2**	**165.1**	**94.5**	**100.0**	**54.0**	**29.4**	**22.2**	**34.9**	**3.78**	**2.64**	**46.0**	**10.3**	**14.3**	**14.3**	RA106RRB	72	**4000**	**1.089**
PBS	1 7/16	1 7/8	5	7/8	6 1/2	3 23/32	3 15/16	2 1/8	1 5/32	7/8	1 3/8	0.149	0.104	1 13/16	13/32	9/16	9/16	RA107RRB	MST-(ZP)	900	2.40
PBS	**35**																	RAE35RRB			

[1]Stamping thrust rating is 1/5 of stamping radial load rating.
NOTE: Shaft diameter with an S = smaller housing.

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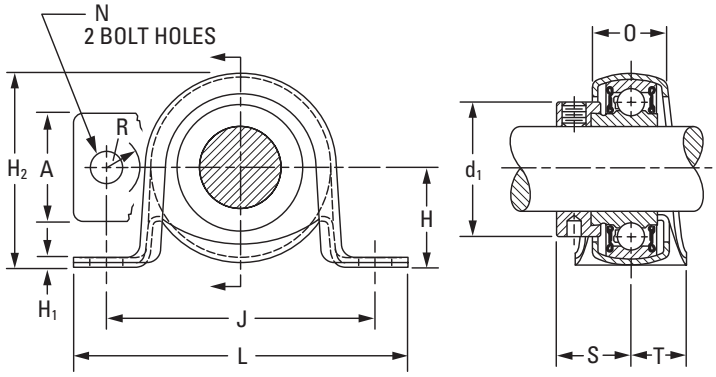
PB SERIES – RPB SERIES

- The PB series provides the advantages of ball bearings at an economical price.
- They are used for light-duty applications.
- The PB series consists of a two-piece separable zinc-plated steel housing with a spherical bearing seat. This allows the spherically ground bearing to have initial self-alignment in all directions.
- The ball bearing is an RA-RRB extended inner-ring-type with positive-contact, land-riding seals and a self-locking collar.
- The series incorporates an improved shroud-cap design and comes permanently prelubricated.
- RPB has the same construction as the PB-type, but with a thick, electrically conductive rubber inner liner.
- The bearings in the RPB unit are designated as RA-RRB FS450 and have a special ball and race finish for quiet operation.
- The RABR unit consists of the bearing with the rubber interliner.

Suggested shaft tolerances: nominal to -0.013 mm, -0.0005 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: PB 1 3/16 in. or RPB 1 3/16 in.



PB Series

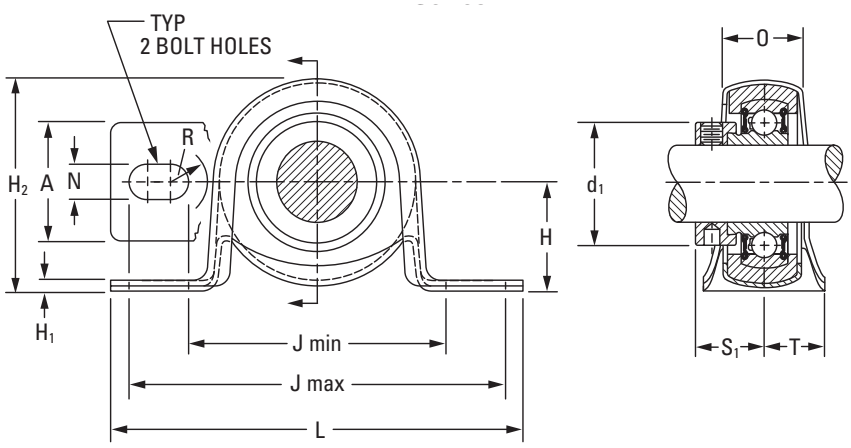
BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
PB	RA-RRB	Page A-48
RPB	RA-RRB	Page A-48

Unit	Shaft Dia.	H	H_2	J max.	J min.	L	A	H_1	N	R	d_1	O	S_1	T	Bearing No.	Collar No.	Stamping Radial Load Rating[1]	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**N** lbs.	**kg** lbs.
PB	1/2	**22.2**	**44.4**	**81.0**	**55.6**	**92.1**	**25.4**	**2.54**	**8.7**	**8.7**	**28.6**	**18.24**	**22.07**	**12.7**	RA008RRB	S1008K		
PB	5/8	7/8	1 3/4	3 3/16	2 3/16	3 5/8	1	0.100	11/32	11/32	1 1/8	0.718	0.869	1/2	RA010RRB	S1010K	**1340** 300	**0.200** 0.44
PB	**17**														RAE17RRB	SE17K		
PB	3/4	**25.4**	**52.4**	**88.9**	**63.5**	**104.8**	**25.4**	**2.54**	**10.3**	**10.3**	**33.3**	**21.82**	**23.44**	**15.9**	RA012RRB	S1012K	**1560**	**0.259**
PB	**20**	1	2 1/16	3 1/2	2 1/2	4 1/8	1	0.100	13/32	13/32	1 5/16	0.859	0.923	5/8	RAE20RRB	SE20K	350	0.57
PB	7/8														RA014RRB	S1014K		
PB	15/16	**28.6**	**56.4**	**100.0**	**71.4**	**114.0**	**28.6**	**5.28**	**10.3**	**10.3**	**38.1**	**25.40**	**23.44**	**14.3**	RA015RRB	S1015K	**1760**	**0.295**
PB	1	1 1/8	2 7/32	3 15/16	2 13/16	4 1/2	1 1/8	0.208	13/32	13/32	1 1/2	1.000	0.923	9/16	RA100RRB	S1100K	400	0.65
PB	**25**														RAE25RRB	SE25K		
PB	1 1/8														RA102RRB	S1102K		
PB	1 3/16	**33.3**	**66.7**	**104.8**	**76.2**	**123.8**	**31.8**	**3.68**	**10.3**	**10.3**	**44.5**	**25.40**	**26.72**	**19.0**	RA103RRB	S1103K	**2650**	**0.476**
PB	1 1/4 S	1 5/16	2 5/8	4 1/8	3	4 7/8	1 1/4	0.145	13/32	13/32	1 3/4	1.000	1.052	3/4	RA103RRB2	S1103K3	600	1.05
PB	**30**														RAE30RRB	SE30K		

[1]Housing thrust rating is 1/3 of housing radial load rating. Maximum suggested speed is 2400 RPM.
NOTE: Shaft diameter with an S = smaller housing.
NOTE: Load ratings are upright mounted capacities with load direction toward base.
NOTE: These units should not be mounted vertically or upside down.

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RPB Series

Unit	Shaft Dia.	H	H2	J max.	J min.	L	A	H1	N	R	d1	O	S1	T	Bearing No.(1)	Collar No.	Stamping Radial Load Rating(2)	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**N** lbs.	**kg** lbs.
RPB	1/2														RA008RRB	S1008K		
RPB	5/8	**25.40** 1	**52.4** 2 1/16	**88.9** 3 1/2	**63.5** 2 1/2	**104.8** 4 1/8	**25.4** 1	**2.54** 0.100	**10.3** 13/32	**10.3** 13/32	**28.6** 1 1/8	**21.59** 0.85	**22.07** 0.869	**15.9** 5/8	RA010RRB	S1010K	**880** 200	**0.200** 0.44
RPB	**17**														RAE17RRB	SE17K		
RPB	3/4	**28.58** 1 1/8	**56.4** 2 7/32	**100.0** 3 5/16	**71.4** 2 13/16	**114.0** 4 1/2	**28.6** 1 1/8	**5.28** 0.208	**10.3** 13/32	**10.3** 13/32	**33.3** 1 5/16	**25.40** 1.00	**23.44** 0.923	**14.3** 9/16	RA012RRB	S1012K	**1120** 250	**0.259** 0.57
RPB	**20**														RAE20RRB	SE20K		
RPB	7/8														RA014RRB	S1014K		
RPB	15/16	**33.34** 1 5/16	**66.7** 2 5/8	**104.8** 4 1/8	**76.2** 3	**123.8** 4 7/8	**31.8** 1 1/4	**3.68** 0.145	**10.3** 13/32	**10.3** 13/32	**38.1** 1 1/2	**25.40** 1.00	**23.44** 0.923	**19.0** 3/4	RA015RRB	S1015K	**1340** 300	**0.295** 0.65
RPB	1														RA100RRB	S1100K		
RPB	**25**														RAE25RRB	SE25K		
LRPB	1 3/16	**33.34** 1 5/16	**66.7** 2 5/8	**104.8** 4 1/8	**76.2** 3	**123.8** 4 7/8	**31.8** 1 1/4	**3.68** 0.145	**10.3** 13/32	**10.3** 13/32	**44.4** 1 3/4	**25.40** 1.00	**28.30** 1.114	**19.0** 3/4	RAL103NPPB	LS103K	**1340** 300	**0.476** 1.05

(1)Bearing suffix number FS450.
(2)Housing thrust rating is 1/3 of housing radial load rating. Maximum suggested speed is 2400 RPM.

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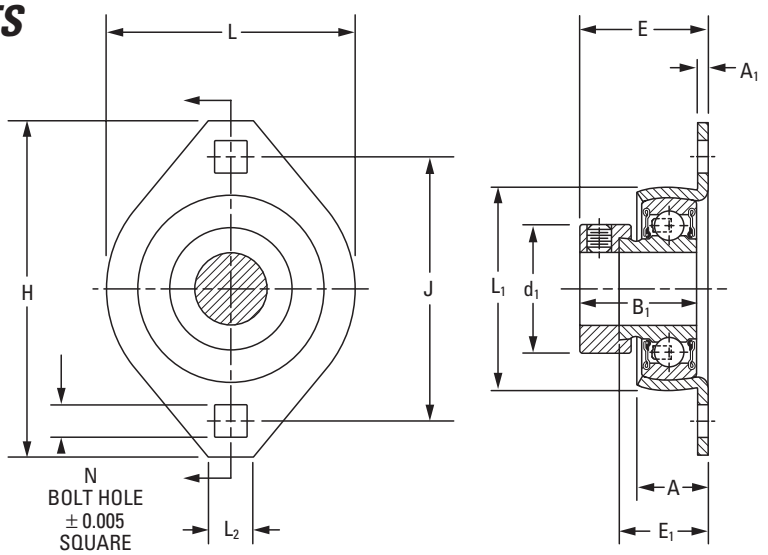
PRESSED-STEEL FLANGED UNITS

VFMST SERIES

- The zinc-plated, pressed-metal flange unit is assembled with an RA-RR prelubricated extended inner-ring-type bearing.
- The unit is ideal for light-duty applications.
- The unit features flush-mounting.
- The unit has additional contamination protection.
- The VFMST series is self-aligning.

Suggested shaft tolerances:

nominal to -0.013 mm, -0.0005 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
VFMST	RA-RRB	Page A-48

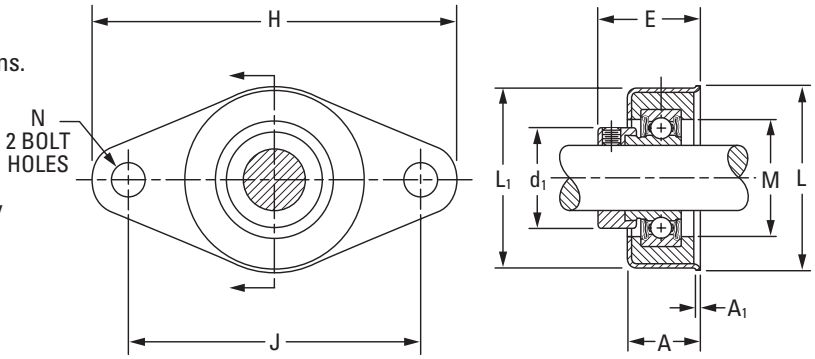
Unit	Shaft Dia.	H	J	L	E	A	N	L_1	E_1	L_2	B_1	d_1	A_1	Bearing No.	Collar No.	Stamping	
																Size	Radial Load Rating[1]
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**N** lbs.
VFMST	3/4	**90.5**	**71.4**	**66.7**	**33.3**	**16.7**	**8.7**	**50.8**	**23.0**	**12.7**	**31.0**	**33.3**	**2.64**	RA012RRB	S1012K	47FMST	**2240**
VFMST	**20**	3 9/16	2 13/16	2 5/8	1 5/16	21/32	11/32	2	29/32	1/2	1 7/32	1 5/16	0.104	RAE20RRB	SE20K		500
VFMST	7/8													RA014RRB	S1014K		
VFMST	15/16	**95.2**	**76.2**	**71.0**	**33.3**	**18.3**	**8.7**	**55.6**	**23.8**	**12.7**	**31.0**	**38.1**	**2.64**	RA015RRB	S1015K	52FMST	**2650**
VFMST	1	3 3/4	3	2 51/64	1 5/16	23/32	11/32	2 3/16	15/16	1/2	1 7/32	1 1/2	0.104	RA100RRB	S1100K		600
VFMST	**25**													RAE25RRB	SE25K		
VFMST	1 1/8													RA102RRB	S1102K		
VFMST	1 3/16	**112.7**	**90.5**	**84.1**	**38.9**	**23.0**	**10.3**	**66.7**	**27.8**	**15.9**	**35.7**	**44.4**	**3.40**	RA103RRB	S1103K	62FMST	**3550**
VFMST	1 1/4 S	4 7/16	3 9/16	3 5/16	1 17/32	29/32	13/32	2 5/8	1 3/32	5/8	1 13/32	1 3/4	0.134	RA103RRB2	S1103K3		800
VFMST	**30**													RAE30RRB	SE30K		

[1]Housing thrust rating is 1/3 of housing radial load rating.
NOTE: Shaft diameter with an S = smaller housing.

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LFST SERIES

- This unit is zinc-plated, pressed-steel and flush-mounted.
- This unit simplifies bearing flange-unit installations.
- The conductive rubber interliner reduces noise and vibration. This allows for alignment while the pressed-steel flange assures rigid bearing support.
- The bolt-hole spacing permits interchangeability with competitive mountings.
- The unit offers compact, economical, corrosion-resistant housing and balanced design.
- The unit features Timken RAL light-series ball bearings. The RAL provides precision in an extended inner-ring bearing with superior shroud seal protection and self-locking collar.
- The bearings are prelubricated.



Suggested shaft tolerances:

nominal to -0.013 mm, -0.0005 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: LFST 1 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
LFST	RAL-NPP	Page A-55

Unit	Shaft Dia.	H	J	L	L_1	E	N	A	A_1	d_1	M	Bearing No.	Collar No.	Housing Radial Load Rating[1]
	in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**N** lbs.
LFST	1/2	**114.3** 4 1/2	**92.1** 3 5/8	**57.2** 2 1/4	**55.6** 2 3/16	**31** 1 7/32	**9.5** 3/8	**23** 29/32	**1.52** 0.06	**25.4** 1	**29.4** 1 5/32	RAL008NPP	LS008K	**880** 200
LFST	5/8											RAL010NPP	LS010K	
LFST	3/4	**114.3** 4 1/2	**92.1** 3 5/8	**57.2** 2 1/4	**55.6** 2 3/16	**31** 1 7/32	**9.5** 3/8	**23** 29/32	**1.52** 0.06	**29.8** 1 11/64	**34.9** 1 3/8	RAL012NPP	LS012K	**1120** 250
LFST	15/16	**114.3** 4 1/2	**92.1** 3 5/8	**57.2** 2 1/4	**55.6** 2 3/16	**31** 1 7/32	**9.5** 3/8	**23** 29/32	**1.52** 0.06	**36.1** 1 27/64	**39.7** 1 9/16	RAL015NPP	LS015K	**1340** 300
LFST	1											RAL100NPP	LS100K	

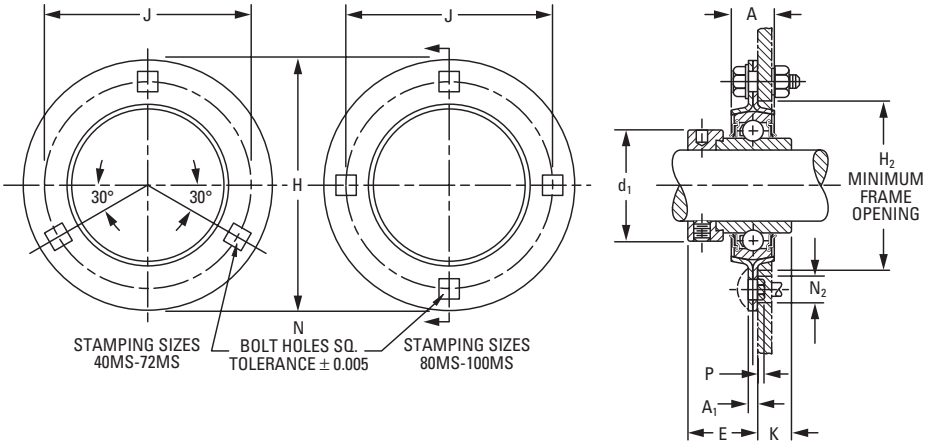
[1]Housing thrust rating is 1/3 of housing radial load rating. Maximum suggested speed is 2400 RPM.

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PRESSED-STEEL FLANGETTE UNITS

RR FLANGETTE UNIT

- The unit consists of two interchangeable, pressed-steel, zinc-plated flanges housing a standard bearing with a self-locking collar.
- The spherical inside surfaces of each pair of flanges mate with the spherical outside surface of the bearing's outer ring. This provides initial self-alignment.
- The flangette is equipped with the KRRB (R-seal) wide-inner-ring ball bearing.
- All units are non-relubricatable.



Suggested shaft tolerances:

½ in. – 1 15⁄16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 15⁄16 in., nominal to -0.025 mm, -0.0010 in.

BEARING DATA

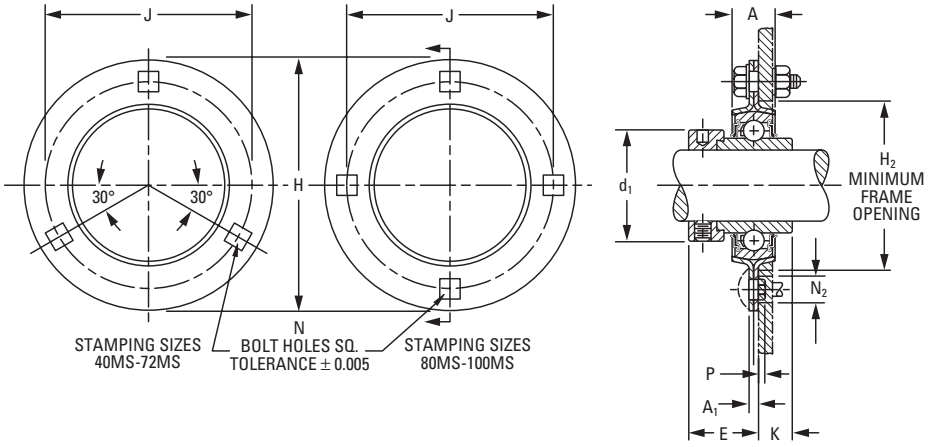
Unit	Bearing No.	Dimensions and Load Ratings
RR	KRRB	Page A-32

Unit	Shaft Dia.	H	A	J	N	H_2	A_1	E	K	d_1	Bolt Size	Short Shank P	Long Shank P	Flange Hole Diam. to Clear Sq. Shank N_2	Bearing No.	Collar No.	Stamping[1] Size	Stamping[1] Radial Load Rating[2]	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**N** lbs.	**kg** lbs.
RR	½														1008KRRB	S1008K			
RR	⅝	**81.0**	**14.2**	**63.5**	**7.1**	**49.2**	**3.80**	**25.4**	**11.9**	**28.6**	**6.4**	**0.15**	**2.54**	**10.3**	1010KRRB	S1010K	40MS	**2650**	**0.295**
RR	**17**	3 3⁄16	9⁄16	2 ½	9⁄32	1 15⁄16	0.150	1	15⁄32	1 1⁄8	¼	0.006	0.100	13⁄32	E17KRRB	SE17K		600	0.65
RR	¾	**90.5**	**15.8**	**71.4**	**8.7**	**55.6**	**4.22**	**28.6**	**15.1**	**33.3**	**7.9**	**0.53**	**2.92**	**12.7**	1012KRRB	S1012K	47MS	**3100**	**0.404**
RR	**20**	3 9⁄16	5⁄8	2 13⁄16	11⁄32	2 3⁄16	0.166	1 1⁄8	19⁄32	1 5⁄16	5⁄16	0.021	0.115	½	E20KRRB	SE20K		700	0.89
RR	7⁄8														1014KRRB	S1014K			
RR	15⁄16	**95.2**	**17.4**	**76.2**	**8.7**	**60.3**	**4.22**	**28.6**	**15.1**	**38.1**	**7.9**	**0.53**	**2.92**	**12.7**	1015KRRB	S1015K	52MS	**3550**	**0.490**
RR	1	3 ¾	11⁄16	3	11⁄32	2 3⁄8	0.166	1 1⁄8	19⁄32	1 ½	5⁄16	0.021	0.115	½	1100KRRB	S1100K		800	1.08
RR	**25**														E25KRRB	SE25K			
RR	1 1⁄8														1102KRRB	S1102K			
RR	1 3⁄16	**112.7**	**17.4**	**90.5**	**10.3**	**71.4**	**5.28**	**32.5**	**15.9**	**44.5**	**9.5**	**0.28**	**2.64**	**15.1**	1103KRRB	S1103K	62MS	**4900**	**0.753**
RR	1 1⁄4 S	4 7⁄16	11⁄16	3 9⁄16	13⁄32	2 13⁄16	0.208	1 9⁄32	5⁄8	1 3⁄4	3⁄8	0.011	0.104	19⁄32	1103KRRB3	S1103K3		1100	1.66
RR	**30**														E30KRRB	SE30K			
RR	1 1⁄4														1104KRRB	S1104K			
RR	1 5⁄16														1105KRRB	S1105K			
RR	1 3⁄8	**122.2**	**19.0**	**100.0**	**10.3**	**81.0**	**5.28**	**34.9**	**15.9**	**54.0**	**9.5**	**0.28**	**2.64**	**15.1**	1106KRRB	S1106K	72MS	**6220**	**0.962**
RR	1 7⁄16	4 13⁄16	3⁄4	3 15⁄16	13⁄32	3 3⁄16	0.208	1 3⁄8	5⁄8	2 1⁄8	3⁄8	0.011	0.104	19⁄32	1107KRRB	S1107K		1400	2.12
RR	**35**														E35KRRB	SE35K			

[1]Stampings must be ordered in pairs to assemble bearing.
[2]Thrust ratings for stamping are 50 percent of radial ratings.
NOTE: Shaft diameter with an S = smaller housing.

Continued on next page.

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Continued from previous page.

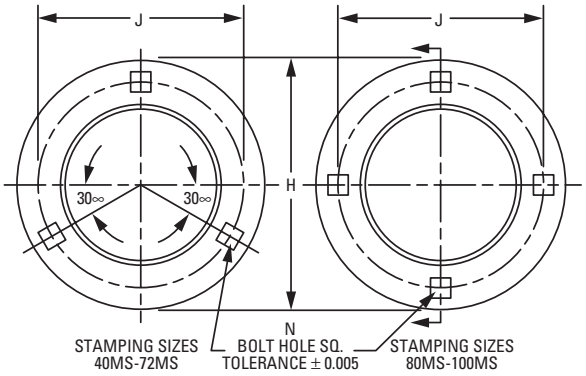
Unit	Shaft Dia.	H	A	J	N	H_2	A_1	E	K	d_1	Bolt Size	Short Shank P	Long Shank P	Flange Hole Diam. to Clear Sq. Shank N_2	Bearing No.	Collar No.	Stamping[1] Size	Stamping[1] Radial Load Rating[2]	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**N** lbs.	**kg** lbs.
RR	1 1/2														1108KRRB	S1108KT			
RR	1 9/16	**147.6**	**20.6**	**119.1**	**13.5**	**90.5**	**6.80**	**38.1**	**18.3**	**60.3**	**12.7**	**0.33**	**2.72**	**19.4**	1109KRRB	S1109KT	80MS	**7500**	**1.143**
RR	**40**	5 13/16	13/16	4 11/16	17/32	3 9/16	0.268	1 1/2	23/32	2 3/8	1/2	0.013	0.107	49/64	E40KRRB	SE40K		1700	2.52
RR	1 5/8														1110KRRB	S1110K			
RR	1 11/16	**149.2**	**22.2**	**120.6**	**13.5**	**96.8** 3	**6.80**	**38.1**	**18.3**	**63.5**	**12.7**	**0.33**	**2.72**	**19.4**	1111KRRB	S1111K	85MS	**7500**	**1.651**
RR	**45**	5 7/8	7/8	4 3/4	17/32	13/16	0.268	1 1/2	23/32	2 1/2	1/2	0.013	0.107	49/64	E45KRRB	SE45K		1700	3.64
RR	1 7/8														1114KRRB	S1114K			
RR	1 15/16	**155.6**	**22.2**	**127.0**	**13.5**	**101.6**	**7.56**	**42.1**	**20.6**	**69.8**	**12.7**	**0**	**1.96**	**19.4**	1115KRRB	S1115K	90MS	**8500**	**1.878**
RR	**50**	6 1/8	7/8	5	17/32	4	0.298	1 21/32	13/16	2 3/4	1/2	0	0.077	49/64	E50KRRB	SE50K		1900	4.14
RR	2														1200KRRB	S1200K			
RR	2 1/8	**166.7**	**23.8**	**138.1**	**13.5**	**112.7**	**7.56**	**47.6**	**23.8**	**76.2**	**12.7**	**0**	**1.96**	**19.4**	1202KRRB	S1202K	100MS	**10200**	**2.268**
RR	2 3/16	6 9/16	15/16	5 7/16	17/32	4 7/16	0.298	1 7/8	15/16	3	1/2	0	0.077	49/64	1203KRRB	S1203K		2300	5.00
RR	**55**														E55KRRB	SE55K			

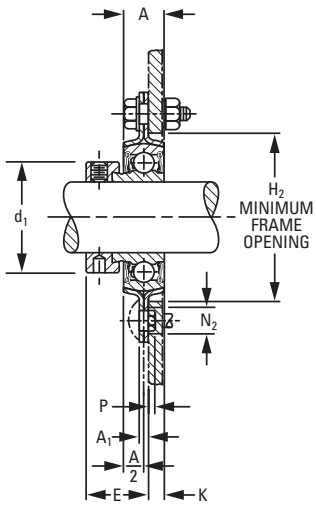
[1]Thrust ratings for stamping are 50 percent of radial ratings.
[2]Stampings must be ordered in pairs to assemble bearing.
NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

RA FLANGETTE UNIT

- The RA flangette unit is similar to Timken RR flangette unit.
- The unit consists of two interchangeable, pressed-steel, zinc-plated flanges that house a standard ball bearing.
- The unit incorporates an extended inner-ring bearing with a self-locking collar and spherical seat in the cartridge, providing initial self-alignment.
- The unit is equipped with an RA-RRB extended inner ring ball bearing.
- The units are non-relubricatable.





Suggested shaft tolerances:

½ in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RA 1 in. flangette.

BEARING DATA

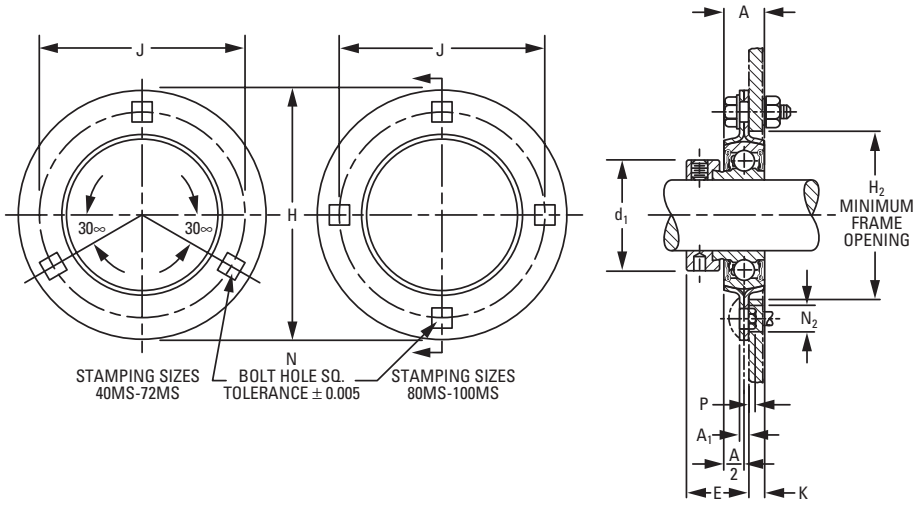
Unit	Bearing No.	Dimensions and Load Ratings
RA	RA-RRB	Page A-48

Unit	Shaft Dia.	H	A	J	N	H_2	A_1	E	K	d_1	Bolt Size	Short Shank P	Long Shank P	Flange Hole Diam. to Clear Sq. Shank N_2	Bearing No.	Collar No.	Stamping[1] Size	Stamping[1] Radial Load Rating[2]	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**N** lbs.	**kg** lbs.
RA	1/2														RA008RRB	S1008K			
RA	9/16	**81.0**	**14.2**	**63.5**	**7.1**	**49.2**	**3.81**	**23.8**	**5.6**	**28.6**	**6.4**	**0.15**	**2.54**	**10.3**	RA009RRB	S1009K	40MS	**2650**	**0.277**
	5/8	3 3/16	9/16	2 1/2	9/32	1 15/16	0.150	15/16	7/32	1 1/8	1/4	0.006	0.100	13/32	RA010RRB	S1010K		600	0.61
RA	**17**														RAE17RRB	SE17K			
RA	3/4														RA012RRB	S1012K			
		90.5	**15.8**	**71.4**	**8.7**	**55.6**	**4.22**	**25.0**	**6.4**	**33.3**	**7.9**	**0.53**	**2.92**	**12.7**			47MS	**3100**	**0.363**
RA	**20**	3 9/16	5/8	2 13/16	11/32	2 3/16	0.166	63/64	1/4	1 5/16	5/16	0.021	0.115	1/2	RAE20RRB	SE20K		700	0.80
	13/16														RA013RRB	S1013K			
RA	7/8														RA014RRB	S1014K			
RA	15/16	**95.2**	**17.4**	**76.2**	**8.7**	**60.3**	**4.22**	**25.0**	**7.1**	**38.1**	**7.9**	**0.53**	**2.92**	**12.7**	RA015RRB	S1015K	52MS	**3550**	**0.408**
RA	1	3 3/4	11/16	3	11/32	2 3/8	0.166	63/64	9/32	1 1/2	5/16	0.021	0.115	1/2	RA100RRB	S1100K		800	0.90
RA	**25**														RAE25RRB	SE25K			
	1 1/16														RA101RRB	S11013K			
RA	1 1/8														RA102RRB	S1102K			
RA	1 3/16	**112.7**	**17.4**	**90.5**	**10.3**	**71.4**	**5.28**	**29.0**	**6.7**	**44.5**	**9.5**	**0.28**	**2.64**	**15.1**	RA103RRB	S1103K	62MS	**4900**	**0.667**
RA	1 1/4 S	4 7/16	11/16	3 9/16	13/32	2 13/16	0.208	1 9/64	17/64	1 3/4	3/8	0.011	0.104	19/32	RA103RRB3	S1103K3		1100	1.47
RA	**30**														RAE30RRB	SE30K			
RA	1 1/4														RA104RRB	S1104K			
RA	1 5/16														RA105RRB	S1105K			
RA	1 3/8	**122.2**	**19.0**	**100.0**	**10.3**	**81.0**	**5.28**	**31.8**	**7.5**	**54**	**9.5**	**0.28**	**2.64**	**15.1**	RA106RRB	S1106K	72MS	**6220**	**0.889**
RA	1 7/16	4 13/16	3/4	3 15/16	13/32	3 3/16	0.208	1 1/4	19/64	2 1/8	3/8	0.011	0.104	19/32	RA107RRB	S1107K		1400	1.96
RA	**35**														RAE35RRB	SE35K			

[1]Stampings must be ordered in pairs to assemble bearing.
[2]Thrust ratings for stamping are 50 percent of radial ratings.
NOTE: Shaft diameter with an S = smaller housing.

Continued on next page.

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Continued from previous page.

Unit	Shaft Dia.	H	A	J	N	H_2	A_1	E	K	d_1	Bolt Size	Short Shank P	Long Shank P	Flange Hole Diam. to Clear Sq. Shank N_2	Bearing No.	Collar No.	Stamping[1] Size	Stamping[1] Radial Load Rating[2]	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**N** lbs.	**kg** lbs.
RA	1 1/2														RA108RRB	S1108KT			
RA	1 9/16	**147.6**	**20.6**	**119.1**	**13.5**	**90.5**	**6.80**	**36.1**	**7.5**	**60.3**	**12.7**	**0.33**	**2.72**	**19.4**	RA109RRB	S1109KT	80MS	**7500**	**1.447**
RA	**40**	5 13/16	13/16	4 11/16	17/32	3 9/16	0.268	1 27/64	19/64	2 3/8	1/2	0.013	0.107	49/64	RAE40RRB	SE40K		1700	3.19
RA	1 5/8														RA110RRB	S1110K			
RA	1 11/16	**149.2**	**22.2**	**120.6**	**13.5**	**96.8**	**6.80**	**36.1**	**7.5**	**63.5**	**12.7**	**0.33**	**2.72**	**19.4**	RA111RRB	S1111K	85MS	**7500**	**1.479**
	1 3/4	5 7/8	7/8	4 3/4	17/32	3 13/16	0.268	1 27/64	19/64	2 1/2	1/2	0.013	0.107	49/64	RA112RRB	S1112K		1700	3.26
RA	**45**														RAE45RRB	SE45K			
	1 13/16														RA113RRB	S1113K			
RA	1 7/8	**155.6**	**22.2**	**127.0**	**13.5**	**101.6**	**7.56**	**36.5**	**7.1**	**69.8**	**12.7**	**0**	**1.96**	**19.4**	RA114RRB	S1114K	90MS	**8500**	**1.669**
RA	1 15/16	6 1/8	7/8	5	17/32	4	0.300	1 7/16	9/32	2 3/4	1/2	0	0.077	49/64	RA115RRB	S1115K		1900	3.68
RA	**50**														RAE50RRB	SE50K			
RA	2														RA200RRB	S1200K			
	2 1/16														RA201RRB	S1201K			
RA	2 1/8	**166.7**	**23.8**	**138.1**	**13.5**	**112.7**	**7.56**	**40.5**	**8.3**	**76.2**	**12.7**	**0**	**1.96**	**19.4**	RA202RRB	S1202K	100MS	**10200**	**2.000**
RA	2 3/16	6 9/16	15/16	5 7/16	17/32	4 7/16	0.300	1 19/32	29/64	3	1/2	0	0.077	49/64	RA203RRB	S1203K		2300	4.41
RA	**55**														RAE55RRB	SE55K			

[1]Stampings must be ordered in pairs to assemble bearing.
[2]Thrust ratings for stamping are 50 percent of radial ratings.
NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

RAT, RRT TWO-BOLT FLANGETTE UNITS

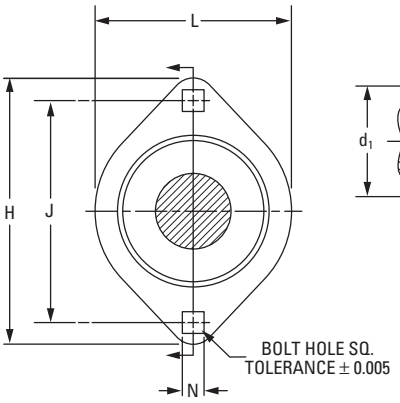
- These units are designed for installations where the standard three-bolt flangettes cannot be used due to space limitations.
- Like standard three-bolt flangettes, they are available with RA-RRB extended inner ring ball bearings and the KRRB wide-inner-ring ball bearings (RRT) with self-locking collars.
- All units are non-relubricatable.

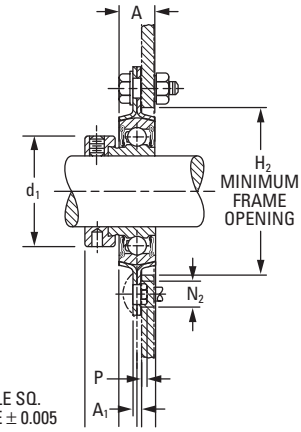
Suggested shaft tolerances:

½ in. – 1 7⁄16 in.,
nominal to -0.013 mm, -0.0005 in.;

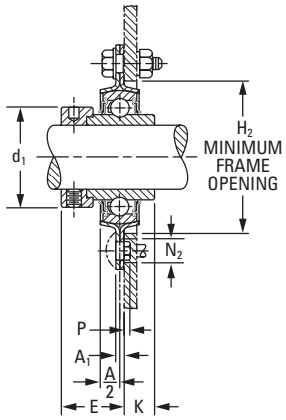
To order, specify UNIT and SHAFT DIAMETER.

Example: RAT 1 in. flangette or RRT 1 in. flangette.





RAT Series



RRT Series

BEARING DATA

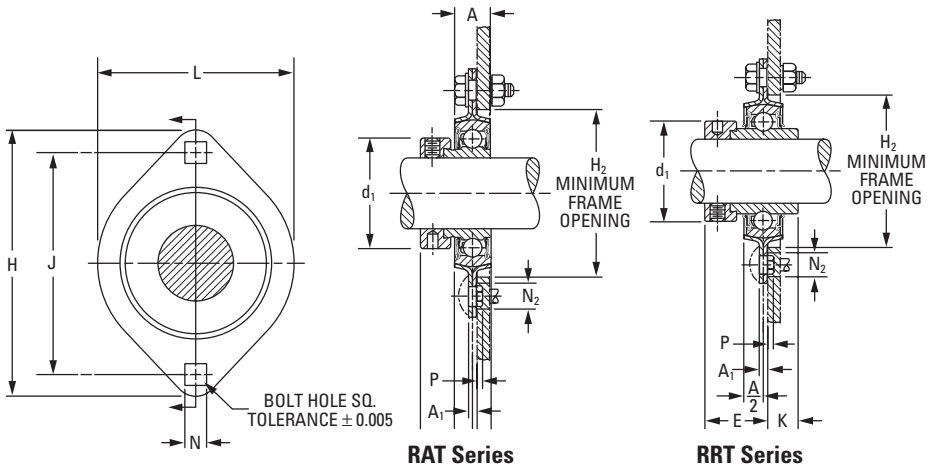
Unit	Bearing No.	Dimensions and Load Ratings
RAT	RA-RRB	Page A-48
RRT	-KRRB	Page A-32

Unit	Shaft Dia.	L	H	A	J	N	H_2	A_1	E	K	d_1	Bolt Size	Short Shank P	Long Shank P	Flange Hole Diam. to Clear Sq. Shank N_2	Bearing No.	Collar No.	Stamping[1] Size	Stamping[1] Radial Load Rating[2]	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**N** lbs.	**kg** lbs.
RAT	1⁄2															RA008RRB	S1008K			
RAT	5⁄8	**58.7** 2 5⁄16	**81.0** 3 3⁄16	**14.2** 9⁄16	**63.5** 2 1⁄2	**7.1** 9⁄32	**49.2** 1 15⁄16	**3.81** 0.150	**23.8** 15⁄16	**5.6** 7⁄32	**28.6** 1 1⁄8	**6.4** 1⁄4	**0.15** 0.006	**2.54** 0.100	**10.3** 13⁄32	RA010RRB	S1010K	40MST	**2650** 600	**0.213** 0.47
RAT	**17**															RAE17RRB	SE17K			
RAT	3⁄4															RA012RRB	S1012K			
RAT	**20**	**66.7** 2 5⁄8	**90.5** 3 9⁄16	**15.8** 5⁄8	**71.4** 2 13⁄16	**8.7** 11⁄32	**55.6** 2 3⁄16	**4.22** 0.166	**25.0** 63⁄64	**6.4** 1⁄4	**33.3** 1 5⁄16	**7.9** 5⁄16	**0.53** 0.021	**2.92** 0.115	**12.7** 1⁄2	RAE20RRB	SE20K	47MST	**3100** 700	**0.299** 0.66
RAT	7⁄8															RA014RRB	S1014K			
RAT	15⁄16	**71.0** 2 51⁄64	**95.2** 3 3⁄4	**17.4** 11⁄16	**76.2** 3	**8.7** 11⁄32	**60.3** 2 3⁄8	**4.22** 0.166	**25.0** 63⁄64	**7.1** 9⁄32	**38.1** 1 1⁄2	**7.9** 5⁄16	**0.53** 0.021	**2.92** 0.115	**12.7** 1⁄2	RA015RRB	S1015K	52MST	**3550** 800	**0.331** 0.73
RAT	1															RA100RRB	S1100K			
RAT	**25**															RAE25RRB	SE25K			
RAT	1 1⁄16															RA101RRB	S1103K			
RAT	1 1⁄8															RA102RRB	S1102K			
RAT	1 3⁄16	**84.1** 3 5⁄16	**112.7** 4 7⁄16	**17.4** 11⁄16	**90.5** 3 9⁄16	**10.3** 13⁄32	**71.4** 2 13⁄16	**5.28** 0.208	**29.0** 1 9⁄64	**6.7** 17⁄64	**44.5** 1 3⁄4	**9.5** 3⁄8	**0.28** 0.011	**2.64** 0.104	**15.1** 19⁄32	RA103RRB	S1103K	62MST	**4900** 1100	**0.531** 1.17
RAT	1 1⁄4 S															RA103RRB2	S1103K3			
RAT	**30**															RAE30RRB	SE30K			
RAT	1 1⁄4															RA104RRB	S1104K			
RAT	1 5⁄16															RA105RRB	S1105K			
RAT	1 3⁄8	**93.7** 3 11⁄16	**125.4** 4 15⁄16	**22.2** 7⁄8	**100.0** 3 15⁄16	**10.3** 13⁄32	**81.0** 3 3⁄16	**5.28** 0.208	**32.1** 1 17⁄64	**6.7** 17⁄64	**54.0** 2 1⁄8	**9.5** 3⁄8	**0.28** 0.011	**2.64** 0.104	**15.1** 19⁄32	RA106RRB	S1106K	72MST	**6220** 1400	**0.476** 1.05
RAT	1 7⁄16															RA107RRB	S1107K			
RAT	**35**															RAE35RRB	SE35K			

[1]Stampings must be ordered in pairs to assemble bearing.
[2]Thrust ratings for stamping are 50 percent of radial ratings.
NOTE: Shaft diameter with an S = smaller housing.

Continued on next page.

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Continued from previous page.

Unit	Shaft Dia.	L	H	A	J	N	H_2	A_1	E	K	d_1	Bolt Size	Short Shank P	Long Shank P	Flange Hole Diam. to Clear Sq. Shank N_2	Bearing No.	Collar No.	Stamping[1] Size	Stamping[1] Radial Load Rating[2]	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**N** lbs.	**kg** lbs.
RRT	1/2															1008KRBB	S1008K			
RRT	5/8	**58.7** 2 5/16	**81.0** 3 3/16	**14.2** 9/16	**63.5** 2 1/2	**7.1** 9/32	**49.2** 1 15/16	**3.81** 0.150	**23.8** 15/16	**5.6** 7/32	**28.6** 1 1/8	**6.4** 1/4	**0.15** 0.006	**2.54** 0.100	**10.3** 13/32	1010KRRB	S1010K	40MST	**2650** 600	**0.213** 0.47
RRT	**17**															E17KRRB	SE17K			
RRT	3/4	**66.7** 2 5/8	**90.5** 3 9/16	**15.8** 5/8	**71.4** 2 13/16	**8.7** 11/32	**55.6** 2 3/16	**4.22** 0.166	**25.0** 63/64	**6.4** 1/4	**33.3** 1 5/16	**7.9** 5/16	**0.53** 0.021	**2.92** 0.115	**12.7** 1/2	**1012KRRB**	**S1012K**	47MST	**3100** 700	**0.299** 0.66
RRT	**20**															E20KRRB	SE20K			
RRT	7/8															1014KRRB	S1014K			
RRT	15/16	**71.0** 2 51/64	**95.2** 3 3/4	**17.4** 11/16	**76.2** 3	**8.7** 11/32	**60.3** 2 3/8	**4.22** 0.166	**25.0** 63/64	**7.1** 9/32	**38.1** 1 1/2	**7.9** 5/16	**0.53** 0.021	**2.92** 0.115	**12.7** 1/2	**1015KRRB**	**S1015K**	52MST	**3550** 800	**0.331** 0.73
RRT	1															1100KRRB	S1100K			
RRT	**25**															E25KRRB	SE25K			
RRT	1 1/16															1101KRRB	S1103K			
RRT	1 1/8															**1102KRRB**	**S1102K**			
RRT	1 3/16	**84.1** 3 5/16	**112.7** 4 7/16	**17.4** 11/16	**90.5** 3 9/16	**10.3** 13/32	**71.4** 2 13/16	**5.28** 0.208	**29.0** 1 9/64	**6.7** 17/64	**44.5** 1 3/4	**9.5** 3/8	**0.28** 0.011	**2.64** 0.104	**15.1** 19/32	1103KRRB	S1103K	62MST	**4900** 1100	**0.531** 1.17
RRT	1 1/4 S															1103KRRB3	S1103K3			
RRT	**30**															E30KRRB	SE30K			
RRT	1 1/4															1104KRRB	S1104K			
RRT	1 5/16															**1105KRRB**	**S1105K**			
RRT	1 3/8	**93.7** 3 11/16	**125.4** 4 15/16	**22.2** 7/8	**100.0** 3 15/16	**10.3** 13/32	**81.0** 3 3/16	**5.28** 0.208	**32.1** 1 17/64	**6.7** 17/64	**54.0** 2 1/8	**9.5** 3/8	**0.28** 0.011	**2.64** 0.104	**15.1** 19/32	1106KRRB	S1106K	72MST	**6220** 1400	**0.476** 1.05
RRT	1 7/16															1107KRRB	S1107K			
RRT	**35**															E35KRRB	SE35K			

[1]Stampings must be ordered in pairs to assemble bearing.
[2]Thrust ratings for stamping are 50 percent of radial ratings.
NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

RATR, RRTR TRIANGLE FLANGETTE UNITS

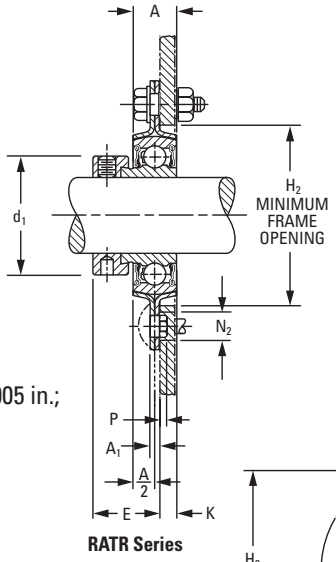
- These units are similar to standard 47MS, 52MS, 62MS and 72MS, except the stamping is triangular instead of round.
- These units are used where space is limited or where it is necessary to cut off one or more sides of the standard flangette stamping.
- The RA-RRB and KRRB may be used with this stamping, as with other types of flangettes.
- All units are non-relubricatable.

Suggested shaft tolerances:

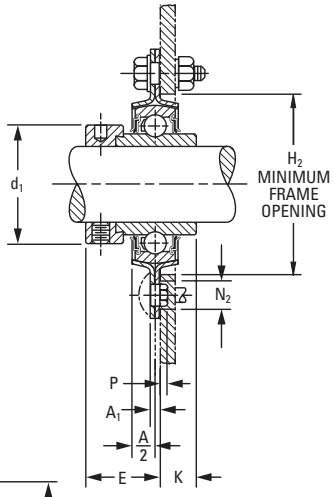
½ in. – 1 7⁄16 in., nominal to -0.013 mm, -0.0005 in.;

To order, specify UNIT and SHAFT DIAMETER.

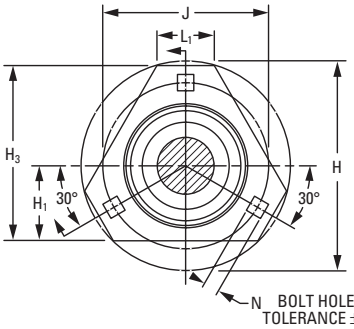
Example: RATR 1 in. flangette or
RRTR 1 in. flangette.



RATR Series



RRTR Series



BEARING DATA

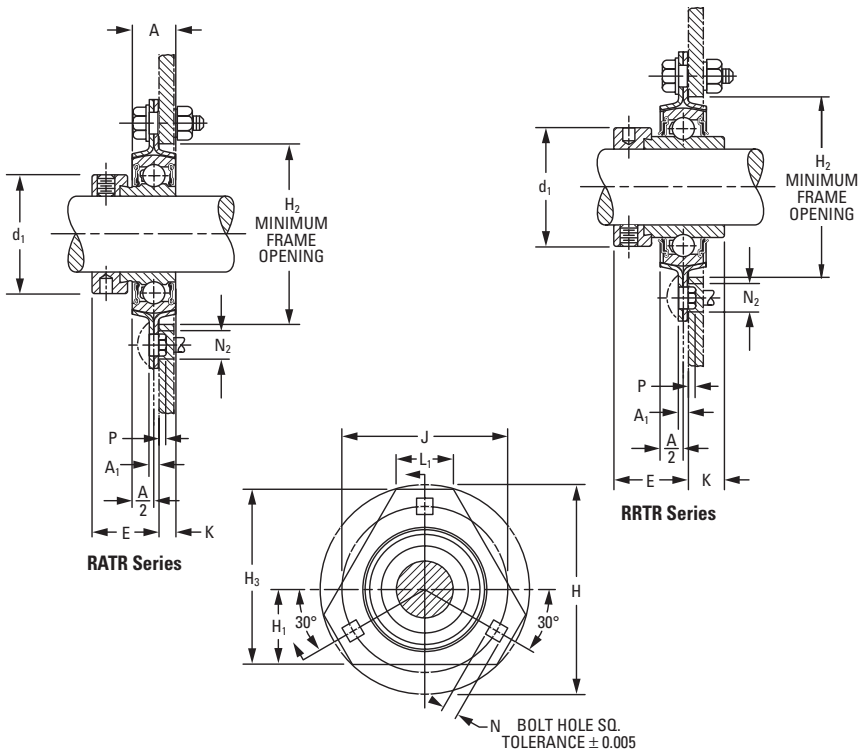
Unit	Bearing No.	Dimensions and Load Ratings
RATR	RA-RRB	Page A-48
RRTR	-KRRB	Page A-32

Unit	Shaft Dia.	H_3	H	A	J	N	H_2	A_1	E	K	d_1	H_1	L_1	Bolt Size	Short Shank P	Long Shank P	Flange Hole Diam. to Clear Sq. Shank N_2	Bearing No.	Collar No.	Stamping[1] Size	Stamping[1] Radial Load Rating[2]	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**N** lbs.	**kg** lbs.
RATR	3⁄4	**76.2**	**90.5**	**15.8**	**71.4**	**8.7**	**55.6**	**4.22**	**25.0**	**6.4**	**33.3**	**33.3**	**27.0**	**7.9**	**0.15**	**2.54**	**12.7**	RA012RRB	S1012K	47MSTR	**3100**	**0.313**
RATR	**20**	3	3 9⁄16	5⁄8	2 13⁄16	11⁄32	2 3⁄16	0.166	63⁄64	1⁄4	1 5⁄16	1 5⁄16	1 1⁄16	5⁄16	0.006	0.100	1⁄2	RAE20RRB	SE20K		700	0.69
RATR	7⁄8																	RA014RRB	S1014K			
RATR	15⁄16	**79.4**	**95.2**	**17.4**	**76.2**	**8.7**	**60.3**	**4.22**	**25.0**	**7.1**	**38.1**	**34.9**	**27.8**	**7.9**	**0.53**	**2.92**	**12.7**	RA015RRB	S1015K		**3550**	**0.354**
RATR	1	3 1⁄8	3 3⁄4	11⁄16	3	11⁄32	2 3⁄8	0.166	63⁄64	9⁄32	1 1⁄2	1 3⁄8	1 3⁄32	5⁄16	0.021	0.115	1⁄2	RA100RRB	S1100K	52MSTR	800	0.78
RATR	**25**																	RAE25RRB	SE25K			
RATR	1 1⁄16																	RA101RRB	S1103K			
RATR	1 1⁄8																	RA102RRB	S1102K			
RATR	1 3⁄16	**93.7**	**112.7**	**17.4**	**90.5**	**10.3**	**71.4**	**5.28**	**29.0**	**6.7**	**44.5**	**38.1**	**25.4**	**9.5**	**0.28**	**2.64**	**15.1**	RA103RRB	S1103K	62MSTR	**4900**	**0.526**
RATR	1 1⁄4 S	3 11⁄16	4 7⁄16	11⁄16	3 9⁄16	13⁄32	2 13⁄16	0.208	1 9⁄64	17⁄64	1 3⁄4	1 1⁄2	1	3⁄8	0.011	0.104	19⁄32	RA103RRB2	S1103K3		1100	1.16
RATR	**30**																	RAE30RRB	SE30K			
RATR	1 1⁄4																	RA104RRB	S1104K			
RATR	1 5⁄16																	RA105RRB	S1105K			
RATR	1 3⁄8	**105.6**	**127.0**	**19.0**	**100.0**	**10.3**	**81.0**	**5.28**	**32.1**	**6.7**	**54.0**	**44.4**	**32.1**	**9.5**	**0.028**	**2.64**	**15.1**	RA106RRB	S1106K	72MSTR	**6300**	**0.703**
RATR	1 7⁄16	4 5⁄32	5	3⁄4	3 15⁄16	13⁄32	3 3⁄16	0.208	1 17⁄64	17⁄64	2 1⁄8	1 3⁄4	1 17⁄64	3⁄8	0.011	0.104	19⁄32	RA107RRB	S1107K		1400	1.55
RATR	**35**																	RAE35RRB	SE35K			

[1]Stampings must be ordered in pairs to assemble bearing.
[2]Thrust ratings for stamping are 50 percent of radial ratings.
NOTE: Shaft diameter with an S = smaller housing.

Continued on next page.

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Continued from previous page.

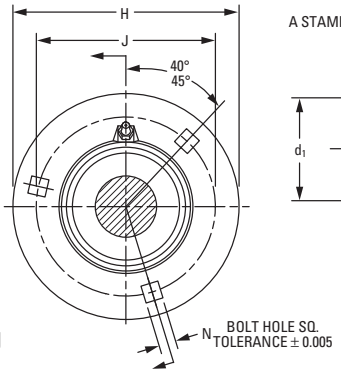
Unit	Shaft Dia.	H_3	H	A	J	N	H_2	A_1	E	K	d_1	H_1	L_1	Bolt Size	Short Shank P	Long Shank P	Flange Hole Diam. to Clear Sq. Shank N_2	Bearing No.	Collar No.	Stamping[1] Size	Stamping[1] Radial Load Rating[2]	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**N** lbs.	**kg** lbs.
RRTR	3/4	**76.2**	**90.5**	**15.8**	**71.4**	**8.7**	**55.6**	**4.22**	**28.6**	**15.1**	**33.3**	**33.3**	**2.07**	**7.9**	**0.15**	**2.54**	**12.7**	1012KRRB	S1012K	47MSTR	**3100**	**0.313**
RRTR	**20**	3	3 9/16	5/8	2 13/16	11/32	2 3/16	0.166	1 1/8	19/32	1 5/16	1 5/16	1 1/16	5/16	0.006	0.100	1/2	E20KRRB	SE20K		700	0.69
RRTR	7/8																	1014KRRB	S1014K			
RRTR	15/16	**79.4**	**95.2**	**17.4**	**76.2**	**8.7**	**60.3**	**4.22**	**28.6**	**15.1**	**38.1**	**34.9**	**27.8**	**7.9**	**0.53**	**2.92**	**12.7**	1015KRRB	S1015K	52MSTR	**3550**	**0.354**
RRTR	1	3 1/8	3 3/4	11/16	3	11/32	2 3/8	0.166	1 1/8	19/32	1 1/2	1 3/8	1 3/32	5/16	0.021	0.115	1/2	1100KRRB	S1100K		800	0.78
RRTR	**25**																	E25KRRB	SE25K			
RRTR	1 1/16																	1101KRRB	S1103K			
RRTR	1 1/8																	1102KRRB	S1102K			
RRTR	1 3/16	**93.7**	**112.7**	**17.4**	**90.5**	**10.3**	**71.4**	**5.28**	**32.5**	**15.9**	**44.5**	**38.1**	**25.4**	**9.5**	**0.28**	**2.64**	**15.1**	1103KRRB	S1103K	62MSTR	**4900**	**0.526**
RRTR	1 1/4 S	3 11/16	4 7/16	11/16	3 9/16	13/32	2 13/16	0.208	1 9/32	5/8	1 3/4	1 1/2	1	3/8	0.011	0.104	19/32	1103KRRB3	S1103K3		1100	1.16
RRTR	**30**																	E30KRRB	SE30K			
RRTR	1 1/4																	1104KRRB	S1104K			
RRTR	1 5/16																	1105KRRB	S1105K			
RRTR	1 3/8	**105.6**	**127.0**	**19.0**	**100.0**	**10.3**	**81.0**	**5.28**	**34.9**	**16.3**	**54.0**	**44.4**	**32.1**	**9.5**	**.028**	**2.64**	**15.1**	1106KRRB	S1106K	72MSTR	**6300**	**0.703**
RRTR	1 7/16	4 5/32	5	3/4	3 15/16	13/32	3 3/16	0.208	1 3/8	41/64	2 1/8	1 3/4	1 17/64	3/8	0.011	0.104	19/32	1107KRRB	S1107K		1400	1.55
RRTR	**35**																	E35KRRB	SE35K			

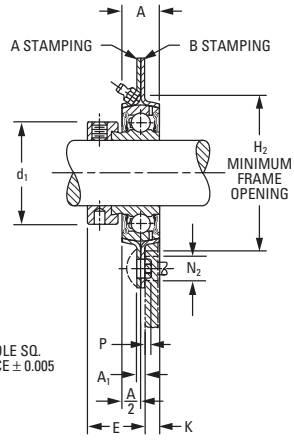
[1]Stampings must be ordered in pairs to assemble bearing.
[2]Thrust ratings for stamping are 50 percent of radial ratings.
NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

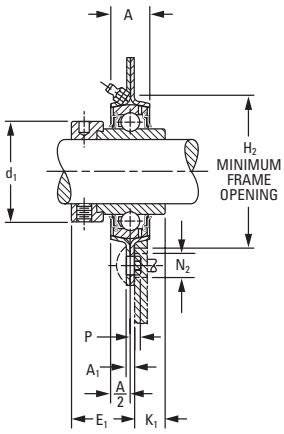
GRA, GRR RELUBRICATABLE FLANGETTE UNITS

- These units are supplements to the standard non-relubricatable type.
- These units are zinc-plated and designed for relubrication in applications where excessive moisture and severe contamination are present.
- The relubricatable flangettes are dimensionally interchangeable with the non-relubricated types. Load ratings also are the same.
- The relubricatable units incorporate G-KRRB bearings and GRA-RRB inner-ring bearings with positive-contact, land-riding seals and self-locking collars.
- The two stampings are needed to make a complete relubricatable flangette. Stamping A contains the boss for the grease fitting and a grease groove to allow grease to enter holes in the outer ring of the bearing. Stamping B contains a similar groove for the same purpose. With the grease groove in both stampings, the bearing can be reversed in the housing and still be relubricated.





GRA Series



GRR Series

Suggested shaft tolerances:

1/2 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: GRA 1 in. flangette.

BEARING DATA

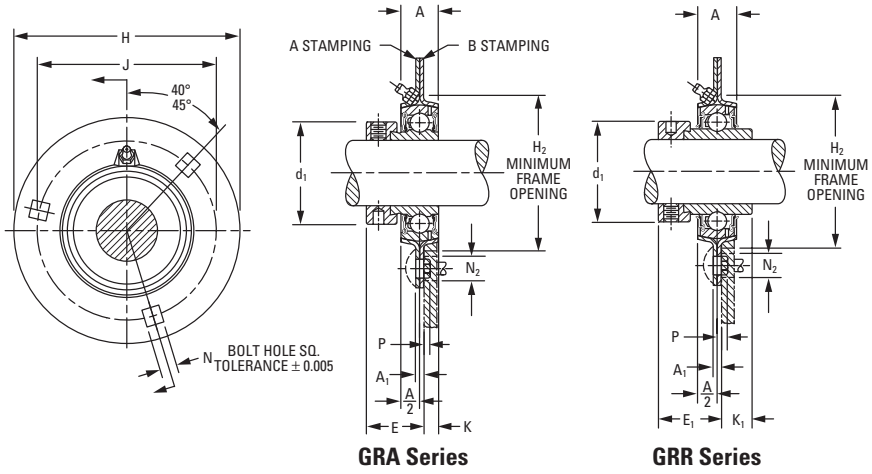
Unit	Bearing No.	Dimensions and Load Ratings
GRA	GRA-RRB	Page A-50
GRR	G-KRRB	Page A-34

Unit	Shaft Dia.	H	A	J	N	H_2	A_1	E	E_1	K	K_1	d_1	Short Shank P	Long Shank P	Flange Hole Diam. to Clear Sq. Shank N_2	Bearing No. (GRA)	Bearing No. (GRR)	Collar No.	Stamping Radial Load Rating[1]
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**N** lbs.
G52MSA & G52MSB	13/16	**95.2** 3 3/4	**17.40** 11/16	**76.2** 3	**8.7** 11/32	**60.3** 2 3/8	**4.22** 0.166	**25.4** 1	**29.0** 1 9/64	**6.7** 17/64	**13.5** 17/32	**38.1** 1 1/2	**0.53** 0.021	**2.92** 0.115	**12.7** 1/2	GRA013RRB	G1013KRRB	S1013K	**7700** 1730
	7/8															GRA014RRB	G1014KRRB	S1014K	
	15/16															GRA015RRB	G1015KRRB	S1015K	
	1															GRA100RRB	G1100KRRB	S1100K	
	25															GRAE25RRB	GE25KRRB	SE25K	
G62MSA & G62MSB	1 1/16	**112.7** 4 7/16	**19.05** 3/4	**90.5** 3 9/16	**10.3** 13/32	**71.4** 2 13/16	**5.28** 0.208	**29.4** 1 5/32	**32.9** 1 19/64	**6.7** 17/64	**15.5** 39/64	**44.1** 1 47/64	**0.28** 0.011	**2.64** 0.104	**15.1** 19/32	GRA101RRB	G1101KRRB	S1103K	**11100** 2500
	1 1/8															GRA102RRB	G1102KRRB	S1102K	
	1 3/16															GRA103RRB	G1103KRRB	S1103K	
	1 1/4 S															GRA103RRB2	G1103KRRB3	S1103K3	
	30															GRAE30RRB	GE30KRRB	SE30K	
G72MSA & G72MSB	1 1/4	**122.2** 4 13/16	**22.20** 7/8	**100.0** 3 15/16	**10.3** 13/32	**81.0** 3 3/16	**6.80** 0.268	**32.9** 1 19/64	**35.7** 1 13/32	**7.9** 5/16	**15.5** 39/64	**54.0** 2 1/8	**0.28** 0.011	**2.64** 0.104	**15.1** 19/32	GRA104RRB	G1104KRRB	S1104K	**15100** 3400
	1 5/16															GRA105RRB	G1105KRRB	S1105K	
	1 3/8															GRA106RRB	G1106KRRB	S1106K	
	1 7/16															GRA107RRB	G1107KRRB	S1107K	
	35															GRAE35RRB	GE35KRRB	SE35K	

[1]Thrust ratings for stampings are 50 percent of radial ratings.
[2]Four bolt holes.
NOTE: Shaft diameter with an S = smaller housing.

Continued on next page.

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GRA Series **GRR Series**

Continued from previous page.

Unit	Shaft Dia.	H	A	J	N	H_2	A_1	E	E_1	K	K_1	d_1	Short Shank P	Long Shank P	Flange Hole Diam. to Clear Sq. Shank N_2	Bearing No. (GRA)	Bearing No. (GRR)	Collar No.	Stamping Radial Load Rating[1]
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**N** lbs.
G80MSA[2] & G80MSB[2]	1 1/2 1 9/16 **40**	**147.6** 5 13/16	**31.80** 1 1/4	**119.1** 4 11/16	**13.5** 17/32	**90.4** 3 9/16	**7.56** 0.298	**36.5** 1 7/16	**38.9** 1 17/32	**12.3** 31/64	**17.9** 45/64	**60.3** 2 3/8	**0.33** 0.013	**2.72** 0.107	**19.4** 49/64	GRA108RRB GRA109RRB GRAE40RRB	G1108KRRB G1109KRRB GE40KRRB	S1108KT S1109KT SE40K	**19600** 4400
G85MSA[2] & G85MSB[2]	1 5/8 1 11/16 1 3/4 **45**	**149.2** 5 7/8	**31.8** 1 1/4	**120.6** 4 3/4	**13.5** 17/32	**96.8** 3 13/16	**7.56** 0.298	**36.5** 1 7/16	**38.9** 1 17/32	**11.9** 15/32	**17.9** 45/64	**63.5** 2 1/2	**0.33** 0.013	**2.72** 0.107	**19.4** 49/64	GRA110RRB GRA111RRB GRA112RRB GRAE45RRB	G1110KRRB G1111KRRB G1112KRRB GE45KRRB	S1110K S1111K S1112K SE45K	**20500** 4600
G90MSA[2] & G90MSB[2]	1 13/16 1 7/8 1 15/16 **50**	**155.6** 6 1/8	**25.4** 1	**127.0** 5	**13.5** 17/32	**101.6** 4	**8.34** 0.328	**36.9** 1 29/64	**42.5** 1 43/64	**8.3** 21/64	**20.6** 13/16	**69.8** 2 3/4	–	**1.96** 0.077	**19.4** 49/64	GRA113RRB GRA114RRB GRA115RRB GRAE50RRB	G1113KRRB G1114KRRB G1115KRRB GE50KRRB	S1113K S1114K S1115K SE50K	**22700** 5100
G100MSA & G100MSB	2 2 1/16 2 1/8 2 3/16 **55**	**166.7** 6 9/16	**31.8** 1 1/4	**138.1** 5 7/16	**13.5** 17/32	**112.7** 4 7/16	**8.34** 0.328	**40.5** 1 19/32	**47.6** 1 7/8	**11.9** 15/32	**23.8** 15/16	**76.2** 3	–	**1.96** 0.077	**19.4** 49/64	GRA200RRB GRA201RRB GRA202RRB GRA203RRB GRAE55RRB	G1200KRRB G1201KRRB G1202KRRB G1203KRRB GE55KRRB	S1200K S1201K S1202K S1203K SE55K	**28500** 6400

[1]Thrust ratings for stampings are 50 percent of radial ratings.
[2]Four bolt holes.
NOTE: Shaft diameter with an S = smaller housing.

08-19-13 DRAFT

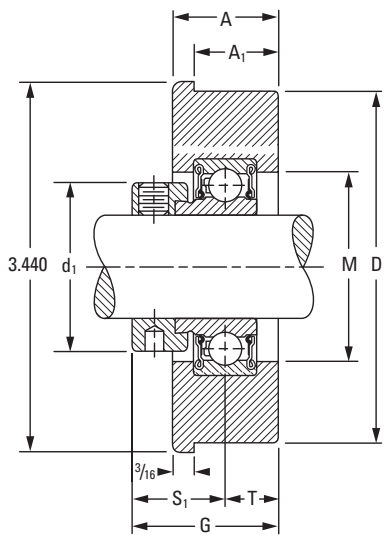
RUBBER CARTRIDGES

RCSM, RCR, CR SERIES

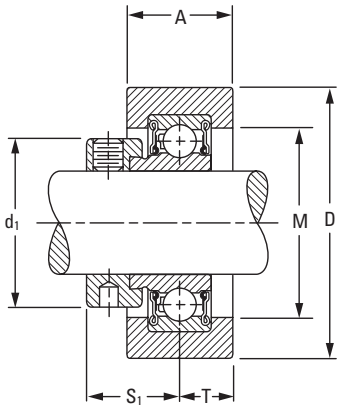
- RCSM and RCR are quiet, synthetic, conductive-rubber cylindrical cartridges designed for domestic heating, air-conditioning, ventilating equipment and other applications that require noise-free operation.
- All units are available with the RA-RRB extended inner-ring bearings with positive-contact, land-riding seals and a self-locking collar.
- An initial supply of grease is provided in the one-piece, non-relubricatable cartridges.
- The Timken-patented CR unit was designed to accommodate the wide tolerances of hot or cold rolled #10-gage (0.134 in.), 3 ½ in. O.D., electric-resistance welded mechanical tubing, similar to what is found in post office conveyor systems.

To order, specify UNIT and SHAFT DIAMETER.

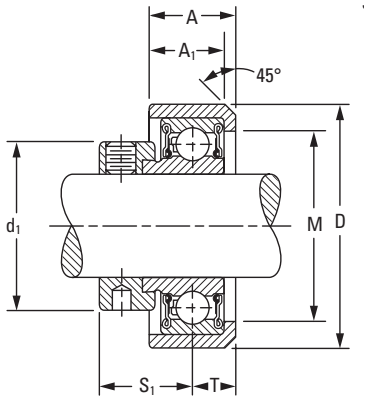
Example: RCSM ¾ in. or RCR ¾ in. or CR ¾ in.



CR



RCSM



RCR

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RCSM, RCR, CR	RA-RR	Page A-48

Unit	Shaft Dia.	D	A	A_1	G	M	d_1	S_1	T	Bearing No.[1]	Collar No.	Housing Radial Load Rating[2]	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**N** lbs.	**kg** lbs.
RCSM SERIES – Suggested Housing Diameter = Nominal D ± 0.013 mm ± 0.005 in.													
RCSM	½									RA008RR	S1008K		
RCSM	⅝	**64.30**	**25.4**	–	–	**34.9**	**28.6**	**22.2**	**12.7**	RA010RR	S1010K	**880**	**0.395**
RCSM	**17**	2 17/32	1			1 3/8	1 1/8	7/8	½	RAE17RR	SE17K	200	0.87
RCSM	¾												
RCSM	**20**	**64.30** 2 17/32	**25.4** 1	–	–	**39.7** 1 9/16	**33.3** 1 5/16	**23.4** 59/64	**12.7** ½	RA012RR –	S1012K SE20K	**1120** 250	**0.472** 1.04
RCSM	15/16									RA015RR	S1015K		
RCSM	1	**64.30**	**25.4**	–	–	**45.2**	**38.1**	**23.4**	**12.7**	RA100RR	S1100K	**1340**	**0.527**
RCSM	**25**	2 17/32	1			1 25/32	1 ½	59/64	½	RAE25RR	SE25K	300	1.16
LRCSM	1 3/16	**64.30** 2 17/32	**25.4** 1	–	–	**47.6** 1 7/8	**42.1** 1 21/32	**19.8** 25/32	**12.7** ½	RAL103NPP	LS103K	**1340** 300	**0.627** 1.38
RCSM SERIES – Suggested Housing Diameter = Nominal D -0.13 mm to -0.038 mm, -0.005 in. to -0.0015 in.													
LRCR	¾	**46.00** 1 13/16	**18.3** 23/32	**15.9** ⅝	–	**34.9** 1 3/8	**30.2** 1 3/16	**18.7** 47/64	**9.9** 25/64	RAL012NPP	LS012K	**880** 200	**0.272** 0.60
RCR	1	**57.20**	**19.8**	**17.5**	–	**44.4**	**38.1**	**23.4**	**9.9**	RA100RR	S1100K	**1340**	**0.409**
RCR	**25**	2 ¼	25/32	11/16		1 ¾	1 ½	59/64	25/64	RAE25RR	SE25K	300	0.90
RCSM SERIES – Suggested Housing Diameter 82.73 mm to 81.76 mm, 3.257 in. to 3.219 in.													
CR	¾	**83.57**	**25.4**	**22.2**	**36.1**	**39.7**	**33.3**	**23.4**	**12.7**	RA012RR	S1012K	**670**	**0.318**
CR	**20**	3.29	1	7/8	1 27/64	1 9/16	1 5/16	59/64	½	RAE20RR	SE20K	150	0.70
CR	1	**83.57**	**25.4**	**22.2**	**36.1**	**45.2**	**38.1**	**23.4**	**12.7**	RA100RR	S1100K	**880**	**0.340**
CR	**25**	3.29	1	7/8	1 27/64	1 25/32	1 ½	59/64	½	RAE25RR	SE25K	200	0.75
LCR	1	**83.57**	**25.4**	**20.6**	**33.3**	**39.7**	**36.1**	**19.8**	**14.3**	RAL100NPP	S1100K	**880**	**0.309**
LCR	**25**	3.29	1	13/16	1 5/16	1 9/16	1 27/64	25/32	9/16	RALE25NPP	SE25K	200	0.68

[1]Suffix for RA bearing is FS450 (RCSM and RCR series).
[2]Steady loads only. Thrust load is ⅓ radial load rating. Maximum suggested speed is 2400 RPM.

08-19-13 DRAFT

RABR HVAC SPECIAL SERIES

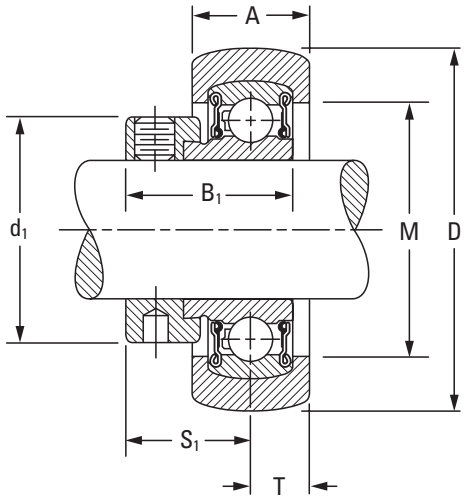
- This unit features a conductive rubber interliner to dissipate static charges.
- The quiet RA-RRB extended inner-ring bearings are prelubricated and have positive-contact, land-riding seals with self-locking collars.
- RABR units can be mounted in tri-arm brackets or pressed-steel stampings.
- Maximum suggested speed is 2400 RPM.

Suggested housing diameter =

Nominal (D) -0.130 mm – 0.380 mm; -0.005 in. – 0.015 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RABR 1 in.



BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
RABR	RA-RRB	Page A-48

Unit	Shaft Dia.	D	B_1	A	M	d_1	S_1	T	Bearing No.[1]	Collar No.	Housing Radial Load Rating[2]
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.			**N** lbs.
RABR	1/2								RA008RRB	S1008K	
RABR	5/8	**47.37** 1.865	**28.6** 1 1/8	**17.5** 11/16	**34.9** 1 3/8	**28.6** 1 1/8	**22.2** 7/8	**8.7** 11/32	RA010RRB	S1010K	**880** 200
RABR	**17**								RAE17RRB	SE17K	
RABR	3/4	**52.37** 2.062	**31.0** 1 7/32	**17.5** 11/16	**41.3** 1 5/8	**33.3** 1 5/16	**23.4** 59/64	**8.7** 11/32	RA012RRB	S1012K	**1120** 250
RABR	**20**								RAE20RRB	SE20K	
RABR	15/16								RA015RRB	S1015K	
RABR	1	**62.38** 2.456	**31.0** 1 7/32	**20.6** 13/16	**46.8** 1 27/32	**38.1** 1 1/2	**23.4** 59/64	**10.3** 13/32	RA100RRB	S1100K	**1340** 300
RABR	**25**								RAE25RRB	SE25K	
RABR	1 3/16	**62.38** 2.456	**35.7** 1 13/32	**20.6** 13/16	**46.8** 1 27/32	**44.4** 1 3/4	**28.6** 1 1/8	**10.3** 13/32	RAL103PP	LS103K	**1340** 300
RABR	**30**								RAE30PP3	SE30K	

[1]For replacement of bearings, specify suffix FS450.
[2]Thrust load is 1/3 radial load rating.
NOTE: Maximum suggested speed is 2400 RPM.

08-19-13 DRAFT

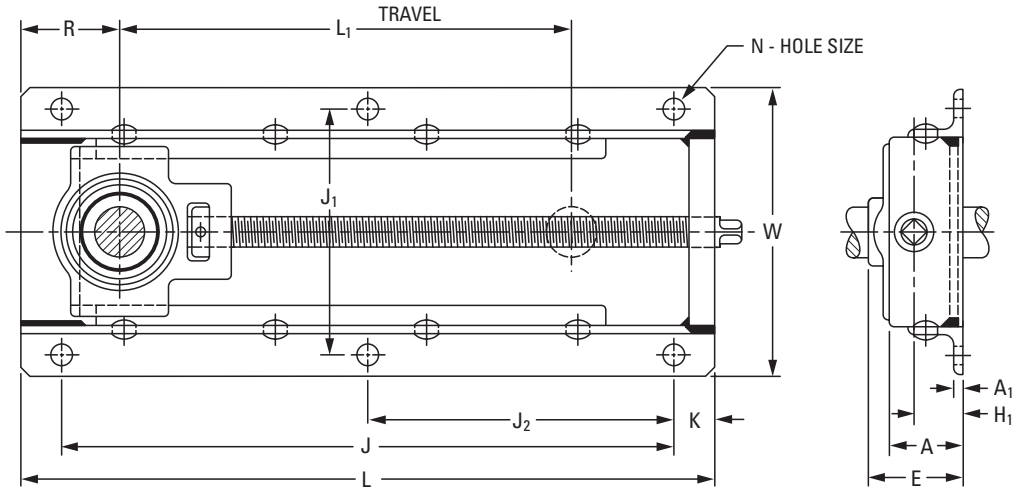
TAKE-UP UNITS

NLTU SERIES
SIDE-MOUNTED, PRESSED-STEEL

- The take-up frame incorporates RTU take-up units as shown on the following pages.
- The frame is designed for side mounting and made of welded steel.

To order a complete assembly, specify NLTU FRAME and RTU TAKE-UP UNIT.

Example: NLTU5 frame and RTU 1 11/16 in. If frame only is required, order by frame number. Example: NLTU3.



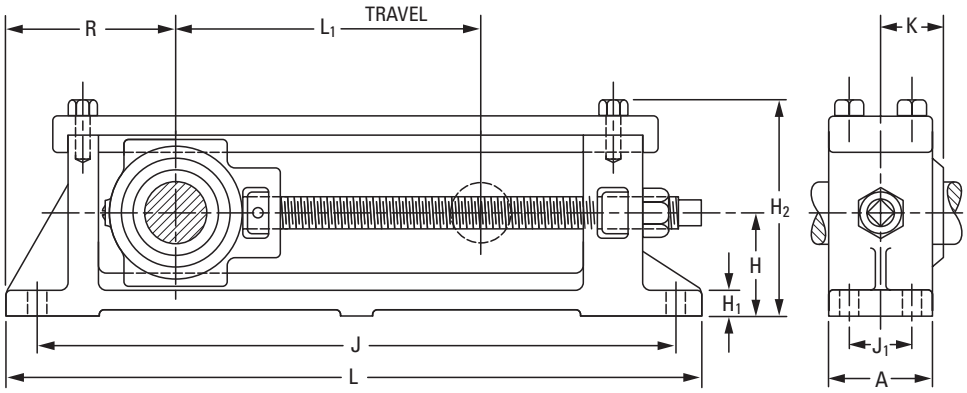
NLTU Frame No.	Shaft Dia.	L_1	R	J	L	A_1	H_1	E	J_1	W	A	J_2	K	N	Bolts 6 req'd.	Unit Wt.
	in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	in.	**kg** lbs.
1	5/16, 3/4, 13/16, 7/8, 15/16, 1	**231.8** 9 1/8	**62.70** 2 15/32	**327.0** 12 7/8	**377.8** 14 7/8	**4.8** 3/16	**27.0** 1 1/16	**54.0** 2 1/8	**141.3** 5 9/16	**166.7** 6 9/16	**44.4** 1 3/4	**163.5** 6 7/16	**25.4** 1	**12.7** 1/2	7/16	**3.691** 8.13
3	1 1/16, 1 1/8, 1 3/16, 1 1/4, 1 5/16, 1 3/8, 1 7/16	**290.5** 11 7/16	**64.23** 2 17/32	**392.1** 15 7/16	**432.2** 17 7/16	**4.8** 3/16	**31.8** 1 1/4	**61.9** 2 7/16	**154.0** 6 1/16	**179.4** 7 1/16	**50.8** 2	**196.1** 7 23/32	**25.4** 1	**12.7** 1/2	7/16	**5.003** 11.02
		290.5 11 7/16	**61.90** 2 7/16	**392.1** 15 7/16	**432.2** 17 7/16	**4.8** 3/16	**31.8** 1 1/4	**64.3** 2 17/32	**154** 6 1/16	**179.4** 7 1/16	**50.8** 2	**196.1** 7 23/32	**25.4** 1	**12.7** 1/2	7/16	
5	1 1/2, 1 9/16, 1 5/8, 1 11/16, 1 3/4, 1 13/16, 1 7/8, 1 15/16	**298.4** 11 3/4	**92.90** 3 21/32	**444.5** 17 1/2	**501.6** 19 3/4	**4.8** 3/16	**36.5** 1 7/16	**71.4** 2 13/16	**185.7** 7 5/16	**223.8** 8 13/16	**57.2** 2 1/4	**222.5** 8 3/4	**28.6** 1 1/8	**14.3** 9/16	1/2	**8.217** 18.10
7	2, 2 1/16, 2 1/8, 2 3/16, 2 1/4, 2 5/16, 2 3/8, 2 7/16	**362.0** 14 1/4	**92.90** 3 21/32	**546.1** 21 1/2	**603.2** 23 3/4	**4.8** 3/16	**38.1** 1 1/2	**81.8** 3 7/32	**219.1** 8 5/8	**265.1** 10 7/16	**63.5** 2 1/2	**273.0** 10 3/4	**28.6** 1 1/8	**15.9** 5/8	9/16	**12.312** 27.12
		362.0 14 1/4	**92.90** 3 21/32	**546.1** 21 1/2	**603.2** 23 3/4	**4.8** 3/16	**38.1** 1 1/2	**84.9** 3 11/32	**219.1** 8 5/8	**265.1** 10 7/16	**63.5** 2 1/2	**273.0** 10 3/4	**28.6** 1 1/8	**15.9** 5/8	9/16	

08-19-13 DRAFT

TU SERIES
TOP-MOUNTED, CAST-IRON

- The take-up frame incorporates RTU take-up units as shown on the following pages.
- The frame is designed for top mounting and is made of cast-iron.

To order a complete assembly, specify TU FRAME and RTU or TU TAKE-UP UNIT.
Example: TU5 frame and RTU 1 11/16 in.



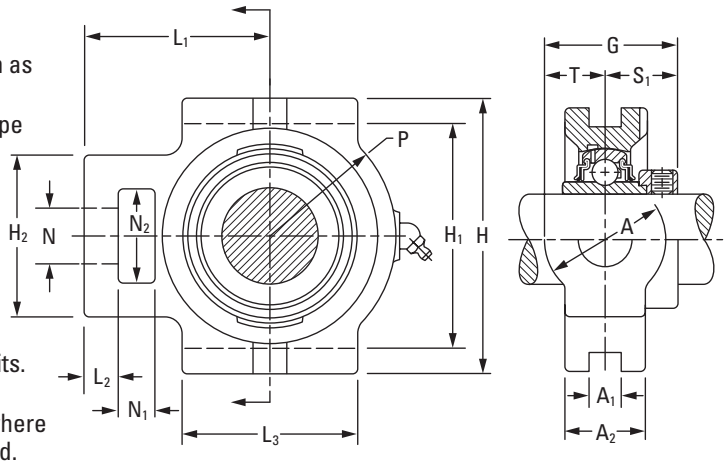
TU Frame No.	Shaft Dia.	L_1	R	J	L	H_1	H	H_2	J_1	A	K	Bolts 4 req'd.	Unit Wt.
	in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	in.	**kg** lbs.
1	3/4, 13/16, 7/8, 15/16, 1	**203.2** 8	**114.3** 4 1/2	**419.2** 16 1/2	**469.9** 18 1/2	**14.3** 9/16	**63.5** 2 1/2	**131.0** 5 5/32	**34.9** 1 3/8	**54.0** 2 1/8	–	3/8	**7.491** 16.50
3	1 1/16, 1 1/8, 1 3/16, 1 1/4, 1 5/16, 1 3/8, 1 7/16	**254.0** 10	**127.0** 5	**492.1** 19 3/8	**542.9** 21 3/8	**15.9** 5/8	**71.4** 2 13/16	**149.2** 5 7/8	**38.1** 1 1/2	**65.1** 2 9/16	–	7/16	**11.464** 25.25
5	1 1/2, 1 9/16, 1 5/8, 1 11/16, 1 3/4, 1 13/16, 1 7/8, 1 15/16	**254.0** 10	**139.7** 5 1/2	**530.2** 20 7/8	**581.0** 22 7/8	**19.0** 3/4	**82.6** 3 1/4	**171.4** 6 3/4	**50.8** 2	**88.9** 3 1/2	–	1/2	**20.203** 44.50
7	2, 2 1/16, 2 1/8, 2 3/16, 2 1/4, 2 5/16, 2 3/8, 2 7/16	**304.8** 12	**168.3** 6 5/8	**644.5** 25 3/8	**708.0** 27 7/8	**22.2** 7/8	**101.6** 4	**211.9** 8 11/32	**63.5** 2 1/2	**101.6** 4	–	5/8	**36.320** 80.00
9	2 11/16, 2 15/16 [1]	**304.8** 12	**193.7** 7 5/8	**695.3** 27 3/8	**771.5** 30 3/8	**25.4** 1	**117.5** 4 5/8	**243.7** 9 19/32	**82.6** 3 1/4	**120.6** 4 3/4	**65.1** 2 9/16	5/8	**52.778** 116.25

[1]Dimension K is 69.1 mm (2 23/32 in.) for 2 15/16 in. shaft diameters.

08-19-13 DRAFT

RTU INDUSTRIAL SERIES

- These ball bearing take-up units are used where shaft adjustment and belt-tightening devices are required, such as in conveyor applications.
- Both types of take-up units incorporate self-aligning, B-type wide-inner-ring ball bearings with self-locking collars.
- These units use a G-KRRB, R-seal type wide inner ring ball bearing.
- These units provide compact, efficient supports for adjustable shafts and conveyer take-up pulleys.
- The units are factory-prelubricated. A grease fitting is provided for relubrication if required.
- See the preceding page for take-up frames to fit these units.
- Contact your Timken engineer to discuss highly corrosive applications (e.g., food processing, chemical exposure) where Timken thin-dense chrome-coated bearings can be utilized.



Suggested shaft tolerances:

3/4 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 7/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: RTU 3/4 in. or RTU 2 11/16 in.

BEARING DATA

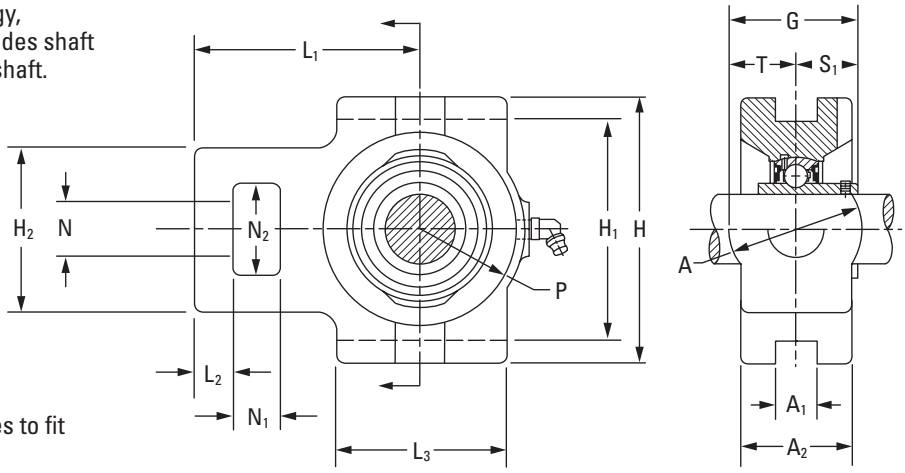
Unit	Bearing No.	Dimensions and Load Ratings
RTU	G-KRRB	Page A-34

Unit	Shaft Dia.	G	T	S_1	A_2	A_1	A	L_1	H_2	N	N_2	L_2	N_1	P	L_3	H_1	H	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**kg** lbs.
RTU	3/4	**47.6**	**20.6**	**27.0**	**34.1**	**13.5**	**41.3**	**67.5**	**57.2**	**19.0**	**31.8**	**12.7**	**15.9**	**49.2**	**57.2**	**76.2**	**92.1**	G1012KRRB	S1012K	T-18832	**1.444**
RTU	**20**	1 7/8	13/16	1 1/16	1 11/32	17/32	1 5/8	2 21/32	2 1/4	3/4	1 1/4	1/2	5/8	1 15/16	2 1/4	3	3 5/8	GE20KRRB	SE20K		3.18
RTU	7/8																	G1014KRRB	S1014K		
RTU	15/16	**42.9**	**22.2**	**27.0**	**37.3**	**13.5**	**44.4**	**67.5**	**57.2**	**19.0**	**31.8**	**12.7**	**15.9**	**34.9**	**57.2**	**76.2**	**92.1**	G1015KRRB	S1015K	T-18696	**1.498**
RTU	1	1 15/16	7/8	1 1/16	1 15/32	17/32	1 3/4	2 21/32	2 1/4	3/4	1 1/4	1/2	5/8	1 3/8	2 1/4	3	3 5/8	G1100KRRB	S1100K		3.30
RTU	**25**																	GE25KRRB	SE25K		
RTU	1 1/16																	G1101KRRB	S1101K		
RTU	1 1/8	**55.6**	**25.4**	**30.2**	**38.1**	**13.5**	**50.8**	**72.2**	**61.9**	**22.2**	**36.5**	**12.7**	**15.9**	**41.3**	**63.5**	**88.9**	**104.8**	G1102KRRB	S1102K	T-18694	**1.920**
RTU	1 3/16	2 3/16	1	1 3/16	1 1/2	17/32	2	2 27/32	2 7/16	7/8	1 7/16	1/2	5/8	1 5/8	2 1/2	3 1/2	4 1/8	G1103KRRB	S1103K		4.23
RTU	**30**																	GE30KRRB	SE30K		
RTU	1 1/4																	G1104KRRB	S1104K		
RTU	1 5/16																	G1105KRRB	S1105K		
RTU	1 3/8	**54.8**	**22.2**	**32.5**	**36.5**	**13.5**	**44.5**	**74.6**	**63.5**	**22.2**	**36.5**	**12.7**	**15.9**	**49.2**	**69.8**	**88.9**	**104.8**	G1106KRRB	S1106K	T-18692	**2.025**
RTU	1 7/16	2 5/32	7/8	1 9/32	1 7/16	17/32	1 3/4	2 15/16	2 1/2	7/8	1 7/16	1/2	5/8	1 15/16	2 3/4	3 1/2	4 1/8	G1107KRRB	S1107K		4.46
RTU	**35**																	GE35KRRB	SE35K		
RTU	1 1/2																	G1108KRRB	S1108KT		
RTU	1 9/16	**67.5**	**32.5**	**34.9**	**44.4**	**17.5**	**65.1**	**88.1**	**82.6**	**28.6**	**49.2**	**15.9**	**19.0**	**53.3**	**82.6**	**100.8**	**120.6**	G1109KRRB	S1109K	T-18834	**3.314**
RTU	**40**	2 21/32	1 9/32	1 3/8	1 3/4	11/16	2 9/16	3 15/32	3 1/4	1 1/8	1 15/16	5/8	3/4	2 3/32	3 1/4	3 31/32	4 3/4	GE40KRRB	SE40K		7.30
RTU	1 5/8																	G1110KRRB	S1110K		
RTU	1 11/16	**67.5**	**32.5**	**34.9**	**44.4**	**17.5**	**65.1**	**88.1**	**82.6**	**28.6**	**49.2**	**15.9**	**19.0**	**53.3**	**82.6**	**100.8**	**120.6**	G1111KRRB	S1111K	T-18762	**3.164**
RTU	1 3/4	2 21/32	1 9/32	1 3/8	1 3/4	11/16	2 9/16	3 15/32	3 1/4	1 1/8	1 15/16	5/8	3/4	2 3/32	3 1/4	3 31/32	4 3/4	G1112KRRB	S1112K		6.97
RTU	**45**																	GE45KRRB	SE45K		
RTU	1 7/8																	G1114KRRB	S1114K		
RTU	1 15/16	**70.6**	**32.5**	**38.1**	**49.2**	**17.5**	**65.1**	**91.3**	**82.6**	**28.6**	**49.2**	**15.9**	**19.0**	**59.5**	**85.7**	**100.8**	**120.6**	G1115KRRB	S1115K	T-18690	**3.587**
RTU	**50**	2 25/32	1 9/32	1 1/2	1 15/16	11/16	2 9/16	3 19/32	3 1/4	1 1/8	1 15/16	5/8	3/4	2 11/32	3 3/8	3 31/32	4 3/4	GE50KRRB	SE50K		7.90
RTU	2																	G1200KRRB	S1201K		
RTU	2 1/8	**77.0**	**34.9**	**43.7**	**55.6**	**27.0**	**69.8**	**119.9**	**101.6**	**34.9**	**63.5**	**19.0**	**31.8**	**69.1**	**101.6**	**129.4**	**149.2**	G1202KRRB	S1202K	T-18828	**6.333**
RTU	2 3/16	3 1/32	1 3/8	1 23/32	2 3/16	1 1/16	2 3/4	4 23/32	4	1 3/8	2 1/2	3/4	1 1/4	2 23/32	4	5 3/32	5 7/8	G1203KRRB	S1203K		13.95
RTU	**55**																	GE55KRRB	SE55K		
RTU	2 1/4																	G1204KRRB	S1204K		
RTU	2 3/8	**81.8**	**34.9**	**46.8**	**52.4**	**27.0**	**69.8**	**119.9**	**101.6**	**34.9**	**63.5**	**19.0**	**31.8**	**69.1**	**101.6**	**129.4**	**149.2**	G1206KRRB	S1206K	T-18830	**5.993**
RTU	2 7/16	3 7/32	1 3/8	1 27/32	2 1/16	1 1/16	2 3/4	4 23/32	4	1 3/8	2 1/2	3/4	1 1/4	2 23/32	4	5 3/32	5 7/8	G1207KRRB	S1207K		13.20
RTU	**60**																	GE60KRRB	SE60K		

08-19-13 DRAFT

YTU INDUSTRIAL SERIES

- Incorporates Shaft Guarding Technology, which reduces replacement time, provides shaft protection and prolongs the life of the shaft.
- Used where shaft adjustment and belt-tightening devices are required, such as conveyer applications.
- Incorporates self-aligning, B-type extra wide-inner-ring ball bearings with set screw lock.
- Provides compact, efficient supports for adjustable shafts and conveyor take-up pulleys.
- Factory-prelubricated. A grease fitting is provided for relubrication if required.
- See preceding pages for take-up frames to fit these units.
- Safety end caps are available for selected sizes.
- Contact your Timken engineer to discuss highly corrosive applications (e.g., food processing, chemical exposure) where Timken thin-dense chrome-coated bearings can be utilized.



Suggested shaft tolerances:

½ in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 7/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: YTU ¾ in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
YTU	GY-KRRB	Page A-44

Unit	Shaft Dia.	G	T	S_1	A_2	A_1	A	L_1	H_2	N	N_2	L_2	N_1	P	L_3	H_1	H	Bearing No.	Housing No.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.		
YTU SGT	¾	**39.7**	**20.6**	**19.00**	**34.1**	**13.5**	**41.3**	**67.5**	**57.2**	**19.0**	**31.8**	**12.7**	**15.9**	**33.3**	**57.2**	**76.2**	**92.1**	GY1012KRRB SGT	T-18832
YTU SGT	**20**	1 9/16	13/16	0.748	1 11/32	17/32	1 5/8	2 21/32	2 1/4	3/4	1 1/4	1/2	5/8	1 5/16	2 1/4	3	3 5/8	GYE20KRRB SGT	
YTU SGT	7/8																	GY1014KRRB SGT	T-18696
YTU SGT	15/16	**42.9**	**22.2**	**20.60**	**37.3**	**13.5**	**44.4**	**67.5**	**57.2**	**19.0**	**31.8**	**12.7**	**15.9**	**34.9**	**57.2**	**76.2**	**92.1**	GY1015KRRB SGT	
YTU SGT	1	1 11/16	7/8	0.81	1 15/32	17/32	1 3/4	2 21/32	2 1/4	3/4	1 1/4	1/2	5/8	1 3/8	2 1/4	3	3 5/8	GY1100KRRB SGT	
YTU SGT	**25**																	GYE25KRRB SGT	
YTU SGT	1 1/8																	GY1102KRRB SGT	T-18694
YTU SGT	1 3/16	**48.8**	**25.4**	**23.24**	**38.1**	**13.5**	**50.8**	**72.2**	**61.9**	**22.2**	**36.5**	**12.7**	**15.9**	**41.3**	**63.5**	**88.9**	**104.8**	GY1103KRRB SGT	
YTU SGT	**30**	1 59/64	1	0.915	1 1/2	17/32	2	2 27/32	2 7/16	7/8	1 7/16	1/2	5/8	1 5/8	2 1/2	3 1/2	4 1/8	GYE30KRRB SGT	
YTU SGT	1 1/4																	GY1104KRRB SGT	T-18692
YTU SGT	1 3/8	**50.4**	**22.2**	**27.90**	**36.5**	**13.5**	**44.5**	**74.6**	**63.5**	**22.2**	**36.5**	**12.7**	**15.9**	**49.2**	**69.8**	**88.9**	**104.8**	GY1106KRRB SGT	
YTU SGT	1 7/16	1 63/64	7/8	1.1	1 7/16	17/32	1 3/4	2 15/16	2 1/2	7/8	1 7/16	1/2	5/8	1 15/16	2 3/4	3 1/2	4 1/8	GY1107KRRB SGT	
YTU SGT	**35**																	GYE35KRRB SGT	
YTU SGT	1 1/2	**62.7**	**32.5**	**30.20**	**44.4**	**17.5**	**65.1**	**88.1**	**82.6**	**28.6**	**49.2**	**15.9**	**19.0**	**53.3**	**82.6**	**100.8**	**120.6**	GY1108KRRB SGT	T-18834
YTU SGT	**40**	2 15/32	1 9/32	1.188	1 3/4	11/16	2 9/16	3 15/32	3 1/4	1 1/8	1 15/16	5/8	3/4	2 3/32	3 1/4	3 31/32	4 3/4	GYE40KRRB SGT	
YTU SGT	1 5/8																	GY1110KRRB SGT	T-18762
YTU SGT	1 11/16	**64.0**	**32.5**	**31.30**	**44.4**	**17.5**	**65.1**	**88.1**	**82.6**	**28.6**	**49.2**	**15.9**	**19.0**	**53.3**	**82.6**	**100.8**	**120.6**	GY1111KRRB SGT	
YTU SGT	1 3/4	2 33/64	1 9/32	1.233	1 3/4	11/16	2 9/16	3 15/32	3 1/4	1 1/8	1 15/16	5/8	3/4	2 3/32	3 1/4	3 31/32	4 3/4	GY1112KRRB SGT	
YTU SGT	**45**																	GYE45KRRB SGT	
YTU SGT	1 15/16	**65.0**	**32.5**	**32.50**	**49.2**	**17.5**	**65.1**	**91.3**	**82.6**	**28.6**	**49.2**	**15.9**	**19.0**	**59.5**	**85.7**	**100.8**	**120.6**	GY1115KRRB SGT	T-18690
YTU SGT	**50**	2 9/16	1 9/32	1.281	1 15/16	11/16	2 9/16	3 19/32	3 1/4	1 1/8	1 15/16	5/8	3/4	2 11/32	3 3/8	3 31/32	4 3/4	GYE50KRRB SGT	
YTU SGT	2																	GY1200KRRB SGT	T-18828
YTU SGT	2 3/16	**68.3**	**34.9**	**33.30**	**55.6**	**27.0**	**69.8**	**119.9**	**101.6**	**34.9**	**63.5**	**19.0**	**31.8**	**69.1**	**101.6**	**129.4**	**149.2**	GY1203KRRB SGT	
YTU SGT	**55**	2 11/16	1 3/8	1.312	2 3/16	1 1/16	2 3/4	4 23/32	4	1 3/8	2 1/2	3/4	1 1/4	2 23/32	4	5 3/32	5 7/8	GYE55KRRB SGT	
YTU SGT	2 1/4																	GY1204KRRB SGT	T-18830
YTU SGT	2 7/16	**74.6**	**34.9**	**39.70**	**52.4**	**27.0**	**69.8**	**119.9**	**101.6**	**34.9**	**63.5**	**19.0**	**31.8** 1	**69.1**	**101.6**	**129.4**	**149.2**	GY1207KRRB SGT	
YTU SGT	**60**	2 15/16	1 3/8	1.562	2 1/16	1 1/16	2 3/4	4 23/32	4	1 3/8	2 1/2	3/4	1/4	2 23/32	4	5 3/32	5 7/8	GYE60KRRB SGT	

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VTU STANDARD SERIES

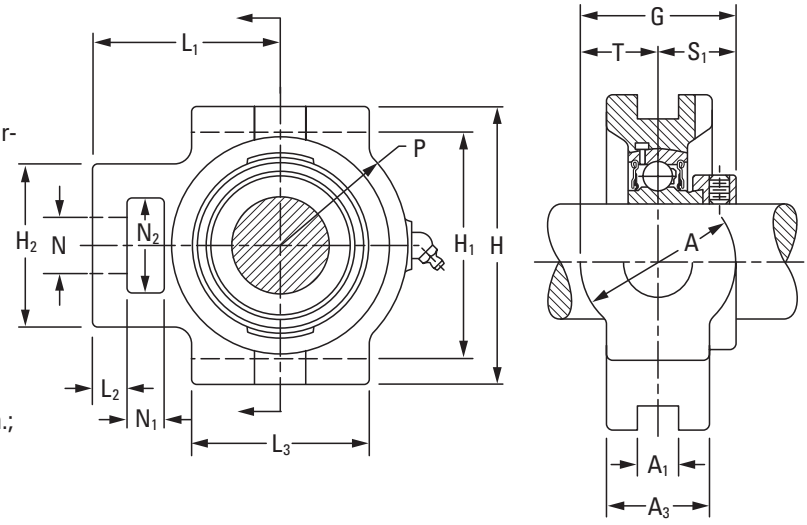
- These units are used where shaft adjustment and belt-tightening devices are required (e.g., conveyor belt applications).
- This unit provides self-aligning, B-type wide-inner-ring ball bearings with self-locking collars.
- Provides compact, efficient supports for adjustable shafts and conveyor take-up pulleys.
- The units are factory-prelubricated. A grease fitting is provided for relubrication if required.
- See the preceding pages for take-up frames to fit these units.

Suggested shaft tolerances:

3/4 in. – 1 15/16 in., nominal to -0.013 mm, -0.0005 in.;
2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: VTU 3/4 in. or VTU 2 11/16 in.



BEARING DATA

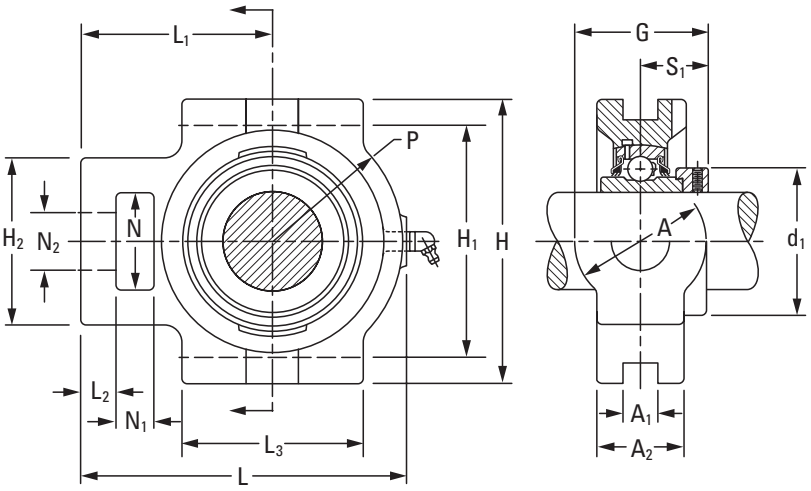
Unit	Bearing No.	Dimensions and Load Ratings
VTU	GRA-RRB	Page A-50

Unit	Shaft Dia.	G	T	S_1	A_3	A_1	A	L_1	H_2	N	N_2	L_2	N_1	P	L_3	H_1	H	Bearing No.	Collar No.	Housing No.	Unit Wt.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.				**kg** lbs.
VTU	3/4	**44.1**	**20.6**	**23.4**	**34.1**	**13.5**	**41.3**	**67.5**	**57.2**	**19.0**	**31.8**	**12.7**	**15.9**	**33.3**	**57.2**	**76.2**	**92.1**	GRA012RRB	S1012K	T-18832	**1.372**
VTU	**20**	1 47/64	13/16	59/64	1 11/32	17/32	1 5/8	2 21/32	2 1/4	3/4	1 1/4	1/2	5/8	1 5/16	1/4	3	3 5/8	GRAE20RRB	SE20K		3.02
VTU	7/8																	GRA014RRB	S1014K		
VTU	15/16	**45.2**	**22.2**	**23.0**	**37.3**	**13.5**	**44.4**	**67.5**	**57.2**	**19.0**	**31.8**	**12.7**	**15.9**	**34.9**	**57.2**	**76.2**	**92.1**	GRA015RRB	S1015K	T-18696	**1.458**
VTU	1	1 25/32	7/8	29/32	1 15/32	17/32	1 3/4	2 21/32	2 1/4	3/4	1 1/4	1/2	5/8	3/8	2 1/4	3	3 5/8	GRA100RRB	S1100K		3.21
VTU	**25**																	GRAE25RRB	SE25K		
VTU	1 1/8																	GRA102RRB	S1102K		
VTU	1 3/16	**52.0**	**25.4**	**27.0**	**38.1**	**13.5**	**50.8**	**72.2**	**61.9**	**22.2**	**36.5**	**12.7**	**15.9**	**41.3**	**63.5**	**88.9**	**104.8**	GRA103RRB	S1103K3	T-18694	**1.862**
VTU	**30**	2 1/16	1	1 1/16	1 1/2	17/32	2	2 27/32	2 7/16	7/8	1 7/16	1/2	5/8	1 5/8	2 1/2	3 1/2	4 1/8	GRAE30RRB	SE30K		4.10
VTU	1 1/4																	GRA104RRB	S1104K		
VTU	1 3/8	**51.6**	**22.2**	**29.4**	**36.5**	**13.5**	**44.5**	**74.6**	**63.5**	**22.2**	**36.5**	**12.7**	**15.9**	**49.2**	**69.8**	**88.9**	**104.8**	GRA106RRB	S1106K	T-18692	**1.953**
VTU	1 7/16	2 1/32	7/8	1 5/32	1 7/16	17/32	1 3/4	2 15/16	2 1/2	7/8	1 7/16	1/2	5/8	1 15/16	3/4	3 1/2	4 1/8	GRA107RRB	S1107K		4.30
VTU	**35**																	GRAE35RRB	SE35K		
VTU	1 1/2	**65.0**	**32.5**	**32.5**	**44.4**	**17.5**	**65.1**	**88.1**	**82.6**	**28.6**	**49.2**	**15.9**	**19.0**	**53.3**	**82.6**	**100.8**	**120.6**	GRA108RRB	S1108KT	T-18834	**3.192**
VTU	**40**	2 9/16	1 9/32	1 9/32	1 3/4	11/16	2 9/16	3 15/32	3 1/4	1 1/8	1 15/16	5/8	3/4	2 3/32	3 1/4	3 31/32	4 3/4	GRAE40RRB	SE40K		7.03
VTU	1 5/8																	GRA110RRB	S1110K		
VTU	1 11/16	**65.0**	**32.5**	**32.5**	**44.4**	**17.5**	**65.1**	**88.1**	**82.6**	**28.6**	**49.2**	**15.9**	**19.0**	**53.3**	**82.6**	**100.8**	**120.6**	GRA111RRB	S1111K	T-18762	**3.009**
VTU	1 3/4	2 9/16	1 9/32	1 9/32	1 3/4	11/16	2 9/16	3 15/32	3 1/4	1 1/8	1 15/16	5/8	3/4	2 3/32	3 1/4	3 31/32	4 3/4	GRA112RRB	S1112K		6.63
VTU	**45**																	GRAE45RRB	SE45K		
VTU	1 7/8																	GRA114RRB	S1114K		
VTU	1 15/16	**65.0**	**32.5**	**32.5**	**49.2**	**17.5**	**65.1**	**91.3**	**82.6**	**28.6**	**49.2**	**15.9**	**19.0**	**59.5**	**85.7**	**100.8**	**120.6**	GRA115RRB	S1115K	T-18690	**3.342**
VTU	**50**	2 9/16	1 9/32	1 9/32	1 15/16	11/16	2 9/16	3 19/32	3 1/4	1 1/8	1 15/16	5/8	3/4	2 11/32	3 3/8	3 31/32	4 3/4	GRAE50RRB	SE50K		7.36
VTU	2																	GRA200RRB	S1200K		
VTU	2 3/16	**71.4**	**34.9**	**36.5**	**55.6**	**27.0**	**69.8**	**119.9**	**101.6**	**34.9**	**63.5**	**19.0**	**31.8**	**69.1**	**101.6**	**129.4**	**149.2**	GRA203RRB	S1203K	T-18828	**5.784**
VTU	**55**	2 13/16	1 3/8	1 7/16	2 3/16	1 1/16	2 3/4	4 23/32	4	1 3/8	1/2	3/4	1 1/4	2 23/32	4	5 3/32	5 7/8	GRAE55RRB	SE55K		12.73

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TTU INDUSTRIAL SERIES

- These units are used where shaft adjustment and belt-tightening devices are required (e.g., in conveyor belt applications).
- The unit incorporates self-aligning, B-type, extra wide-inner-ring ball bearings with self-locking collars.
- The unit uses a G-KPPB (tri-ply) type wide inner ring ball bearing.
- The unit provides compact, efficient supports for adjustable shafts and conveyor take-up pulleys.
- The units are factory-prelubricated. A grease fitting is provided for relubrication if required.
- Contact your Timken engineer to discuss highly corrosive applications (e.g., food processing, chemical exposure) where Timken thin-dense chrome-coated bearings can be utilized.



Suggested shaft tolerances:

2 in. – 2 3/16 in., nominal to -0.025 mm, -0.0010 in.

To order, specify UNIT and SHAFT DIAMETER.

Example: TTU 3/4 in.

BEARING DATA

Unit	Bearing No.	Dimensions and Load Ratings
TTU	G-KPPB	Page A-39

Unit	Shaft Dia.	G	L	S_1	d_1	A_2	A_1	A	L_1	H_2	N	N_2	L_2	N_1	P	L_3	H_1	H	Bearing No.	Housing No.
	in. **mm**	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.		
TTU	1 1/4 1 5/16 1 3/8 1 7/16	**54.38** 2.141	**125.41** 4 15/16	**32.31** 1.272	**53.98** 2.125	**36.51** 1 7/16	**13.49** 17/32	**44.45** 1 3/4	**74.61** 2 15/16	**63.50** 2 1/2	**36.51** 1 7/16	**22.23** 0.875	**12.70** 1/2	**15.88** 5/8	**49.21** 1 15/16	**69.85** 2 3/4	**88.90** 3 1/2	**104.78** 4 1/8	G1104KPPB2 G1105KPPB2 G1106KPPB2 G1107KPPB2	T18692
TTU	1 15/16	**70.64** 2.781	**152.80** 6 1/64	**38.07** 1.499	**69.34** 2.73	**49.21** 1 15/16	**17.46** 11/16	**65.09** 2 9/16	**91.28** 3 19/32	**82.55** 3 1/4	**49.21** 1 15/16	**28.58** 1.125	**15.88** 5/8	**19.05** 3/4	**59.53** 2 11/32	**85.73** 3 3/8	**100.81** 3 31/32	**120.65** 4 3/4	G1115KPPB3	T18690
TTU	2 2 1/16 2 1/8 2 3/16 **55**	**79** 3.109	**190.5** 7 1/2	**43.6** 1.716	**75.7** 2.980	**55.6** 2 3/16	**27** 1 1/16	**69.8** 2 3/4	**119.9** 4 23/32	**101.6** 4	**63.5** 2 1/2	**34.7** 1.365	**19** 3/4	**31.8** 1 1/4	**69.1** 2 23/32	**101.6** 4	**129.4** 5 3/32	**149.2** 5 7/8	G1200KPPB4 G1201KPPB4 G1202KPPB4 G1203KPPB4 GE55KPPB4	T-18828

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TIMKEN® SURVIVOR® PS SERIES

Timken® Survivor® PS series housed units have polymer housings and a 300-series stainless-steel insert to provide the highest possible corrosion resistance in the industry (fig. A-24). The engineered polymer housing unit is FDA/USDA compliant. It is specifically designed for light loads and low speeds with stainless-steel set screws.

The durable corrosion-proof polymer housing features stainless-steel crush bushings in mounting holes with stainless-steel grease fittings with a nylon cap (table A-23). It resists a broad range of acids and alkalis, as well as steam and continuous temperature up to 121° C (250° F) and brief exposure up to 160° C (320° F). Additionally, the polymer strength exceeds the static capacity of the bearing, and the housing retains proper bearing fit and resists shock loads. The flush base has no voids where bacteria could collect. Optional end covers further protect the insert bearing from direct contact with wash-down solutions and cover rotating components.

Survivor PS series units are available as:

- High-base and low-base pillow blocks.
- Two-bolt and four-bolt flanged cartridges for popular shaft sizes.



Fig. A-24. PS series.

TABLE A-23.

PS SERIES	
Component	Material
Balls	Stainless steel
Ball retainer	Nylon
Set screws	Stainless steel
Crush bushing	Stainless steel
Grease	FDA approved
Housing	**Polymer**
Grease fitting	Stainless steel
Grease-fitting cover	Nylon
Rings	**Stainless steel**
Seals	Synthetic rubber

ORDERING INFORMATION

To order complete Survivor polymer assemblies, simply replace the (current cast-iron housed-unit designations) prefix with K and add the PS suffix.

Example: **KCJT 1 PS or KAK ¾ PS**

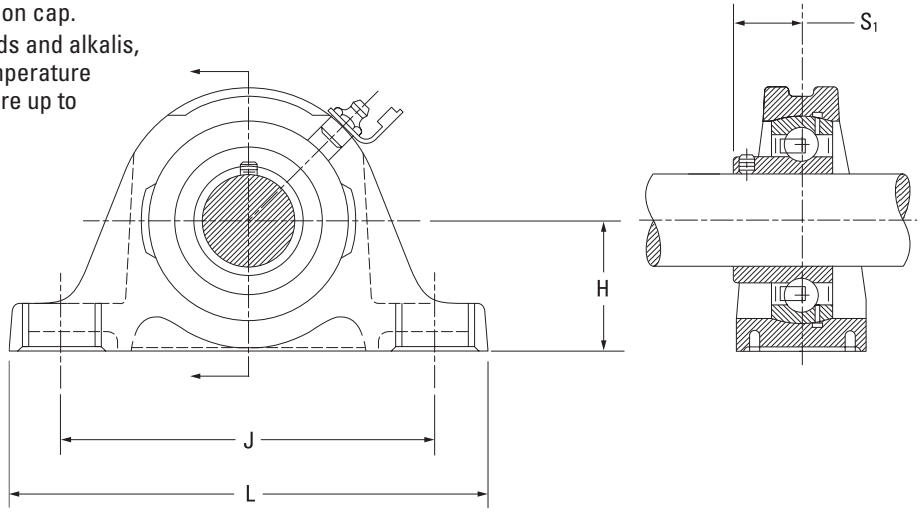
PS Survivor inserts can be ordered using the part numbers shown in the following tables.

Example: **KCJT1PS100RRB or KAK3/4PS012RRB**

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PS
KAK/S SERIES

- The 300-series stainless-steel insert provides the highest resistance to corrosion in the industry.
- This unit is used for the ready-to-eat portion of the process. Loads are lighter and corrosion protection is the primary concern.
- Specifically designed for light loads and low speeds, and has stainless-steel set screws.
- The durable, corrosion-proof polymer housing has stainless-steel crush bushings in the mounting holes and a stainless-steel grease fitting with nylon cap.
- Polymer resists a broad range of acids and alkalis, as well as steam and continuous temperature up to 121° C (250° F) and brief exposure up to 160° C (320° F).
- The polymer strength exceeds static capacity of bearing; housing retains proper bearing fit and resists shock loads.
- The flush base contains no voids where bacteria can collect.
- The optional end covers further protect insert bearing from direct contact with washdown solutions and cover rotating components.



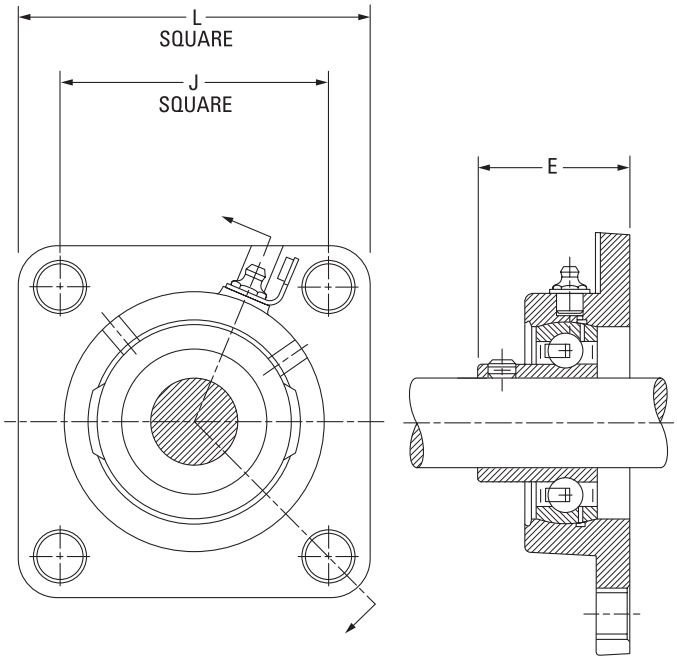
Unit[1]	Shaft Dia.	Type	KAK H	KAS H	J	L	S_1	Static Load Rating	Limiting Speed	Bearing No.
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	RPM	
KAK/S	3/4 **20**	PS	**31.75** 1 1/4	**33.34** 1 15/16	**96.04** 3 25/32	**127.00** 5	**18.26** 23/32	**900** 200	500	GKY012RRB GKYE20RRB
KAK/S	1 **25**	PS	**33.34** 1 5/16	**36.51** 1 7/16	**104.78** 4 1/8	**139.70** 5 1/2	**20.64** 13/16	**1100** 240	425	GKY100RRB GKYE25RRB
KAK/S	1 3/16 1 1/4 S **30**	PS	**39.69** 1 9/16	**42.86** 1 11/16	**117.48** 4 5/8	**157.16** 6 3/16	**22.23** 7/8	**1600** 350	375	GKY103RRB GKY103RRB2 GKYE30RRB
KAK/S	1 1/4 1 7/16 **35**	PS	**46.04** 1 13/16	**47.63** 1 7/8	**130.18** 5 1/8	**166.69** 6 9/16	**27.38** 1 5/64	**2100** 475	300	GKY104RRB GKY107RRB GKYE35RRB

[1]Option of low-base KAK or high-base KAS.

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KCJ SERIES

- The 300-series stainless-steel insert provides the highest resistance to corrosion in the industry.
- This unit is used for the ready-to-eat portion of the process. Loads are lighter and corrosion protection is the primary concern.
- Specifically designed for light loads and low speeds, and has stainless-steel set screws.
- The durable, corrosion-proof polymer housing has stainless-steel crush bushings in the mounting holes and a stainless-steel grease fitting with nylon cap.
- Polymer resists a broad range of acids and alkalis, as well as steam and continuous temperature up to 121° C (250° F) and brief exposure up to 160° C (320° F).
- The polymer strength exceeds static capacity of bearing; housing retains proper bearing fit and resists shock loads.
- The flush base contains no voids where bacteria can collect.
- The optional end covers further protect insert bearing from direct contact with washdown solutions and cover rotating components.

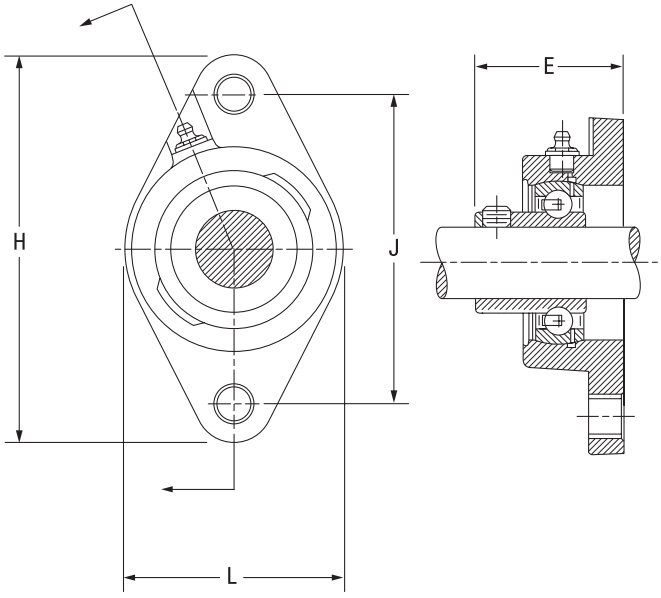


Unit	Shaft Dia.	Type	L	J	E	Static Load Rating	Limiting Speed	Bearing No.
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**N** lbs.	RPM	
KCJ	3/4 **20**	PS	**85.33** 3 23/64	**63.50** 2 1/2	**37.31** 1 15/32	**900** 200	500	GKY012RRB GKYE20RRB
KCJ	1 **25**	PS	**94.85** 3 47/64	**69.85** 2 3/4	**39.69** 1 9/16	**1100** 240	425	GKY100RRB GKYE25RRB
KCJ	1 3/16 1 1/4 S **30**	PS	**107.95** 4 1/4	**82.55** 3 1/4	**41.28** 1 5/8	**1600** 350	375	GKY103RRB GKY103RRB2 GKYE30RRB
KCJ	1 1/4 1 7/16 **35**	PS	**117.48** 4 5/8	**92.08** 3 5/8	**46.04** 1 13/16	**2100** 475	300	GKY104RRB GKY107RRB GKYE35RRB

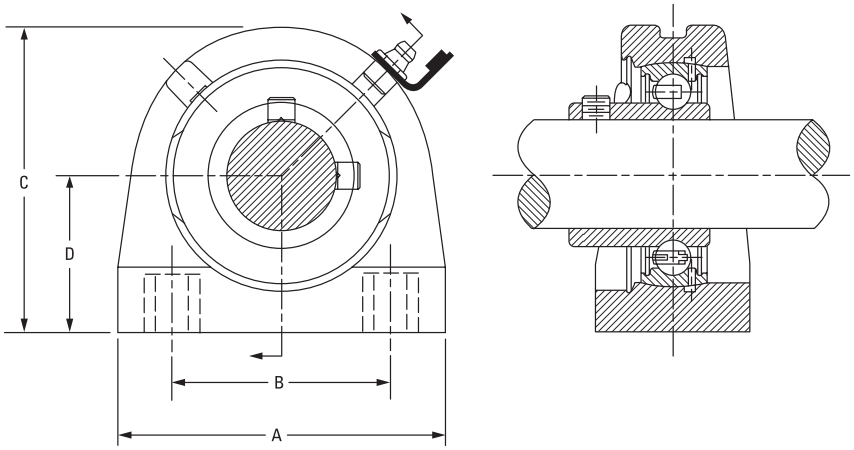
08-19-13 DRAFT

KCJT AND KTB SERIES

- The 300-series stainless-steel insert provides the highest resistance to corrosion in the industry.
- This unit is used for the ready-to-eat portion of the process. Loads are lighter and corrosion protection is the primary concern.
- Specifically designed for light loads and low speeds, and has stainless-steel set screws.
- The durable, corrosion-proof polymer housing has stainless-steel crush bushings in the mounting holes and a stainless-steel grease fitting with nylon cap.
- Polymer resists a broad range of acids and alkalis, as well as steam and continuous temperature up to 121° C (250° F) and brief exposure up to 160° C (320° F).
- The polymer strength exceeds static capacity of bearing; housing retains proper bearing fit and resists shock loads.
- The flush base contains no voids where bacteria can collect.
- The optional end covers further protect insert bearing from direct contact with washdown solutions and cover rotating components.



Unit	Shaft Dia.	Type	H	J	L	E	Static Load Rating	Limiting Speed	Bearing No.
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	RPM	
KCJT	3/4 **20**	PS	**111.92** 4 13/32	**89.69** 3 17/32	**60.33** 2 3/8	**37.31** 1 15/32	**900** 200	500	GKY012RRB GKYE20RRB
KCJT	1 **25**	PS	**124.22** 4 57/64	**98.82** 3 57/64	**65.48** 2 37/64	**39.69** 1 9/16	**1100** 240	425	GKY100RRB GKYE25RRB
KCJT	1 3/16 1 1/4 S **30**	PS	**140.89** 5 35/64	**116.68** 4 19/32	**76.20** 3	**41.28** 1 5/8	**1600** 350	375	GKY103RRB GKY103RRB2 GKYE30RRB
KCJT	1 1/4 1 7/16 **35**	PS	**155.58** 6 1/8	**130.18** 5 1/8	**92.08** 3 5/8	**49.21** 1 15/16	**2100** 475	300	GKY104RRB GKY107RRB GKYE35RRB



Unit	Shaft Dia.	Type	A	B	C	D	Static Load Rating	Limiting Speed	Bearing No.
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	RPM	
KTB	1	PS	**76.20** 3	**50.80** 2	**71.44** 2 13/16	**36.51** 1 7/16	**1100** 240	425	GKY100RRB

08-19-13 DRAFT

TIMKEN® SURVIVOR® PT SERIES

Timken® Survivor® PT series housed units are designed to meet stringent food-handling requirements while standing up to highly corrosive environments (fig. A-25). All materials used in Survivor assemblies, including grease, are approved for USDA- and FDA-compliant industries (table A-24).

The Survivor series also provides extraordinary corrosion resistance for materials handling operations, dairy and refrigeration applications, as well as heating, ventilation and air conditioning (HVAC), chemical, maritime and other highly corrosive environments.

Patented Survivor PT polymer housed units withstand a wide range of chemicals. These units are dimensionally stable under load and able to operate in continuous temperatures up to 120° C (250° F) and brief exposures up to 177° C (350° F).

Our bearing inserts are coated in proprietary Timken thin-dense chrome that will not crack or peel. Inserts are available with a self-locking collar or a set screw locking device. Also available is Timken Shaft Guarding Technology (page A-31), which uses a stainless-steel, hardened band to transfer gripping pressure on the shaft. Unlike traditional set screws, which can dig into the shaft, there are no nicks, raised metal or permanent shaft damage. The stainless band won't corrode on the shaft. Housed units with Shaft Guarding Technology also reduce change-out time.

Survivor PT series units are available as:

- High-base and low-base pillow blocks.
- Two-bolt and four-bolt flanged cartridges for popular shaft sizes of ½ in. through 2 15⁄16 in. (and selected metric diameters).
- Take-up unit in the Survivor PT series in limited shaft sizes (RTU-NT). The bearing inserts are available with self-locking collars.

Timken also produces a take-up unit in the Survivor NT series in limited shaft sizes (RTU-NT). The bearing inserts are available with self-locking collars.

Survivor PT assemblies are dimensionally interchangeable with the current line of Timken cast-iron housed units.

The polymer housing and TDC coating resist premature failure under corrosive conditions. These properties extend the life of the housed unit and bearing. Longer periods between replacements save costs and reduce downtime.



Fig. A-25. Popular styles.

TABLE A-24.

PT SERIES	
Component	Material
Balls	Stainless steel
Ball retainer	Nylon
Collar	Stainless steel
Crush bushing	Stainless steel
Grease	FDA approved
Housing	**Polymer**
Grease fitting	Stainless steel
Grease fitting cover	Nylon
Rings	**TDC plated**
Seals	Synthetic rubber
Seal caps	Stainless steel
Set screw	Stainless steel

ORDERING INFORMATION

To order complete Survivor polymer assemblies, simply add the PT suffix to the current cast-iron housed-unit designations.

Example: **YCJT 1 PT SGT or RAK ¾ PT SGT**

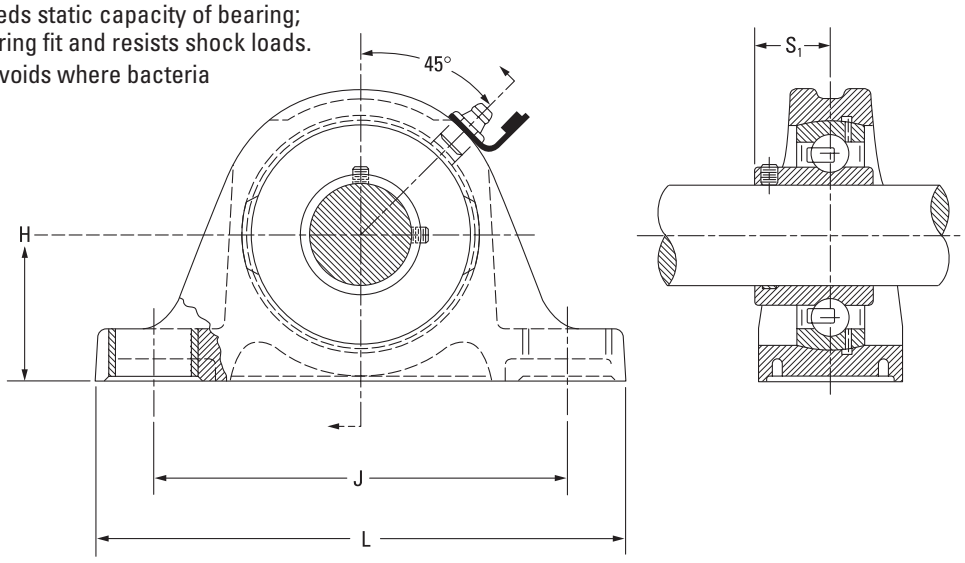
Survivor inserts can be ordered using Timken's standard part number for wide-inner-ring ball bearings with a TDCF suffix.

Example: **GY1100KRRB TDCF SGT or G1100KRRB + COL TDCF SGT**

08-19-13 DRAFT

PT
YAK/S SERIES

- This unit is used for the main portion of the process where loads are lighter and corrosion protection is important.
- Durable corrosion-proof polymer housing with stainless-steel crush bushings in mounting holes and a stainless-steel grease fitting with a nylon cap.
- Polymer resists a broad range of acids and alkalis, as well as steam and continuous temperature up to 121° C (250° F), and brief exposure up to 160° C (320° F).
- The polymer strength exceeds static capacity of bearing; housing retains proper bearing fit and resists shock loads.
- The flush base contains no voids where bacteria can collect.
- Corrosion-resistant insert bearing with stainless-steel balls and a nylon retainer. The PT series also features industrial-duty contact seals with stainless-steel shroud caps.
- This unit has stainless-steel set screws with Shaft Guarding Technology.
- This unit is factory lubricated with FDA/USDA-approved grease (class H1 lubricant) for incidental food contact.



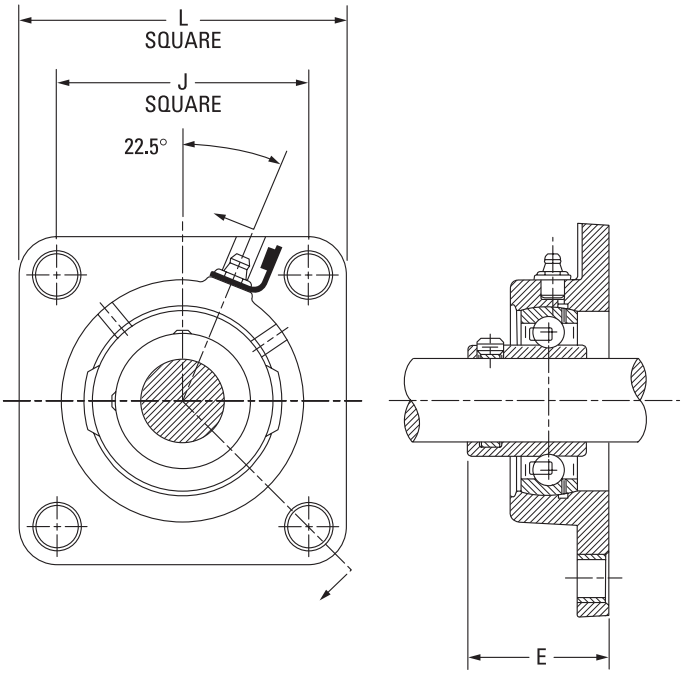
Unit[1]	Shaft Dia.	Type	YAK H	YAS H	J	L	S_1	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.	
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM		
YAK/S	3/4 **20**	PT SGT	**31.75** 1 1/4	**33.34** 1 5/16	**96.04** 3 25/32	**127.00** 5	**19.05** 3/4	**6500** 1460	**14500** 3250	9200 8800	GY1012KRRB GYE20KRRB	TDCF SGT TDCF SGT
YAK/S	1 **25**	PT SGT	**33.34** 1 5/16	**36.51** 1 7/16	**104.78** 4 1/8	**139.70** 5 1/2	**20.64** 13/16	**7700** 1730	**15800** 3550	6900 7000	GY1100KRRB GYE25KRRB	TDCF SGT TDCF SGT
YAK/S	1 1/4S **30**	PT PT SGT	**39.69** 1 9/16	**42.86** 1 11/16	**117.48** 4 5/8	**157.16** 6 3/16	**23.4** 59/64	**11100** 2500	**21800** 4900	5500 5800	GY1103KRRB3 GYE30KRRB	TDCF TDCF SGT
YAK/S	1 3/8 1 7/16 **35**	PT SGT	**46.04** 1 13/16	**47.63** 1 7/8	**130.18** 5 1/8	**166.69** 6 9/16	**28.18** 1 7/64	**15100** 3400	**28500** 6400	5000 4800 5000	GY1106KRRB GY1107KRRB GYE35KRRB	TDCF SGT TDCF SGT TDCF SGT
YAK/S	1 1/2 **40**	PT SGT	**49.21** 1 15/16	**49.21** 1 15/16	**136.53** 5 3/8	**179.39** 7 1/16	**30.16** 1 3/16	**19600** 4400	**36300** 8150	4600 4400	GY1108KRRB GYE40KRRB	TDCF SGT TDCF SGT

[1]Option of low-base RAK or high-base RAS.

08-19-13 DRAFT

YCJ SERIES

- This unit is used for the main portion of the process where loads are lighter and corrosion protection is important.
- Durable corrosion-proof polymer housing with stainless-steel crush bushings in mounting holes and a stainless-steel grease fitting with a nylon cap.
- Polymer resists a broad range of acids and alkalis, as well as steam and continuous temperature up to 121° C (250° F), and brief exposure up to 160° C (320° F).
- The polymer strength exceeds static capacity of bearing; housing retains proper bearing fit and resists shock loads.
- The flush base contains no voids where bacteria can collect.
- Corrosion-resistant insert bearing with stainless-steel balls and a nylon retainer. The PT series also features industrial-duty contact seals with stainless-steel shroud caps.
- This unit has stainless-steel set screws with Shaft Guarding Technology.
- This unit is factory lubricated with FDA/USDA-approved grease (class H1 lubricant) for incidental food contact.

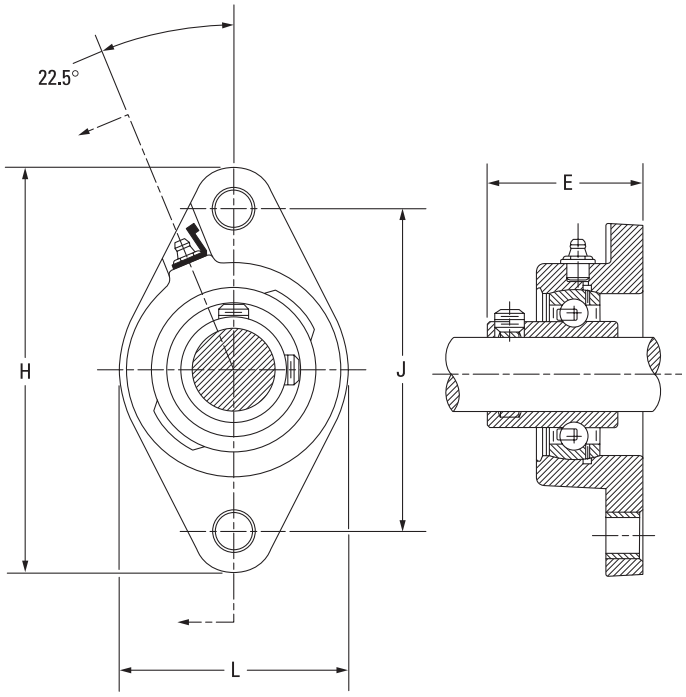


Unit	Shaft Dia.	Type	L	J	E	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.	
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM		
YCJ	3/4 **20**	PT SGT	**85.73** 3 3/8	**63.50** 2 1/2	**38.10** 1 1/2	**6500** 1460	**14500** 3250	9200 8800	GY1012KRRB GYE20KRRB	TDCF SGT TDCF SGT
YCJ	1 **25**	PT SGT	**95.25** 3 3/4	**69.85** 2 49/64	**39.69** 1 9/16	**7700** 1730	**15800** 3550	6900 7000	GY1100KRRB GYE25KRRB	TDCF SGT TDCF SGT
YCJ	1 3/16 1 1/4S **30**	PT SGT PT PT SGT	**107.95** 4 1/4	**82.55** 3 1/4	**42.07** 1 21/32	**11100** 2500	**21800** 4900	5800 5500 5800	GY1103KRRB GY1103KRRB3 GYE30KRRB	TDCF SGT TDCF TDCF SGT
YCJ	1 1/4 1 3/8 1 7/16 **35**	PT SGT	**117.48** 4 5/8	**92.08** 3 5/8	**48.42** 1 29/32	**15100** 3400	**28500** 6400	5500 5000 4800 5000	GY1104KRRB GY1106KRRB GY1107KRRB GYE35KRRB	TDCF SGT TDCF SGT TDCF SGT TDCF SGT
YCJ	1 1/2 **40**	PT SGT	**130.18** 5 1/8	**101.60** 4	**53.98** 2 1/8	**19600** 4400	**36300** 8150	4600 4400	GY1108KRRB GYE40KRRB	TDCF SGT TDCF SGT

08-19-13 DRAFT

YCJT SERIES

- This unit is used for the main portion of the process where loads are lighter and corrosion protection is important.
- Durable corrosion-proof polymer housing with stainless-steel crush bushings in mounting holes and a stainless-steel grease fitting with a nylon cap.
- Polymer resists a broad range of acids and alkalis, as well as steam and continuous temperature up to 121° C (250° F), and brief exposure up to 160° C (320° F).
- The polymer strength exceeds static capacity of bearing; housing retains proper bearing fit and resists shock loads.
- The flush base contains no voids where bacteria can collect.
- Corrosion-resistant insert bearing with stainless-steel balls and a nylon retainer. The PT series also features industrial-duty contact seals with stainless-steel shroud caps.
- This unit has stainless-steel set screws with Shaft Guarding Technology.
- This unit is factory lubricated with FDA/USDA-approved grease (class H1 lubricant) for incidental food contact.

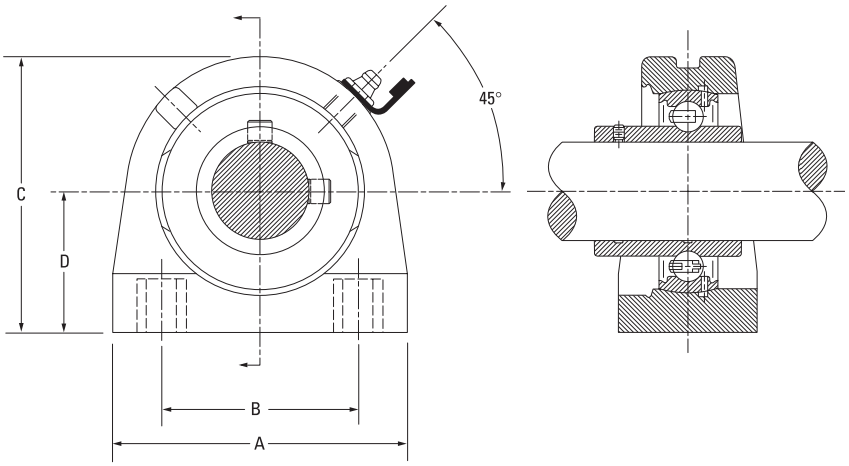


Unit	Shaft Dia.	Type	H	J	L	E	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.	
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM		
YCJT	3/4 **20**	PT SGT	**111.92** 4 13/32	**89.69** 3 17/32	**60.33** 2 3/8	**38.10** 1 1/2	**6500** 1460	**14500** 3250	9200 8800	GY1012KRRB GYE20KRRB	TDCF SGT TDCF SGT
YCJT	1 **25**	PT SGT	**123.83** 4 7/8	**99.22** 3 29/32	**69.85** 2 3/4	**39.69** 1 9/16	**7700** 1730	**15800** 3550	6900 7000	GY1100KRRB GYE25KRRB	TDCF SGT TDCF SGT
YCJT	1 3/16 1 1/4S **30**	PT SGT PT PT SGT	**141.29** 5 9/16	**116.68** 4 19/32	**79.38** 3 1/8	**42.07** 1 21/32	**11100** 2500	**21800** 4900	5800 5500 5800	GY1103KRRB GY1103KRRB3 GYE30KRRB	TDCF SGT TDCF TDCF SGT
YCJT	1 1/4 1 3/8 1 7/16 **35**	PT SGT	**155.58** 6 1/8	**130.18** 5 1/8	**92.08** 3 5/8	**48.42** 1 29/32	**15100** 3400	**28500** 6400	5500 5000 4800 5000	GY1104KRRB GY1106KRRB GY1107KRRB GYE35KRRB	TDCF SGT TDCF SGT TDCF SGT TDCF SGT
YCJT	1 1/2 **40**	PT SGT	**171.45** 6 3/4	**143.67** 5 21/32	**104.78** 4 1/8	**53.98** 2 1/8	**19600** 4400	**36300** 8150	4600 4400	GY1108KRRB GYE40KRRB	TDCF SGT TDCF SGT

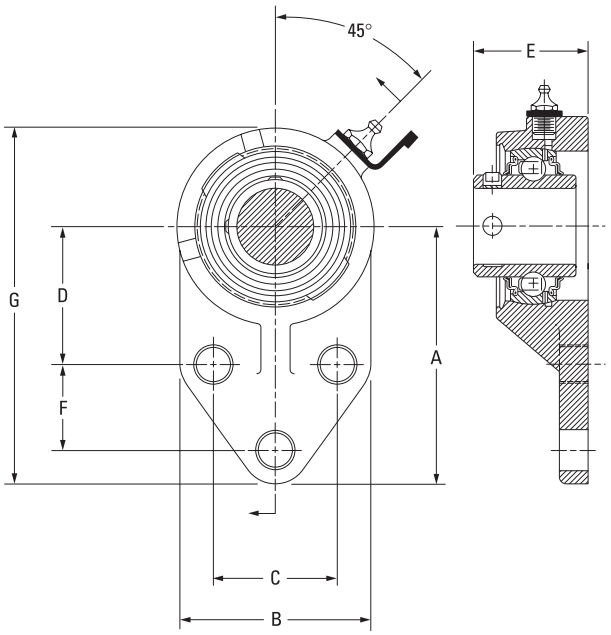
08-19-13 DRAFT

YTB AND YFB SERIES

- This unit is used for the main portion of the process where loads are lighter and corrosion protection is important.
- Durable corrosion-proof polymer housing with stainless-steel crush bushings in mounting holes and a stainless-steel grease fitting with a nylon cap.
- Polymer resists a broad range of acids and alkalis, as well as steam and continuous temperature up to 121° C (250° F), and brief exposure up to 160° C (320° F).
- The polymer strength exceeds static capacity of bearing; housing retains proper bearing fit and resists shock loads.
- The flush base contains no voids where bacteria can collect.
- Corrosion-resistant insert bearing with stainless-steel balls and a nylon retainer. The PT series also features industrial-duty contact seals with stainless-steel shroud caps.
- This unit has stainless-steel set screws with Shaft Guarding Technology.
- This unit is factory lubricated with FDA/USDA-approved grease (class H1 lubricant) for incidental food contact.



Unit	Shaft Dia.	Type	A	B	C	D	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.	
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM		
YTB	1	PT SGT	**76.20** 3	**50.80** 2	**71.44** 2 13/16	**36.51** 1 7/16	**7700** 1730	**15800** 3550	6900	GY1100KRRB	TDCF SGT
	25								7000	GYE25KRRB	TDCF SGT

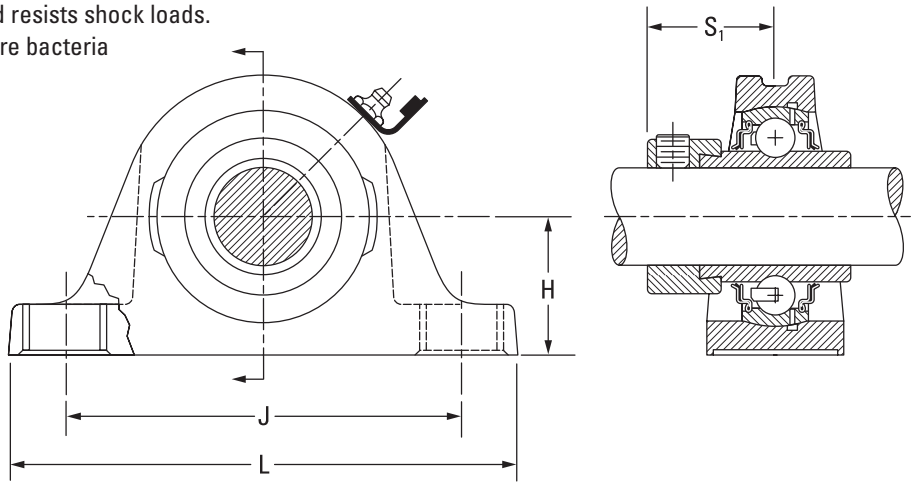


Unit	Shaft Dia.	Type	A	B	C	D	E	F	G	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.	
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM		
YFB	1	PT SGT	**85.73** 3 3/8	**63.50** 2 1/2	**41.28** 1 5/8	**46.04** 1 13/16	**38.10** 1 1/2	**28.58** 1 1/8	**118.66** 4 43/64	**6900** 1560	**15300** 3450	6900 7000	GY1100KRRB GYE25KRRB	TDCF SGT TDCF SGT
	25													

08-19-13 DRAFT

RAK/S SERIES

- This unit is used for the main portion of the process where loads are lighter and corrosion protection is important.
- Durable corrosion-proof polymer housing with stainless-steel crush bushings in mounting holes and a stainless-steel grease fitting with a nylon cap.
- Polymer resists a broad range of acids and alkalis, as well as steam and continuous temperature up to 121° C (250° F), and brief exposure up to 160° C (320° F).
- The polymer strength exceeds static capacity of bearing; housing retains proper bearing fit and resists shock loads.
- The flush base contains no voids where bacteria can collect.
- Corrosion-resistant insert bearing with stainless-steel balls and a nylon retainer. The PT series also features industrial-duty contact seals with stainless-steel shroud caps.
- This unit has a stainless-steel lock collar.
- This unit is factory lubricated with FDA/USDA-approved grease (class H1 lubricant) for incidental food contact.



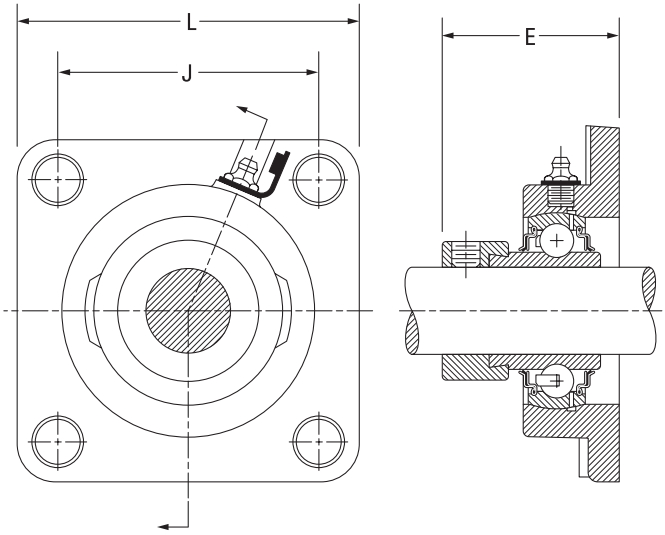
Unit[1]	Shaft Dia.	Type	RAK H	RAS H	J	L	S_1	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.	Collar No.
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM		
RAK/S	3/4	PT	**31.75** 1 1/4	**33.34** 1 5/16	**96.04** 3 25/32	**127.00** 5	**26.59** 1 3/64	**6500** 1460	**14500** 3250	9200	G1012KRRB TDCF	S1012K SS
RAK/S	1 **25**	PT	**33.34** 1 5/16	**36.51** 1 7/16	**104.78** 4 1/8	**139.70** 5 1/2	**26.99** 1 1/16	**7700** 1730	**15800** 3550	6900 7000	G1100KRRB TDCF GE25KRRB TDCF	S1100K SS SE25K SS
RAK/S	1 3/16 1 1/4S **30**	PT	**39.69** 1 9/16	**42.86** 1 11/16	**117.48** 4 5/8	**157.16** 6 3/16	**30.16** 1 3/16	**11100** 2500	**21800** 4900	5800 5500 5800	G1103KRRB TDCF G1103KRRB3 TDCF GE30KRRB TDCF	S1103K SS S1103K3 SS SE30K SS
RAK/S	1 1/4 1 3/8 1 7/16	PT	**46.04** 1 13/16	**47.63** 1 7/8	**130.18** 5 1/8	**166.69** 6 9/16	**32.54** 1 9/32	**15100** 3400	**28500** 6400	5500 5000 4800	G1104KRRB TDCF G1106KRRB TDCF G1107KRRB TDCF	S1104K SS S1106K SS S1107K SS
RAK/S	1 1/2 **40**	PT	**49.21** 1 15/16	**49.21** 1 15/16	**136.53** 5 3/8	**179.39** 7 1/16	**34.93** 1 3/8	**19600** 4400	**36300** 8150	4600 4400	G1108KRRB TDCF GE40KRRB TDCF	S1108KT SS SE40K SS

[1]Option of low-base RAK or high-base RAS.

08-19-13 DRAFT

RCJ SERIES

- This unit is used for the main portion of the process where loads are lighter and corrosion protection is important.
- Durable corrosion-proof polymer housing with stainless-steel crush bushings in mounting holes and a stainless-steel grease fitting with a nylon cap.
- Polymer resists a broad range of acids and alkalis, as well as steam and continuous temperature up to 121° C (250° F), and brief exposure up to 160° C (320° F).
- The polymer strength exceeds static capacity of bearing; housing retains proper bearing fit and resists shock loads.
- The flush base contains no voids where bacteria can collect.
- Corrosion-resistant insert bearing with stainless-steel balls and a nylon retainer. The PT series also features industrial-duty contact seals with stainless-steel shroud caps.
- This unit has a stainless-steel lock collar.
- This unit is factory lubricated with FDA/USDA-approved grease (class H1 lubricant) for incidental food contact.

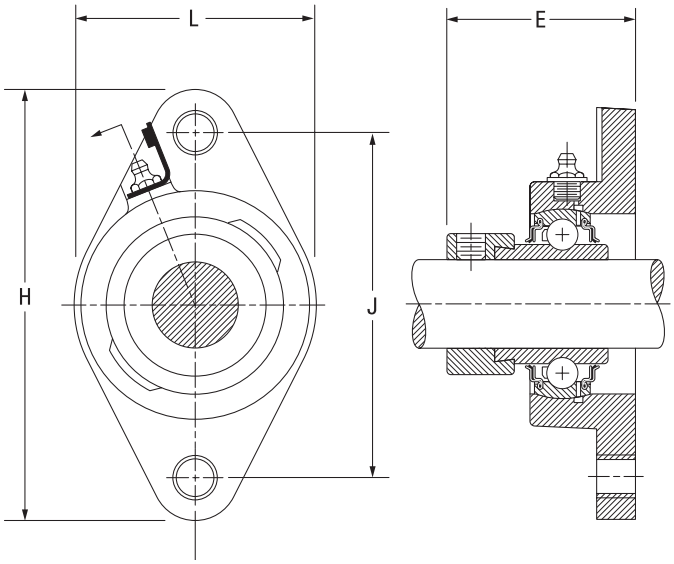


Unit	Shaft Dia.	Type	L	J	E	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.	Collar No.
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM		
RCJ	¾	PT	**85.73** 3 3/8	**63.50** 2 1/2	**43.26** 1 45/64	**6500** 1460	**14500** 3250	9200	G1012KRRB TDCF	S1012K SS
RCJ	1 **25**	PT	**95.25** 3 3/4	**69.85** 2 3/4	**46.04** 1 13/16	**7700** 1730	**15800** 3550	6900 7000	G1100KRRB TDCF GE25KRRB TDCF	S1100K SS SE25K SS
RCJ	1 3/16 1 1/4S **30**	PT	**107.95** 4 1/4	**82.55** 3 1/4	**49.21** 1 15/16	**11100** 2500	**21800** 4900	5800 5500 5800	G1103KRRB TDCF G1103KRRB3 TDCF GE30KRRB TDCF	S1103K SS S1103K3 SS SE30K SS
RCJ	1 1/4 1 3/8 1 7/16	PT	**117.48** 4 5/8	**92.08** 3 5/8	**52.78** 2 5/64	**15100** 3400	**28500** 6400	5500 5000 4800	G1104KRRB TDCF G1106KRRB TDCF G1107KRRB TDCF	S1104K SS S1106K SS S1107K SS
RCJ	1 1/2 **40**	PT	**130.18** 5 1/8	**101.60** 4	**58.74** 2 5/16	**19600** 4400	**36300** 8150	4600 4400	G1108KRRB TDCF GE40KRRB TDCF	S1108KT SS SE40K SS

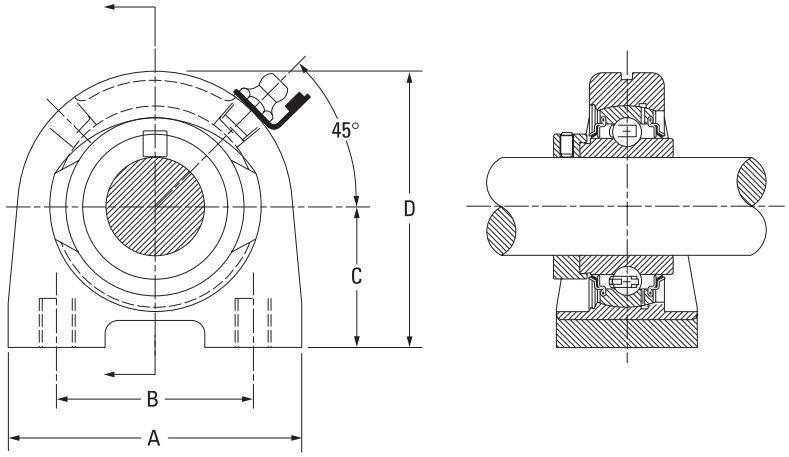
08-19-13 DRAFT

RCJT AND RTB SERIES

- This unit is used for the main portion of the process where loads are lighter and corrosion protection is important.
- Durable corrosion-proof polymer housing with stainless steel crush bushings in mounting holes and a stainless-steel grease fitting with a nylon cap.
- Polymer resists a broad range of acids and alkalis, as well as steam and continuous temperature up to 121° C (250° F), and brief exposure up to 160° C (320° F).
- The polymer strength exceeds static capacity of bearing; housing retains proper bearing fit and resists shock loads.
- The flush base contains no voids where bacteria can collect.
- Corrosion-resistant insert bearing with stainless-steel balls and a nylon retainer. The PT series also features industrial-duty contact seals with stainless-steel shroud caps.
- This unit has a stainless-steel lock collar.
- This unit is factory lubricated with FDA/USDA-approved grease (class H1 lubricant) for incidental food contact.



Unit	Shaft Dia.	Type	H	J	L	E	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.	Collar No.
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM		
RCJT	¾	PT	**111.92** 4 13/32	**89.69** 3 17/32	**60.5** 2 3/8	**45.24** 1 25/32	**6500** 1460	**14500** 3250	9200	G1012KRRB TDCF	S1012K SS
RCJT	1 **25**	PT	**123.83** 4 7/8	**99.22** 3 29/32	**69.85** 2 ¾	**46.04** 1 13/16	**7700** 1730	**15800** 3550	6900 7000	G1100KRRB TDCF GE25KRRB TDCF	S1100K SS SE25K SS
RCJT	1 3/16 1 ¼S **30**	PT	**141.29** 5 9/16	**116.68** 4 19/32	**79.38** 3 1/8	**49.21** 1 15/16	**11100** 2500	**21800** 4900	5800 5500 5800	G1103KRRB TDCF G1103KRRB3 TDCF GE30KRRB TDCF	S1103K SS S1103K3 SS SE30K SS
RCJT	1 ¼ 1 3/8 1 7/16	PT	**155.58** 6 1/8	**130.18** 5 1/8	**92.08** 3 5/8	**52.78** 2 5/64	**15100** 3400	**28500** 6400	5000 4800 5500	G1104KRRB TDCF G1106KRRB TDCF G1107KRRB TDCF	S1104K SS S1106K SS S1107K SS
RCJT	1 ½ **40**	PT	**171.45** 6 ¾	**143.67** 5 21/32	**104.78** 4 1/8	**58.74** 2 5/16	**19600** 4400	**36300** 8150	4600 4400	G1108KRRB TDCF GE40KRRB TDCF	S1108KT SS SE40K SS



Unit	Shaft Dia.	Type	A	B	C	D	Static Load Rating	Dynamic Load Rating	Limiting Speed	Bearing No.	Collar No.
	in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM		
RTB	1	PT	**76.20** 3	**50.80** 2	**36.51** 1 7/16	**71.44** 2 13/16	**7700** 1730	**15300** 3450	6900	G1100KRRB TDCF	S1100K SS

08-19-13 DRAFT

TIMKEN® SURVIVOR® NT SERIES

Timken® Survivor® NT series housed units offer superior corrosion resistance and durability for food and beverage industries, materials-handling operations, dairy and refrigeration applications, as well as HVAC, chemical, maritime and other highly corrosive environments (fig. A-26). All materials used in the Survivor assemblies, including the grease, are approved for USDA- and FDA-compliant industries (table A-25). The solid base is designed so food particles easily wash out.

Bearing inserts are coated in proprietary Timken thin-dense chrome that will not crack or peel. Combined with stainless-steel locking collars, these offer superior corrosion protection. The robust block option features an electroless nickel-plated housing.

Survivor NT series units are available as:

- High-base and low-base pillow blocks.
- Two-bolt and four-bolt flanged cartridges for popular shaft sizes of ½ in. through 2 15⁄16 in. (and select metric diameters).
- Take-up unit in the Survivor NT series in limited shaft sizes (RTU-NT). The bearing inserts are available with self-locking collars.

The Survivor NT series is dimensionally interchangeable with the current line of Timken cast-iron housed units.

Our bearing inserts are coated in proprietary Timken thin-dense chrome that will not crack or peel. Inserts are available with a self-locking collar or a set screw locking device. Also available is Timken Shaft Guarding Technology (page A-31), which uses a stainless-steel hardened band to transfer gripping pressure on the shaft. Unlike traditional set screws, which can dig into the shaft, there are no nicks, raised metal or permanent shaft damage. The stainless band won't corrode on the shaft. Housed units with Shaft Guarding Technology also reduce change-out time.



Fig. A-26. Popular styles.

TABLE A-25.

NT SERIES	
Component	Material
Balls	Stainless steel
Ball retainer	Nylon
Collar	Stainless steel
Rings	TDC plated
Grease	FDA approved
Housing finish	**Nickel plating**
Grease fitting	Stainless steel
Grease-fitting cover	Nylon
Seals	Synthetic rubber
Seal caps	Stainless steel
Set screw[1]	Stainless steel

[1]Standard Survivor® NT units are only available in the R-series self-locking collar types. Set screw lock series (Y) units are available for minimum quantity orders.

ORDERING INFORMATION

To order complete Survivor nickel-plated assemblies, simply add the NT suffix to the cast-iron housed-unit designations.

Example: **RCJT 1 NT or RAK ¾ NT**

Survivor inserts can be ordered using Timken's standard part number for wide-inner-ring ball bearings with a TDCF suffix.

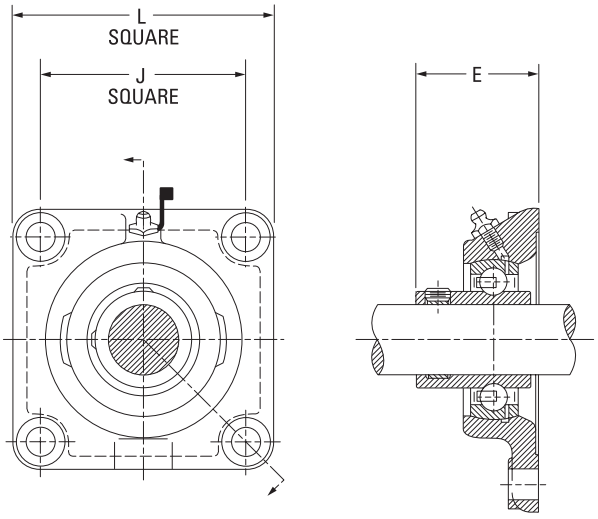
Example: **G1100KRRB + COL TDCF**

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NT

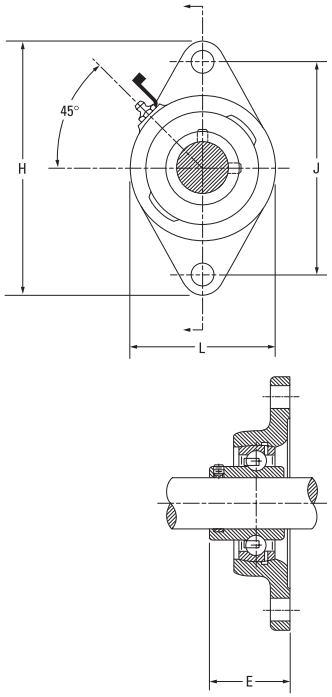
YCJ AND YCJT SERIES

- This unit has the largest variety of configurations and shaft sizes and is used for the heaviest loads at the beginning of processing.
- Corrosion-resistant housing that is electroless nickel-plated and has a stainless-steel grease fitting. The protective cap withstands corrosion and prevents contamination.
- The corrosion-resistant insert bearing has stainless-steel balls with a nylon retainer. It also has industrial-duty contact seals with stainless-steel shroud caps.
- This unit has stainless-steel set screws with Shaft Guarding Technology.
- The unit is factory lubricated with FDA/USDA-approved grease (class H1 lubricant) for incidental food contact.



Unit	Shaft Dia.	Type	L	J	E	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	RPM	
YCJ	1 **25**	NT SGT	**95.25** 3 3/4	**70.25** 2 49/64	**40.08** 1 37/64	**7700** 1730	**15800** 3550	6900 7000	GY1100KRRB TDCF SGT GYE25KRRB TDCF SGT
YCJ	1 1/4S **30**	NT SGT	**107.95** 4 1/4	**82.55** 3 1/4	**42.46** 1 43/64	**11100** 2500	**21800** 4900	5500 5800	GY1103KRRB3 TDCF GYE30KRRB TDCF SGT
YCJ	1 1/4 1 3/8 1 7/16 **35**	NT SGT	**117.48** 4 5/8	**92.08** 3 5/8	**49.21** 1 15/16	**15100** 3400	**28500** 6400	5500 5000 4800 4800	GY1104KRRB TDCF SGT GY1106KRRB TDCF SGT GY1107KRRB TDCF SGT GYE35KRRB TDCF SGT
YCJ	1 15/16	NT SGT	**142.88** 5 5/8	**111.13** 4 3/8	**60.72** 2 25/64	**22700** 5100	**39100** 8800	3600	GY1115KRRB TDCF SGT
YCJ	2	NT SGT	**161.93** 6 3/8	**130.18** 5 1/8	**64.69** 2 35/64	**28500** 6400	**48000** 10800	3400	GY1200KRRB TDCF SGT
YCJ	2 7/16	NT SGT	**174.63** 6 7/8	**142.88** 5 5/8	**74.22** 2 59/64	**35600** 8000	**58700** 13200	2800	GY1207KRRB TDCF SGT

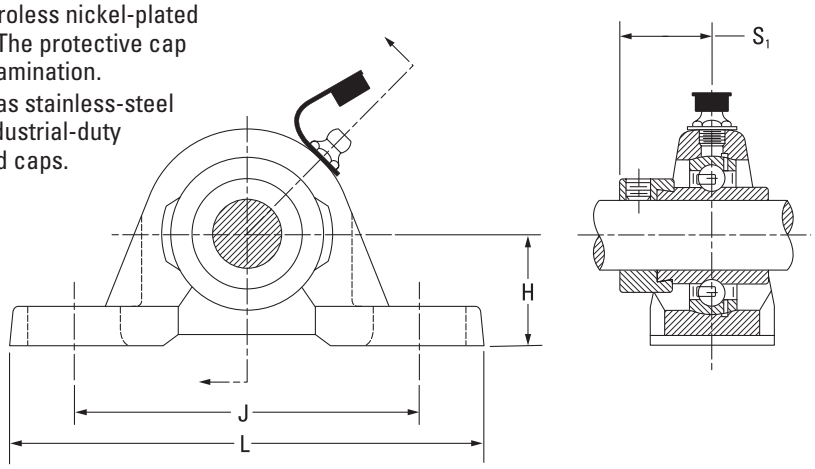
Unit	Shaft Dia.	Type	H	J	L	E	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM	
YCJT	3/4	NT SGT	**111.92** 4 13/32	**89.69** 3 17/32	**60.33** 2 3/8	**38.50** 1 33/64	**6500** 1460	**14500** 3250	9200	G1012KRRB TDCF SGT
YCJT	1 **25**	NT SGT	**123.83** 4 7/8	**99.22** 3 29/32	**69.85** 2 3/4	**40.08** 1 37/64	**7700** 1730	**15800** 3550	6900 7000	G1100KRRB TDCF SGT GE25KRRB TDCF SGT
YCJT	1 3/16 1 1/4S **30**	NT SGT NT NT SGT	**141.29** 5 9/16	**116.68** 4 19/32	**79.38** 3 1/8	**43.66** 1 23/32	**11100** 2500	**21800** 4900	5800 5500 5800	G1103KRRB TDCF SGT G1103KRRB3 TDCF GE30KRRB TDCF SGT
YCJT	1 1/4 1 3/8 1 7/16 **35**	NT SGT	**155.58** 6 1/8	**130.18** 5 1/8	**92.08** 3 5/8	**49.21** 1 15/16	**15100** 3400	**28500** 6400	5500 5000 4800 4800	G1104KRRB TDCF SGT G1106KRRB TDCF SGT G1107KRRB TDCF SGT GE35KRRB TDCF SGT
YCJT	1 1/2 **40**	NT SGT	**171.45** 6 3/4	**143.67** 5 21/32	**104.78** 4 1/8	**54.37** 2 9/64	**19600** 4400	**36300** 8150	4600 4400	G1108KRRB TDCF SGT GE40KRRB TDCF SGT
YCJT	1 11/16 1 3/4	NT SGT	**179.39** 7 1/16	**148.03** 5 53/64	**111.13** 4 3/8	**55.56** 2 3/16	**20000** 4500	**36300** 8150	4100 3900	G1111KRRB TDCF SGT G1112KRRB TDCF SGT
YCJT	1 15/16	NT SGT	**188.91** 7 7/16	**157.16** 6 3/16	**115.89** 4 9/16	**60.72** 2 25/64	**22700** 5100	**39100** 8800	3600	G1115KRRB TDCF SGT
YCJT	2 3/16	NT SGT	**215.90** 8 1/2	**184.15** 7 1/4	**127.00** 5	**64.69** 2 35/64	**28500** 6400	**48000** 10800	3100	G1203KRRB TDCF SGT



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RAK/S SERIES

- This unit has the largest variety of configurations and shaft sizes and is used for the heaviest loads at the beginning of processing.
- Corrosion-resistant housing that is electroless nickel-plated and has a stainless-steel grease fitting. The protective cap withstands corrosion and prevents contamination.
- The corrosion-resistant insert bearing has stainless-steel balls with a nylon retainer. It also has industrial-duty contact seals with stainless-steel shroud caps.
- This unit has a stainless-steel lock collar.
- The unit is factory lubricated with FDA/USDA-approved grease (class H1 lubricant) for incidental food contact.



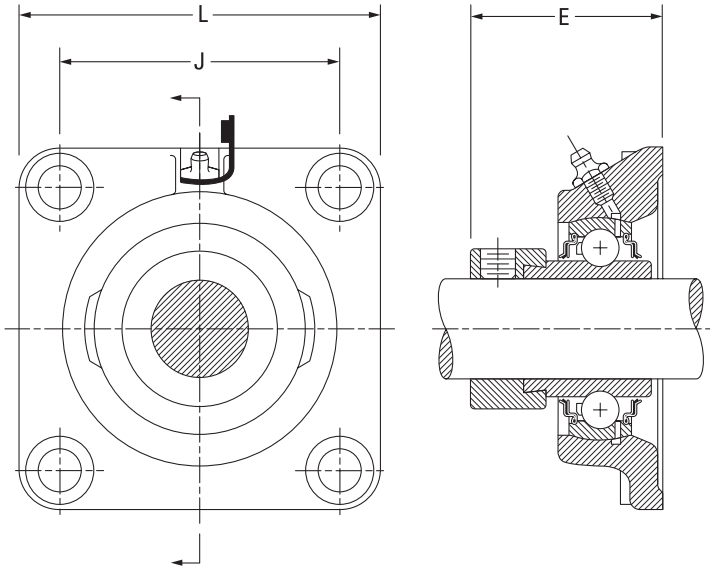
Unit[1]	Shaft Dia.	Type	RAK H	RAS H	J	L	S_1	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.		Collar No.
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM			
RAK/S	1/2 5/8	NT	**26.99** 1 1/16	**30.16** 1 3/16	**92.08** 3 5/8	**123.83** 4 7/8	**23.42** 59/64	**4700** 1060	**10700** 2400	13800 11000	G1008KRRB G1010KRRB	TDCF TDCF	S1008K SS S1010K SS
RAK/S	3/4	NT	**31.75** 1 1/4	**33.34** 1 5/16	**96.04** 3 25/32	**127.00** 5	**26.59** 1 3/64	**6500** 1460	**14500** 3250	9200	G1012KRRB	TDCF	S1012K SS
RAK/S	1 **25**	NT	**33.34** 1 5/16	**36.51** 1 7/16	**104.78** 4 1/8	**139.70** 5 1/2	**26.99** 1 1/16	**7700** 1730	**15800** 3550	6900 7000	G1100KRRB GE25KRRB	TDCF TDCF	S1100K SS SE25K SS
RAK/S	1 3/16 1 1/4S **30**	NT	**39.69** 1 9/16	**42.86** 1 11/16	**117.48** 4 5/8	**157.16** 6 3/16	**30.16** 1 3/16	**11100** 2500	**21800** 4900	5800 5500 5800	G1103KRRB G1103KRRB3 GE30KRRB	TDCF TDCF TDCF	S1103K SS S1103K3 SS SE30K SS
RAK/S	1 1/4 1 3/8 1 7/16	NT	**46.04** 1 13/16	**47.63** 1 7/8	**130.18** 5 1/8	**166.69** 6 9/16	**32.54** 1 9/32	**15100** 3400	**28500** 6400	5500 5000 4800	G1104KRRB G1106KRRB G1107KRRB	TDCF TDCF TDCF	S1104K SS S1106K SS S1107K SS
RAK/S	1 1/2 **40**	NT	**49.21** 1 15/16	**49.21** 1 15/16	**136.53** 5 3/8	**179.39** 7 1/16	**34.93** 1 3/8	**19600** 4400	**36300** 8150	4600 4400	G1108KRRB GE40KRRB	TDCF TDCF	S1108KT SS SE40K SS
RAK/S	1 11/16 1 3/4	NT	**52.39** 2 1/16	**53.98** 2 1/8	**149.23** 5 7/8	**191.29** 7 17/32	**34.93** 1 3/8	**20000** 4500	**36300** 8150	4100 3900	G1111KRRB G1112KRRB	TDCF TDCF	S1111K SS S1112K SS
RAK/S	1 15/16	NT	**55.56** 2 3/16	**57.15** 2 1/4	**157.96** 6 7/32	**200.03** 7 7/8	**38.10** 1 1/2	**22700** 5100	**39100** 8800	3600	G1115KRRB	TDCF	S1115K SS
RAK/S	2 2 3/16	NT	**61.91** 2 7/16	**63.50** 2 1/2	**176.21** 6 15/16	**222.25** 8 3/4	**43.66** 1 23/32	**28500** 6400	**48000** 10800	3400 3100	G1200KRRB G1203KRRB	TDCF TDCF	S1200K SS S1203K SS
RAK/S	2 7/16	NT	**68.26** 2 11/16	**69.85** 2 3/4	**188.12** 7 13/32	**239.71** 9 7/16	**46.83** 1 27/32	**35600** 8000	**58700** 13200	2800	G1207KRRB	TDCF	S1207K SS
RAK/S	2 11/16	NT	**76.20** 3	–	**203.20** 8	**266.70** 10 1/2	**51.59** 2 1/32	**42900** 9650	**69400** 15600	2600	G1211KRRB	TDCF	S1211K SS
RAK/S	2 15/16	NT	**84.14** 3 5/16	**82.55** 3 1/4	**241.30** 9 1/2	**304.80** 12	**54.77** 2 5/32	**43600** 9800	**69400** 15600	2300	G1215KRRB	TDCF	S1215K SS

[1]Option of low-base RAK or high-base RAS.

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RCJ SERIES

- This unit has the largest variety of configurations and shaft sizes and is used for the heaviest loads at the beginning of processing.
- Corrosion-resistant housing that is electroless nickel-plated and has a stainless-steel grease fitting. The protective cap withstands corrosion and prevents contamination.
- The corrosion-resistant insert bearing has stainless-steel balls with a nylon retainer. It also has industrial-duty contact seals with stainless-steel shroud caps.
- This unit has a stainless-steel lock collar.
- The unit is factory lubricated with FDA/USDA-approved grease (class H1 lubricant) for incidental food contact.

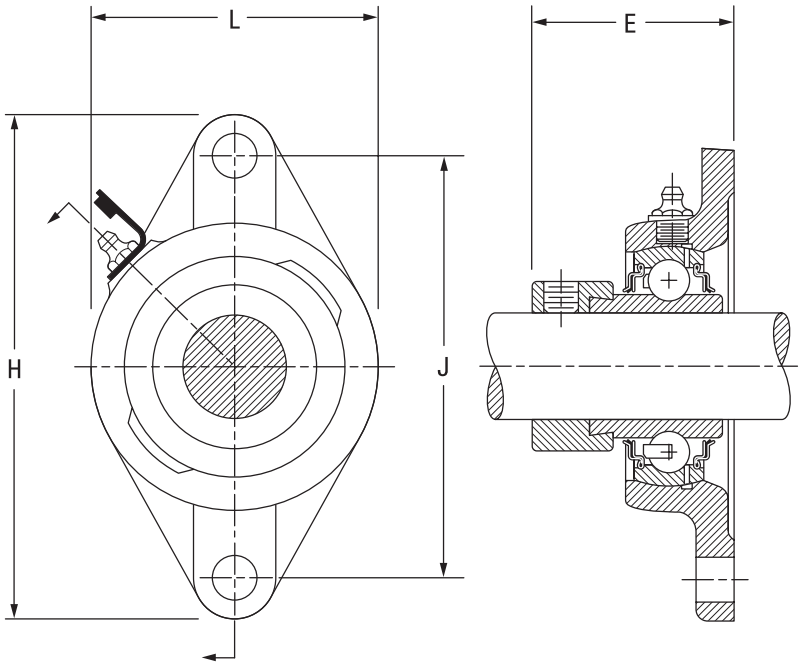


Unit	Shaft Dia.	Type	L	J	E	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.	Collar No.
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM		
RCJ	1/2 5/8	NT	**76.20** 3	**53.98** 2 1/8	**40.10** 1 19/32	**4700** 1060	**10700** 2400	13800 11000	G1008KRRB TDCF G1010KRRB TDCF	S1008K SS S1010K SS
RCJ	3/4	NT	**85.73** 3 3/8	**63.50** 2 1/2	**46.43** 1 53/64	**6500** 1460	**14500** 3250	9200	G1012KRRB TDCF	S1012K SS
RCJ	1 **25**	NT	**95.25** 3 3/4	**69.85** 2 3/4	**46.80** 1 27/32	**7700** 1730	**15800** 3550	6900 7000	G1100KRRB TDCF GE25KRRB TDCF	S1100K SS SE25K SS
RCJ	1 3/16 1 1/4S **30**	NT	**107.95** 4 1/4	**82.55** 3 1/4	**50.80** 2	**11100** 2500	**21800** 4900	5800 5500 5800	G1103KRRB TDCF G1103KRRB3 TDCF GE30KRRB TDCF	S1103K SS S1103K3 SS SE30K SS
RCJ	1 1/4 1 3/8 1 7/16	NT	**117.48** 4 5/8	**92.08** 3 5/8	**53.58** 2 7/64	**15100** 3400	**28500** 6400	5500 5000 4800	G1104KRRB TDCF G1106KRRB TDCF G1107KRRB TDCF	S1104K SS S1106K SS S1107K SS
RCJ	1 1/2 **40**	NT	**130.18** 5 1/8	**101.60** 4	**59.13** 2 21/64	**19600** 4400	**36300** 8150	4600 4400	G1108KRRB TDCF GE40KRRB TDCF	S1108KT SS SE40K SS
RCJ	1 11/16 1 3/4	NT	**136.53** 5 3/8	**104.78** 4 1/8	**59.13** 2 21/64	**20000** 4500	**36300** 8150	4100 3900	G1111KRRB TDCF G1112KRRB TDCF	S1111K SS S1112K SS
RCJ	1 15/16	NT	**142.88** 5 5/8	**111.13** 4 3/8	**66.68** 2 5/8	**22700** 5100	**39100** 8800	3600	G1115KRRB TDCF	S1115K SS
RCJ	2 2 3/16	NT	**161.93** 6 3/8	**130.18** 5 1/8	**75.41** 2 31/32	**28500** 6400	**48000** 10800	3400 3100	G1200KRRB TDCF G1203KRRB TDCF	S1200K SS S1203K SS
RCJ	2 7/16	NT	**174.63** 6 7/8	**142.88** 5 5/8	**81.76** 3 7/32	**35600** 8000	**58700** 13200	2800	G1207KRRB TDCF	S1207K SS
RCJ	2 11/16	NT	**187.33** 7 3/8	**149.23** 5 7/8	**90.49** 3 9/16	**42900** 9650	**69400** 15600	2600	G1211KRRB TDCF	S1211K SS
RCJ	2 15/16	NT	**196.85** 7 3/4	**152.40** 6	**96.84** 3 13/16	**43600** 9800	**69400** 15600	2300	G1215KRRB TDCF	S1215K SS

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RCJT SERIES

- This unit has the largest variety of configurations and shaft sizes and is used for the heaviest loads at the beginning of processing.
- Corrosion-resistant housing that is electroless nickel-plated and has a stainless-steel grease fitting. The protective cap withstands corrosion and prevents contamination.
- The corrosion-resistant insert bearing has stainless-steel balls with a nylon retainer. It also has industrial-duty contact seals with stainless-steel shroud caps.
- This unit has a stainless-steel lock collar.
- The unit is factory lubricated with FDA/USDA-approved grease (class H1 lubricant) for incidental food contact.

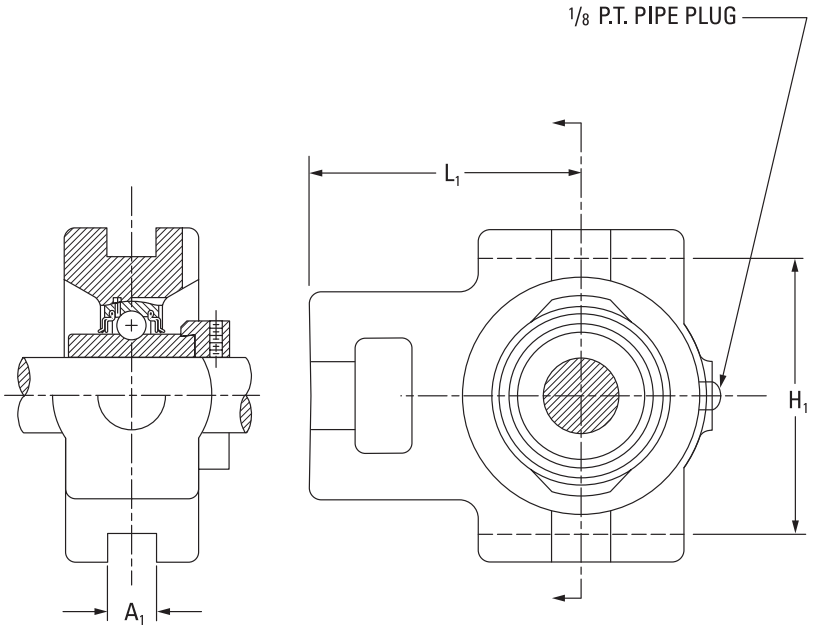


Unit	Shaft Dia.	Type	H	J	L	E	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.		Collar No.
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM			
RCJT	1/2	NT	**98.43** 3 7/8	**76.20** 3	**54.0** 2 1/8	**40.61** 1 39/64	**4700** 1060	**10700** 2400	13800 11000	G1008KRRB G1010KRRB	TDCF TDCF	S1008K SS S1010K SS
RCJT	3/4	NT	**111.92** 4 13/32	**89.69** 3 17/32	**60.5** 2 3/8	**46.43** 1 53/64	**6500** 1460	**14500** 3250	9200	G1012KRRB	TDCF	S1012K SS
RCJT	1 **25**	NT	**123.83** 4 7/8	**99.22** 3 29/32	**69.85** 2 3/4	**46.83** 1 27/32	**7700** 1730	**15800** 3550	6900 7000	G1100KRRB GE25KRRB	TDCF TDCF	S1100K SS SE25K SS
RCJT	1 3/16 1 1/4S **30**	NT	**141.29** 5 9/16	**116.68** 4 19/32	**79.38** 3 1/8	**50.80** 2	**11100** 2500	**21800** 4900	5800 5500 5800	G1103KRRB G1103KRRB3 GE30KRRB	TDCF TDCF TDCF	S1103K SS S1103K3 SS SE30K SS
RCJT	1 1/4 1 3/8 1 7/16	NT	**155.58** 6 1/8	**130.18** 5 1/8	**92.08** 3 5/8	**53.58** 2 7/64	**15100** 3400	**28500** 6400	5500 5000 4800	G1104KRRB G1106KRRB G1107KRRB	TDCF TDCF TDCF	S1104K SS S1106K SS S1107K SS
RCJT	1 1/2 **40**	NT	**171.45** 6 3/4	**143.67** 5 21/32	**104.78** 4 1/8	**59.13** 2 21/64	**19600** 4400	**36300** 8150	4600 4400	G1108KRRB GE40KRRB	TDCF TDCF	S1108KT SS SE40K SS
RCJT	1 11/16 1 3/4	NT	**179.39** 7 1/16	**148.03** 5 27/32	**111.13** 4 3/8	**59.13** 2 21/64	**20000** 4500	**36300** 8150	4100 3900	G1111KRRB G1112KRRB	TDCF TDCF	S1111K SS S1112K SS
RCJT	1 15/16	NT	**188.91** 7 7/16	**157.16** 6 3/16	**115.89** 4 9/16	**66.68** 2 5/8	**22700** 5100	**39100** 8800	3600	G1115KRRB	TDCF	S1115K SS
RCJT	2 2 3/16	NT	**215.90** 8 1/2	**184.15** 7 1/4	**127.00** 5	**75.41** 2 31/32	**28500** 6400	**48000** 10800	3400 3100	G1200KRRB G1203KRRB	TDCF TDCF	S1200K SS S1203K SS

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RTU SERIES

- This unit has the largest variety of configurations and shaft sizes and is used for the heaviest loads at the beginning of processing.
- Corrosion-resistant housing that is electroless nickel-plated and has a stainless-steel grease fitting. The protective cap withstands corrosion and prevents contamination.
- The corrosion-resistant insert bearing has stainless-steel balls with a nylon retainer. It also has industrial-duty contact seals with stainless-steel shroud caps.
- This unit has a stainless-steel lock collar.
- The unit is factory lubricated with FDA/USDA-approved grease (class H1 lubricant) for incidental food contact.



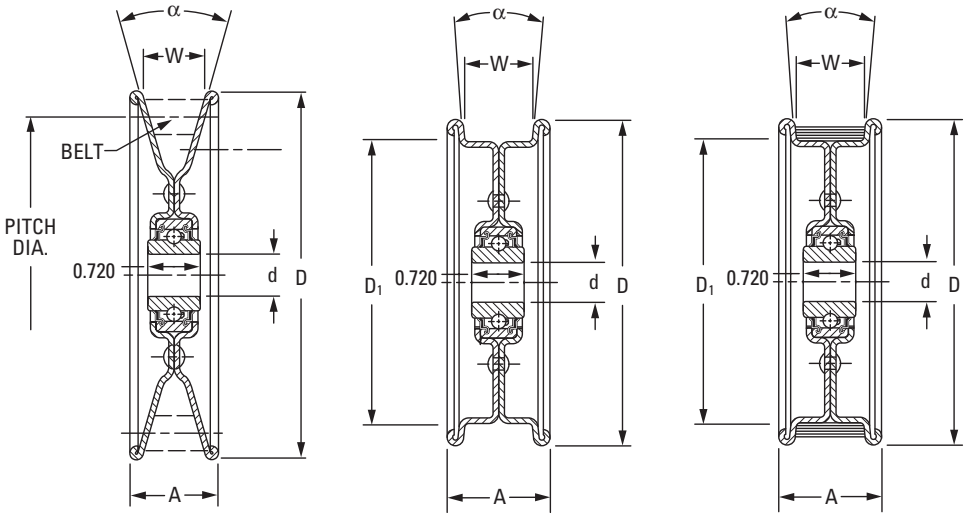
Unit	Shaft Dia.	Type	A_1	H_1	L_1	Static Load Rating	Dynamic Load Rating	Speed Rating	Bearing No.	Collar No.
	in. **mm**		**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**N** lbs.	RPM		
RTU	1 **25**	NT	**13.49** 17/32	**76.20** 3	**67.47** 2 21/32	**7700** 1730	**15300** 3450	6900 7000	G1100KRRB TDCF GE25KRRB TDCF	S1100K SS SE25K SS
RTU	1 3/16 **30**	NT	**13.49** 17/32	**88.90** 3 1/2	**72.23** 2 27/32	**11100** 2500	**21800** 4900	5800 5800	G1103KRRB TDCF GE30KRRB TDCF	S1103K SS SE30K SS
RTU	1 1/4 1 7/16	NT	**13.49** 17/32	**88.90** 3 1/2	**74.61** 2 15/16	**15100** 3400	**28500** 6400	5500 4800	G1104KRRB TDCF G1107KRRB TDCF	S1104K SS S1107K SS
RTU	1 1/2 **40**	NT	**17.46** 11/16	**100.81** 3 31/32	**88.11** 3 15/32	**19600** 4400	**36300** 8150	4600 4400	G1108KRRB TDCF GE40KRRB TDCF	S1108KT SS SE40K SS
RTU	1 11/16 1 3/4	NT	**17.46** 11/16	**100.81** 3 31/32	**88.11** 3 15/32	**20000** 4500	**36300** 8150	4100 3900	G1111KRRB TDCF G1112KRRB TDCF	S1111K SS S1112K SS
RTU	1 15/16	NT	**17.46** 11/16	**100.81** 3 31/32	**91.28** 3 19/32	**22700** 5100	**39100** 8800	3600	G1115KRRB TDCF	S1115K SS
RTU	2 2 3/16	NT	**26.99** 1 1/16	**129.38** 5 3/32	**119.86** 4 23/32	**28500** 6400	**48000** 10800	3400 3100	G1200KRRB TDCF G1203KRRB TDCF	S1200K SS S1203K SS
RTU	2 7/16	NT	**26.99** 1 1/16	**129.38** 5 3/32	**119.86** 4 23/32	**35600** 8000	**58700** 13200	2800	G1207KRRB TDCF	S1207K SS

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MISCELLANEOUS HOUSED UNITS
IDLER PULLEY UNITS

- A pressed-steel pulley and a Timken® precision ball bearing with rubber seals are combined to make a self-contained unit.
- Two pulley designs are available. One for V-belts and another for the backs of V-belts. Both are made for A, B, C and D section belts.
- A chain idler, identical in construction to the flat idler, is available, with the addition of an assembled rubber tire (part number A-10927). The rubber tire cushions the chain, preventing undue wear on the pulley surface or chain.
- Idler pulley units feature a Timken® single-row radial ball bearing with an inner ring extended on both sides. This provides clearance for abutting parts and greater support on the shaft.
- Contact-type rubber seals help ensure positive retention for lubricant and full protection against dirt, dust and foreign matter.
- All units are non-relubricatable. Special features include smoothly rolled-over edges, eliminating belt chafing and scuffing. The weep holes on the rivet circle allow water drainage when the pulley is mounted in a horizontal position.

To order, specify PULLEY NUMBER.
Example: 008-10853 Idler Pulley.



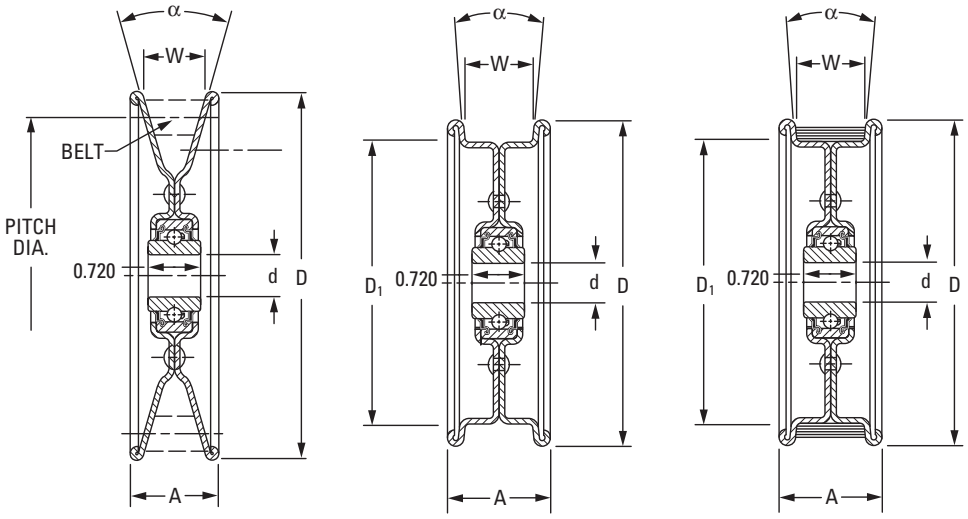
V - IDLER **FLAT - IDLER** **CHAIN - IDLER**

Pulley No.	α Included Angle Degrees	Bearing No.	Bore d	D	A	D_1	W	Wt.
			mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
V IDLERS								
006-11520A[1]	32	WS3NPP3	**10.010/9.780** 0.3940/0.3850	**76.2** 3	**19.0** ¾	–	**12.45** 0.049	0.145 0.32
10874[2]	34	203NPP	**17.000/16.993** 0.6693/0.6690	**101.6** 4	**22.2** ⅞	–	**12.70** 0.500	0.417 0.92
010-10874	34	203KRR2	**16.130/16.260** 0.6350/0.6400	**101.6** 4	**22.2** 7.8	–	**12.70** 0.500	0.435 0.96
008-10482	32	203KRR5	**13.080/12.950** 0.5150/0.5100	**128.6** 5 1/16	**31.8** 1 ¼	–	**22.15** 0.872	**0.572** 1.26
010-10482	32	203KRR2	**16.130/16.260** 0.6350/0.6400	**128.6** 5 1/16	**31.8** 1 ¼	–	**22.15** 0.872	**0.558** 1.23
008-10853	32	203KRR5	**13.080/12.950** 0.5150/0.5100	**185.7** 7 5/16	**31.8** 1 ¼	–	**22.15** 0.872	**1.134** 2.50
010-10853	32	203KRR2	**16.13/16.260** 0.6350/0.6400	**185.7** 7 5/16	**31.8** 1 ¼	–	**22.15** 0.872	**1.120** 2.47

[1]Inner ring width 13.891 mm – 13.764 mm; (0.5469 in. – 0.5419 in.)
[2]12 mm (0.4724 in.) inner ring width 11.999 mm – 11.872 mm (0.4724 in. – 0.4674 in.).

Continued on next page.

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V - IDLER **FLAT - IDLER** **CHAIN - IDLER**

Continued from previous page.

Pulley No.	α Included Angle Degrees	Bearing No.	Bore d	D	A	D_1	W	Wt.
			mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
FLAT IDLERS								
006-11581A[1]	10	WS3NPP3	**10.01/9.78** 0.394/0.385	**92.1** 3 5/8	**30.6** 1 7/32	**76.2** 3	**22.2** 7/8	**0.259** 0.57
008-10601	10	203KRR5	**13.08/12.95** 0.515/0.510	**117.5** 4 5/8	**36.5** 1 7/16	**101.6** 4	**25.4** 1	**0.503** 1.11
010-10601	10	203KRR2	**16.13/16.26** 0.635/0.640	**117.5** 4 5/8	**36.5** 1 7/16	**101.6** 4	**25.4** 1	**0.490** 1.08
FLAT IDLERS								
008-10483	10	203KRR5	**13.08/12.95** 0.515/0.510	**158.8** 6 1/4	**36.5** 1 7/16	**139.7** 5 1/2	**25.4** 1	**0.803** 1.77
010-10483	10	203KRR2	**16.13/16.26** 0.635/0.640	**158.8** 6 1/4	**36.5** 1 7/16	**139.7** 5 1/2	**25.4** 1	**0.789** 1.74
008-10650	50	203KRR5	**13.08/12.95** 0.515/0.510	**158.8** 6 1/4	**36.5** 1 7/16	**139.7** 5 1/2	**25.4** 1	**0.785** 1.73
010-10650	50	203KRR2	**16.13/16.26** 0.635/0.640	**158.8** 6 1/4	**41.3** 1 7/16	**139.7** 5 1/2	**25.4** 1	**0.771** 1.70
008-11515	10	203KRR5	**13.08/12.95** 0.515/0.510	**222.2** 8 3/4	**35.7** 1 13/32	**203.2** 8	**25.4** 1	**1.238** 2.73
010-11515	10	203KRR2	**16.13/16.26** 0.635/0.640	**222.2** 8 3/4	**35.7** 1 13/32	**203.2** 8	**25.4** 1	**1.225** 2.70
008-10731	10	203KRR5	**13.08/12.95** 0.515/0.510	**222.2** 8 3/4	**48.4** 1 29/32	**203.2** 8	**38.1** 1 1/2	**1.488** 3.38
010-10731	10	203KRR2	**16.13/16.26** 0.635/0.640	**222.2** 8 3/4	**48.4** 1 29/32	**203.2** 8	**38.1** 1 1/2	**1.474** 3.25
CHAIN IDLERS								
008-10927	10	203KRR5	**13.08/12.95** 0.515/0.510	**117.5** 4 5/8	**36.5** 1 7/16	**111.1** 4 3/8	**25.4** 1	**0.576** 1.27
010-10927	10	203KRR2	**16.13/16.26** 0.635/0.640	**117.5** 4 5/8	**36.5** 1 7/16	**111.1** 4 3/8	**25.4** 1	**0.562** 1.24

[1]Inner ring width 13.891 mm – 13.764 mm; (0.5469 in. – 0.5419 in.)
[2]12 mm (0.4724 in.) inner ring width 11.999 mm – 11.872 mm (0.4724 in. – 0.4674 in.).

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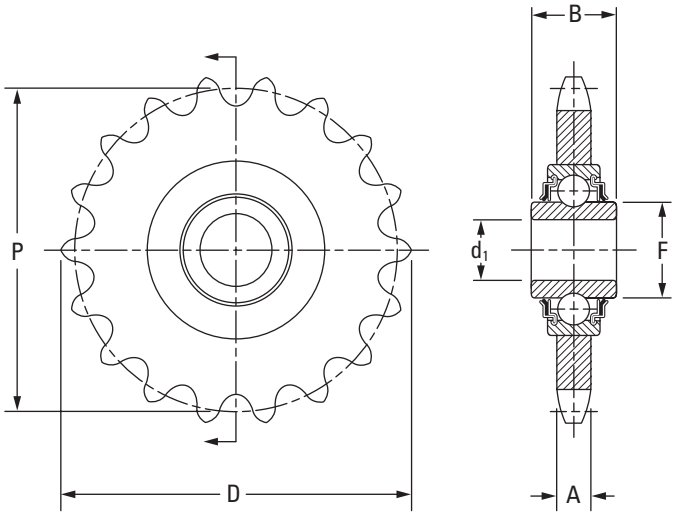
ROLLER CHAIN IDLER SPROCKETS

- The sintered-steel sprockets are hardened and perform well at an economical cost.
- The roller chain idler sprocket replaces the hardened-plate steel sprockets on most applications.
- All units are non-relubricatable.

To order, specify SPROCKET NUMBER.

Example: 010-5017S Idler Sprocket.

Order all bearings with E8728 specification.



Sprocket No.	Bearing No.	Bore d_1	A.S.A. Chain No.	No. of Teeth	Pitch	P	D	A	F	B	Bearing Radial Load Rating @500 RPM	Wt.
		mm in.			**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**N** lbs.	**kg** lbs.
008-4018-S	203KRR5	**13.08/12.95** 0.5150/0.5000	40	18	**12.7** ½	**73.13** 2.879	**79.88** 3.145	**7.21** 0.284	**24.43** 0.962	**18.29** 0.72	**3550** 800	**0.200** 0.44
008-5017-S	203KRR5	**13.08/12.95** 0.5150/0.5000	50	17	**15.9** ⅝	**86.36** 3.400	**94.72** 3.729	**8.71** 0.343	**24.43** 0.962	**18.29** 0.72	**3550** 800	**0.299** 0.66
008-6015-S	203KRR5	**13.08/12.95** 0.5150/0.5000	60	15	**19.0** ¾	**91.62** 3.607	**101.32** 3.989	**11.66** 0.459	**24.43** 0.962	**18.29** 0.72	**3550** 800	**0.417** 0.92
010-4018-S	203KRR2	**16.26/16.13** 0.6400/0.6350	40	18	**12.7** ½	**73.13** 2.879	**79.88** 3.145	**7.21** 0.284	**24.43** 0.962	**18.29** 0.72	**3550** 800	**0.200** 0.44
010-5017-S	203KRR2	**16.26/16.13** 0.6400/0.6350	50	17	**15.9** ⅝	**86.36** 3.400	**94.72** 3.729	**8.71** 0.343	**24.43** 0.962	**18.29** 0.72	**3550** 800	**0.299** 0.66
010-6015-S	203KRR2	**16.26/16.13** 0.6400/0.6350	60	15	**19.0** ¾	**91.62** 3.607	**101.32** 3.989	**11.66** 0.459	**24.43** 0.962	**18.29** 0.72	**3550** 800	**0.417** 0.92
011H-5017-S	204KRR2	**17.65/17.52** HEX 0.6950/0.6900	50	17	**15.9** ⅝	**86.36** 3.400	**94.72** 3.729	**8.71** 0.343	**28.73** 1.131	**18.29** 0.72	**3550** 800	**0.299** 0.66
011H-6015-S	204RR2	**17.65/17.52** HEX 0.6950/0.6900	60	15	**19.0** ¾	**91.62** 3.607	**101.32** 3.989	**11.66** 0.459	**24.43** 0.962	**18.29** 0.72	**3550** 800	**0.417** 0.92
012-8012-S	204RR6	**19.18/19.05** 0.7500/0.7505	80	12	**25.4** 1	**98.15** 3.864	**110.41** 4.347	**14.60** 0.575	**26.62** 1.048	**15.49** 0.61	**4800** 1080	**0.676** 1.49

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REPLACEMENT BEARINGS

TABLE A-26. HOUSED UNIT REPLACEMENT BEARINGS

Housed Units	Replacement Bearing Assembly	Features	Part No.
C	MUB replaced by 1000KRB & Col.	Standard series (SM) wide inner ring (B-type), collar, caps and wire	Example: 2 11/16 in. (uses MUB 2 11/16 in.)
DRNR	1000KR & Col. (Two)	Single R-seal (A-type), complete bearing number marked on seal	Example: DRNR 1 3/16 in. (uses two 1103KR & Col.)
FLCT	RA000RRB & Col.	Non-relubricatable; B-spherical outer ring; RR-double R-seal	Bearing identification marked on seal.
GRFD, GRFDR, GRFTD, GRFTDR	G1000KRRB & Col.	G-relubricatable; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: GRFD 1 3/16 in. (uses G1103KRRB & Col.)
GRKD, GRSD	G1000KRRB & Col.	G-relubricatable; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: GRKD 1 3/16 in. (uses G1103KRRB & Col.)
GVFD, GVFDR, GVFTD, GVFTDR	GRA000RRB & Col.	G-relubricatable; B-spherical outer ring; RR-double R-seal	Bearing identification marked on seal.
GVKD, GVSD	GRA000RRB & Col.	G-relubricatable; B-spherical outer ring; RR-double R-seal	Bearing identification marked on seal.
LAK, LAS	G1000KLLB & Col.	G-relubricatable; B-spherical outer ring; LL-double Mechani-seal	Complete bearing number marked on seal. Example: LAK 1 3/16 in. (uses G1103KLLB & Col.)
LAKHL	1000KLS & Col.	L-single Mechani-seal; S-external self-aligning	Complete bearing number marked on seal. Example: LAKHL 1 3/16 in. (uses 1103KLS & Col.)
LAO, LSAO	GN000KLLB & Col.	G-relubricatable; B-spherical outer ring; LL-double Mechani-seal	Complete bearing number marked on seal. Example: LAO 1 3/16 in. (uses GN103KLLB & Col.)
LCJ, LCJT	G1000KLLB & Col.	G-relubricatable; B-spherical outer ring; LL-double Mechani-seal	Complete bearing number marked on seal. Example: LCJ 1 3/16 in. (uses G1103KLLB & Col.)
LCJO	GN000KLLB	G-relubricatable; N-Heavy series; B-spherical outer ring; LL-double Mechani-seal	Complete bearing number marked on seal. Example: LCJO 1 3/16 in. (uses GN103KLLB & Col.)
PB, PBS, VKD, VSD	RA000RRB & Col.	Non-relubricatable; B-spherical outer ring; RR-double R-seal	Bearing identification marked on seal.
RA Flangette, RAT Flangette	RA000RRB & Col.	Non-relubricatable; B-spherical outer ring; RR-double R-seal	Bearing identification marked on seal.
RA Relubricatable Flangette	GRA000RRB & Col.	G-relubricatable; B-spherical outer ring; RR-double R-seal	To order, specify bearings and markings. Example: 1-GRA103RRB & Col., 1-G62MSA marking, 1-G62MSB marking
RAK, RAS, RAKH, RSA	G1000KRRB & Col.	G-relubricatable; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: RAK 1 3/16 in. (uses G1103KRRB & Col.)
RAKHL	1000KRS & Col	R-Single R-seal; S-external self-aligning	Complete bearing number marked on seal. Example: RAKHL 1 3/16 in. (uses 1103KRS & Col.)
RAKN, RASN	1000KRRB & Col.	Non-relubricatable; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: RAKN 1 3/16 in. (uses 1103KRRB & Col.)
RAO, RSAO	GN000KRRB & Col.	G-relubricatable; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: RSAO 3 3/16 in. (uses GN303KRRB & Col.)
RASC	GC1000KRRB & Col.	G-relubricatable; C-concentric collar; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: RASC 1 3/16 in. (uses GC1103KRRB & Col.)
RCJ, RCJT, RC	G1000KRRB & Col.	G-relubricatable; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: RCJ 1 3/16 in. (uses G1103KRRB & Col.)
RCJN, RR Flangette, RRT Flangette	1000KRRB & Col.	Non-relubricatable; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: RCJN 1 3/16 in. (uses 1103KRRB & Col.)
RFC, RCJC, RCJTC	GC1000KRRB & Col.	G-relubricatable; C-concentric collar; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: 1 3/16 in. (uses GC1103KRRB & Col.)
RFD, RFDR, RFTD, RFTDR	1000KRRB & Col.	Non-relubricatable; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: RFD: 1 3/16 in. (uses 1103KRRB & Col.)

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Housed Units	Replacement Bearing Assembly	Features	Part No.
RKD, RSD	1000KRRB & Col.	Non-relubricatable; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: RKD 1 3/16 in. (uses 1103KRRB & Col.)
RPB	RABR (shaft size)	Non-relubricatable; B-spherical outer ring; RR-double R-seal	RA000RRB FS-450 Bearing and Col. mounted in rubber interliner. Example: RPB 1 3/16 in. (uses an RABR 1 3/16 in.)
RR Relubricatable Flangette	G1000KRRB & Col.	G-relubricatable; B-spherical outer ring; RR-double R-seal	To order, specify bearing and markings. Example: 1-G1100KRRB & Col., 1-G52MSA marking, 1-G52MSB marking
SA	MUB replaced by 1000KRB & Col.	Standard series (SM) wide-inner-ring ball bearing (B-type), collar, caps and wire	Example: SA 1 3/16 in. (uses MUB 1 3/16 in.)
SAD	MUBD replaced by 1000KRB & Col.	Standard series (SM) wide-inner-ring ball bearing (B-type), dust seal, collar, caps and wire	Example: SA 1 3/16 in. (uses MUB 1 3/16 in.)
SADD	MUBD replaced by N000KRB & Col.	Rear dust seal, otherwise same as SAD	
SAL	SM1000KS & Col.	S-external self-aligning ring	Example: SAL 1 3/16 in. (uses SM1103KS & Col.)
SAO	MUOB replaced by 100KRB & Col.	Heavy series (SMN) wide-inner-ring ball bearing (B-type), collar, caps and wire	Example: SAO 1 3/16 in. (uses MUOB 1 3/16 in.)
SAOD	MUOBD (shaft size}	Heavy series (SMN) wide-inner-ring ball bearing (B-type), dust seal, collar, caps and wire	Example: SAOD 1 3/16 in. (uses MUOBD 1 3/16 in.)
SAODD	MUOBD (shaft size}	Rear dust seal, otherwise same as SAOD	
SAOL	SMN000KS & Col.	S-external self-aligning ring heavy series	Example: SAOL 1 3/16 in. (uses SMN103KS & Col.)
SAS, SAK	GYA000RRB	G-relubricatable; B-spherical outer ring; RR-double R-seal	Bearing identification marked on seal.
SCJ, SCJT	GYA00RRB	G-relubricatable; B-spherical outer ring; RR-double R-seal	Bearing identification marked on seal.
TAK, TAS	G1000KPPB & Col.	G-relubricatable; B-spherical outer ring; PP-Double tri-ply seal	Complete bearing number marked on seal. Example: TAK 1 3/16 in. (uses G1103KPPB3 & Col.)
TCJ, TCJT	G1000KPPB & Col.	G-relubricatable; B-spherical outer ring; PP-Double tri-ply seal	Complete bearing number marked on seal. Example: TCJ 1 3/16 in. (uses G1103KPPB3 & Col.)
VAK, VAS	GRA000RRB & Col.	G-relubricatable; B-spherical outer ring; RR-double R-seal	Bearing identification marked on seal.
VCJ, VCJT	GRA000RRB & Col.	G-relubricatable; B-spherical outer ring; RR-double R-seal	Bearing identification marked on seal.
VFD, VFDR, VFTD, VFTDR	RA000RRB & Col.	Non-relubricatable; B-spherical outer ring; RR-double R-seal	Bearing identification marked on seal.
YAS, YAK, YASM, YCJ, YCJT, YTU	GY-KRRB	G-relubricatable; B-spherical outer ring; RR-double R-seal, Y-series wide inner ring	Bearing identification marked on seal.
OTHER TYPES			
LTU Take-Up	G1000KLLB & Col.	G-relubricatable; B-spherical outer ring; LL-double Mechani-seal	Complete bearing number marked on seal. Example: LTU 1 3/16 in. (uses G1103KLLB & Col.)
RHC, RHCM Hanger	GC1000KRRB & Col.	G-relubricatable; C-concentric collar; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: RCH 1 1/2 in. (uses GC1108KRRB & Col.)
RTU Take-Up	G1000KRRB & Col.	G-relubricatable; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: RTU 1 3/16 in. (uses G1103KRRB & Col.)
STU Take-Up	GYA-RRB	G-relubricatable; B-spherical outer ring; RR-double R-seal	Complete bearing number marked on seal. Example: STU 1 3/16 in. (uses GYA103RRB)
TU Take-Up	MUB replaced by 1000KRB & Col.	Standard series (SM) wide-inner-ring ball bearing (B-type), collar, caps and wire	Example: TU 2 11/16 in. (uses MUB 2 11/16 & Col.)
YTU Take-Up	GY-KRRB	G-relubricatable; B-spherical outer ring; RR-double R-seal; Y-series wide inner ring with set screw lock	Complete bearing number marked on seal. Example: YTU 1 3/16 in. (uses GY1103KRRB)

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MACHINE UNITS

A complete machine unit consists of either a standard (SM) or heavy (SMN) series wide-inner-ring ball bearing, an inner and outer sealing cap, a retaining wire and self-locking collar, or an integrally sealed bearing and collar. These units are available as bearing replacements for Timken power transmission units such as the SA, SAO, DSA and DSAO pillow blocks, and C and Co cylindrical cartridges or special housings.

These are available in two types, A and B, as described below.

A-TYPE

Fig. A-27 shows a machine unit with an A-type bearing carrying the designation MUA (standard series) and MUOA (heavy series). It consists of a wide inner ring, open type or one-piece R-seal bearing, collar, caps and wire. The "caps" are two steel members which comprise a non-integral frictionless labyrinth seal. The inner member is pressed on the inner ring and rotates with it. The outer member is pressed in the housing against the face of the outer ring and is held in place by the round retaining wire.

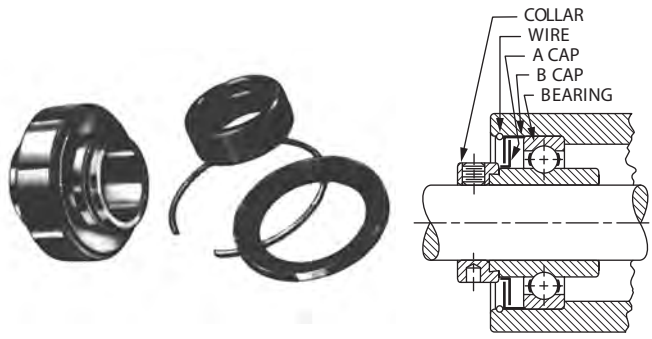


Fig. A-27. MUA, MUOA.

B-TYPE

Fig. A-28 is the same as fig. A-27, except that the bearing is B-type and the seal on the collar side is either a labyrinth seal (as shown) or a one-piece R-seal. In the latter case no wire is supplied. The designation of the machine unit is MUB (standard series) or MUOB (heavy series). The B-type bearing is mounted in the spherical housing seat by means of two slots milled diametrically opposite each other in the housing. The bearing can be inserted at right angles and swiveled into position. No additional shoulders or snap rings are required to locate this type.

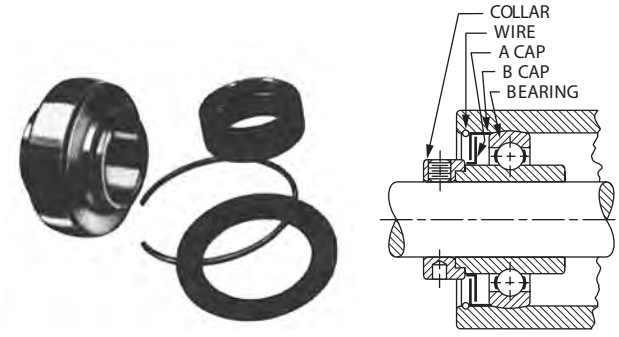


Fig. A-28. MUB, MUOB.

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TIMKEN® BALL BEARING HOUSED UNIT SAFETY END CAPS MAKE WORKPLACE PROTECTION A SNAP

Easy-to-install Timken® safety end caps protect exposed rotating shafts, reducing hazards around many types of equipment.

The Timken safety product line consists of a mounting ring and snap-on cover, both molded in durable, bright-yellow polymer. The end cap snaps into the adhesive-backed ring that adheres to the outboard face of most flanged bearing housings. The secure 360-degree fit makes for a rugged unit that also provides basic protection and washdown.

Factory retrofits are a snap with everything provided in a handy kit. The cost-effective end covers are simple-to-install on Timken and most other flanged units. Current sizes range from 20 mm to 50 mm (3/4 in. to 1 15/16 in.) shaft sizes for two or four-bolt flanged cast-iron, malleable iron and other selected housing styles and sizes.



Fig. A-29. Safety end caps protect against rotating stub shafts.

KIT CONTENTS

Timken safety end caps come in a convenient kit that contains everything required for a safe and durable mounting:

- Polymer end cap.
- Adhesive-backed polymer mounting ring.
- Scuffing pad.
- Cleaning cloth.

INSTALLATION

Steps in the simple mounting procedure include:

1. Use the scuffing pad on housing's mating surface where the mounting ring will be placed.
2. Clean off the mounting area.
3. Attach the adhesive-backed mounting ring.
4. Hold the mounting ring in place with pressure for 60 seconds.
5. Allow the adhesive to set for a minimum of one hour.
6. Snap the end cap into place.

ORDERING INFORMATION

TABLE A-27. ORDERING INFORMATION

Kit[1]	Shaft Sizes
204 ECY Kit	**20 mm,** 3/4
205 ECY Kit	**25 mm,** 7/8, 15/16, 1
206 ECY Kit	**30 mm,** 1 1/16, 1 1/8,1 3/16, 1 1/4 S
207 ECY Kit	**35 mm,** 1 1/4, 1 5/16, 1 3/8, 1 7/16,
208 ECY Kit	**40 mm,** 1 1/2
209 ECY Kit	**45 mm,** 1 5/8, 1 11/16, 1 3/4
210 ECY Kit	**50 mm,** 1 15/16, 2 S

[1]Kits are designed to fit the following housed units –
Four-bolt: YCJ, RCJ, RCJC, TCJ, LCJ, SCJ, VCJ
Two-bolt: YCJT, RCJT, RCJTC, TCJT, LCJT, SCJT, VCJT

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FLCT Standard Series A-108
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B

TAPERED ROLLER BEARING TYPE E HOUSED UNITS

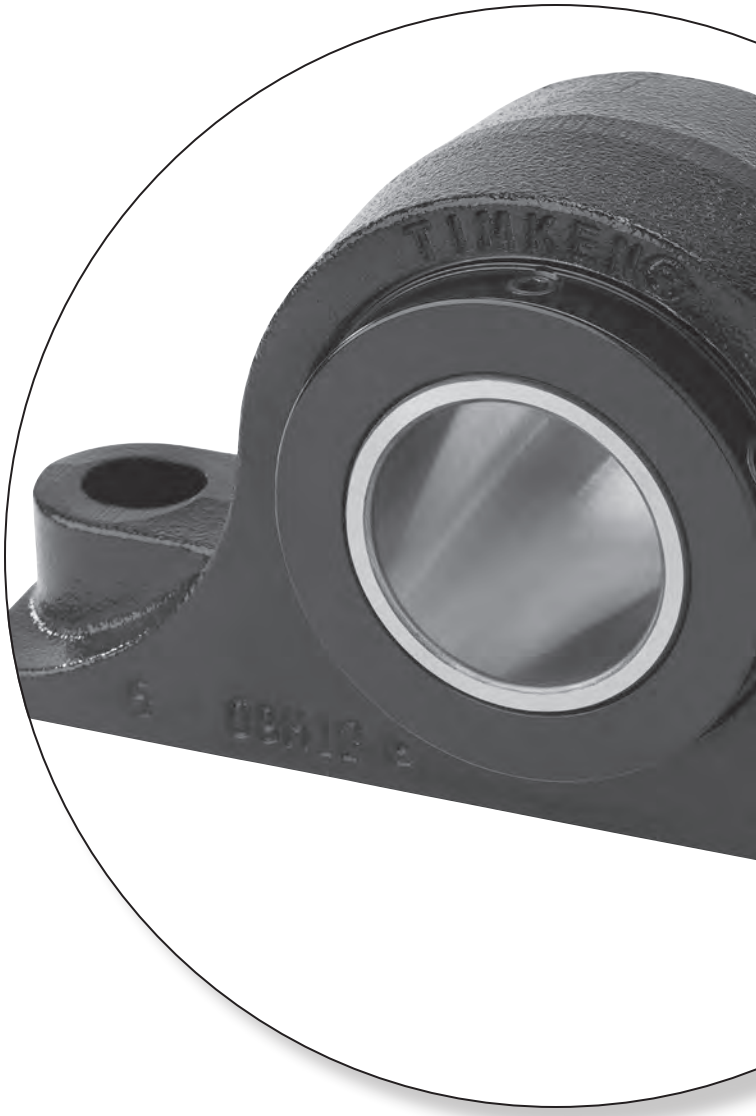
Timken® Type E housed units strengthen the performance of your equipment with industry-leading premium tapered roller bearings encased in protective blocks.

Compared to standard bearings, our premium bearings have a 113 percent increase in calculated life and 25 percent more calculated load capacity.

For tough industrial applications, Timken designed a durable housing built with corrosion-resistant electrocoating, locking collars and Timken-designed double-lip seals.

Our seal improves grease retention and our rotating collar acts as an initial flinger. Together, they significantly block contaminant ingress and improve your operations.

Updates are made periodically to this catalog. Visit www.timken.com for the most recent version of the Timken® Housed Unit Catalog.



TYPICAL INDUSTRIES AND APPLICATIONS

Common uses include processing and material handling equipment found in many industries, including pulp and paper, power generation, mining, cement and aggregate. Type E housed units also are widely used in equipment used for air-handling, and water and waste-water treatment. Other common machine applications include mixers, washers, shredders, mills and oven/furnace roller beds.

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INTRODUCTION

ENHANCED PERFORMANCE BEARINGS, LOWER COST OF OWNERSHIP

Timken Type E tapered roller bearings have a significantly higher load-carrying capability than industry-standard Type E housed units.

Our Type E bearings also experience lower internal contact stresses and frictional drag due to optimized bearing profiles and improved surface textures. This results in improved lubrication performance and up to three times greater misalignment capability than industry-standard tapered roller bearing designs.

Timken-designed double-lip seals help lower maintenance costs. The seals in our Type E housed units optimize lip contact to help improve grease retention and significantly reduce contaminant ingress.

SIZE RANGE AND CONFIGURATION

Timken Type E roller bearing housed units are available in a wide variety of sizes and configurations.

TABLE B-1. SHAFT SIZES AND RANGES

Housed Unit Configuration	Inches (in.)	Metric (mm)
Pillow Block: Two-Bolt Base	1 3⁄16 thru 3 1⁄2	35 thru 90
Pillow Block: Four-Bolt Base	2 1⁄4 thru 5	60 thru 125
Flange: Four-Bolt	1 3⁄16 thru 4 1⁄2	35 thru 115
Flange: Piloted	1 3⁄16 thru 5	35 thru 125
Take-Up: Wide Slot	1 3⁄8 thru 3	35 thru 75
Take-Up: Top Angle	1 3⁄4 thru 4	45 thru 100

European REACH Compliance

Timken lubricants, greases and similar products sold in stand-alone containers or delivery systems are subject to the European REACH (**R**egistration, **E**valuation, **A**uthorization and **R**estriction of **CH**emicals) directive. For import into the European Union, Timken can sell and provide only those lubricants and greases that are registered with ECHA (**E**uropean **CH**emical **A**gency). For further information, please contact your Timken engineer.

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⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Failure to follow selection recommendations and installation instructions and to maintain proper lubrication can result in equipment failure.

Overheated bearings can ignite explosive atmospheres. Special care must be taken to properly select, install, maintain, and lubricate housed unit bearings that are used in or near atmospheres that may contain explosive levels of combustible gases or accumulations of dust such from grain, coal, or other combustible materials. Consult your equipment designer or supplier for installation and maintenance instructions.

⚠ CAUTION

Failure to follow these cautions could create a risk of injury.

Do not use damaged housed units. The use of a damaged housed unit can result in equipment damage and/or injury.

CAUTION

Failure to follow these cautions may result in property damage.

If hammer and bar are used for installation or removal of a part, use a mild steel bar (e.g., 1010 or 1020 grade). Mild steel bars are less likely to cause release of high-speed fragments from the hammer, bar or the part being removed.

Warnings for this product line are in this catalog and posted on www.timken.com/en-us/products/warnings/Pages/TimkenHousedUnitWarnings.aspx.

NOTE

Do not use excessive force when mounting or dismounting the unit.

Follow all tolerance, fit, and torque recommendations.

Always follow the Original Equipment Manufacturer's installation and maintenance guidelines.

Ensure proper alignment.

Never weld housed units.

Do not heat components with an open flame.

Do not operate at bearing temperatures above 121˚C (250˚F).

DISCLAIMER

This catalog is provided solely to give you analysis tools and data to assist you in your product selection. Product performance is affected by many factors beyond the control of Timken. Therefore, you must validate the suitability and feasibility of all product selections for your applications.

Timken products are sold subject to Timken terms and conditions of sale, which include our limited warranty and remedy. You can find these at http://www.timken.com/en-us/purchase/Pages/TermsandConditionsofSale.aspx.

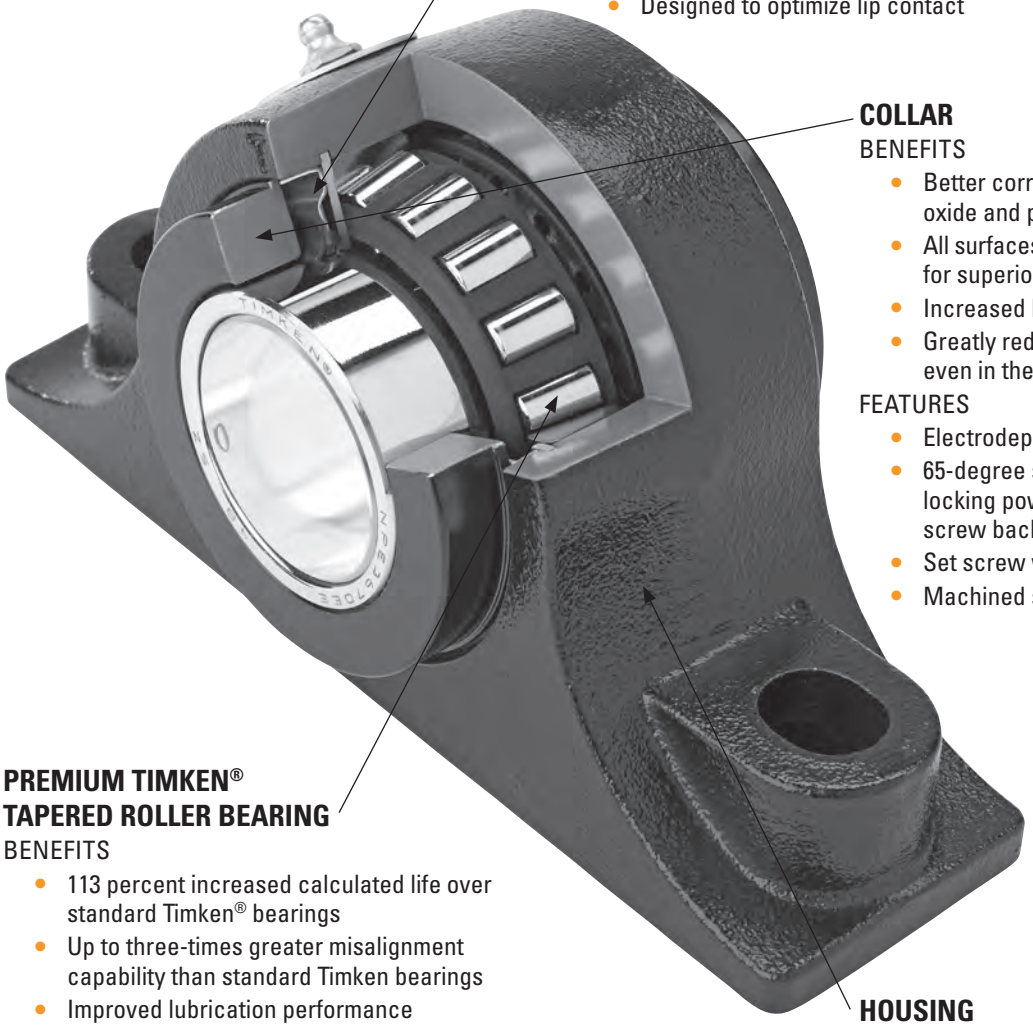
Please consult with your Timken engineer for more information and assistance.

Every reasonable effort has been made to ensure the accuracy of the information in this writing, but no liability is accepted for errors, omissions or for any other reason.

Updates are made periodically to this catalog. Visit www.timken.com for the most recent version of the Timken® Housed Unit Catalog.

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BENEFITS AND FEATURES



TIMKEN-DESIGNED DOUBLE-LIP SEALS

BENEFITS

- Improved grease retention
- Significantly reduced contaminant ingress
- Rotating collar acts as an initial flinger

FEATURES

- Double-lip design
- Designed to optimize lip contact

COLLAR

BENEFITS

- Better corrosion-resistance than black oxide and powder-coating
- All surfaces are protected with E-coat for superior corrosion protection
- Increased locking power
- Greatly reduced set screw back out even in the most severe applications

FEATURES

- Electrodeposition coating (E-coat)
- 65-degree set screw angle for maximum locking power and greatly reduced set screw back out
- Set screw with nylon patch
- Machined steel

PREMIUM TIMKEN® TAPERED ROLLER BEARING

BENEFITS

- 113 percent increased calculated life over standard Timken® bearings
- Up to three-times greater misalignment capability than standard Timken bearings
- Improved lubrication performance
- Reduced internal stresses
- Enhanced performance

FEATURES

- 25 percent more load capacity
- Optimized bearing profiles
- Improved surface textures
- Super-clean, high-alloy bearing steel

HOUSING

BENEFITS

- Better corrosion resistance than black oxide or powder coating
- Designed to Type E dimensions
- Bolt holes and shaft centerline dimensions interchangeable, conforming with industry practice

FEATURES

- Electrodeposition coating (E-coat)
- Material spec: ASTM –A48 grade 30 cast iron

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ENGINEERING



Tapered roller bearings can manage broad ranges of speed and many combinations of radial and thrust loads. Other important environmental conditions affect bearing operation, such as low and high temperature, dust and dirt, moisture and unusual mounting conditions.

This engineering section is not intended to be comprehensive, but does serve as a useful guide when selecting Type E housed units.

To view the complete engineering catalog, please visit www.timken.com. To order the catalog, please contact your Timken engineer and request a copy of the Timken Engineering Manual, order number 10424.

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Installation and Lubrication B-12

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BEARING SELECTION AND LIFE CALCULATIONS

Many different performance criteria exist that dictate how a bearing should be selected. These criteria include bearing fatigue life, rotational precision, power requirements, temperature limits, speed capabilities, sound and more. The life can also be limited by other system components such as the shaft, shaft interface and the housing. This section deals primarily with bearing life as related to material associated fatigue.

BEARING LIFE

Bearing life is defined here as the length of time, or number of revolutions, until a fatigue spall of 6 mm^2 (0.01 $in.^2$) develops. Since metal fatigue is a statistical phenomenon, the life of an individual bearing is impossible to precisely predetermine. Bearings that may appear to be identical can exhibit considerable life scatter when tested under identical conditions. Thus, it is necessary to base life predictions on a statistical evaluation of a large number of bearings operating under similar conditions. The Weibull distribution function is commonly used to predict the life of a population of bearings at any given reliability level.

RATING LIFE

Rating life, (L_{10}), is the life that 90 percent of a group of apparently identical bearings will complete or exceed before a fatigue spall develops. The L_{10} life also is associated with 90 percent reliability for a single bearing under a certain load.

BEARING LIFE EQUATIONS

The L_{10} life has been calculated as follows for bearings under radial or combined loading where the dynamic equivalent radial load, (P_r), has been determined.

Tapered roller bearings often use a dynamic load rating (C_{90}) based on 90 million cycles, yielding the equations as follows:

$$L_{10} = \left(\frac{C_{90}}{P_r}\right)^{10/3} \quad (90 \times 10^6) \text{ revolutions}$$

or based on shaft speed, (RPM),

$$L_{10} = \left(\frac{C_{90}}{P_r}\right)^{10/3} \left(\frac{90 \times 10^6}{60n}\right) \text{ hours}$$

Timken has expanded standard life equations to include certain additional variables that can affect bearing performance. The approach that considers these factors in bearing analysis and selection has been termed Bearing Systems Analysis (BSA).

The Timken expanded bearing life equation for tapered roller bearings is:

$$L_{na} = a_1 a_2 a_{3d} a_{3k} a_{3l} a_{3m} a_{3p} \left(\frac{C_{90}}{P_r}\right)^{10/3} \left(\frac{90 \times 10^6}{60n}\right) \text{ hours}$$

Where,

a_1 = Reliability life factor
a_2 = Material life factor
a_{3d} = Debris life factor
a_{3k} = Load zone life factor
a_{3l} = Lubrication life factor
a_{3m} = Misalignment life factor
a_{3p} = Low-load life factor

More details on Life Adjustment Factors can be found in the Timken Engineering Manual (order no. 10424) available on timken.com or by contacting a Timken engineer.

Other factors that can be taken into account within the simple bearing life equation are shock or vibration. These are known to occur in many industrial applications due to combined factors including imbalanced dynamic forces, abusive handling, equipment misuse or neglect. These are difficult to predict.

When these conditions are known or suspected to occur, we suggest that equipment designers use a multiplication factor of ($1.5 \times P_r$) to estimate effects on housed unit selection and system reliability. Performance testing or advanced analysis is strongly suggested to validate final product selection.

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TIMKEN® ROLLER HOUSED UNIT SELECTION

The double extended tapered roller bearings used in the Type E roller housed units are suited for carrying radial, thrust or a combination of both types of loading. This section will describe the bearing selection process using different methods based on selection criteria and application details.

METHOD 1 – SELECTION TABLE (RADIAL LOADS ONLY)

Note: Based on reference conditions with adequate lubrication.

1. Determine criteria for bearing selection:
   - L_{10} life required.
   - Size of bearing based on shaft size (if known).
   - Loading conditions (radial) of the application.
   - Shaft speed measured by revolutions per minute (RPM).
2. Use table B-3:
   - Find speed criteria on upper row.
   - Proceed in the column directly below that speed to the equivalent radial load (P_r) that is equal to or greater than that required.
   - Follow that row to the left to determine what the minimum shaft size should be for the required L_{10} life (hours). Many values are listed to help in selecting the proper bearing.

METHOD 2 – USING BEARING LIFE EQUATION TO SELECT BEARING FOR A DIFFERENT L_{10} LIFE (RADIAL LOADS ONLY)

If a different life is required than what is found in table B-3, it can be calculated from the bearing life equation. Note that each value in the selection table was calculated using this equation. The equation can be rewritten based on the unknown value.

Take the bearing life equation shown previously:

$$L_{10} = \left(\frac{C_{90}}{P_r}\right)^{10/3} \left(\frac{90 \times 10^6}{60n}\right) \text{ hours}$$

Or rewritten as:

$$L_{10} = \left(\frac{C_{90}}{P_r}\right)^{10/3} \left(\frac{1500000}{n}\right) \text{ hours}$$

Solve for C_{90}:

$$C_{90} = \left(\frac{L_{10} \times n}{1500000}\right)^{0.3} \left(P_r\right)$$

After calculating the C_{90}, check table B-3 to determine the shaft size needed. (Note: Ensure that the application speed does not exceed the maximum RPM found on that same table). Check the radial load, as well, with regard to the maximum allowable slip-fit radial load ($F_{r\text{-}max}$, see table B-5). If this value is exceeded, then a tighter line-to-line or press fit is required.

TIMKEN METHOD 3A – DETERMINE EQUIVALENT RADIAL LOADS AND USE BEARING LIFE EQUATION (FOR COMBINED RADIAL- AND THRUST-LOADED APPLICATIONS)

For combined radial- and thrust-loaded applications, it is necessary to calculate an equivalent dynamic radial bearing load, designated by P_r, before applying the L_{10} bearing life equation. The dynamic equivalent radial load is defined as a single radial load that, if applied to the bearing, will result in the same life as the combined loading under which the bearing operates.

Tapered roller bearings are ideally suited to carrying all types of loads – radial, thrust and any combination of both. Due to the tapered design of the bearing, a radial load will induce a thrust reaction that must be opposed by an equal or greater thrust load to keep the bearing cone and cup from separating.

The ratio of the radial to the thrust load and the bearing included cup angle determine the load zone in a given bearing and the number of rollers in contact in the load zone in the bearing. If all the rollers are in contact, the load zone is referred to as being 360 degrees. When only radial load is applied to a tapered roller bearing – for convenience it is assumed in using the traditional calculation method that half the rollers support the load – the load zone is 180 degrees.

For Type E roller housed units with no external thrust load ($F_a = 0$), the dynamic equivalent radial load (P_r) equals F_r. This P_r value can then be used in the bearing life equation shown on page B-6.

For Type E units with thrust loading, table B-2 can be used. In this table, only bearing A has an applied thrust load. If bearing B has the applied thrust load, each A in the equations should be replaced by a B and vice versa.

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The equations in the first row of table B-2 yield single-row equivalent radial loads (P_{rA} and P_{rB}). To find the two-row (Type E housed unit) life, the following equations must be used to solve for L_{10} life of each bearing row, and then combined for the system unit life:

$$L_{10A} = \left(\frac{C_{90}}{1.74 \times P_{rA}} \right)^{10/3} \left(\frac{1500000}{n} \right) \text{ hours}$$

and,

$$L_{10B} = \left(\frac{C_{90}}{1.74 \times P_{rB}} \right)^{10/3} \left(\frac{1500000}{n} \right) \text{ hours}$$

then,

$$L_{10} = \left[\left(\frac{1}{L_{10A}} \right)^{3/2} + \left(\frac{1}{L_{10B}} \right)^{3/2} \right]^{-2/3} \text{ hours}$$

In the second row of table B-2, $P_{rB} = 0$; therefore, $P_{rA} = P_r$ in the standard bearing life equation shown on page B-6.

ISO METHOD 3B

The ISO Method uses the following equation to determine the equivalent dynamic radial load:

$P_r = XF_r + YF_a$

Where,

P_r = Dynamic equivalent radial load
F_r = Applied radial load
F_a = Applied axial load
X = Radial load factor
Y = Axial load factor

The values for X and Y are found in table B-5. In order to find these values, the value of F_r / F_a must be compared to the e value. Determine if the value is greater than or less than the e and then use the corresponding X and Y values below that formula.

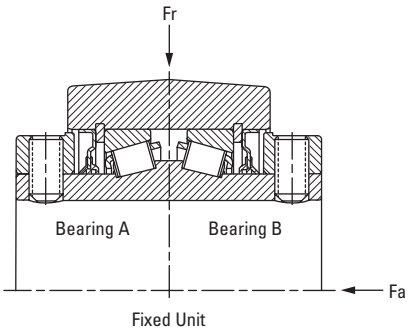
After the P_r value is calculated, then use the bearing life equation as shown on page B-6.

ISO METHOD 4 – (THRUST ONLY APPLICATIONS)

Use the equation $P_r = YF_a$. Use Y from table B-5 (for $F_a / F_r > e$). Then use this P_r value for the equivalent radial load in the bearing life equation. This value can also be used as the radial load in the load rating selection table B-3.

After selection has been made, verify that the application does not exceed the maximum allowable speed, allowable thrust loads and allowable housing loads. Heavy loads should be directed through the base of the units. See table B-4 for housing ratings for loads applied upward through the top of the housed unit perpendicular to the shaft axis. The housings need to be bolted down with adequate strength.

TABLE B-2. DYNAMIC EQUIVALENT RADIAL LOAD CALCULATIONS

Design	Thrust Condition	Dynamic Equivalent Radial Load
	$F_a \leq \frac{0.6\,F_r}{K}$	$P_{rA} = 0.5\,F_r + 0.83\,K\,F_a$ $P_{rB} = 0.5\,F_r - 0.83\,K\,F_a$
	$F_a > \frac{0.6\,F_r}{K}$	$P_{rA} = 0.4\,F_r + K\,F_a$ $P_{rB} = 0$

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LOAD AND SPEED RATING TABLES

The table below shows the allowable equivalent radial load for a given shaft size, speed, and L_{10} life under normal operating conditions with adequate lubrication. Refer to the discussion on the previous pages of this catalog to determine the criteria for combinations not shown in this table or for combined load applications.

NOTE

The shaded area in this table indicates radial loads that exceed the maximum allowable slip-fit radial load ($F_{r\text{-}max}$). Operation at these conditions may require line-to-line (g6 or h6) or light press fit (m6) on the shaft.

TABLE B-3. TYPE E TAPERED ROLLER BEARING LOAD RATING SELECTION TABLE

Shaft Dia.	Basic Dynamic Load Rating	Max Speed Timken Double-Lip Seal	Life	Equivalent Radial Loads Allowed, P_r at Various Speeds, RPM																		
	C_{90}		L_{10}	50	100	150	250	500	750	1000	1200	1360	1530	1640	1750	2060	2420	2730	3050	3320	3820	4490
in. **mm**	lbs.	RPM	hrs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1 3/16 1 1/4	3810	4490	10000	5297	4303	3810	3269	2655	2351	2157	2042	1966	1898	1859	1823	1736	1654	1596	1543	1505	1443	1374
			30000	3810	3095	2740	2351	1910	1691	1551	1468	1414	1365	1337	1311	1249	1190	1148	1110	1082	1038	988
			40000	3495	2839	2514	2157	1752	1551	1423	1347	1297	1252	1227	1203	1145	1091	1053	1018	993	952	907
			60000	3095	2514	2226	1910	1551	1373	1260	1193	1149	1109	1086	1065	1014	966	932	902	879	843	803
			100000	2655	2157	1910	1638	1331	1178	1081	1023	986	951	932	914	870	829	800	774	754	723	689
1 3/8 1 7/16 **35 mm**	6100	3820	10000	8481	6889	6100	5233	4251	3764	3453	3269	3148	3039	2976	2919	2780	2649	2555	2471	2409	2310	
			30000	6100	4955	4387	3764	3057	2707	2483	2351	2264	2186	2141	2099	1999	1905	1837	1777	1733	1661	
			40000	5596	4545	4024	3453	2804	2483	2278	2157	2077	2005	1964	1926	1834	1747	1685	1630	1589	1524	
			60000	4955	4024	3564	3057	2483	2199	2017	1910	1839	1775	1739	1705	1624	1547	1492	1444	1407	1349	
			100000	4251	3453	3057	2623	2130	1886	1730	1638	1578	1523	1492	1463	1393	1327	1280	1238	1207	1158	
1 1/2 1 5/8 1 11/16 **40 mm**	7860	3320	10000	10928	8877	7860	6743	5477	4850	4449	4212	4057	3916	3835	3761	3582	3413	3292	3184	3104		
			30000	7860	6384	5653	4850	3939	3488	3200	3029	2918	2816	2758	2705	2576	2455	2367	2290	2232		
			40000	7210	5856	5186	4449	3614	3200	2935	2779	2677	2584	2530	2482	2363	2252	2172	2101	2048		
			60000	6384	5186	4592	3939	3200	2833	2599	2461	2370	2288	2241	2197	2092	1994	1923	1860	1813		
			100000	5477	4449	3939	3380	2745	2431	2230	2111	2033	1963	1922	1885	1795	1710	1650	1596	1556		
1 3/4 1 7/8 1 15/16 2 **45 mm** **50 mm**	10300	3050	10000	14321	11632	10300	8837	7178	6355	5830	5520	5316	5132	5026	4929	4694	4472	4313	4172			
			30000	10300	8366	7408	6355	5162	4571	4193	3970	3824	3691	3615	3545	3376	3217	3102	3001			
			40000	9448	7674	6795	5830	4735	4193	3846	3642	3507	3386	3316	3252	3097	2951	2846	2753			
			60000	8366	6795	6017	5162	4193	3713	3406	3225	3106	2998	2936	2879	2742	2613	2520	2437			
			100000	7178	5830	5162	4429	3597	3185	2922	2766	2664	2572	2519	2470	2352	2241	2162	2091			
2 3/16 **55 mm**	10900	2730	10000	15155	12310	10900	9351	7596	6726	6170	5841	5626	5431	5319	5216	4967	4733	4565				
			30000	10900	8854	7840	6726	5463	4837	4437	4201	4046	3906	3825	3752	3572	3404	3283				
			40000	9999	8121	7191	6170	5011	4437	4070	3854	3712	3583	3509	3441	3277	3122	3012				
			60000	8854	7191	6368	5463	4437	3929	3604	3412	3287	3172	3107	3047	2902	2765	2667				
			100000	7596	6170	5463	4687	3807	3371	3092	2928	2820	2722	2666	2614	2489	2372	2288				
2 1/4 2 7/16 2 1/2 **60 mm** **65 mm**	11600	2420	10000	16129	13100	11600	9952	8083	7158	6566	6216	5987	5779	5660	5551	5286	5037					
			30000	11600	9422	8343	7158	5814	5148	4722	4471	4306	4157	4071	3992	3802	3622					
			40000	10641	8643	7653	6566	5333	4722	4332	4101	3950	3813	3734	3662	3487	3323					
			60000	9422	7653	6777	5814	4722	4181	3836	3631	3498	3376	3307	3243	3088	2942					
			100000	8083	6566	5814	4988	4051	3587	3291	3116	3001	2897	2837	2782	2649	2524					
2 11/16 2 3/4 2 15/16 3 **70** **75**	12300	2060	10000	17102	13891	12300	10552	8571	7590	6962	6591	6348	6128	6002	5886	5605						
			30000	12300	9991	8846	7590	6165	5459	5007	4741	4566	4407	4317	4233	4031						
			40000	11283	9165	8115	6962	5655	5007	4593	4349	4188	4043	3960	3883	3698						
			60000	9991	8115	7186	6165	5007	4434	4067	3851	3709	3580	3506	3439	3274						
			100000	8571	6962	6165	5289	4296	3804	3489	3304	3182	3071	3008	2950	2809						
3 3/16 3 1/4 3 7/16 3 1/2 **80 mm** **85 mm** **90 mm**	19600	1640	10000	27252	22135	19600	16815	13658	12094	11094	10503	10116	9765	9564								
			30000	19600	15920	14097	12094	9823	8698	7979	7554	7276	7023	6879								
			40000	17979	14604	12931	11094	9011	7979	7319	6930	6674	6443	6310								
			60000	15920	12931	11450	9823	7979	7065	6481	6136	5910	5705	5587								
			100000	13658	11094	9823	8428	6845	6061	5560	5264	5070	4894	4793								

Continued on next page.

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LOAD AND SPEED RATING TABLES – *continued*

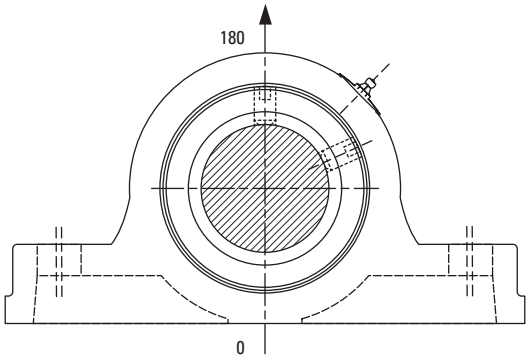
TABLE B-3. TYPE E TAPERED ROLLER BEARING LOAD RATING SELECTION TABLE – *Continued from previous page.*

Shaft Dia.	Basic Dynamic Load Rating	Max Speed Timken Double-Lip Seal	Life	Equivalent Radial Loads Allowed, P_r at Various Speeds, RPM																			
	C_{90}		L_{10}	50	100	150	250	500	750	1000	1200	1360	1530	1640	1750	2060	2420	2730	3050	3320	3820	4490
in. **mm**	lbs.	RPM	hrs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
3 15/16 4 **100 mm**	26900	1530	10000	37401	30379	26900	23078	18745	16598	15226	14415	13884	13402									
			30000	26900	21850	19347	16598	13482	11938	10951	10368	9986	9639									
			40000	24676	20043	17747	15226	12367	10951	10045	9511	9160	8842									
			60000	21850	17747	15715	13482	10951	9697	8895	8421	8111	7829									
			100000	18745	15226	13482	11566	9395	8319	7631	7225	6959	6717									
4 7/16 4 1/2 **110 mm** **115 mm**	33000	1360	10000	45883	37268	33000	28311	22996	20362	18678	17684	17033										
			30000	33000	26804	23734	20362	16539	14645	13434	12719	12250										
			40000	30271	24588	21772	18678	15172	13434	12323	11667	11237										
			60000	26804	21772	19278	16539	13434	11895	10912	10331	9950										
			100000	22996	18678	16539	14189	11525	10205	9361	8863	8536										
4 15/16 5 **125 mm**	45500	1200	10000	63263	51385	45500	39035	31706	28075	25754	24383											
			30000	45500	36957	32725	28075	22804	20192	18523	17537											
			40000	41738	33902	30019	25754	20918	18523	16991	16087											
			60000	36957	30019	26581	22804	18523	16401	15045	14244											
			100000	31706	25754	22804	19564	15891	14071	12907	12220											

HOUSING RATINGS

TABLE B-4. HOUSING RATINGS – TYPE E PILLOW BLOCKS: TWO-BOLT BASE, FOUR-BOLT BASE

Shaft Dia.	Maximum Housing Rating Gray Iron at 180°
in. **mm**	lbs.
1 3/16 thru 1 1/4	1600
1 3/8 thru 1 7/16 **35**	3150
1 1/2 thru 1 11/16 **40**	3000
1 3/4 thru 2 **45 thru 50**	5150
2 3/16 **55**	3500
2 1/4 thru 2 1/2 **60 thru 65**	6550
2 11/16 thru 3 **70 thru 75**	7000
3 3/16 thru 3 1/2 **80 thru 90**	15700
3 15/16 thru 4 **100**	16250
4 7/16 thru 4 1/2 **110 thru 115**	21000
4 15/16 thru 5 **125**	22860



1. These ratings have been calculated for initial bearing selection. These include a nominal safety factor for the standard Type E two- and four-bolt pillow blocks. The following conditions apply: standard cast-iron material, the force is applied perpendicular to the shaft axis, and the housing bolts are properly clamped.
2. These limits should not be applied to operating conditions that include impact (shock) loads or combined radial and thrust loads that are not directed into the pillow block base.
3. If heavy cap loads are expected, use the following modifications to mounting method or equipment design: Grade 8 base bolts and hardened washers; ensure that proper installation torque is achieved and is uniform.
4. If axial loads are expected, provide mechanical stops or shear bars with strength sufficient to support the load. Specification of the strength, material, method of fastening, and precision location are the responsibility of the machinery designer.

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TABLE B-5. TAPERED ROLLER BEARING – RADIAL AND THRUST FACTORS; SPEED AND SLIP-FIT LOAD LIMITS

Shaft Dia.	e	$F_a / F_r \leq e$		$F_a / F_r > e$		K Factor	Dynamic Load Rating[1]	Static Load Rating	Maximum Permissible Thrust Load[2]	Max Speed[3]	Maximum Allowable Slip-Fit Radial Load[4]
		X	Y	X	Y		C_{90}	C_0	$F_{a\text{-}max}$		$F_{r\text{-}max}$
in. **mm**							lbs.	lbs.	lbs.	RPM	lbs.
1 3/16 1 1/4	0.49	0.87	1.77	0.70	2.14	1.23	3810	15760	2000	4490	3100
1 3/8 1 7/16 **35 mm**	0.46	0.87	1.89	0.70	2.28	1.31	6100	26000	2590	3820	5000
1 1/2 1 5/8 1 11/16 **40 mm**	0.44	0.87	1.96	0.70	2.37	1.36	7860	33000	2590	3320	6400
1 3/4 1 7/8 1 15/16 2 **45 mm** **50 mm**	0.33	0.87	2.64	0.70	3.18	1.83	10300	43000	2590	3050	8400
2 3/16 **55 mm**	0.36	0.87	2.38	0.70	2.87	1.65	10900	48200	3454	2730	8900
2 1/4 2 7/16 2 1/2 **60 mm** **65 mm**	0.4	0.87	2.17	0.70	2.63	1.51	11600	54000	3454	2420	9500
2 11/16 2 3/4 2 15/16 3 **70 mm** **75 mm**	0.46	0.87	1.87	0.70	2.26	1.3	12300	61200	5181	2060	10000
3 3/16 3 1/4 3 7/16 3 1/2 **80 mm** **85 mm** **90 mm**	0.5	0.87	1.71	0.70	2.07	1.19	19600	108600	5181	1640	16000
3 15/16 4 **100 mm**	0.49	0.87	1.77	0.70	2.14	1.23	26900	154000	6908	1530	22000
4 7/16 4 1/2 **110 mm**	0.53	0.87	1.63	0.70	1.97	1.13	33000	188400	6908	1360	27000
4 15/16 5 **125 mm**	0.47	0.87	1.83	0.70	2.21	1.27	45500	266000	6908	1200	35000

[1] C_{90} is the dynamic load rating based on a rated life of 90 million revolutions (3000 hrs. at 500 RPM).

[2] $F_{a\text{-}max}$ is based on the limits of the holding force of two properly tightened collars and set screws. When a single collar is installed, 50 percent of the values should be used.

[3] Double-lip seal.

[4] Operating at conditions where loads approach or exceed $F_{r\text{-}max}$ may require line-to-line (g6 or h6) or light press-fit (m6) on the shaft.

NOTE: The maximum permissible thrust load applies to conditions of slip-fit with set screw mounting or in applications where a large moment loading occurs. The values shown are valid only when two collars and set screws are used.

NOTE: When heavy thrust forces are applied, the friction between the pillow block and base may not be sufficient to prevent movement. Mechanical stops or shear bars with strength sufficient to support the load should be added. Never weld the pillow block or bearing to secure it to the shaft or base.

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INSTALLATION AND LUBRICATION

INSTALLATION

Proper installation of the housed unit is necessary. This includes the use of shafts that are clean, free from nicks and burrs, straight and of proper diameter. Follow table B-6. The recommended shaft tolerances shown in table B-6 are for normal loaded applications. Refer to table B-5 to verify the maximum allowable slip-fit radial load ($F_{r\text{-}max}$) and to determine if a tighter fit is required.

Do not mount the bearing on a worn section of the shaft. Use of shafts with hardness greater than HRC 45 will reduce the effectiveness of locking devices.

Also, it is necessary that the housed units and shafts are in alignment (fig. B-3). Verify that the mounting surfaces are in the same flat plane to help make sure good alignment is achieved. If shimming is required to minimize misalignment, use full shims across the entire housing base (fig. B-4). The bolts then need to be alternately torqued securely to their mounting supports.

Flat washers should be used when installing any kind of housed unit (fig. B-4). Washers should be properly sized to the bolt diameter. Typically, the diameters of SAE washers are too small to properly cover the bolt slots on the units. After the locking collars are lined up flush with the end of the cone (inner ring) face (fig. B-5), set screws then need to be properly tightened per table B-7. Set screws in multiple units should be aligned to each other (fig. B-6).

LUBRICATION

To help maintain a rolling bearing's antifriction characteristics, lubrication is needed to:

- Minimize rolling resistance due to deformation of the rolling elements and raceway under load by separating the mating surfaces.
- Minimize sliding friction occurring between rolling elements, raceways and cage.
- Protect from corrosion and, with grease lubrication, from contaminant ingress.

Bearings have been factory prelubricated with Timken Premium All Purpose Industrial Grease, which is an NLGI No. 2 lithium-complex-based grease. This is suitable for normal operating conditions. Units should be relubricated with the Timken grease or one that is compatible and made for roller bearings.

It is vital that the greases used are compatible. Please consult with a Timken engineer for the grease specifications if the use of a grease other than the Timken grease mentioned above is needed.

Normal service is considered as operation in a clean, dry environment at temperatures between -34° C to +82° C (-30° F and +180° F). If service is beyond normal conditions due to speed, temperature or exposure to moisture, dirt or corrosive chemicals, periodic relubrication may be advisable. For extreme conditions or conditions in which special chemicals are used, consult your Timken engineer.

After extended storage or periods when the unit is not in operation, fresh grease should be added.

For units operating in dirty or wet environments, the bearing should contain as much grease as possible, based on the shaft speed, to help protect against contamination. For slower applications, with shaft speeds typically less than 200 RPM, the unit should have additional grease added at start-up to fill the bearing.

Lubrication affects the bearing operating temperature as well. If the bearing does not have enough grease, this could lead to higher temperature operation due to inadequate lubrication film thickness. Excessive grease will lead to higher operating temperatures due to grease churning. This can cause bearing overheating. To avoid this, it may be necessary to remove some of the grease inside the unit. The grease fitting may be removed briefly in this circumstance to allow excess grease to purge. The grease fitting must be put back in place. It is best to observe the bearing and its temperature to adjust the lubrication as needed.

RELUBRICATION CYCLE

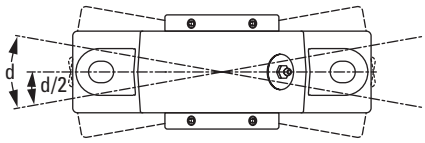
Adequate lubrication is an essential element affecting the bearing life. The two primary considerations that determine the relubrication cycle on any application are operating temperature and contamination. Every attempt should be made to maintain seals at peak efficiency.

The higher the temperature, the more rapidly the grease oxidizes. Grease life is reduced by approximately half for every 10° C (18° F) rise in temperature. The higher the operating temperature, the more often the grease must be replenished. Table B-8 can be used as a suggested initial point of reference. Relubrication frequency and quantity intervals are best developed through experience for each application based on types of service, which may differ from the suggestions in table B-8.

When the bearing is not in operation for an extended period of time, grease should be added to prevent corrosion.

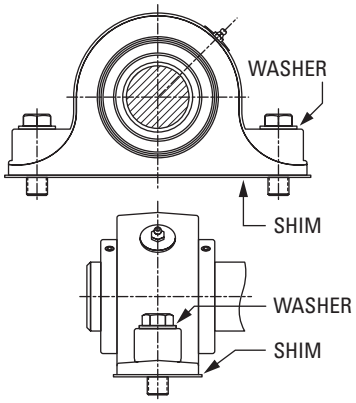
Table B-8 shows general lubrication suggested starting points only. Please read the entire installation instructions prior to using these tables. Applications should be regularly reviewed and lubrication amounts and intervals modified as needed to assure best results.

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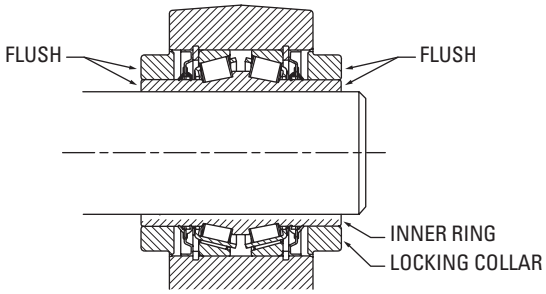
ALIGN HOUSING TO ½ TOTAL ANGULAR MOVEMENT.

Fig. B-3.



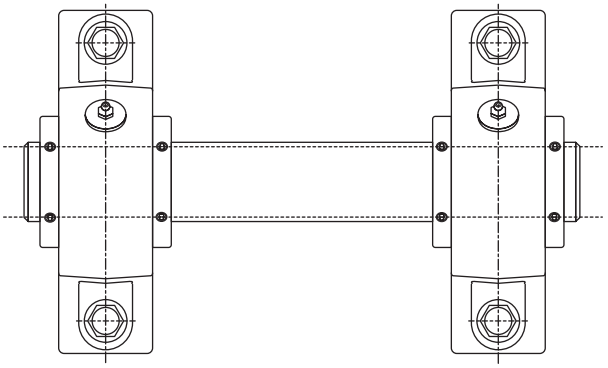
USE WASHERS AND FULL SHIMS.

Fig. B-4.



LINE UP COLLARS WITH INNER RING.

Fig. B-5.



LINE UP SET SCREWS IN MULTIPLE UNITS.

Fig. B-6.

TABLE B-6. RECOMMENDED SHAFT TOLERANCE

Shaft Dia.	Tolerance
in. **mm**	in. **mm**
Up thru 1 ½ **35 mm**	+0.0000 to -0.0005 **+0.000 to -0.013**
1 5/8 thru 4 **40 thru 100 mm**	+0.0000 to -0.0010 **+0.000 to -0.025**
4 7/16 thru 5 **110 thru 125 mm**	+0.0000 to -0.0015 **+0.000 to -0.038**

NOTE: Refer to the Timken Engineering Manual (order no. 10424) for ISO g6, h6 or m6 shaft tolerance data.

TABLE B-7. RECOMMENDED SET SCREW TIGHTENING TORQUE

Shaft Dia.	Set Screw Size	Tightening Torque
in. **mm**	in.	in. - lbs.
1 3/16 thru 1 11/16 **35 thru 40 mm**	5/16-18	155
1 ¾ thru 2 ½ **45 thru 65 mm**	3/8-16	275
2 11/16 thru 3 ½ **70 thru 90 mm**	½-13	615
3 15/16 thru 5 **100 thru 125 mm**	5/8-11	1315

⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Overheated bearings can ignite explosive atmospheres. Special care must be taken to properly select, install, maintain, and lubricate housed unit bearings that are used in or near atmospheres that may contain explosive levels of combustible gases or accumulations of dust such from grain, coal, or other combustible materials. Consult your equipment designer or supplier for installation and maintenance instructions.

TABLE B-8. SUGGESTED RELUBRICATION INTERVALS (BASED ON EIGHT HOURS/DAY OPERATION)

Environment	Clean: Un-Exposed			Moderate: Exposed			Extreme: Harsh		
Application Speed[1]	Low	Med.	Hi	Low	Med.	Hi	Low	Med.	Hi
Greasing Interval	1 year	2 months	2 weeks	1 month	2 weeks	[2]	1 week	1 week	[2]

[1]Low < 25% max RPM; 25% < Med. < 75%; 75% < Hi – See table B-5.

[2]Use extra caution due to heat generation.

Relubrication frequency and quantity are best developed through experience. At all times, follow Original Equipment Manufacturer's maintenance instructions.

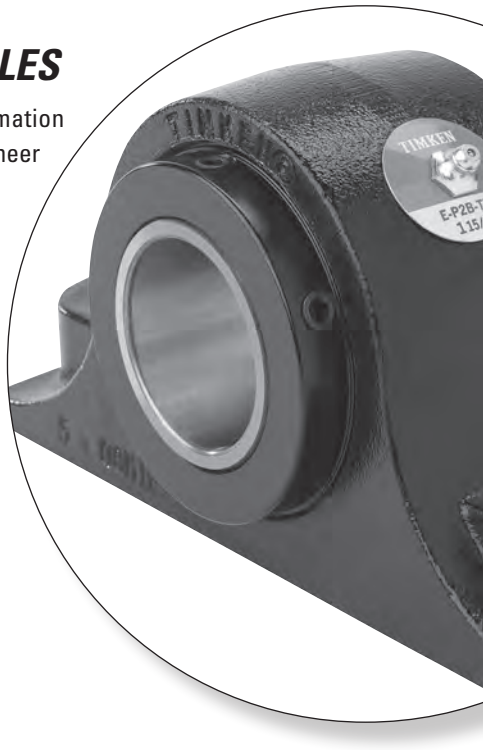
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TYPE E TAPERED ROLLER BEARING HOUSED UNIT PRODUCT DATA TABLES

The following tables include product specification information for Timken® Type E housed units. Contact your Timken engineer for more information.

Pillow Block: Two-Bolt Base B-17
Pillow Block: Four-Bolt Base B-18
Flange: Four-Bolt B-19
Flange: Piloted B-20
Take-Up: Wide Slot B-21
Take-Up: Top Angle B-22



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NOMENCLATURE

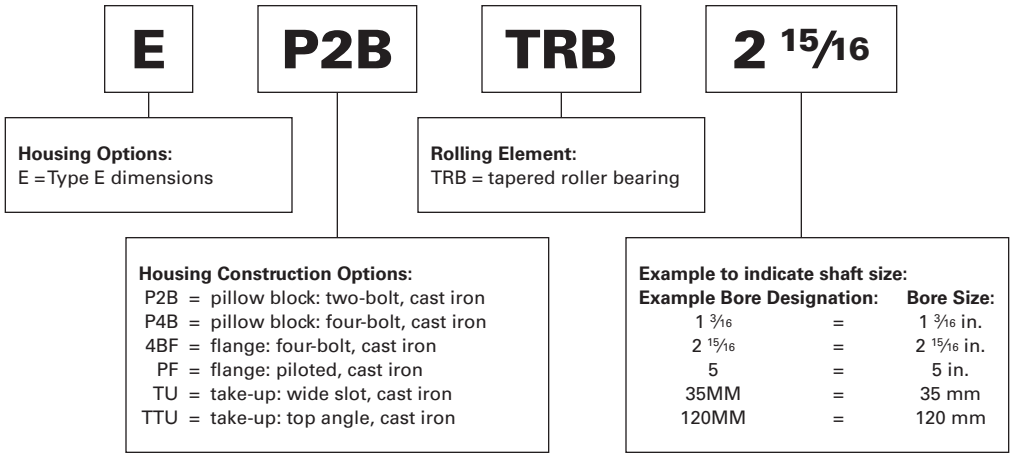


Fig. B-1. Type E nomenclature.



Pillow block: two-bolt base **Pillow block: four-bolt base** **Flange: four-bolt**

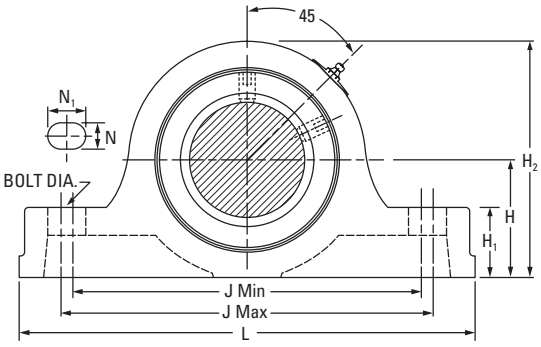


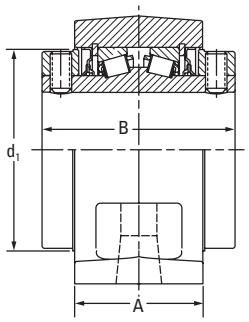
Flange: piloted **Take-up: wide slot** **Take-up: top angle**

Fig. B-2. Type E housed unit types.

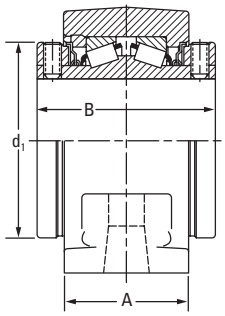
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PILLOW BLOCK: TWO-BOLT BASE





1 3⁄16 IN. THRU 3 IN. SHAFT SIZE

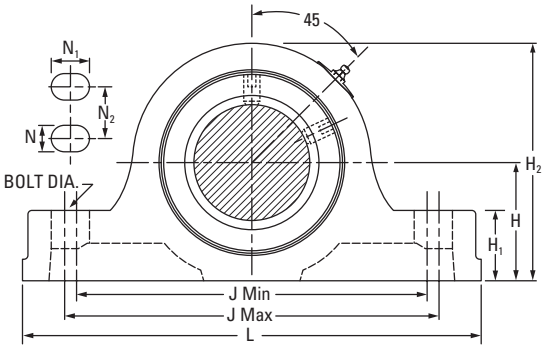


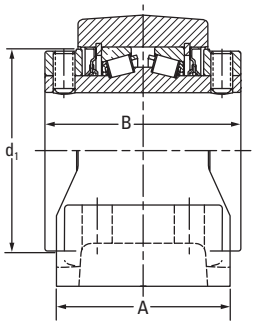
3 3⁄16 IN. THRU 3 1⁄2 IN. SHAFT SIZE

Shaft Dia.	Part No.	B	L	A	J		Bolt Dia.	N	N_1	H_1	H_2	d_1	H	Approx. Wt.
					Max.	Min.								
in. **mm**		in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.
1 13⁄16	E-P2B-TRB-1 3⁄16	2 3⁄4	6	1 7⁄8	4 13⁄16	4 3⁄4	1⁄2	9⁄16	19⁄32	7⁄8	3	2 1⁄4	1 1⁄2	4
1 1⁄4	E-P2B-TRB-1 1⁄4													
1 3⁄8	E-P2B-TRB-1 3⁄8	3	7 3⁄8	2 1⁄8	5 7⁄8	5 5⁄8	1⁄2	5⁄8	3⁄4	1 1⁄8	3 3⁄4	2 3⁄4	1 7⁄8	7
1 7⁄16	E-P2B-TRB-1 7⁄16													
35 mm	E-P2B-TRB-35MM													
1 1⁄2	E-P2B-TRB-1 1⁄2	3 3⁄8	7 7⁄8	2 3⁄8	6 3⁄8	6 1⁄8	1⁄2	5⁄8	3⁄4	1 1⁄4	4 1⁄4	3 3⁄16	2 1⁄8	10
1 5⁄8	E-P2B-TRB-1 5⁄8													
1 11⁄16	E-P2B-TRB-1 11⁄16													
40 mm	E-P2B-TRB-40MM													
1 3⁄4	E-P2B-TRB-1 3⁄4	3 1⁄2	8 7⁄8	2 1⁄2	7 1⁄8	6 7⁄8	5⁄8	3⁄4	7⁄8	1 15⁄16	4 1⁄2	3 7⁄16	2 1⁄4	12
1 7⁄8	E-P2B-TRB-1 7⁄8													12
1 15⁄16	E-P2B-TRB-1 15⁄16													12
2	E-P2B-TRB-2													11
45 mm	E-P2B-TRB-45MM													12
50 mm	E-P2B-TRB-50MM													11
2 3⁄16	E-P2B-TRB-2 3⁄16	3 3⁄4	9 5⁄8	2 5⁄8	7 7⁄8	7 5⁄8	5⁄8	3⁄4	7⁄8	1 1⁄2	5	3 3⁄4	2 1⁄2	15
55 mm	E-P2B-TRB-55MM													
2 1⁄4	E-P2B-TRB-2 1⁄4	4	10 1⁄2	2 7⁄8	8 5⁄8	8 3⁄8	5⁄8	3⁄4	7⁄8	1 5⁄8	5 23⁄32	4 1⁄16	2 3⁄4	23
2 7⁄16	E-P2B-TRB-2 7⁄16													23
2 1⁄2	E-P2B-TRB-2 1⁄2													22
60 mm	E-P2B-TRB-60MM													23
65 mm	E-P2B-TRB-65MM													22
2 11⁄16	E-P2B-TRB-2 11⁄16	4 1⁄2	12	3	9 11⁄16	9 5⁄16	3⁄4	27⁄32	1	1 7⁄8	6 1⁄4	4 23⁄32	3 1⁄8	28
2 3⁄4	E-P2B-TRB-2 3⁄4													
2 15⁄16	E-P2B-TRB-2 15⁄16													27
3	E-P2B-TRB-3													27
70 mm	E-P2B-TRB-70MM													28
75 mm	E-P2B-TRB-75MM													27
3 3⁄16	E-P2B-TRB-3 3⁄16	5	14	3 1⁄2	11 13⁄16	10 13⁄16	7⁄8	1	1 13⁄16	2 1⁄4	7 1⁄2	5 17⁄32	3 3⁄4	48
3 1⁄4	E-P2B-TRB-3 1⁄4													47
3 7⁄16	E-P2B-TRB-3 7⁄16													46
3 1⁄2	E-P2B-TRB-3 1⁄2													46
80 mm	E-P2B-TRB-80MM													48
85 mm	E-P2B-TRB-85MM													47
90 mm	E-P2B-TRB-90MM													45

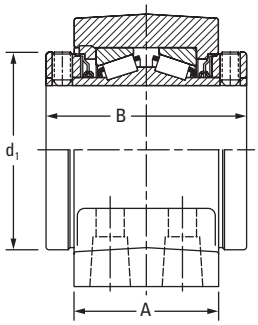
08-19-13 DRAFT

PILLOW BLOCK: FOUR-BOLT BASE





2¼ IN. THRU 3 IN. SHAFT SIZE

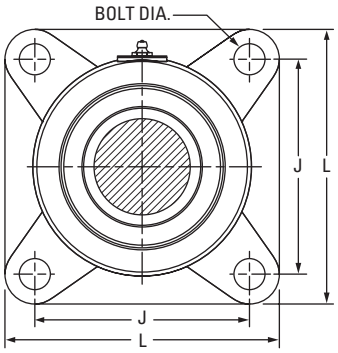


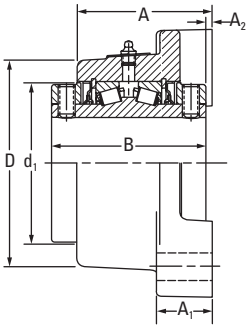
3 3/16 IN. THRU 5 IN. SHAFT SIZE

Shaft Dia.	Part No.	B	L	A	J		Bolt Dia.	N	N_1	N_2	H_1	H_2	d_1	H	Approx. Wt.
					Max.	Min.									
in. **mm**		in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.
2 1/4	E-P4B-TRB-2 1/4	4	10 1/2	3 1/2	8 11/16	8 5/16	5/8	11/16	7/8	1 7/8	1 5/8	5 23/32	4 1/16	2 3/4	22
2 7/16	E-P4B-TRB-2 7/16														22
2 1/2	E-P4B-TRB-2 1/2														21
60 mm	E-P4B-TRB-60MM														22
65 mm	E-P4B-TRB-65MM														21
2 11/16	E-P4B-TRB-2 11/16	4 1/2	12	4	9 13/16	9 3/16	5/8	11/16	1	2 1/8	1 7/8	6 1/4	4 23/32	3 1/8	30
2 3/4	E-P4B-TRB-2 3/4														29
2 15/16	E-P4B-TRB-2 15/16														28
3	E-P4B-TRB-3														
70 mm	E-P4B-TRB-70MM														29
75 mm	E-P4B-TRB-75MM														28
3 3/16	E-P4B-TRB-3 3/16	5	13 1/2	4 1/2	11 1/4	10 3/4	3/4	15/16	1 3/16	2 3/8	2 1/4	7 1/2	5 17/32	3 3/4	47
3 1/4	E-P4B-TRB-3 1/4														46
3 7/16	E-P4B-TRB-3 7/16														45
3 1/2	E-P4B-TRB-3 1/2														44
80 mm	E-P4B-TRB-80MM														47
85 mm	E-P4B-TRB-85MM														45
90 mm	E-P4B-TRB-90MM														44
3 15/16	E-P4B-TRB-3 15/16	6 1/4	15 1/4	4 1/2	12 3/4	12 1/4	3/4	7/8	1 1/8	2 1/4	2 7/16	8 1/2	6 1/16	4 1/4	72
4	E-P4B-TRB-4														71
100 mm	E-P4B-TRB-100MM														71
4 7/16	E-P4B-TRB-4 7/16	6 3/4	16 5/8	4 5/8	13 11/16	13 5/16	3/4	15/16	1 1/8	2 1/2	2 3/4	9 3/8	6 47/64	4 3/4	91
4 1/2	E-P4B-TRB-4 1/2														90
110 mm	E-P4B-TRB-110MM														92
115 mm	E-P4B-TRB-115MM														89
4 15/16	E-P4B-TRB-4 15/16	7 1/4	18 1/2	5 1/8	15 3/4	15 1/4	7/8	1	1 1/4	2 7/8	3	10 7/8	7 3/4	5 1/2	134
5	E-P4B-TRB-5														133
125 mm	E-P4B-TRB-125MM														134

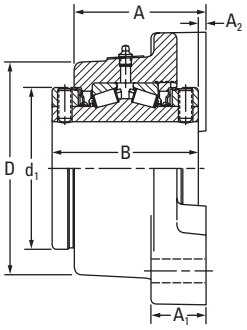
08-19-13 DRAFT

FLANGE: FOUR-BOLT





1 3⁄16 IN. THRU 3 IN. SHAFT SIZE

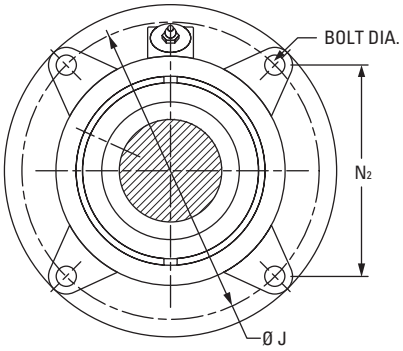


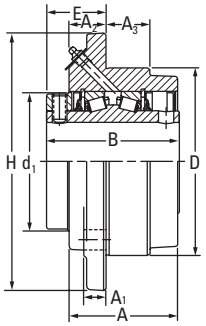
3 3⁄16 IN. THRU 4 1⁄2 IN. SHAFT SIZE

Shaft Dia.	Part No.	B	L	A	J	A_2	Bolt Dia.	A_1	D	d_1	Approx. Wt.
in. **mm**		in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.
1 3⁄16	E-4BF-TRB-1 3⁄16	2 3⁄4	3 3⁄4	2 11⁄32	2 7⁄8	1⁄16	3⁄8	1	2 15⁄16	2 1⁄4	4
1 1⁄4	E-4BF-TRB-1 1⁄4										
1 3⁄8	E-4BF-TRB-1 3⁄8	3	4 5⁄8	2 19⁄32	3 1⁄2	1⁄16	1⁄2	1 1⁄16	3 1⁄2	2 3⁄4	7
1 7⁄16	E-4BF-TRB-1 7⁄16										
35 mm	E-4BF-TRB-35MM										
1 1⁄2	E-4BF-TRB-1 1⁄2	3 3⁄8	5 3⁄8	2 31⁄32	4 1⁄8	1⁄8	1⁄2	1 3⁄16	4 3⁄16	3 3⁄16	11
1 5⁄8	E-4BF-TRB-1 5⁄8										
1 11⁄16	E-4BF-TRB-1 11⁄16										
40 mm	E-4BF-TRB-40MM										
1 3⁄4	E-4BF-TRB-1 3⁄4	3 1⁄2	5 5⁄8	3 3⁄32	4 3⁄8	1⁄8	1⁄2	1 3⁄16	4 7⁄16	3 7⁄16	12
1 7⁄8	E-4BF-TRB-1 7⁄8										
1 15⁄16	E-4BF-TRB-1 15⁄16										
2	E-4BF-TRB-2										
45 mm	E-4BF-TRB-45MM										
50 mm	E-4BF-TRB-50MM										
2 3⁄16	E-4BF-TRB-2 3⁄16	3 3⁄4	6 1⁄4	3 9⁄32	4 7⁄8	1⁄8	5⁄8	1 3⁄8	4 7⁄8	3 3⁄4	16
55 mm	E-4BF-TRB-55MM										
2 1⁄4	E-4BF-TRB-2 1⁄4	4	6 7⁄8	3 9⁄16	5 3⁄8	3⁄16	5⁄8	1 1⁄2	5 5⁄16	4 1⁄16	21
2 7⁄16	E-4BF-TRB-2 7⁄16										21
2 1⁄2	E-4BF-TRB-2 1⁄2										20
60 mm	E-4BF-TRB-60MM										21
65 mm	E-4BF-TRB-65MM										20
2 11⁄16	E-4BF-TRB-2 11⁄16	4 1⁄2	7 3⁄4	3 15⁄16	6	3⁄16	3⁄4	1 5⁄8	6	4 23⁄32	29
2 3⁄4	E-4BF-TRB-2 3⁄4										29
2 15⁄16	E-4BF-TRB-2 15⁄16										28
3	E-4BF-TRB-3										28
70 mm	E-4BF-TRB-70MM										29
75 mm	E-4BF-TRB-75MM										28
3 3⁄16	E-4BF-TRB-3 3⁄16	5	9 1⁄4	4 1⁄2	7	1⁄4	3⁄4	1 7⁄8	7 1⁄4	5 17⁄32	52
3 1⁄4	E-4BF-TRB-3 1⁄4										51
3 7⁄16	E-4BF-TRB-3 7⁄16										49
3 1⁄2	E-4BF-TRB-3 1⁄2										49
80 mm	E-4BF-TRB-80MM										52
85 mm	E-4BF-TRB-85MM										50
90 mm	E-4BF-TRB-90MM										49
3 15⁄16	E-4BF-TRB-3 15⁄16	6 1⁄4	10 1⁄4	5 5⁄8	7 3⁄4	1⁄4	7⁄8	2 1⁄8	8 1⁄4	6 1⁄16	76
4	E-4BF-TRB-4										75
100 mm	E-4BF-TRB-100MM										76
4 7⁄16	E-4BF-TRB-4 7⁄16	6 3⁄4	10 7⁄8	5 15⁄16	8 3⁄4	3⁄8	7⁄8	2 7⁄16	8 3⁄4	6 47⁄64	89
4 1⁄2	E-4BF-TRB-4 1⁄2										88
110 mm	E-4BF-TRB-110MM										90
115 mm	E-4BF-TRB-115MM										87

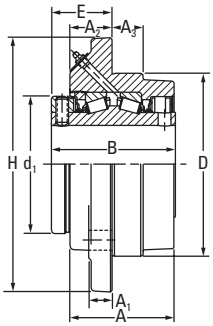
08-19-13 DRAFT

FLANGE: PILOTED

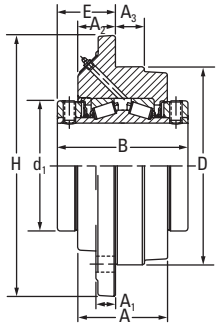




1 3⁄16 IN. THRU 3 IN. SHAFT SIZE



3 3⁄16 IN. THRU 3 1⁄2 IN. SHAFT SIZE



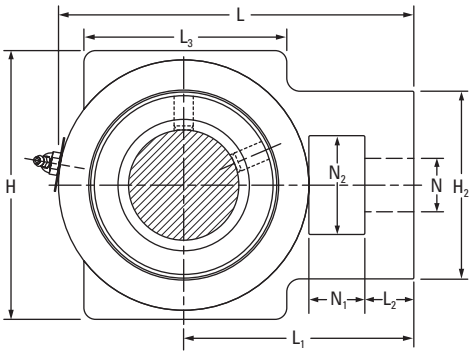
3 15⁄16 IN. THRU 5 IN. SHAFT SIZE

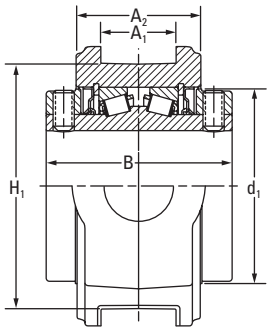
Shaft Dia.	Part No.	B	H	A	N_2	J	A_3	Bolt Dia.	E	A_1	$D^{(1)}$	d_1	A_2	Approx. Wt.
in. **mm**		in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.
1 3⁄16	E-PF-TRB-1 3⁄16	2 3⁄4	5	2 7⁄32	2.92	4 1⁄8	3⁄4	3⁄8	1 5⁄16	7⁄16	3 3⁄8	2 1⁄4	27⁄32	5
1 1⁄4	E-PF-TRB-1 1⁄4													
1 3⁄8	E-PF-TRB-1 3⁄8	3	5 1⁄4	2 15⁄32	3.09	4 3⁄8	7⁄8	3⁄8	1 1⁄2	1⁄2	3 5⁄8	2 3⁄4	1 1⁄32	6
1 7⁄16	E-PF-TRB-1 7⁄16													
35 mm	E-PF-TRB-35MM													
1 1⁄2	E-PF-TRB-1 1⁄2	3 3⁄8	6 1⁄8	2 25⁄32	3.62	5 1⁄8	1 1⁄16	7⁄16	1 9⁄16	1⁄2	4 1⁄4	3 3⁄16	1 1⁄32	9
1 5⁄8	E-PF-TRB-1 5⁄8													
1 11⁄16	E-PF-TRB-1 11⁄16													
40 mm	E-PF-TRB-40MM													
1 3⁄4	E-PF-TRB-1 3⁄4	3 1⁄2	6 3⁄8	2 29⁄32	3.80	5 3⁄8	1 3⁄16	7⁄16	1 9⁄16	9⁄16	4 1⁄2	3 7⁄16	1 1⁄32	10
1 7⁄8	E-PF-TRB-1 7⁄8													
1 15⁄16	E-PF-TRB-1 15⁄16													
2	E-PF-TRB-2													
45 mm	E-PF-TRB-45MM													
50 mm	E-PF-TRB-50MM													
2 3⁄16	E-PF-TRB-2 3⁄16	3 3⁄4	7 1⁄8	3 3⁄32	4.24	6	1 3⁄16	1⁄2	1 11⁄16	9⁄16	5	3 3⁄4	1 3⁄32	13
55 mm	E-PF-TRB-55MM													
2 1⁄4	E-PF-TRB-2 1⁄4	4	7 5⁄8	3 5⁄16	4.60	6 1⁄2	1 5⁄16	1⁄2	1 13⁄16	5⁄8	5 1⁄2	4 1⁄16	1 3⁄16	17
2 7⁄16	E-PF-TRB-2 7⁄16													17
2 1⁄2	E-PF-TRB-2 1⁄2													16
60 mm	E-PF-TRB-60MM													17
65 mm	E-PF-TRB-65MM													16
2 11⁄16	E-PF-TRB-2 11⁄16	4 1⁄2	8 3⁄4	3 11⁄16	5.30	7 1⁄2	1 1⁄2	5⁄8	2	3⁄4	6 3⁄8	4 23⁄32	1 1⁄4	26
2 3⁄4	E-PF-TRB-2 3⁄4													26
2 15⁄16	E-PF-TRB-2 15⁄16													
3	E-PF-TRB-3													25
70 mm	E-PF-TRB-70MM													26
75 mm	E-PF-TRB-75MM													25
3 3⁄16	E-PF-TRB-3 3⁄16	5	10 1⁄4	4 3⁄16	6.10	8 5⁄8	1 1⁄4	3⁄4	2 7⁄16	15⁄16	7 3⁄8	5 17⁄32	1 11⁄16	43
3 1⁄4	E-PF-TRB-3 1⁄4													43
3 7⁄16	E-PF-TRB-3 7⁄16													42
3 1⁄2	E-PF-TRB-3 1⁄2													41
80 mm	E-PF-TRB-80MM													44
85 mm	E-PF-TRB-85MM													42
90 mm	E-PF-TRB-90MM													41
3 15⁄16	E-PF-TRB-3 15⁄16	6 1⁄4	10 7⁄8	4 1⁄2	6.63	9 3⁄8	1 1⁄2	3⁄4	2 11⁄16	1	8 1⁄8	6 1⁄16	1 13⁄16	58
4	E-PF-TRB-4													57
100 mm	E-PF-TRB-100MM													58
4 7⁄16	E-PF-TRB-4 7⁄16	6 3⁄4	13 1⁄2	4 5⁄8	5 7⁄8 [2]	11 3⁄4	1 1⁄2	3⁄4 [2]	3	1	10 1⁄4	6 47⁄64	1 15⁄16	92
4 1⁄2	E-PF-TRB-4 1⁄2													91
110 mm	E-PF-TRB-110MM													93
115 mm	E-PF-TRB-115MM													90
4 15⁄16	E-PF-TRB-4 15⁄16	7 1⁄4	14 3⁄4	5 1⁄16	6 3⁄8 [2]	12 3⁄4	1 3⁄4	7⁄8 [2]	2 31⁄32	1 1⁄4	11	7 3⁄4	1 7⁄8	125
5	E-PF-TRB-5													124
125 mm	E-PF-TRB-125MM													126

[1] +0.000 in./ 0.002 in.
[2] Six holes equally spaced (chordal spacing shown).
Note: 1 3⁄16 to 3 1⁄2 utilize one collar; 3 15⁄16 to 5 utilize two collars.

08-19-13 DRAFT

TAKE-UP: WIDE SLOT



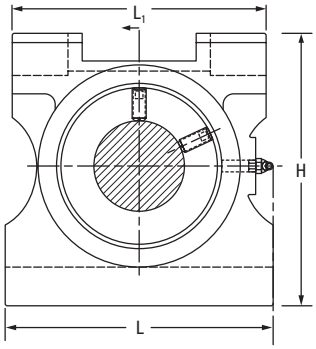


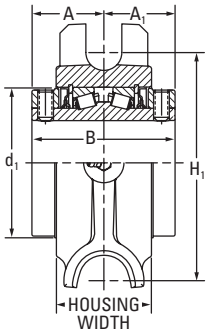
1⅜ IN. THRU 3 IN. SHAFT SIZE

Shaft Dia.	Part No.	B	L	A_1	L_3	L_1	N	L_2	N_1	H_2	N_2	d_1	H_1	H	A_2	Approx. Wt.
in. **mm**		in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.
1 3/8	E-TU-TRB-1 3/8	3	5 3/32	17/32	2 3/4	3 7/32	7/8	11/16	5/8	2 7/16	1 7/16	2 3/4	3 1/2	4 1/8	2 1/16	7
1 7/16	E-TU-TRB-1 7/16															
35 mm	E-TU-TRB-35MM															
1 1/2	E-TU-TRB-1 1/2	3 3/8	6	11/16	3 1/4	3 13/16	1 1/8	15/16	3/4	3 5/16	1 15/16	3 3/16	4	4 3/4	2 5/16	12
1 5/8	E-TU-TRB-1 5/8															11
1 11/16	E-TU-TRB-1 11/16															11
40 mm	E-TU-TRB-40MM															11
1 3/4	E-TU-TRB-1 3/4	3 1/2	6 5/16	11/16	3 3/4	3 5/16	1 1/8	15/16	3/4	3 5/16	1 15/16	3 7/16	4	4 3/4	2 7/16	13
1 7/8	E-TU-TRB-1 7/8															
1 15/16	E-TU-TRB-1 15/16															
2	E-TU-TRB-2															
45 mm	E-TU-TRB-45MM															
50 mm	E-TU-TRB-50MM															
2 3/16	E-TU-TRB-2 3/16	3 3/4	7 1/8	13/16	3 3/4	4 5/8	1 1/4	1	1 1/4	3 7/8	2 1/4	3 3/4	4 1/2	5 1/4	2 9/16	16
55 mm	E-TU-TRB-55MM															
2 1/4	E-TU-TRB-2 1/4	4	7 13/16	1 1/16	4 1/2	5 1/16	1 3/8	1 1/16	1 1/4	4 5/16	2 1/2	4 1/16	5 1/8	6	2 3/4	21
2 7/16	E-TU-TRB-2 7/16															20
2 1/2	E-TU-TRB-2 1/2															20
60 mm	E-TU-TRB-60MM															21
65 mm	E-TU-TRB-65MM															20
2 11/16	E-TU-TRB-2 11/16	4 1/2	9 3/16	1 13/16	4 3/4	5 7/8	1 11/16	1 1/8	1 1/2	4 15/16	2 3/4	4 23/32	5 15/16	6 3/4	3	30
2 3/4	E-TU-TRB-2 3/4															30
2 15/16	E-TU-TRB-2 15/16															29
3	E-TU-TRB-3															28
70 mm	E-TU-TRB-70MM															30
75 mm	E-TU-TRB-75MM															29

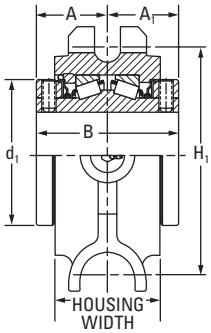
08-19-13 DRAFT

TAKE-UP: TOP ANGLE





1 3/16 IN. THRU 3 IN. SHAFT SIZE



3 3/16 IN. THRU 4 IN. SHAFT SIZE

Shaft Dia.	Part No.	B	H_1	H	d_1	A	A_1	Housing Width	L	L_1	Approx. Wt.
in. **mm**		in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.
1 3/4	E-TTU-TRB-1 3/4	3 1/2	5 3/16	6 3/8	3 7/16	1 3/4	1 3/4	2 9/16	6 1/2	6	14
1 7/8	E-TTU-TRB-1 7/8										
1 15/16	E-TTU-TRB-1 15/16										
2	E-TTU-TRB-2										
45 mm	E-TTU-TRB-45MM										
50 mm	E-TTU-TRB-50MM										
2 3/16	E-TTU-TRB-2 3/16	3 3/4	5 13/16	6 7/8	3 3/4	1 7/8	1 7/8	2 9/16	6 3/4	7	17
55 mm	E-TTU-TRB-55MM										
2 1/4	E-TTU-TRB-2 1/4	4	6 1/4	7 7/16	4 1/16	2	2	3	7 1/2	7	22
2 7/16	E-TTU-TRB-2 7/16										21
2 1/2	E-TTU-TRB-2 1/2										21
60 mm	E-TTU-TRB-60MM										22
65 mm	E-TTU-TRB-65MM										21
2 11/16	E-TTU-TRB-2 11/16	4 1/2	7 3/16	8 5/16	4 23/32	2 1/4	2 1/4	3	8 1/2	8	30
2 3/4	E-TTU-TRB-2 3/4										29
2 15/16	E-TTU-TRB-2 15/16										28
3	E-TTU-TRB-3										28
70 mm	E-TTU-TRB-70MM										29
75 mm	E-TTU-TRB-75MM										28
3 3/16	E-TTU-TRB-3 3/16	5	8 5/16	9 5/8	5 17/32	2 1/2	2 1/2	3 3/4	9 1/2	9	46
3 1/4	E-TTU-TRB-3 1/4										46
3 7/16	E-TTU-TRB-3 7/16										44
3 1/2	E-TTU-TRB-3 1/2										44
80 mm	E-TTU-TRB-80MM										46
85 mm	E-TTU-TRB-85MM										45
90 mm	E-TTU-TRB-90MM										43
3 15/16	E-TTU-TRB-3 15/16	6 1/4	9 1/16	11	6 1/16	3 1/8	3 1/8	4 3/4	11	10 1/2	70
4	E-TTU-TRB-4										70
100 mm	E-TTU-TRB-100MM										70

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SPHERICAL ROLLER BEARING SOLID-BLOCK HOUSED UNITS

Timken® spherical roller bearing solid-block housed units provide heavy-duty protection in harsh environments. Designed to handle high temperatures, high speeds, heavy loads, misalignment, and contaminated conditions, these solid-block housed units are rugged enough to help protect bearings working in tough conditions. With machined feet, tapped puller holes, black oxide inner rings and multiple shaft locking options, these cast-steel housed units are easy to install.

Updates are made periodically to this catalog. Visit www.timken.com for the most recent version of the Timken® Housed Unit Catalog.



TYPICAL INDUSTRIES AND APPLICATIONS

Common industries include metal mills, aggregate and cement, mining, power generation, agriculture, pulp and paper, and sawmills and other forest industries. Applications include material conveying, commercial and industrial building equipment, sugar mill machinery, waste management and water treatment equipment, off-highway and construction vehicles, fans, blowers, cranes, lifts and hoists.

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Spherical Roller Bearing Solid-Block Housed Unit
Product Data Tables C-53

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INTRODUCTION

When your equipment faces harsh environments, you need roller bearing housed units that are rugged enough to withstand tough conditions and deliver exceptional performance.

You gain both with Timken spherical roller bearing solid-block housed units.

Designed specifically to perform under extreme conditions, Timken solid-block housed units are able to handle up to ±1.5 degrees of misalignment and withstand the impact of falling debris. Made of cast-steel housings and Timken® double-row spherical roller bearings, their unique sealing design offers protection from contaminants.

Increased performance and durability helps decrease the overall cost of ownership.

CUSTOMIZABLE DESIGN FEATURES TO FIT YOUR EQUIPMENT

With a full line of precision-made shaft-locking styles, seals and housings, it's easy to find the right housed unit to fit your application. Timken spherical roller bearing solid-block housed units interchange with a wide range of mounted roller bearings. Choose from many primary and secondary sealing mechanisms, and you decide how it's built without paying custom charges.

HOUSING STYLES

- Two-bolt pillow blocks.
- Four-bolt pillow blocks.
- Flange blocks.
- Piloted flanges.
- Cartridges.
- Take-up blocks.
- Cartridge units.

LOCKING STYLES

- Eccentric lock.
- Concentric lock (set screw) – single or double collar.
- Tapered adapter lock.
- V-Lock® double tapered lock – single or double nut.

SEALS

- Labyrinth seals – DuPont™ Teflon®:
  - High-speed applications.
  - Superior in dirty and wet conditions.
  - Able to operate at high temperatures.
  - Resistant to most chemicals.
  - Abrasion-resistant.
- Triple-lip seals – nitrile:
  - Self-purging.
  - Excellent in dirty and wet applications.
  - Chemical- and corrosion-resistant.
- Triple-lip seals – urethane:
  - All the benefits of nitrile, plus resistance to abrasion.

SECONDARY SEALS

- Closed-end covers.
- Open-end covers with:
  - Triple-lip seal.
  - DuPont Teflon.
  - V-ring seal.
- Piloted-flange cartridge backing plates with:
  - Triple-lip seal.
- Flange block backing plates with V-ring seal.

HOUSING COATINGS

- Powder coating – standard.
- Nickel plating – optional.
- Dykor® coating – optional.



Fig. C-1. Two-bolt pillow block.



Fig. C-2. Four-bolt pillow block.

DuPont™ is a trademark of E.I. du Pont de Nemours and Company.
Teflon® is a registered trademark of E.I. du Pont de Nemours and Company.
Dykor® is a registered trademark of Whitford Corporation.

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OUTLASTING THE COMPETITION

Timken solid-block housed units last a long time, yet you don't pay extra for reliability. Experience an increase in performance and durability and a decrease in your overall cost of ownership when you use a Timken solid-block housed unit.

STANDS UP TO HARSH CONDITIONS

Protects Bearing. Harsh operating environments and lubrication issues often lead to housed unit bearing damage. Timken solid-block housed units multiply protection with primary and secondary seal options, as well as steel covers in sizes to fit these units. The space between the primary and secondary seals offers a fillable grease cavity for more protection.

Handles Misalignment. Without a properly aligned shaft, the life expectancy of most housed units decreases. However, Timken spherical roller bearing solid-block housed units run efficiently on misaligned shafts up to ±1.5 degrees, thanks to their unique design and Timken spherical roller bearings.



Fig. C-3. Flange block.



Fig. C-4. Take-up block.



Fig. C-5. Piloted-flange cartridge.



Fig. C-6. Cartridge block.

INDUSTRIES AND APPLICATIONS

- Metal mills.
- Aggregate and cement.
- Mining.
- Power generation.
- Sawmills and other forest process industries.
- Pulp and paper.
- Material conveying.
- Commercial and industrial building equipment.
- Sugar mills.
- Agriculture.
- Waste management and water treatment.
- Off-highway and construction vehicles.
- HVAC, fans and blowers.
- Cranes, lifts and hoists.

DEPENDABLE SERVICE

Every Timken spherical roller bearing solid-block housed unit is backed by the service of our industry-leading experts who are ready to assist you with product design, application knowledge and field engineering support – anything you need to help improve uptime and maximize equipment performance.

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LOCKING STYLES

V-LOCK® (DOUBLE-TAPERED LOCK) U.S. PAT. NO. 7344313

The V-Lock locking mechanism is excellent in high-speed applications and designed to maximize shaft-holding power and minimize the time needed for installation and removal as compared to conventional locking mechanisms. With no need for feeler gages during installation, the V-Lock locking mechanism offers superior holding power and is designed to eliminate overtightening. Mechanical withdrawal is a feature of double-nut units.

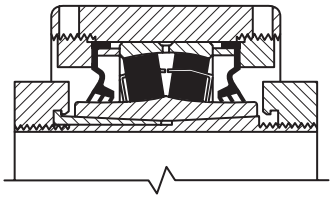


Fig. C-7. V-Lock®.

CONCENTRIC LOCK (SET SCREW) – CL SERIES

Two set screws positioned at 60 degrees provide aggressive holding power. When configured with a double-collared insert, the bearing provides double the holding power compared to our standard single-collared insert.

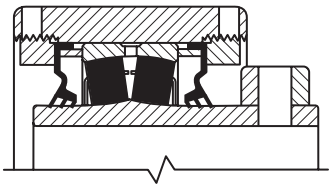


Fig. C-8. Single set screw lock.

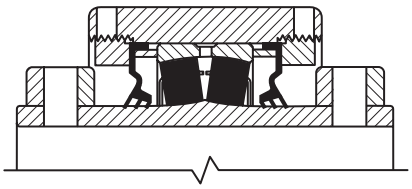


Fig. C-9. Double set screw lock.

ECCENTRIC LOCK – EC SERIES

A reduced eccentric offset results in more mechanical advantage. This series provides a secure lock that should not release from a properly prepared shaft even in reversing applications.

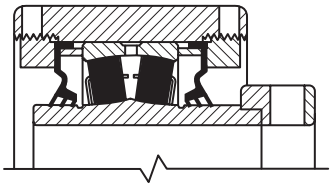


Fig. C-10. Eccentric lock.

TAPERED ADAPTER LOCK – TA/DV SERIES

Excellent in high-load applications, this design uses a longer 2300-series adapter for increased shaft contact. This design offers the best shaft concentricity and highest capacity all while having the ability to accommodate undersized shafting.

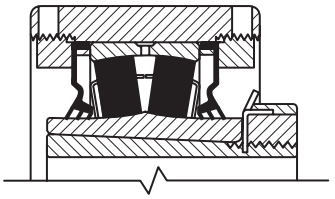


Fig. C-11. Tapered adapter lock.

HOUSING COATINGS

POWDER COATING – STANDARD

All of our steel housings come powder-coated from the factory. Powder coating gives a hard finish that is tough and durable.

NICKEL PLATING – OPTIONAL

By nickel plating any of our housings, we are able to offer superior resistance to wear and corrosion.

DYKOR® COATING – OPTIONAL

Unaffected by most chemicals and solvents, Dykor coating is designed to last in harsh chemical environments while having extreme abrasion resistance.

Dykor® is a registered trademark of Whitford Corporation.

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SOLID-BLOCK HOUSED UNIT BENEFITS

Depending on how you configure your bearing for a specific application, there's a wide range of product benefits.

- Multiple available sizes accommodate shaft diameters from 35 mm to 180 mm (1 7/16 in. to 7 in.).
- Efficient built-to-order manufacturing. Quick delivery of customized configurations for specific applications.
- Quicker installation. Machined feet, tapped puller holes, black oxide inner rings and multiple shaft-locking choices make it simpler to install this heavy-duty unit.
- Improved performance in high-contaminant environments. Wide selection of primary and secondary seals, as well as auxiliary covers.
- Bidirectional shaft expansion. Double-nut housing feature allows expansion in both directions.
- Increased uptime. Robust steel housing, a wide variety of seal choices and a high-performance Timken spherical roller bearing result in increased unit uptime.
- Increased shaft holding power and reduced shaft damage. Eccentric lock series is designed to stay tight in reversing applications on precision-ground shafts.
- Fewer misalignment issues. Bearings accept up to ±1.5 degrees of misalignment.
- Protection against over-lubrication. Pressure relief valves come standard when unit is ordered with non-purgeable seals.
- Dimensionally interchanges with a wide range of other mounted roller bearing units.
- One-time shaft alignment on all housing unit styles. Machined feet ends allow for precise installation and blocking for faster future unit replacement.
- Easier removal with standard withdrawal holes on all piloted-flange units.
- Faster and easier changeover thanks to a comprehensive product offering that interchanges with virtually all solid-block roller bearing units.

NOTE

Do not use excessive force when mounting or dismounting the unit.

Follow all tolerance, fit and torque recommendations.

Always follow the Original Equipment Manufacturer's installation and maintenance guidelines.

Ensure proper alignment.

Never weld housed units.

Do not heat components with an open flame.

Do not operate at bearing temperatures above 121°C (250°F).

Updates are made periodically to this catalog. Visit www.timken.com for the most recent version of the Timken® Housed Unit Catalog.

WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

Overheated bearings can ignite explosive atmospheres. Special care must be taken to properly select, install, maintain, and lubricate housed unit bearings that are used in or near atmospheres that may contain explosive levels of combustible gases or accumulations of dust such as from grain, coal, or other combustible materials. Consult your equipment designer or supplier for installation and maintenance instructions.

CAUTION

Failure to follow these cautions could create a risk of injury.

Do not use damaged housed units. The use of a damaged housed unit can result in equipment damage and/or injury.

CAUTION

Failure to follow these cautions may result in property damage.

If hammer and bar are used for installation or removal of a part, use a mild steel bar (e.g., 1010 or 1020 grade). Mild steel bars are less likely to cause release of high-speed fragments from the hammer, bar or the part being removed.

Warnings for this product line are in this catalog and posted on www.timken.com/en-us/products/warnings/Pages/TimkenHousedUnitWarnings.aspx.

DISCLAIMER

This catalog is provided solely to give you analysis tools and data to assist you in your product selection. Product performance is affected by many factors beyond the control of Timken. Therefore, you must validate the suitability and feasibility of all product selections for your applications.

Timken products are sold subject to Timken terms and conditions of sale, which include our limited warranty and remedy. You can find these at http://www.timken.com/en-us/purchase/Pages/TermsandConditionsofSale.aspx.

Please consult with your Timken engineer for more information and assistance.

Every reasonable effort has been made to ensure the accuracy of the information in this writing, but no liability is accepted for errors, omissions or for any other reason.

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SOLID-BLOCK HOUSED UNIT DESIGN

Flexibility through interchangeable components.

Double-row spherical roller bearing accepts misalignment.

Black oxide inner ring reduces shaft fretting corrosion.

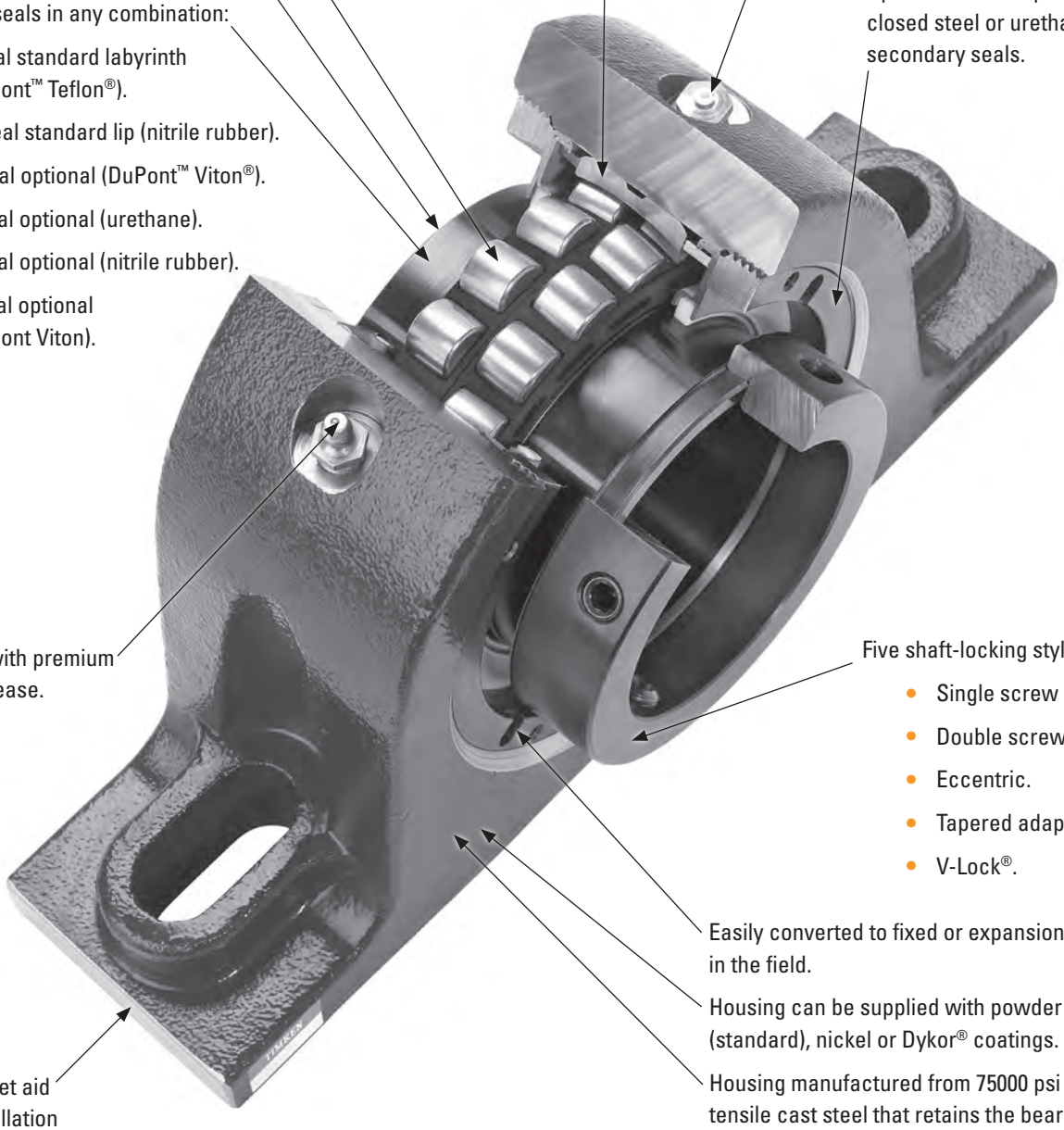
Six primary seals in any combination:

- T seal standard labyrinth (DuPont™ Teflon®).
- M seal standard lip (nitrile rubber).
- N seal optional (DuPont™ Viton®).
- O seal optional (urethane).
- B seal optional (nitrile rubber).
- C seal optional (DuPont Viton).

Housing fit: J7, size-for-size to light interference.

Standard relief valve.

Optional bolt-on open and closed steel or urethane secondary seals.



Lubricated with premium industrial grease.

Five shaft-locking styles:

- Single screw set.
- Double screw set.
- Eccentric.
- Tapered adapter.
- V-Lock®.

Easily converted to fixed or expansion in the field.

Housing can be supplied with powder (standard), nickel or Dykor® coatings.

Housing manufactured from 75000 psi tensile cast steel that retains the bearing-to-housing fit for those rough applications.

Machined feet aid in rapid installation and alignment.

Fig. C-12. High performance plus superior ruggedness.

DuPont™ is a trademark of E.I. du Pont de Nemours and Company.
Teflon® is a registered trademark of E.I. du Pont de Nemours and Company.
Viton® is a registered trademark of E.I. du Pont de Nemours and Company.
Dykor® is a registered trademark of Whitford Corporation.

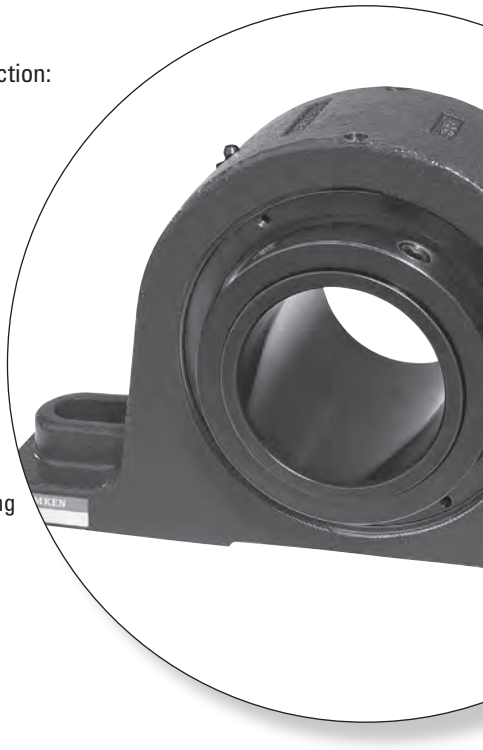
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ENGINEERING

The following topics are covered within this engineering section:

Bearing Load. C-8
Normal Speed Ratings for Seals C-25
Seal Material Chemical Compatibility C-28
Internal Radial Clearance. C-30
Shafting C-32
Misalignment C-33
Lubrication C-33
Installation Guides. C-34

To view the complete engineering catalog, please visit www.timken.com. To order the catalog, please contact your Timken engineer and request a copy of the Timken Engineering Manual, order number 10424.



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BEARING LOAD

Solid-block housed unit bearings are excellent for many applications including those with:

- Heavy radial loads.
- Heavy combined radial and thrust loads.
- Shock loads.
- Harsh contamination conditions.
- Low to moderate speeds.
- The possibility of misalignment.

Bearing loads generally come from one of three sources that should all be evaluated and considered when selecting steel housed unit bearings for your application. Contact your Timken engineer for assistance in determining specific application loads and for bearing recommendations.

- Static loads – weights of various components supported by the bearings.
- Drive loads – belts, chains or gears that exert forces on the shaft.
- Imposed loads – forces generated by equipment operation.

Generally, bearing loads are described as being radial (load perpendicular to the axis of the shaft) or axial (load parallel to the axis of the shaft). Axial loads also are referred to as thrust loads. Spherical roller bearings, by design, are very capable of accepting heavy radial loads, even when combined with a thrust load. Timken® Type E housed units are recommended for use in applications when only thrust loads are present or when the thrust component of the load is larger than the radial component.

To determine the allowable radial load at various RPMs for bearings supporting only radial loads, simply use the charts on pages C-10 – C-23. For bearings supporting both radial and thrust loads, an equivalent radial load must first be calculated prior to using these tables (see DYNAMIC EQUIVALENT RADIAL LOAD on page C-9).

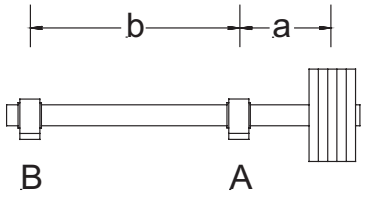
BELT LOADS

V-belt drives are common sources of drive loads. A good approximation of drive load may be calculated from the formula:

Drive Load = (HP x 189000)/(Pulley Diameter x RPM)
Drive Load = (KW x 189000)/(Pulley Diameter x RPM)

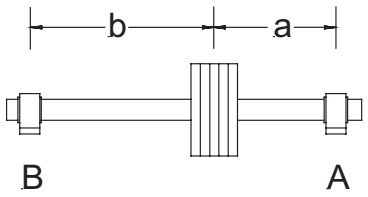
LOAD SHARING

In some cases, bearings may share the load unequally, depending on their position in relationship to the load. Use the appropriate formula below to determine the drive load on each bearing:



Load A = Drive Load x (a + b)/b
Load B = Drive Load x a/b

Fig. C-13. Overhung load.



Load A = (Drive Load x b)/(a + b)
Load B = (Drive Load x a)/(a + b)

Fig. C-14. Load between bearings.

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DYNAMIC EQUIVALENT RADIAL LOAD

Bearings that support a combination of radial load and thrust load take an unequal load on one of the rows of rollers. The following formulas and bearing geometry factors are used to convert the independent thrust and radial loads into a single equivalent radial load. The calculated dynamic equivalent radial load (P_r) will have the same effect on bearing life (L_{10}) as a radial load of the same magnitude.

$P_r = F_r + (Y1 \times F_a)$ when $F_a/F_r \leq e$

$P_r = (0.67 \times F_r) + (Y2 \times F_a)$ when $F_a/F_r > e$

where:

P_r = Dynamic equivalent radial load
F_r = Applied radial load (lbs., N)
F_a = Applied thrust (axial) load (lbs., N)
Y1, Y2 and e are bearing geometry factors shown on pages C-10 and C-11.

BEARING CALCULATED LIFE

Customers select the bearing life of the bearings in equipment they are building. In the absence of a customer bearing life target, the following may be considered as a guideline:

- If the customers machinery operates eight hours a day, then use a bearing life target of 20000 to 30000 hours.
- If the customers machinery operates 24 hours a day, then use a bearing life target of 40000 to 60000 hours.

In addition, a service factor may be used where application conditions are harsh. Extreme environmental conditions or heavy shock or vibration will require the adjustment of load ratings before referring to the L_{10} tables. Please contact your Timken engineer for additional information.

Standard spherical roller bearing life calculation:

Bearing life = $L_{10} = (C/P_r)^{10/3} \times (16667/RPM)$

where:

C = Dynamic capacity (lbs., N)
P_r = Radial load/dynamic equivalent radial load
RPM = Revolutions per minute

DISCLAIMER

This catalog is provided solely to give you analysis tools and data to assist you in your product selection. Product performance is affected by many factors beyond the control of timken. Therefore, the suitability and feasibility of all product selection must be validated by you.

TERMS AND CONDITIONS

Timken products are sold subject to our terms and conditions of sale, which include its limited warranty and remedy, which terms may be found at http://www.timken.com/en-us/purchase/pages/termsandconditionsofsale.Aspx.

Please consult with your Timken engineer for more information and assistance.

A NOTE ON MINIMUM LOADS

In order for a spherical roller bearing to perform as designed, some radial load should be present. This is particularly true if the bearing is running at high speed. Although it is rarely an issue, as the existing static loads (weights of the combined supported components) usually provide an adequate radial load, there are times when it may be necessary to use a shaft diameter larger than the actual loads require. In these instances, the load becomes a small percentage of the bearing's capacity. Radial loads less than 4 percent of C should be avoided.

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BEARING RADIAL AND THRUST FACTORS

TABLE C-1. V-LOCK® SERIES (TAPERED BORE, C3)

Shaft Dia.	Bearing No.	Dynamic Capacity C	Static Capacity C_0	Equivalent Radial Load Factors		
				e	Y1	Y2
mm in.		**kN** lbs.	**kN** lbs.			
50 1 15/16, 2	22211	**140** 31400	**142** 31900	0.23	2.95	4.40
55 2 3/16, 2 1/4	22212	**169** 38100	**174** 39000	0.24	2.84	4.23
55 2 3/16, 2 1/4	22213	**206** 46400	**216** 48600	0.24	2.79	4.15
60, 65 2 7/16, 2 1/2	22214	**213** 47800	**231** 52000	0.23	2.90	4.32
60, 65 2 7/16, 2 1/2	22215	**222** 49900	**240** 54100	0.22	3.14	4.67
70, 75 2 11/16, 2 3/4, 2 15/16, 3	22216	**254** 57200	**278** 62500	0.22	3.14	4.67
70, 75 2 11/16, 2 3/4, 2 15/16, 3	22217	**297** 66900	**320** 71900	0.22	3.07	4.57
80, 85, 90 3 3/16, 3 1/4, 3 7/16, 3 1/2	22219	**385** 86600	**441** 99000	0.23	2.88	4.29
80, 85, 90 3 3/16, 3 1/4, 3 7/16, 3 1/2	22220	**435** 97700	**502** 113000	0.24	2.85	4.24
100 3 11/16, 3 3/4, 3 15/16, 4	22222	**555** 125000	**653** 147000	0.25	2.73	4.06
110 –	22224	**647** 145000	**772** 174000	0.25	2.70	4.02
110, 115 4 7/16, 4 1/2	22226	**757** 170000	**945** 212000	0.26	2.62	3.90
125, 130 4 15/16, 5	22228	**863** 194000	**1060** 237000	0.25	2.67	3.98

TABLE C-2. CL SERIES (STRAIGHT BORE, C NORMAL)

Shaft Dia.	Bearing No.	Dynamic Capacity C	Static Capacity C_0	Equivalent Radial Load Factors		
				e	Y1	Y2
mm in.		**kN** lbs.	**kN** lbs.			
35 1 7/16, 1 1/2	22208	**104** 23400	**99.7** 22400	0.27	2.47	3.67
40, 45 1 11/16, 1 3/4	22209	**109** 24500	**108** 24200	0.26	2.64	3.93
50 1 15/16, 2	22210	**117** 26300	**118** 26600	0.24	2.84	4.23
55 2 3/16, 2 1/4	22211	**140** 31400	**142** 31900	0.23	2.95	4.40
60, 65 2 7/16, 2 1/2	22213	**206** 46400	**216** 48600	0.24	2.79	4.15
70, 75 2 11/16, 2 3/4, 2 15/16, 3	22215	**222** 49900	**240** 54100	0.22	3.14	4.67
80, 85, 90 3 3/16, 3 1/4, 3 7/16, 3 1/2	22218	**355** 79700	**388** 87200	0.23	2.90	4.31
100 3 15/16, 4	22220	**435** 97700	**502** 113000	0.24	2.85	4.24
110, 115 4 7/16, 4 1/2	22222	**555** 125000	**653** 147000	0.25	2.73	4.06
125, 130 4 15/16, 5	22226	**757** 170000	**945** 212000	0.26	2.62	3.90

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TABLE C-3. EC SERIES (STRAIGHT BORE, C NORMAL)

Shaft Dia.	Bearing No.	Dynamic Capacity C	Static Capacity C_0	Equivalent Radial Load Factors		
				e	Y1	Y2
mm in.		**kN** lbs.	**kN** lbs.			
35 1 7/16, 1 1/2	22208	**104** 23400	**99.7** 22400	0.27	2.47	3.67
40, 45 1 11/16, 1 3/4	22209	**109** 24500	**108** 24200	0.26	2.64	3.93
50 1 15/16, 2	22210	**117** 26300	**118** 26600	0.24	2.84	4.23
55 2 3/16, 2 1/4	22211	**140** 31400	**142** 31900	0.23	2.95	4.40
60, 65 2 7/16, 2 1/2	22213	**206** 46400	**216** 48600	0.24	2.79	4.15
70, 75 2 11/16, 2 3/4, 2 15/16, 3	22215	**220** 49900	**240** 54100	0.22	3.14	4.67
80, 85, 90 3 3/16, 3 1/4, 3 7/16, 3 1/2	22218	**355** 79700	**388** 87200	0.23	2.90	4.31
100 3 11/16, 3 3/4, 3 15/16, 4	22220	**435** 97700	**502** 113000	0.24	2.85	4.24
110, 115 4 7/16, 4 1/2	22222	**555** 125000	**653** 147000	0.25	2.73	4.06
125, 130 4 15/16, 5	22226	**757** 170000	**945** 212000	0.26	2.62	3.90
140, 150 5 7/16, 5 1/2, 5 15/16, 6	23230	**1270** 286000	**1660** 372000	0.32	2.08	3.10
170, 180 6 7/16, 6 1/2, 6 15/16, 7	23234	**1660** 373000	**2200** 494000	0.33	2.08	3.09

TABLE C-4. TA/DV SERIES (TAPERED BORE, C3)

Shaft Dia.	Bearing No.	Dynamic Capacity C	Static Capacity C_0	Equivalent Radial Load Factors		
				e	Y1	Y2
mm in.		**kN** lbs.	**kN** lbs.			
40 1 7/16, 1 1/2	22209	**109** 24500	**108** 24200	0.26	2.64	3.93
45 1 11/16, 1 3/4	22210	**117** 26300	**118** 26600	0.24	2.84	4.23
50 1 15/16, 2	22211	**140** 31400	**142** 31900	0.23	2.95	4.40
55 –	22212	**169** 38100	**174** 39000	0.24	2.84	4.23
60 2 3/16, 2 1/4	22213	**206** 46400	**216** 48600	0.24	2.79	4.15
65 2 7/16, 2 1/2	22215	**222** 49900	**240** 54100	0.22	3.14	4.67
70 2 11/16, 2 3/4	22216	**254** 57200	**278** 62500	0.22	3.14	4.67
75 2 15/16, 3	22217	**297** 66900	**320** 71900	0.22	3.07	4.57
80 3 3/16, 3 1/4	22218	**355** 79700	**388** 87200	0.23	2.90	4.31
85 –	22219	**385** 86600	**441** 99000	0.23	2.88	4.29
90 3 7/16, 3 1/2	22220	**435** 97700	**502** 113000	0.24	2.85	4.24
100 3 15/16, 4	22222	**555** 125000	**653** 147000	0.25	2.73	4.06
110 4 3/16, 4 1/4	22224	**647** 145000	**772** 174000	0.25	2.70	4.02
115 4 7/16, 4 1/2	22226	**757** 170000	**945** 212000	0.26	2.62	3.90
125 4 15/16, 5	22228	**863** 194000	**1060** 237000	0.25	2.67	3.98

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LOAD RATINGS

TABLE C-5. V-LOCK SERIES – ALLOWABLE RADIAL LOAD (kN/LBS.) AT VARIOUS RPM[1]

Shaft Diameter	Bearing No.	C	L_{10} Life	Speed[2]													
mm in.		**kN** lbs.		RPM													
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200	3500[1]
50 1 15/16, 2	22211	**140** 31400	10000	**50.3** 11319	**40.9** 9194	**33.2** 7468	**25.2** 5673	**20.5** 4608	**19.4** 4362	**18.1** 4080	**17.2** 3863	**16.4** 3688	**15.8** 3543	**15.2** 3420	**14.7** 3314	**14.5** 3250	**14.1** 3164
			30000	**36.2** 8141	**29.4** 6612	**23.9** 5371	**18.1** 4080	**14.7** 3314	**14.0** 3138	**13.1** 2934	**12.4** 2778	**11.8** 2653	**11.3** 2549	**10.9** 2460	**10.6** 2383	**10.4** 2338	**10.1** 2276
			40000	**33.2** 7468	**27.0** 6066	**21.9** 4927	**16.6** 3743	**13.5** 3040	**12.8** 2878	**12.0** 2692	**11.3** 2549	**10.8** 2433	**10.4** 2338	**10.0** 2257	**9.7** 2186	**9.5** 2144	**9.3** 2088
			60000	**29.4** 6612	**23.9** 5371	**19.4** 4362	**14.7** 3314	**12.0** 2692	**11.3** 2549	**10.6** 2383	**10.0** 2257	**9.6** 2155	**9.2** 2070	**8.9** 1998	**8.6** 1936	**8.4** 1899	**8.2** 1849
			100000	**25.2** 5673	**20.5** 4608	**16.6** 3743	**12.6** 2843	**10.3** 2309	**9.7** 2186	**9.1** 2045	**8.6** 1936	**8.2** 1849	**7.9** 1776	**7.6** 1714	**7.4** 1661	**7.2** 1629	**7.1** 1586
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200[1]	3500[1]
55 2 3/16, 2 1/4	22212	**169** 38100	10000	**61.1** 13734	**49.6** 11155	**40.3** 9061	**30.6** 6883	**24.9** 5591	**23.5** 5293	**22.0** 4951	**20.8** 4687	**19.9** 4475	**19.1** 4300	**18.5** 4150	**17.9** 4021	**17.5** 3944	**17.1** 3839
			30000	**43.9** 9878	**35.7** 8023	**29.0** 6517	**22.0** 4951	**17.9** 4021	**16.9** 3807	**15.8** 3561	**15.0** 3371	**14.3** 3219	**13.8** 3092	**13.3** 2985	**12.9** 2892	**12.6** 2837	**12.3** 2761
			40000	**40.3** 9061	**32.7** 7360	**26.6** 5978	**20.2** 4541	**16.4** 3689	**15.5** 3492	**14.5** 3266	**13.8** 3092	**13.1** 2953	**12.6** 2837	**12.2** 2738	**11.8** 2653	**11.6** 2602	**11.3** 2533
			60000	**35.7** 8023	**29.0** 6517	**23.5** 5293	**17.9** 4021	**14.5** 3266	**13.8** 3092	**12.9** 2892	**12.2** 2738	**11.6** 2614	**11.2** 2512	**10.8** 2425	**10.4** 2349	**10.2** 2304	**10.0** 2243
			100000	**30.6** 6883	**24.9** 5591	**20.2** 4541	**15.3** 3450	**12.5** 2802	**11.8** 2653	**11.0** 2481	**10.4** 2349	**10.0** 2243	**9.6** 2155	**9.3** 2080	**9.0** 2015	**8.8** 1977	**8.6** 1924
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000[1]	3200[1]	3500[1]
55 2 3/16, 2 1/4	22213	**206** 46400	10000	**74.4** 16726	**60.4** 13585	**49.1** 11035	**37.3** 8383	**30.3** 6809	**28.7** 6446	**26.8** 6029	**25.4** 5708	**24.2** 5450	**23.3** 5236	**22.5** 5054	**21.8** 4897	**21.4** 4803	**20.8** 4676
			30000	**53.5** 12030	**43.5** 9771	**35.3** 7937	**26.8** 6029	**21.8** 4897	**20.6** 4636	**19.3** 4336	**18.3** 4105	**17.4** 3920	**16.8** 3766	**16.2** 3635	**15.7** 3522	**15.4** 3455	**15.0** 3363
			40000	**49.1** 11035	**39.9** 8963	**32.4** 7280	**24.6** 5531	**20.0** 4492	**18.9** 4253	**17.7** 3978	**16.8** 3766	**16.0** 3596	**15.4** 3455	**14.8** 3335	**14.4** 3231	**14.1** 3169	**13.7** 3085
			60000	**43.5** 9771	**35.3** 7937	**28.7** 6446	**21.8** 4897	**17.7** 3978	**16.8** 3766	**15.7** 3522	**14.8** 3335	**14.2** 3184	**13.6** 3059	**13.1** 2953	**12.7** 2861	**12.5** 2806	**12.2** 2732
			100000	**37.3** 8383	**30.3** 6809	**24.6** 5531	**18.7** 4201	**15.2** 3413	**14.4** 3231	**13.4** 3022	**12.7** 2861	**12.2** 2732	**11.7** 2624	**11.3** 2533	**10.9** 2454	**10.7** 2407	**10.4** 2343
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700[1]	3000[1]	3200[1]	
60, 65 2 7/16, 2 1/2	22214	**213** 47800	10000	**76.6** 17230	**62.3** 13995	**50.6** 11368	**38.4** 8636	**31.2** 7014	**29.5** 6641	**27.6** 6211	**26.2** 5880	**25.0** 5615	**24.0** 5394	**23.2** 5207	**22.4** 5045	**22.0** 4948	
			30000	**55.1** 12392	**44.8** 10066	**36.4** 8176	**27.6** 6211	**22.4** 5045	**21.2** 4776	**19.9** 4467	**18.8** 4229	**18.0** 4038	**17.3** 3880	**16.7** 3745	**16.1** 3628	**15.8** 3559	
			40000	**50.6** 11368	**41.1** 9234	**33.4** 7500	**25.3** 5697	**20.6** 4628	**19.5** 4381	**18.2** 4098	**17.3** 3880	**16.5** 3704	**15.8** 3559	**15.3** 3435	**14.8** 3328	**14.5** 3265	
			60000	**44.8** 10066	**36.4** 8176	**29.5** 6641	**22.4** 5045	**18.2** 4098	**17.3** 3880	**16.1** 3628	**15.3** 3435	**14.6** 3280	**14.0** 3151	**13.5** 3042	**13.1** 2947	**12.9** 2891	
			100000	**38.4** 8636	**31.2** 7014	**25.3** 5697	**19.3** 4328	**15.6** 3515	**14.8** 3328	**13.8** 3113	**13.1** 2947	**12.5** 2814	**12.0** 2703	**11.6** 2610	**11.2** 2528	**11.0** 2480	

[1]Speeds referenced here may be higher than speed rating for seals. Please refer to the charts on pages C-25 and C-26.
[2]For speeds greater than thermal reference speed, contact your Timken engineer.

Continued on next page.

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Shaft Diameter	Bearing No.	C	L_{10} Life	Speed[2]												
mm in.		**kN** lbs.		RPM												
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700[1]	3000[1]	3200[1]
60, 65 2 7/16, 2 1/2	22215	**222** 49900	10000	**80.0** 17987	**65.0** 14610	**52.8** 11867	**40.1** 9015	**32.6** 7322	**30.8** 6933	**28.8** 6484	**27.3** 6139	**26.1** 5861	**25.0** 5631	**24.2** 5436	**23.4** 5266	**23.0** 5166
			30000	**57.5** 12937	**46.7** 10508	**38.0** 8535	**28.8** 6484	**23.4** 5266	**22.2** 4986	**20.7** 4663	**19.6** 4415	**18.8** 4216	**18.0** 4050	**17.4** 3909	**16.8** 3788	**16.5** 3715
			40000	**52.8** 11867	**42.9** 9639	**34.8** 7829	**26.5** 5948	**21.5** 4831	**20.3** 4574	**19.0** 4278	**18.0** 4050	**17.2** 3867	**16.5** 3715	**16.0** 3586	**15.5** 3475	**15.2** 3408
			60000	**46.7** 10508	**38.0** 8535	**30.8** 6933	**23.4** 5266	**19.0** 4278	**18.0** 4050	**16.8** 3788	**16.0** 3586	**15.2** 3424	**14.6** 3290	**14.1** 3175	**13.7** 3077	**13.4** 3018
			100000	**40.1** 9015	**32.6** 7322	**26.5** 5948	**20.1** 4518	**16.3** 3670	**15.5** 3475	**14.5** 3250	**13.7** 3077	**13.1** 2938	**12.6** 2822	**12.1** 2724	**11.7** 2639	**11.5** 2589
				50	100	200	500	1000	1200	1500	1800	2100	2400[1]	2700[1]	3000[1]	
70, 75 2 11/16, 2 3/4, 2 15/16, 3	22216	**254** 57200	10000	**91.7** 20619	**74.5** 16748	**60.5** 13603	**46.0** 10334	**37.3** 8394	**35.4** 7947	**33.1** 7432	**31.3** 7037	**29.9** 6719	**28.7** 6455	**27.7** 6231	**26.9** 6037	
			30000	**66.0** 14829	**53.6** 12045	**43.5** 9784	**33.1** 7432	**26.9** 6037	**25.4** 5716	**23.8** 5346	**22.5** 5061	**21.5** 4832	**20.7** 4643	**19.9** 4481	**19.3** 4342	
			40000	**60.5** 13603	**49.1** 11049	**39.9** 8975	**30.3** 6818	**24.6** 5538	**23.3** 5243	**21.8** 4904	**20.7** 4643	**19.7** 4433	**18.9** 4259	**18.3** 4111	**17.7** 3983	
			60000	**53.6** 12045	**43.5** 9784	**35.4** 7947	**26.9** 6037	**21.8** 4904	**20.7** 4643	**19.3** 4342	**18.3** 4111	**17.5** 3925	**16.8** 3771	**16.2** 3640	**15.7** 3527	
			100000	**46.0** 10334	**37.3** 8394	**30.3** 6818	**23.0** 5179	**18.7** 4207	**17.7** 3983	**16.6** 3725	**15.7** 3527	**15.0** 3367	**14.4** 3235	**13.9** 3123	**13.5** 3026	
				50	100	200	500	1000	1200	1500	1800	2100[1]	2400[1]	2700[1]		
70, 75 2 11/16, 2 3/4, 2 15/16, 3	22217	**297** 66900	10000	**107.3** 24115	**87.1** 19588	**70.8** 15910	**53.8** 12086	**43.7** 9817	**41.3** 9295	**38.7** 8693	**36.6** 8230	**35.0** 7858	**33.6** 7550	**32.4** 7287		
			30000	**77.1** 17344	**62.7** 14088	**50.9** 11443	**38.7** 8693	**31.4** 7061	**29.7** 6685	**27.8** 6252	**26.3** 5919	**25.1** 5652	**24.2** 5430	**23.3** 5241		
			40000	**70.8** 15910	**57.5** 12923	**46.7** 10497	**35.5** 7974	**28.8** 6477	**27.3** 6132	**25.5** 5735	**24.2** 5430	**23.1** 5184	**22.2** 4981	**21.4** 4808		
			60000	**62.7** 14088	**50.9** 11443	**41.3** 9295	**31.4** 7061	**25.5** 5735	**24.2** 5430	**22.6** 5078	**21.4** 4808	**20.4** 4591	**19.6** 4410	**18.9** 4257		
			100000	**53.8** 12086	**43.7** 9817	**35.5** 7974	**26.9** 6057	**21.9** 4920	**20.7** 4658	**19.4** 4357	**18.3** 4125	**17.5** 3938	**16.8** 3784	**16.2** 3652		
				50	100	200	500	1000	1200	1500	1800	2100[1]	2400[1]	2700[1]		
80, 85, 90 3 3/16, 3 1/4, 3 7/16, 3 1/2	22219	**385** 86600	10000	**138.9** 31216	**112.8** 25356	**91.6** 20595	**69.6** 15645	**56.5** 12708	**53.5** 12032	**50.1** 11252	**47.4** 10654	**45.2** 10172	**43.5** 9773	**42.0** 9433		
			30000	**99.9** 22452	**81.1** 18236	**65.9** 14813	**50.1** 11252	**40.7** 9140	**38.5** 8653	**36.0** 8093	**34.1** 7662	**32.5** 7316	**31.3** 7029	**30.2** 6785		
			40000	**91.6** 20595	**74.4** 16729	**60.4** 13588	**45.9** 10322	**37.3** 8384	**35.3** 7938	**33.0** 7424	**31.3** 7029	**29.9** 6711	**28.7** 6448	**27.7** 6224		
			60000	**81.1** 18236	**65.9** 14813	**53.5** 12032	**40.7** 9140	**33.0** 7424	**31.3** 7029	**29.2** 6574	**27.7** 6224	**26.4** 5942	**25.4** 5709	**24.5** 5511		
			100000	**69.6** 15645	**56.5** 12708	**45.9** 10322	**34.9** 7841	**28.3** 6369	**26.8** 6030	**25.1** 5640	**23.7** 5339	**22.7** 5098	**21.8** 4898	**21.0** 4728		

[1]Speeds referenced here may be higher than speed rating for seals. Please refer to the charts on pages C-25 and C-26.
[2]For speeds greater than thermal reference speed, contact your Timken engineer.

Continued on next page.

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LOAD RATINGS – *continued*

TABLE C-5. V-LOCK SERIES – ALLOWABLE RADIAL LOAD (kN/LBS.) AT VARIOUS RPM[1] – *continued*

Shaft Diameter	Bearing No.	C	L_{10} Life	Speed[2]										
mm in.		**kN** lbs.		RPM										
				50	100	200	500	1000	1200	1500	1800[1]	2100[1]	2400[1]	2700[1]
80, 85, 90 3 3/16, 3 1/4, 3 7/16, 3 1/2	22220	**435** 97700	10000	**156.7** 35218	**127.2** 28606	**103.4** 23235	**78.5** 17651	**63.8** 14337	**60.4** 13574	**56.5** 12695	**53.5** 12019	**51.0** 11476	**49.0** 11025	**47.3** 10642
			30000	**112.7** 25329	**91.5** 20574	**74.3** 16711	**56.5** 12695	**45.9** 10311	**43.4** 9762	**40.6** 9130	**38.5** 8644	**36.7** 8254	**35.3** 7930	**34.0** 7654
			40000	**103.4** 23235	**84.0** 18873	**68.2** 15329	**51.8** 11645	**42.1** 9459	**39.8** 8955	**37.3** 8375	**35.3** 7930	**33.7** 7571	**32.4** 7274	**31.2** 7021
			60000	**91.5** 20574	**74.3** 16711	**60.4** 13574	**45.9** 10311	**37.3** 8375	**35.3** 7930	**33.0** 7416	**31.2** 7021	**29.8** 6704	**28.7** 6441	**27.7** 6217
			100000	**78.5** 17651	**63.8** 14337	**51.8** 11645	**39.3** 8846	**32.0** 7185	**30.3** 6803	**28.3** 6362	**26.8** 6024	**25.6** 5752	**24.6** 5526	**23.7** 5334
				50	100	200	500	1000	1200	1500[1]	1800[1]	2100[1]	2400[1]	
100 3 11/16, 3 3/4, 3 15/16, 4	22222	**555** 125000	10000	**200.4** 45058	**162.8** 36599	**132.2** 29727	**100.5** 22583	**81.6** 18343	**77.3** 17367	**72.2** 16242	**68.4** 15377	**65.3** 14683	**62.7** 14106	
			30000	**144.2** 32407	**117.1** 26323	**95.1** 21381	**72.2** 16242	**58.7** 13193	**55.6** 12490	**52.0** 11682	**49.2** 11060	**47.0** 10560	**45.1** 10145	
			40000	**132.2** 29727	**107.4** 24146	**87.2** 19613	**66.3** 14899	**53.8** 12102	**51.0** 11458	**47.7** 10716	**45.1** 10145	**43.1** 9687	**41.4** 9306	
			60000	**117.1** 26323	**95.1** 21381	**77.3** 17367	**58.7** 13193	**47.7** 10716	**45.1** 10145	**42.2** 9488	**40.0** 8983	**38.2** 8577	**36.7** 8241	
			100000	**100.5** 22583	**81.6** 18343	**66.3** 14899	**50.3** 11318	**40.9** 9193	**38.7** 8704	**36.2** 8140	**34.3** 7707	**32.7** 7359	**31.4** 7070	
				50	100	200	500	1000	1200	1500	1800	2100	2400	
110 –	22224	**647** 145000	10000	**232.5** 52268	**188.8** 42455	**153.4** 34484	**116.5** 26196	**94.6** 21278	**89.6** 20145	**83.8** 18841	**79.3** 17838	**75.8** 17032	**72.8** 16363	
			30000	**167.2** 37592	**135.8** 30534	**110.3** 24802	**83.8** 18841	**68.1** 15303	**64.5** 14489	**60.3** 13551	**57.1** 12829	**54.5** 12250	**52.4** 11769	
			40000	**153.4** 34484	**124.6** 28010	**101.2** 22751	**76.9** 17283	**62.4** 14038	**59.1** 13291	**55.3** 12430	**52.4** 11769	**50.0** 11237	**48.0** 10796	
			60000	**135.8** 30534	**110.3** 24802	**89.6** 20145	**68.1** 15303	**55.3** 12430	**52.4** 11769	**49.0** 11007	**46.4** 10421	**44.3** 9950	**42.5** 9559	
			100000	**116.5** 26196	**94.6** 21278	**76.9** 17283	**58.4** 13129	**47.4** 10664	**44.9** 10097	**42.0** 9443	**39.8** 8940	**38.0** 8536	**36.5** 8201	

[1]Speeds referenced here may be higher than speed rating for seals. Please refer to the charts on pages C-25 and C-26.
[2]For speeds greater than thermal reference speed, contact your Timken engineer.

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Shaft Diameter	Bearing No.	C	L_{10} Life	Speed[2]								
mm in.		**kN** lbs.		RPM								
				50	100	200	500	1000	1200[1]	1500[1]	1800[1]	2100[1]
110, 115 4 7/16, 4 1/2	22226	**757** 170000	10000	**272.6** 61279	**221.4** 49774	**179.8** 40429	**136.6** 30712	**111.0** 24946	**105.1** 23618	**98.3** 22089	**93.0** 20913	**88.8** 19968
			30000	**196.1** 44074	**159.2** 35799	**129.3** 29078	**98.3** 22089	**79.8** 17942	**75.6** 16987	**70.7** 15887	**66.9** 15041	**63.9** 14362
			40000	**179.8** 40429	**146.1** 32839	**118.6** 26673	**90.1** 20263	**73.2** 16458	**69.3** 15582	**64.8** 14573	**61.4** 13798	**58.6** 13174
			60000	**159.2** 35799	**129.3** 29078	**105.1** 23618	**79.8** 17942	**64.8** 14573	**61.4** 13798	**57.4** 12904	**54.3** 12217	**51.9** 11665
			100000	**136.6** 30712	**111.0** 24946	**90.1** 20263	**68.5** 15393	**55.6** 12503	**52.7** 11837	**49.2** 11071	**46.6** 10482	**44.5** 10008
				50	100	200	500	1000[1]	1200[1]	1500[1]	1800[1]	
125, 130 4 15/16, 5	22228	**863** 194000	10000	**311.1** 69931	**252.7** 56801	**205.2** 46137	**155.9** 35048	**126.6** 28468	**119.9** 26953	**112.1** 25208	**106.2** 23866	
			30000	**223.7** 50296	**181.7** 40853	**147.6** 33183	**112.1** 25208	**91.1** 20475	**86.2** 19385	**80.6** 18130	**76.4** 17165	
			40000	**205.2** 46137	**166.7** 37475	**135.4** 30439	**102.9** 23123	**83.5** 18782	**79.1** 17782	**74.0** 16631	**70.0** 15746	
			60000	**181.7** 40853	**147.6** 33183	**119.9** 26953	**91.1** 20475	**74.0** 16631	**70.0** 15746	**65.5** 14726	**62.0** 13942	
			100000	**155.9** 35048	**126.6** 28468	**102.9** 23123	**78.1** 17566	**63.5** 14268	**60.1** 13508	**56.2** 12634	**53.2** 11961	

[1]Speeds referenced here may be higher than speed rating for seals. Please refer to the charts on pages C-25 and C-26.
[2]For speeds greater than thermal reference speed, contact your Timken engineer.

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LOAD RATINGS – *continued*

TABLE C-6. CL SERIES – ALLOWABLE RADIAL LOAD (kN/LBS.) AT VARIOUS RPM[1]

Shaft Diameter	Bearing No.	C	L_{10} Life	Speed[2]													
mm in.		**kN** lbs.		RPM													
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200	3500
35 1 7/16, 1 1/2	22208	**104** 23400	10000	**37.5** 8435	**30.5** 6851	**24.8** 5565	**18.8** 4227	**15.3** 3434	**14.5** 3251	**13.5** 3041	**12.8** 2879	**12.2** 2749	**11.7** 2641	**11.3** 2549	**11.0** 2470	**10.8** 2422	**10.5** 2358
			30000	**27.0** 6067	**21.9** 4928	**17.8** 4002	**13.5** 3041	**11.0** 2470	**10.4** 2338	**9.7** 2187	**9.2** 2070	**8.8** 1977	**8.4** 1899	**8.2** 1833	**7.9** 1776	**7.7** 1742	**7.5** 1696
			40000	**24.8** 5565	**20.1** 4520	**16.3** 3672	**12.4** 2789	**10.1** 2265	**9.5** 2145	**8.9** 2006	**8.4** 1899	**8.1** 1813	**7.7** 1742	**7.5** 1682	**7.2** 1629	**7.1** 1598	**6.9** 1556
			60000	**21.9** 4928	**17.8** 4002	**14.5** 3251	**11.0** 2470	**8.9** 2006	**8.4** 1899	**7.9** 1776	**7.5** 1682	**7.1** 1606	**6.9** 1543	**6.6** 1489	**6.4** 1443	**6.3** 1415	**6.1** 1378
			100000	**18.8** 4227	**15.3** 3434	**12.4** 2789	**9.4** 2119	**7.7** 1721	**7.2** 1629	**6.8** 1524	**6.4** 1443	**6.1** 1378	**5.9** 1323	**5.7** 1278	**5.5** 1238	**5.4** 1214	**5.3** 1182
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200	3500
40, 45 1 11/16, 1 3/4	22209	**109** 24500	10000	**39.3** 8831	**31.9** 7173	**25.9** 5827	**19.7** 4426	**16.0** 3595	**15.1** 3404	**14.2** 3183	**13.4** 3014	**12.8** 2878	**12.3** 2765	**11.9** 2669	**11.5** 2586	**11.3** 2536	**11.0** 2469
			30000	**28.3** 6352	**22.9** 5159	**18.6** 4191	**14.2** 3183	**11.5** 2586	**10.9** 2448	**10.2** 2290	**9.6** 2168	**9.2** 2070	**8.8** 1988	**8.5** 1919	**8.3** 1860	**8.1** 1824	**7.9** 1776
			40000	**25.9** 5827	**21.1** 4733	**17.1** 3844	**13.0** 2920	**10.6** 2372	**10.0** 2246	**9.3** 2100	**8.8** 1988	**8.4** 1899	**8.1** 1824	**7.8** 1761	**7.6** 1706	**7.4** 1673	**7.2** 1629
			60000	**22.9** 5159	**18.6** 4191	**15.1** 3404	**11.5** 2586	**9.3** 2100	**8.8** 1988	**8.3** 1860	**7.8** 1761	**7.5** 1681	**7.2** 1615	**6.9** 1559	**6.7** 1511	**6.6** 1482	**6.4** 1442
			100000	**19.7** 4426	**16.0** 3595	**13.0** 2920	**9.9** 2218	**8.0** 1802	**7.6** 1706	**7.1** 1595	**6.7** 1511	**6.4** 1442	**6.2** 1386	**6.0** 1338	**5.8** 1296	**5.7** 1271	**5.5** 1237
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200	3500
50 1 15/16, 2	22210	**117** 26300	10000	**42.2** 9480	**34.3** 7700	**27.8** 6255	**21.1** 4751	**17.2** 3859	**16.3** 3654	**15.2** 3417	**14.4** 3235	**13.7** 3089	**13.2** 2968	**12.7** 2865	**12.3** 2776	**12.1** 2723	**11.8** 2650
			30000	**30.3** 6818	**24.6** 5538	**20.0** 4498	**15.2** 3417	**12.3** 2776	**11.7** 2628	**10.9** 2458	**10.4** 2327	**9.9** 2222	**9.5** 2135	**9.2** 2060	**8.9** 1996	**8.7** 1958	**8.5** 1906
			40000	**27.8** 6255	**22.6** 5080	**18.4** 4127	**13.9** 3135	**11.3** 2546	**10.7** 2411	**10.0** 2255	**9.5** 2135	**9.1** 2038	**8.7** 1958	**8.4** 1890	**8.1** 1831	**8.0** 1796	**7.8** 1749
			60000	**24.6** 5538	**20.0** 4498	**16.3** 3654	**12.3** 2776	**10.0** 2255	**9.5** 2135	**8.9** 1996	**8.4** 1890	**8.0** 1805	**7.7** 1734	**7.4** 1674	**7.2** 1622	**7.1** 1590	**6.9** 1548
			100000	**21.1** 4751	**17.2** 3859	**13.9** 3135	**10.6** 2381	**8.6** 1934	**8.1** 1831	**7.6** 1713	**7.2** 1622	**6.9** 1548	**6.6** 1487	**6.4** 1436	**6.2** 1391	**6.1** 1364	**5.9** 1328
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200	3500[1]
55 2 3/16, 2 1/4	22211	**140** 31400	10000	**50.3** 11319	**40.9** 9194	**33.2** 7468	**25.2** 5673	**20.5** 4608	**19.4** 4362	**18.1** 4080	**17.2** 3863	**16.4** 3688	**15.8** 3543	**15.2** 3420	**14.7** 3314	**14.5** 3250	**14.1** 3164
			30000	**36.2** 8141	**29.4** 6612	**23.9** 5371	**18.1** 4080	**14.7** 3314	**14.0** 3138	**13.1** 2934	**12.4** 2778	**11.8** 2653	**11.3** 2549	**10.9** 2460	**10.6** 2383	**10.4** 2338	**10.1** 2276
			40000	**33.2** 7468	**27.0** 6066	**21.9** 4927	**16.6** 3743	**13.5** 3040	**12.8** 2878	**12.0** 2692	**11.3** 2549	**10.8** 2433	**10.4** 2338	**10.0** 2257	**9.7** 2186	**9.5** 2144	**9.3** 2088
			60000	**29.4** 6612	**23.9** 5371	**19.4** 4362	**14.7** 3314	**12.0** 2692	**11.3** 2549	**10.6** 2383	**10.0** 2257	**9.6** 2155	**9.2** 2070	**8.9** 1998	**8.6** 1936	**8.4** 1899	**8.2** 1849
			100000	**25.2** 5673	**20.5** 4608	**16.6** 3743	**12.6** 2843	**10.3** 2309	**9.7** 2186	**9.1** 2045	**8.6** 1936	**8.2** 1849	**7.9** 1776	**7.6** 1714	**7.4** 1661	**7.2** 1629	**7.1** 1586
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000[1]	3200[1]	3500[1]
60, 65 2 7/16, 2 1/2	22213	**206** 46400	10000	**74.4** 16726	**60.4** 13585	**49.1** 11035	**37.3** 8383	**30.3** 6809	**28.7** 6446	**26.8** 6029	**25.4** 5708	**24.2** 5450	**23.3** 5236	**22.5** 5054	**21.8** 4897	**21.4** 4803	**20.8** 4676
			30000	**53.5** 12030	**43.5** 9771	**35.3** 7937	**26.8** 6029	**21.8** 4897	**20.6** 4636	**19.3** 4336	**18.3** 4105	**17.4** 3920	**16.8** 3766	**16.2** 3635	**15.7** 3522	**15.4** 3455	**15.0** 3363
			40000	**49.1** 11035	**39.9** 8963	**32.4** 7280	**24.6** 5531	**20.0** 4492	**18.9** 4253	**17.7** 3978	**16.8** 3766	**16.0** 3596	**15.4** 3455	**14.8** 3335	**14.4** 3231	**14.1** 3169	**13.7** 3085
			60000	**43.5** 9771	**35.3** 7937	**28.7** 6446	**21.8** 4897	**17.7** 3978	**16.8** 3766	**15.7** 3522	**14.8** 3335	**14.2** 3184	**13.6** 3059	**13.1** 2953	**12.7** 2861	**12.5** 2806	**12.2** 2732
			100000	**37.3** 8383	**30.3** 6809	**24.6** 5531	**18.7** 4201	**15.2** 3413	**14.4** 3231	**13.4** 3022	**12.7** 2861	**12.2** 2732	**11.7** 2624	**11.3** 2533	**10.9** 2454	**10.7** 2407	**10.4** 2343

[1]Speeds referenced here may be higher than speed rating for seals. Please refer to the charts on pages C-25 and C-26.
[2]For speeds greater than thermal reference speed, contact your Timken engineer.

Continued on next page.

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Continued from previous page.

Shaft Diameter	Bearing No.	C	L_{10} Life	Speed[2]												
mm in.		**kN** lbs.		RPM												
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700[1]	3000[1]	3200[1]
70, 75 2 11/16, 2 3/4, 2 15/16, 3	22215	**220** 49900	10000	**80.0** 17987	**65.0** 14610	**52.8** 11867	**40.1** 9015	**32.6** 7322	**30.8** 6933	**28.8** 6484	**27.3** 6139	**26.1** 5861	**25.0** 5631	**24.2** 5436	**23.4** 5266	**23.0** 5166
			30000	**57.5** 12937	**46.7** 10508	**38.0** 8535	**28.8** 6484	**23.4** 5266	**22.2** 4986	**20.7** 4663	**19.6** 4415	**18.8** 4216	**18.0** 4050	**17.4** 3909	**16.8** 3788	**16.5** 3715
			40000	**52.8** 11867	**42.9** 9639	**34.8** 7829	**26.5** 5948	**21.5** 4831	**20.3** 4574	**19.0** 4278	**18.0** 4050	**17.2** 3867	**16.5** 3715	**16.0** 3586	**15.5** 3475	**15.2** 3408
			60000	**46.7** 10508	**38.0** 8535	**30.8** 6933	**23.4** 5266	**19.0** 4278	**18.0** 4050	**16.8** 3788	**16.0** 3586	**15.2** 3424	**14.6** 3290	**14.1** 3175	**13.7** 3077	**13.4** 3018
			100000	**40.1** 9015	**32.6** 7322	**26.5** 5948	**20.1** 4518	**16.3** 3670	**15.5** 3475	**14.5** 3250	**13.7** 3077	**13.1** 2938	**12.6** 2822	**12.1** 2724	**11.7** 2639	**11.5** 2589
				50	100	200	500	1000	1200	1500	1800	2100[1]	2400[1]	2700[1]		
80, 85, 90 3 3/16, 3 1/4, 3 7/16, 3 1/2	22218	**355** 79700	10000	**127.8** 28729	**103.8** 23335	**84.3** 18954	**64.0** 14399	**52.0** 11695	**49.3** 11073	**46.1** 10356	**43.6** 9805	**41.6** 9362	**40.0** 8994	**38.6** 8682		
			30000	**91.9** 20663	**74.7** 16783	**60.6** 13632	**46.1** 10356	**37.4** 8412	**35.4** 7964	**33.1** 7448	**31.4** 7052	**29.9** 6733	**28.8** 6469	**27.8** 6244		
			40000	**84.3** 18954	**68.5** 15396	**55.6** 12505	**42.3** 9500	**34.3** 7716	**32.5** 7305	**30.4** 6832	**28.8** 6469	**27.5** 6176	**26.4** 5934	**25.5** 5728		
			60000	**74.7** 16783	**60.6** 13632	**49.3** 11073	**37.4** 8412	**30.4** 6832	**28.8** 6469	**26.9** 6050	**25.5** 5728	**24.3** 5469	**23.4** 5254	**22.6** 5072		
			100000	**64.0** 14399	**52.0** 11695	**42.3** 9500	**32.1** 7216	**26.1** 5862	**24.7** 5550	**23.1** 5190	**21.9** 4914	**20.9** 4692	**20.1** 4508	**19.4** 4351		
				50	100	200	500	1000	1200	1500	1800[1]	2100[1]	2400[1]	2700[1]		
100 3 15/16, 4	22220	**435** 97700	10000	**156.7** 35218	**127.2** 28606	**103.4** 23235	**78.5** 17651	**63.8** 14337	**60.4** 13574	**56.5** 12695	**53.5** 12019	**51.0** 11476	**49.0** 11025	**47.3** 10642		
			30000	**112.7** 25329	**91.5** 20574	**74.3** 16711	**56.5** 12695	**45.9** 10311	**43.4** 9762	**40.6** 9130	**38.5** 8644	**36.7** 8254	**35.3** 7930	**34.0** 7654		
			40000	**103.4** 23235	**84.0** 18873	**68.2** 15329	**51.8** 11645	**42.1** 9459	**39.8** 8955	**37.3** 8375	**35.3** 7930	**33.7** 7571	**32.4** 7274	**31.2** 7021		
			60000	**91.5** 20574	**74.3** 16711	**60.4** 13574	**45.9** 10311	**37.3** 8375	**35.3** 7930	**33.0** 7416	**31.2** 7021	**29.8** 6704	**28.7** 6441	**27.7** 6217		
			100000	**78.5** 17651	**63.8** 14337	**51.8** 11645	**39.3** 8846	**32.0** 7185	**30.3** 6803	**28.3** 6362	**26.8** 6024	**25.6** 5752	**24.6** 5526	**23.7** 5334		
				50	100	200	500	1000	1200	1500[1]	1800[1]	2100[1]	2400[1]			
110, 115 4 7/16, 4 1/2	22222	**555** 125000	10000	**200.4** 45058	**162.8** 36599	**132.2** 29727	**100.5** 22583	**81.6** 18343	**77.3** 17367	**72.2** 16242	**68.4** 15377	**65.3** 14683	**62.7** 14106			
			30000	**144.2** 32407	**117.1** 26323	**95.1** 21381	**72.2** 16242	**58.7** 13193	**55.6** 12490	**52.0** 11682	**49.2** 11060	**47.0** 10560	**45.1** 10145			
			40000	**132.2** 29727	**107.4** 24146	**87.2** 19613	**66.3** 14899	**53.8** 12102	**51.0** 11458	**47.7** 10716	**45.1** 10145	**43.1** 9687	**41.4** 9306			
			60000	**117.1** 26323	**95.1** 21381	**77.3** 17367	**58.7** 13193	**47.7** 10716	**45.1** 10145	**42.2** 9488	**40.0** 8983	**38.2** 8577	**36.7** 8241			
			100000	**100.5** 22583	**81.6** 18343	**66.3** 14899	**50.3** 11318	**40.9** 9193	**38.7** 8704	**36.2** 8140	**34.3** 7707	**32.7** 7359	**31.4** 7070			
				50	100	200	500	1000	1200[1]	1500[1]	1800[1]	2100[1]				
125, 130 4 15/16, 5	22226	**757** 170000	10000	**272.6** 61279	**221.4** 49774	**179.8** 40429	**136.6** 30712	**111.0** 24946	**105.1** 23618	**98.3** 22089	**93.0** 20913	**88.8** 19968				
			30000	**196.1** 44074	**159.2** 35799	**129.3** 29078	**98.3** 22089	**79.8** 17942	**75.6** 16987	**70.7** 15887	**66.9** 15041	**63.9** 14362				
			40000	**179.8** 40429	**146.1** 32839	**118.6** 26673	**90.1** 20263	**73.2** 16458	**69.3** 15582	**64.8** 14573	**61.4** 13798	**58.6** 13174				
			60000	**159.2** 35799	**129.3** 29078	**105.1** 23618	**79.8** 17942	**64.8** 14573	**61.4** 13798	**57.4** 12904	**54.3** 12217	**51.9** 11665				
			100000	**136.6** 30712	**111.0** 24946	**90.1** 20263	**68.5** 15393	**55.6** 12503	**52.7** 11837	**49.2** 11071	**46.6** 10482	**44.5** 10008				

[1]Speeds referenced here may be higher than speed rating for seals. Please refer to the charts on pages C-25 and C-26.
[2]For speeds greater than thermal reference speed, contact your Timken engineer.

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LOAD RATINGS – *continued*

TABLE C-7. EC SERIES – ALLOWABLE RADIAL LOAD (kN/LBS.) AT VARIOUS RPM[1]

Shaft Diameter	Bearing No.	C	L_{10} Life	Speed[2]													
mm in.		**kN** lbs.		RPM													
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200	3500
35 1 7/16, 1 1/2	22208	**104** 23400	10000	**37.5** 8435	**30.5** 6851	**24.8** 5565	**18.8** 4227	**15.3** 3434	**14.5** 3251	**13.5** 3041	**12.8** 2879	**12.2** 2749	**11.7** 2641	**11.3** 2549	**11.0** 2470	**10.8** 2422	**10.5** 2358
			30000	**27.0** 6067	**21.9** 4928	**17.8** 4002	**13.5** 3041	**11.0** 2470	**10.4** 2338	**9.7** 2187	**9.2** 2070	**8.8** 1977	**8.4** 1899	**8.2** 1833	**7.9** 1776	**7.7** 1742	**7.5** 1696
			40000	**24.8** 5565	**20.1** 4520	**16.3** 3672	**12.4** 2789	**10.1** 2265	**9.5** 2145	**8.9** 2006	**8.4** 1899	**8.1** 1813	**7.7** 1742	**7.5** 1682	**7.2** 1629	**7.1** 1598	**6.9** 1556
			60000	**21.9** 4928	**17.8** 4002	**14.5** 3251	**11.0** 2470	**8.9** 2006	**8.4** 1899	**7.9** 1776	**7.5** 1682	**7.1** 1606	**6.9** 1543	**6.6** 1489	**6.4** 1443	**6.3** 1415	**6.1** 1378
			100000	**18.8** 4227	**15.3** 3434	**12.4** 2789	**9.4** 2119	**7.7** 1721	**7.2** 1629	**6.8** 1524	**6.4** 1443	**6.1** 1378	**5.9** 1323	**5.7** 1278	**5.5** 1238	**5.4** 1214	**5.3** 1182
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200	3500
40, 45 1 11/16, 1 3/4	22209	**109** 24500	10000	**39.3** 8831	**31.9** 7173	**25.9** 5827	**19.7** 4426	**16.0** 3595	**15.1** 3404	**14.2** 3183	**13.4** 3014	**12.8** 2878	**12.3** 2765	**11.9** 2669	**11.5** 2586	**11.3** 2536	**11.0** 2469
			30000	**28.3** 6352	**22.9** 5159	**18.6** 4191	**14.2** 3183	**11.5** 2586	**10.9** 2448	**10.2** 2290	**9.6** 2168	**9.2** 2070	**8.8** 1988	**8.5** 1919	**8.3** 1860	**8.1** 1824	**7.9** 1776
			40000	**25.9** 5827	**21.1** 4733	**17.1** 3844	**13.0** 2920	**10.6** 2372	**10.0** 2246	**9.3** 2100	**8.8** 1988	**8.4** 1899	**8.1** 1824	**7.8** 1761	**7.6** 1706	**7.4** 1673	**7.2** 1629
			60000	**22.9** 5159	**18.6** 4191	**15.1** 3404	**11.5** 2586	**9.3** 2100	**8.8** 1988	**8.3** 1860	**7.8** 1761	**7.5** 1681	**7.2** 1615	**6.9** 1559	**6.7** 1511	**6.6** 1482	**6.4** 1442
			100000	**19.7** 4426	**16.0** 3595	**13.0** 2920	**9.9** 2218	**8.0** 1802	**7.6** 1706	**7.1** 1595	**6.7** 1511	**6.4** 1442	**6.2** 1386	**6.0** 1338	**5.8** 1296	**5.7** 1271	**5.5** 1237
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200	3500
50 1 15/16, 2	22210	**117** 26300	10000	**42.2** 9480	**34.3** 7700	**27.8** 6255	**21.1** 4751	**17.2** 3859	**16.3** 3654	**15.2** 3417	**14.4** 3235	**13.7** 3089	**13.2** 2968	**12.7** 2865	**12.3** 2776	**12.1** 2723	**11.8** 2650
			30000	**30.3** 6818	**24.6** 5538	**20.0** 4498	**15.2** 3417	**12.3** 2776	**11.7** 2628	**10.9** 2458	**10.4** 2327	**9.9** 2222	**9.5** 2135	**9.2** 2060	**8.9** 1996	**8.7** 1958	**8.5** 1906
			40000	**27.8** 6255	**22.6** 5080	**18.4** 4127	**13.9** 3135	**11.3** 2546	**10.7** 2411	**10.0** 2255	**9.5** 2135	**9.1** 2038	**8.7** 1958	**8.4** 1890	**8.1** 1831	**8.0** 1796	**7.8** 1749
			60000	**24.6** 5538	**20.0** 4498	**16.3** 3654	**12.3** 2776	**10.0** 2255	**9.5** 2135	**8.9** 1996	**8.4** 1890	**8.0** 1805	**7.7** 1734	**7.4** 1674	**7.2** 1622	**7.1** 1590	**6.9** 1548
			100000	**21.1** 4751	**17.2** 3859	**13.9** 3135	**10.6** 2381	**8.6** 1934	**8.1** 1831	**7.6** 1713	**7.2** 1622	**6.9** 1548	**6.6** 1487	**6.4** 1436	**6.2** 1391	**6.1** 1364	**5.9** 1328
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200	3500[1]
55 2 3/16, 2 1/4	22211	**140** 31400	10000	**50.3** 11319	**40.9** 9194	**33.2** 7468	**25.2** 5673	**20.5** 4608	**19.4** 4362	**18.1** 4080	**17.2** 3863	**16.4** 3688	**15.8** 3543	**15.2** 3420	**14.7** 3314	**14.5** 3250	**14.1** 3164
			30000	**36.2** 8141	**29.4** 6612	**23.9** 5371	**18.1** 4080	**14.7** 3314	**14.0** 3138	**13.1** 2934	**12.4** 2778	**11.8** 2653	**11.3** 2549	**10.9** 2460	**10.6** 2383	**10.4** 2338	**10.1** 2276
			40000	**33.2** 7468	**27.0** 6066	**21.9** 4927	**16.6** 3743	**13.5** 3040	**12.8** 2878	**12.0** 2692	**11.3** 2549	**10.8** 2433	**10.4** 2338	**10.0** 2257	**9.7** 2186	**9.5** 2144	**9.3** 2088
			60000	**29.4** 6612	**23.9** 5371	**19.4** 4362	**14.7** 3314	**12.0** 2692	**11.3** 2549	**10.6** 2383	**10.0** 2257	**9.6** 2155	**9.2** 2070	**8.9** 1998	**8.6** 1936	**8.4** 1899	**8.2** 1849
			100000	**25.2** 5673	**20.5** 4608	**16.6** 3743	**12.6** 2843	**10.3** 2309	**9.7** 2186	**9.1** 2045	**8.6** 1936	**8.2** 1849	**7.9** 1776	**7.6** 1714	**7.4** 1661	**7.2** 1629	**7.1** 1586
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000[1]	3200[1]	3500[1]
60, 65 2 7/16, 2 1/2	22213	**206** 46400	10000	**74.4** 16726	**60.4** 13585	**49.1** 11035	**37.3** 8383	**30.3** 6809	**28.7** 6446	**26.8** 6029	**25.4** 5708	**24.2** 5450	**23.3** 5236	**22.5** 5054	**21.8** 4897	**21.4** 4803	**20.8** 4676
			30000	**53.5** 12030	**43.5** 9771	**35.3** 7937	**26.8** 6029	**21.8** 4897	**20.6** 4636	**19.3** 4336	**18.3** 4105	**17.4** 3920	**16.8** 3766	**16.2** 3635	**15.7** 3522	**15.4** 3455	**15.0** 3363
			40000	**49.1** 11035	**39.9** 8963	**32.4** 7280	**24.6** 5531	**20.0** 4492	**18.9** 4253	**17.7** 3978	**16.8** 3766	**16.0** 3596	**15.4** 3455	**14.8** 3335	**14.4** 3231	**14.1** 3169	**13.7** 3085
			60000	**43.5** 9771	**35.3** 7937	**28.7** 6446	**21.8** 4897	**17.7** 3978	**16.8** 3766	**15.7** 3522	**14.8** 3335	**14.2** 3184	**13.6** 3059	**13.1** 2953	**12.7** 2861	**12.5** 2806	**12.2** 2732
			100000	**37.3** 8383	**30.3** 6809	**24.6** 5531	**18.7** 4201	**15.2** 3413	**14.4** 3231	**13.4** 3022	**12.7** 2861	**12.2** 2732	**11.7** 2624	**11.3** 2533	**10.9** 2454	**10.7** 2407	**10.4** 2343

[1]Speeds referenced here may be higher than speed rating for seals. Please refer to the charts on pages C-25 and C-26.
[2]For speeds greater than thermal reference speed, contact your Timken engineer.

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Continued from previous page.

Shaft Diameter	Bearing No.	C	L_{10} Life	Speed[2]												
mm in.		**kN** lbs.		RPM												
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700[1]	3000[1]	3200[1]
70, 75 2 11/16, 2 3/4, 2 15/16, 3	22215	**222** 49900	10000	**80.0** 17987	**65.0** 14610	**52.8** 11867	**40.1** 9015	**32.6** 7322	**30.8** 6933	**28.8** 6484	**27.3** 6139	**26.1** 5861	**25.0** 5631	**24.2** 5436	**23.4** 5266	**23.0** 5166
			30000	**57.5** 12937	**46.7** 10508	**38.0** 8535	**28.8** 6484	**23.4** 5266	**22.2** 4986	**20.7** 4663	**19.6** 4415	**18.8** 4216	**18.0** 4050	**17.4** 3909	**16.8** 3788	**16.5** 3715
			40000	**52.8** 11867	**42.9** 9639	**34.8** 7829	**26.5** 5948	**21.5** 4831	**20.3** 4574	**19.0** 4278	**18.0** 4050	**17.2** 3867	**16.5** 3715	**16.0** 3586	**15.5** 3475	**15.2** 3408
			60000	**46.7** 10508	**38.0** 8535	**30.8** 6933	**23.4** 5266	**19.0** 4278	**18.0** 4050	**16.8** 3788	**16.0** 3586	**15.2** 3424	**14.6** 3290	**14.1** 3175	**13.7** 3077	**13.4** 3018
			100000	**40.1** 9015	**32.6** 7322	**26.5** 5948	**20.1** 4518	**16.3** 3670	**15.5** 3475	**14.5** 3250	**13.7** 3077	**13.1** 2938	**12.6** 2822	**12.1** 2724	**11.7** 2639	**11.5** 2589
				50	100	200	500	1000	1200	1500	1800	2100[1]	2400[1]	2700[1]		
80, 85, 90 3 3/16, 3 1/4, 3 7/16, 3 1/2	22218	**355** 79700	10000	**127.8** 28729	**103.8** 23335	**84.3** 18954	**64.0** 14399	**52.0** 11695	**49.3** 11073	**46.1** 10356	**43.6** 9805	**41.6** 9362	**40.0** 8994	**38.6** 8682		
			30000	**91.9** 20663	**74.7** 16783	**60.6** 13632	**46.1** 10356	**37.4** 8412	**35.4** 7964	**33.1** 7448	**31.4** 7052	**29.9** 6733	**28.8** 6469	**27.8** 6244		
			40000	**84.3** 18954	**68.5** 15396	**55.6** 12505	**42.3** 9500	**34.3** 7716	**32.5** 7305	**30.4** 6832	**28.8** 6469	**27.5** 6176	**26.4** 5934	**25.5** 5728		
			60000	**74.7** 16783	**60.6** 13632	**49.3** 11073	**37.4** 8412	**30.4** 6832	**28.8** 6469	**26.9** 6050	**25.5** 5728	**24.3** 5469	**23.4** 5254	**22.6** 5072		
			100000	**64.0** 14399	**52.0** 11695	**42.3** 9500	**32.1** 7216	**26.1** 5862	**24.7** 5550	**23.1** 5190	**21.9** 4914	**20.9** 4692	**20.1** 4508	**19.4** 4351		
				50	100	200	500	1000	1200	1500	1800[1]	2100[1]	2400[1]	2700[1]		
100 3 11/16, 3 3/4, 3 15/16, 4	22220	**435** 97700	10000	**156.7** 35218	**127.2** 28606	**103.4** 23235	**78.5** 17651	**63.8** 14337	**60.4** 13574	**56.5** 12695	**53.5** 12019	**51.0** 11476	**49.0** 11025	**47.3** 10642		
			30000	**112.7** 25329	**91.5** 20574	**74.3** 16711	**56.5** 12695	**45.9** 10311	**43.4** 9762	**40.6** 9130	**38.5** 8644	**36.7** 8254	**35.3** 7930	**34.0** 7654		
			40000	**103.4** 23235	**84.0** 18873	**68.2** 15329	**51.8** 11645	**42.1** 9459	**39.8** 8955	**37.3** 8375	**35.3** 7930	**33.7** 7571	**32.4** 7274	**31.2** 7021		
			60000	**91.5** 20574	**74.3** 16711	**60.4** 13574	**45.9** 10311	**37.3** 8375	**35.3** 7930	**33.0** 7416	**31.2** 7021	**29.8** 6704	**28.7** 6441	**27.7** 6217		
			100000	**78.5** 17651	**63.8** 14337	**51.8** 11645	**39.3** 8846	**32.0** 7185	**30.3** 6803	**28.3** 6362	**26.8** 6024	**25.6** 5752	**24.6** 5526	**23.7** 5334		
				50	100	200	500	1000	1200	1500[1]	1800[1]	2100[1]	2400[1]			
110, 115 4 7/16, 4 1/2	22222	**555** 125000	10000	**200.4** 45058	**162.8** 36599	**132.2** 29727	**100.5** 22583	**81.6** 18343	**77.3** 17367	**72.2** 16242	**68.4** 15377	**65.3** 14683	**62.7** 14106			
			30000	**144.2** 32407	**117.1** 26323	**95.1** 21381	**72.2** 16242	**58.7** 13193	**55.6** 12490	**52.0** 11682	**49.2** 11060	**47.0** 10560	**45.1** 10145			
			40000	**132.2** 29727	**107.4** 24146	**87.2** 19613	**66.3** 14899	**53.8** 12102	**51.0** 11458	**47.7** 10716	**45.1** 10145	**43.1** 9687	**41.4** 9306			
			60000	**117.1** 26323	**95.1** 21381	**77.3** 17367	**58.7** 13193	**47.7** 10716	**45.1** 10145	**42.2** 9488	**40.0** 8983	**38.2** 8577	**36.7** 8241			
			100000	**100.5** 22583	**81.6** 18343	**66.3** 14899	**50.3** 11318	**40.9** 9193	**38.7** 8704	**36.2** 8140	**34.3** 7707	**32.7** 7359	**31.4** 7070			
				50	100	200	500	1000	1200[1]	1500[1]	1800[1]	2100[1]				
125, 130 4 15/16, 5	22226	**757** 170000	10000	**272.6** 61279	**221.4** 49774	**179.8** 40429	**136.6** 30712	**111.0** 24946	**105.1** 23618	**98.3** 22089	**93.0** 20913	**88.8** 19968				
			30000	**196.1** 44074	**159.2** 35799	**129.3** 29078	**98.3** 22089	**79.8** 17942	**75.6** 16987	**70.7** 15887	**66.9** 15041	**63.9** 14362				
			40000	**179.8** 40429	**146.1** 32839	**118.6** 26673	**90.1** 20263	**73.2** 16458	**69.3** 15582	**64.8** 14573	**61.4** 13798	**58.6** 13174				
			60000	**159.2** 35799	**129.3** 29078	**105.1** 23618	**79.8** 17942	**64.8** 14573	**61.4** 13798	**57.4** 12904	**54.3** 12217	**51.9** 11665				
			100000	**136.6** 30712	**111.0** 24946	**90.1** 20263	**68.5** 15393	**55.6** 12503	**52.7** 11837	**49.2** 11071	**46.6** 10482	**44.5** 10008				

[1]Speeds referenced here may be higher than speed rating for seals. Please refer to the charts on pages C-25 and C-26.
[2]For speeds greater than thermal reference speed, contact your Timken engineer.

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LOAD RATINGS – *continued*

TABLE C-7. EC SERIES – ALLOWABLE RADIAL LOAD (kN/LBS.) AT VARIOUS RPM[1] – *continued*

Shaft Diameter	Bearing No.	C	L_{10} Life	Speed[2]								
mm in.		**kN** lbs.		RPM								
				50	100	200	500	1000[1]	1200[1]			
140, 150 5 7/16, 5 1/2, 5 15/16, 6	23230	**1270** 286000	10000	**458.6** 103094	**372.5** 83738	**302.6** 68016	**229.8** 51669	**186.7** 41968	**176.8** 39735			
			30000	**329.8** 74147	**267.9** 60226	**217.6** 48919	**165.3** 37162	**134.3** 30185	**127.1** 28578			
			40000	**302.6** 68016	**245.8** 55247	**199.6** 44874	**151.6** 34089	**123.2** 27689	**116.6** 26215			
			60000	**267.9** 60226	**217.6** 48919	**176.8** 39735	**134.3** 30185	**109.1** 24518	**103.3** 23213			
			100000	**229.8** 51669	**186.7** 41968	**151.6** 34089	**115.2** 25896	**93.6** 21034	**88.6** 19914			
				50	100	200	500	1000[1]				
170, 180 6 7/16, 6 1/2, 6 15/16, 7	23234	**1660** 373000	10000	**598.1** 134454	**485.8** 109211	**394.6** 88707	**299.8** 67387	**243.5** 54735				
			30000	**430.2** 96703	**349.4** 78547	**283.8** 63800	**215.6** 48466	**175.1** 39367				
			40000	**394.6** 88707	**320.5** 72052	**260.3** 58525	**197.8** 44459	**160.6** 36112				
			60000	**349.4** 78547	**283.8** 63800	**230.5** 51822	**175.1** 39367	**142.2** 31976				
			100000	**299.8** 67387	**243.5** 54735	**197.8** 44459	**150.2** 33773	**122.0** 27433				

[1]Speeds referenced here may be higher than speed rating for seals. Please refer to the charts on pages C-25 and C-26.
[2]For speeds greater than thermal reference speed, contact your Timken engineer.

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TABLE C-8. TA/DV SERIES – ALLOWABLE RADIAL LOAD (kN/LBS.) AT VARIOUS RPM[1]

Shaft Diameter	Bearing No.	C	L_{10} Life	Speed[2]													
mm in.		**kN** lbs.		RPM													
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200	3500
40 1 7/16, 1 1/2	22209	**109** 24500	10000	**39.3** 8831	**31.9** 7173	**25.9** 5827	**19.7** 4426	**16.0** 3595	**15.1** 3404	**14.2** 3183	**13.4** 3014	**12.8** 2878	**12.3** 2765	**11.9** 2669	**11.5** 2586	**11.3** 2536	**11.0** 2469
			30000	**28.3** 6352	**22.9** 5159	**18.6** 4191	**14.2** 3183	**11.5** 2586	**10.9** 2448	**10.2** 2290	**9.6** 2168	**9.2** 2070	**8.8** 1988	**8.5** 1919	**8.3** 1860	**8.1** 1824	**7.9** 1776
			40000	**25.9** 5827	**21.1** 4733	**17.1** 3844	**13.0** 2920	**10.6** 2372	**10.0** 2246	**9.3** 2100	**8.8** 1988	**8.4** 1899	**8.1** 1824	**7.8** 1761	**7.6** 1706	**7.4** 1673	**7.2** 1629
			60000	**22.9** 5159	**18.6** 4191	**15.1** 3404	**11.5** 2586	**9.3** 2100	**8.8** 1988	**8.3** 1860	**7.8** 1761	**7.5** 1681	**7.2** 1615	**6.9** 1559	**6.7** 1511	**6.6** 1482	**6.4** 1442
			100000	**19.7** 4426	**16.0** 3595	**13.0** 2920	**9.9** 2218	**8.0** 1802	**7.6** 1706	**7.1** 1595	**6.7** 1511	**6.4** 1442	**6.2** 1386	**6.0** 1338	**5.8** 1296	**5.7** 1271	**5.5** 1237
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200	3500
45 1 11/16, 1 3/4	22210	**117** 26300	10000	**42.2** 9480	**34.3** 7700	**27.8** 6255	**21.1** 4751	**17.2** 3859	**16.3** 3654	**15.2** 3417	**14.4** 3235	**13.7** 3089	**13.2** 2968	**12.7** 2865	**12.3** 2776	**12.1** 2723	**11.8** 2650
			30000	**30.3** 6818	**24.6** 5538	**20.0** 4498	**15.2** 3417	**12.3** 2776	**11.7** 2628	**10.9** 2458	**10.4** 2327	**9.9** 2222	**9.5** 2135	**9.2** 2060	**8.9** 1996	**8.7** 1958	**8.5** 1906
			40000	**27.8** 6255	**22.6** 5080	**18.4** 4127	**13.9** 3135	**11.3** 2546	**10.7** 2411	**10.0** 2255	**9.5** 2135	**9.1** 2038	**8.7** 1958	**8.4** 1890	**8.1** 1831	**8.0** 1796	**7.8** 1749
			60000	**24.6** 5538	**20.0** 4498	**16.3** 3654	**12.3** 2776	**10.0** 2255	**9.5** 2135	**8.9** 1996	**8.4** 1890	**8.0** 1805	**7.7** 1734	**7.4** 1674	**7.2** 1622	**7.1** 1590	**6.9** 1548
			100000	**21.1** 4751	**17.2** 3859	**13.9** 3135	**10.6** 2381	**8.6** 1934	**8.1** 1831	**7.6** 1713	**7.2** 1622	**6.9** 1548	**6.6** 1487	**6.4** 1436	**6.2** 1391	**6.1** 1364	**5.9** 1328
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200	3500[1]
50 1 15/16, 2	22211	**140** 31400	10000	**50.3** 11319	**40.9** 9194	**33.2** 7468	**25.2** 5673	**20.5** 4608	**19.4** 4362	**18.1** 4080	**17.2** 3863	**16.4** 3688	**15.8** 3543	**15.2** 3420	**14.7** 3314	**14.5** 3250	**14.1** 3164
			30000	**36.2** 8141	**29.4** 6612	**23.9** 5371	**18.1** 4080	**14.7** 3314	**14.0** 3138	**13.1** 2934	**12.4** 2778	**11.8** 2653	**11.3** 2549	**10.9** 2460	**10.6** 2383	**10.4** 2338	**10.1** 2276
			40000	**33.2** 7468	**27.0** 6066	**21.9** 4927	**16.6** 3743	**13.5** 3040	**12.8** 2878	**12.0** 2692	**11.3** 2549	**10.8** 2433	**10.4** 2338	**10.0** 2257	**9.7** 2186	**9.5** 2144	**9.3** 2088
			60000	**29.4** 6612	**23.9** 5371	**19.4** 4362	**14.7** 3314	**12.0** 2692	**11.3** 2549	**10.6** 2383	**10.0** 2257	**9.6** 2155	**9.2** 2070	**8.9** 1998	**8.6** 1936	**8.4** 1899	**8.2** 1849
			100000	**25.2** 5673	**20.5** 4608	**16.6** 3743	**12.6** 2843	**10.3** 2309	**9.7** 2186	**9.1** 2045	**8.6** 1936	**8.2** 1849	**7.9** 1776	**7.6** 1714	**7.4** 1661	**7.2** 1629	**7.1** 1586
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000	3200[1]	3500[1]
55 –	22212	**169** 38100	10000	**61.1** 13734	**49.6** 11155	**40.3** 9061	**30.6** 6883	**24.9** 5591	**23.5** 5293	**22.0** 4951	**20.8** 4687	**19.9** 4475	**19.1** 4300	**18.5** 4150	**17.9** 4021	**17.5** 3944	**17.1** 3839
			30000	**43.9** 9878	**35.7** 8023	**29.0** 6517	**22.0** 4951	**17.9** 4021	**16.9** 3807	**15.8** 3561	**15.0** 3371	**14.3** 3219	**13.8** 3092	**13.3** 2985	**12.9** 2892	**12.6** 2837	**12.3** 2761
			40000	**40.3** 9061	**32.7** 7360	**26.6** 5978	**20.2** 4541	**16.4** 3689	**15.5** 3492	**14.5** 3266	**13.8** 3092	**13.1** 2953	**12.6** 2837	**12.2** 2738	**11.8** 2653	**11.6** 2602	**11.3** 2533
			60000	**35.7** 8023	**29.0** 6517	**23.5** 5293	**17.9** 4021	**14.5** 3266	**13.8** 3092	**12.9** 2892	**12.2** 2738	**11.6** 2614	**11.2** 2512	**10.8** 2425	**10.4** 2349	**10.2** 2304	**10.0** 2243
			100000	**30.6** 6883	**24.9** 5591	**20.2** 4541	**15.3** 3450	**12.5** 2802	**11.8** 2653	**11.0** 2481	**10.4** 2349	**10.0** 2243	**9.6** 2155	**9.3** 2080	**9.0** 2015	**8.8** 1977	**8.6** 1924
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700	3000[1]	3200[1]	3500[1]
60 2 3/16, 2 1/4	22213	**206** 46400	10000	**74.4** 16726	**60.4** 13585	**49.1** 11035	**37.3** 8383	**30.3** 6809	**28.7** 6446	**26.8** 6029	**25.4** 5708	**24.2** 5450	**23.3** 5236	**22.5** 5054	**21.8** 4897	**21.4** 4803	**20.8** 4676
			30000	**53.5** 12030	**43.5** 9771	**35.3** 7937	**26.8** 6029	**21.8** 4897	**20.6** 4636	**19.3** 4336	**18.3** 4105	**17.4** 3920	**16.8** 3766	**16.2** 3635	**15.7** 3522	**15.4** 3455	**15.0** 3363
			40000	**49.1** 11035	**39.9** 8963	**32.4** 7280	**24.6** 5531	**20.0** 4492	**18.9** 4253	**17.7** 3978	**16.8** 3766	**16.0** 3596	**15.4** 3455	**14.8** 3335	**14.4** 3231	**14.1** 3169	**13.7** 3085
			60000	**43.5** 9771	**35.3** 7937	**28.7** 6446	**21.8** 4897	**17.7** 3978	**16.8** 3766	**15.7** 3522	**14.8** 3335	**14.2** 3184	**13.6** 3059	**13.1** 2953	**12.7** 2861	**12.5** 2806	**12.2** 2732
			100000	**37.3** 8383	**30.3** 6809	**24.6** 5531	**18.7** 4201	**15.2** 3413	**14.4** 3231	**13.4** 3022	**12.7** 2861	**12.2** 2732	**11.7** 2624	**11.3** 2533	**10.9** 2454	**10.7** 2407	**10.4** 2343

[1]Speeds referenced here may be higher than speed rating for seals. Please refer to the charts on pages C-25 and C-26.
[2]For speeds greater than thermal reference speed, contact your Timken engineer.

Continued on next page.

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LOAD RATINGS – *continued*

TABLE C-8. TA/DV SERIES – ALLOWABLE RADIAL LOAD (kN/LBS.) AT VARIOUS RPM[1] – *continued*

Shaft Diameter	Bearing No.	C	L_{10} Life	Speed[2]												
mm in.		**kN** lbs.		RPM												
				50	100	200	500	1000	1200	1500	1800	2100	2400	2700[1]	3000[1]	3200[1]
65 2 7/16, 2 1/2	22215	**222** 49900	10000	**80.0** 17987	**65.0** 14610	**52.8** 11867	**40.1** 9015	**32.6** 7322	**30.8** 6933	**28.8** 6484	**27.3** 6139	**26.1** 5861	**25.0** 5631	**24.2** 5436	**23.4** 5266	**23.0** 5166
			30000	**57.5** 12937	**46.7** 10508	**38.0** 8535	**28.8** 6484	**23.4** 5266	**22.2** 4986	**20.7** 4663	**19.6** 4415	**18.8** 4216	**18.0** 4050	**17.4** 3909	**16.8** 3788	**16.5** 3715
			40000	**52.8** 11867	**42.9** 9639	**34.8** 7829	**26.5** 5948	**21.5** 4831	**20.3** 4574	**19.0** 4278	**18.0** 4050	**17.2** 3867	**16.5** 3715	**16.0** 3586	**15.5** 3475	**15.2** 3408
			60000	**46.7** 10508	**38.0** 8535	**30.8** 6933	**23.4** 5266	**19.0** 4278	**18.0** 4050	**16.8** 3788	**16.0** 3586	**15.2** 3424	**14.6** 3290	**14.1** 3175	**13.7** 3077	**13.4** 3018
			100000	**40.1** 9015	**32.6** 7322	**26.5** 5948	**20.1** 4518	**16.3** 3670	**15.5** 3475	**14.5** 3250	**13.7** 3077	**13.1** 2938	**12.6** 2822	**12.1** 2724	**11.7** 2639	**11.5** 2589
				50	100	200	500	1000	1200	1500	1800	2100	2400[1]	2700[1]	3000[1]	
70 2 11/16, 2 3/4	22216	**254** 57200	10000	**91.7** 20619	**74.5** 16748	**60.5** 13603	**46.0** 10334	**37.3** 8394	**35.4** 7947	**33.1** 7432	**31.3** 7037	**29.9** 6719	**28.7** 6455	**27.7** 6231	**26.9** 6037	
			30000	**66.0** 14829	**53.6** 12045	**43.5** 9784	**33.1** 7432	**26.9** 6037	**25.4** 5716	**23.8** 5346	**22.5** 5061	**21.5** 4832	**20.7** 4643	**19.9** 4481	**19.3** 4342	
			40000	**60.5** 13603	**49.1** 11049	**39.9** 8975	**30.3** 6818	**24.6** 5538	**23.3** 5243	**21.8** 4904	**20.7** 4643	**19.7** 4433	**18.9** 4259	**18.3** 4111	**17.7** 3983	
			60000	**53.6** 12045	**43.5** 9784	**35.4** 7947	**26.9** 6037	**21.8** 4904	**20.7** 4643	**19.3** 4342	**18.3** 4111	**17.5** 3925	**16.8** 3771	**16.2** 3640	**15.7** 3527	
			100000	**46.0** 10334	**37.3** 8394	**30.3** 6818	**23.0** 5179	**18.7** 4207	**17.7** 3983	**16.6** 3725	**15.7** 3527	**15.0** 3367	**14.4** 3235	**13.9** 3123	**13.5** 3026	
				50	100	200	500	1000	1200	1500	1800	2100[1]	2400[1]	2700[1]		
75 2 15/16, 3	22217	**297** 66900	10000	**107.3** 24115	**87.1** 19588	**70.8** 15910	**53.8** 12086	**43.7** 9817	**41.3** 9295	**38.7** 8693	**36.6** 8230	**35.0** 7858	**33.6** 7550	**32.4** 7287		
			30000	**77.1** 17344	**62.7** 14088	**50.9** 11443	**38.7** 8693	**31.4** 7061	**29.7** 6685	**27.8** 6252	**26.3** 5919	**25.1** 5652	**24.2** 5430	**23.3** 5241		
			40000	**70.8** 15910	**57.5** 12923	**46.7** 10497	**35.5** 7974	**28.8** 6477	**27.3** 6132	**25.5** 5735	**24.2** 5430	**23.1** 5184	**22.2** 4981	**21.4** 4808		
			60000	**62.7** 14088	**50.9** 11443	**41.3** 9295	**31.4** 7061	**25.5** 5735	**24.2** 5430	**22.6** 5078	**21.4** 4808	**20.4** 4591	**19.6** 4410	**18.9** 4257		
			100000	**53.8** 12086	**43.7** 9817	**35.5** 7974	**26.9** 6057	**21.9** 4920	**20.7** 4658	**19.4** 4357	**18.3** 4125	**17.5** 3938	**16.8** 3784	**16.2** 3652		
				50	100	200	500	1000	1200	1500	1800	2100[1]	2400[1]	2700[1]		
80 3 3/16, 3 1/4	22218	**355** 79700	10000	**127.8** 28729	**103.8** 23335	**84.3** 18954	**64.0** 14399	**52.0** 11695	**49.3** 11073	**46.1** 10356	**43.6** 9805	**41.6** 9362	**40.0** 8994	**38.6** 8682		
			30000	**91.9** 20663	**74.7** 16783	**60.6** 13632	**46.1** 10356	**37.4** 8412	**35.4** 7964	**33.1** 7448	**31.4** 7052	**29.9** 6733	**28.8** 6469	**27.8** 6244		
			40000	**84.3** 18954	**68.5** 15396	**55.6** 12505	**42.3** 9500	**34.3** 7716	**32.5** 7305	**30.4** 6832	**28.8** 6469	**27.5** 6176	**26.4** 5934	**25.5** 5728		
			60000	**74.7** 16783	**60.6** 13632	**49.3** 11073	**37.4** 8412	**30.4** 6832	**28.8** 6469	**26.9** 6050	**25.5** 5728	**24.3** 5469	**23.4** 5254	**22.6** 5072		
			100000	**64.0** 14399	**52.0** 11695	**42.3** 9500	**32.1** 7216	**26.1** 5862	**24.7** 5550	**23.1** 5190	**21.9** 4914	**20.9** 4692	**20.1** 4508	**19.4** 4351		
				50	100	200	500	1000	1200	1500	1800	2100[1]	2400[1]	2700[1]		
85 –	22219	**385** 86600	10000	**138.9** 31216	**112.8** 25356	**91.6** 20595	**69.6** 15645	**56.5** 12708	**53.5** 12032	**50.1** 11252	**47.4** 10654	**45.2** 10172	**43.5** 9773	**42.0** 9433		
			30000	**99.9** 22452	**81.1** 18236	**65.9** 14813	**50.1** 11252	**40.7** 9140	**38.5** 8653	**36.0** 8093	**34.1** 7662	**32.5** 7316	**31.3** 7029	**30.2** 6785		
			40000	**91.6** 20595	**74.4** 16729	**60.4** 13588	**45.9** 10322	**37.3** 8384	**35.3** 7938	**33.0** 7424	**31.3** 7029	**29.9** 6711	**28.7** 6448	**27.7** 6224		
			60000	**81.1** 18236	**65.9** 14813	**53.5** 12032	**40.7** 9140	**33.0** 7424	**31.3** 7029	**29.2** 6574	**27.7** 6224	**26.4** 5942	**25.4** 5709	**24.5** 5511		
			100000	**69.6** 15645	**56.5** 12708	**45.9** 10322	**34.9** 7841	**28.3** 6369	**26.8** 6030	**25.1** 5640	**23.7** 5339	**22.7** 5098	**21.8** 4898	**21.0** 4728		

[1]Speeds referenced here may be higher than speed rating for seals. Please refer to the charts on pages C-25 and C-26.
[2]For speeds greater than thermal reference speed, contact your Timken engineer.

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Continued from previous page.

Shaft Diameter	Bearing No.	C	L_{10} Life	Speed[2]										
mm in.		**kN** lbs.		RPM										
				50	100	200	500	1000	1200	1500	1800[1]	2100[1]	2400[1]	2700[1]
90 3 7/16, 3 1/2	22220	**435** 97700	10000	**156.7** 35218	**127.2** 28606	**103.4** 23235	**78.5** 17651	**63.8** 14337	**60.4** 13574	**56.5** 12695	**53.5** 12019	**51.0** 11476	**49.0** 11025	**47.3** 10642
			30000	**112.7** 25329	**91.5** 20574	**74.3** 16711	**56.5** 12695	**45.9** 10311	**43.4** 9762	**40.6** 9130	**38.5** 8644	**36.7** 8254	**35.3** 7930	**34.0** 7654
			40000	**103.4** 23235	**84.0** 18873	**68.2** 15329	**51.8** 11645	**42.1** 9459	**39.8** 8955	**37.3** 8375	**35.3** 7930	**33.7** 7571	**32.4** 7274	**31.2** 7021
			60000	**91.5** 20574	**74.3** 16711	**60.4** 13574	**45.9** 10311	**37.3** 8375	**35.3** 7930	**33.0** 7416	**31.2** 7021	**29.8** 6704	**28.7** 6441	**27.7** 6217
			100000	**78.5** 17651	**63.8** 14337	**51.8** 11645	**39.3** 8846	**32.0** 7185	**30.3** 6803	**28.3** 6362	**26.8** 6024	**25.6** 5752	**24.6** 5526	**23.7** 5334
				50	100	200	500	1000	1200	1500[1]	1800[1]	2100[1]	2400[1]	
100 3 15/16, 4	22222	**555** 125000	10000	**200.4** 45058	**162.8** 36599	**132.2** 29727	**100.5** 22583	**81.6** 18343	**77.3** 17367	**72.2** 16242	**68.4** 15377	**65.3** 14683	**62.7** 14106	
			30000	**144.2** 32407	**117.1** 26323	**95.1** 21381	**72.2** 16242	**58.7** 13193	**55.6** 12490	**52.0** 11682	**49.2** 11060	**47.0** 10560	**45.1** 10145	
			40000	**132.2** 29727	**107.4** 24146	**87.2** 19613	**66.3** 14899	**53.8** 12102	**51.0** 11458	**47.7** 10716	**45.1** 10145	**43.1** 9687	**41.4** 9306	
			60000	**117.1** 26323	**95.1** 21381	**77.3** 17367	**58.7** 13193	**47.7** 10716	**45.1** 10145	**42.2** 9488	**40.0** 8983	**38.2** 8577	**36.7** 8241	
			100000	**100.5** 22583	**81.6** 18343	**66.3** 14899	**50.3** 11318	**40.9** 9193	**38.7** 8704	**36.2** 8140	**34.3** 7707	**32.7** 7359	**31.4** 7070	
				50	100	200	500	1000	1200	1500[1]	1800[1]	2100[1]	2400[1]	
110 4 3/16, 4 1/4	22224	**647** 145000	10000	**232.5** 52268	**188.8** 42455	**153.4** 34484	**116.5** 26196	**94.6** 21278	**89.6** 20145	**83.8** 18841	**79.3** 17838	**75.8** 17032	**72.8** 16363	
			30000	**167.2** 37592	**135.8** 30534	**110.3** 24802	**83.8** 18841	**68.1** 15303	**64.5** 14489	**60.3** 13551	**57.1** 12829	**54.5** 12250	**52.4** 11769	
			40000	**153.4** 34484	**124.6** 28010	**101.2** 22751	**76.9** 17283	**62.4** 14038	**59.1** 13291	**55.3** 12430	**52.4** 11769	**50.0** 11237	**48.0** 10796	
			60000	**135.8** 30534	**110.3** 24802	**89.6** 20145	**68.1** 15303	**55.3** 12430	**52.4** 11769	**49.0** 11007	**46.4** 10421	**44.3** 9950	**42.5** 9559	
			100000	**116.5** 26196	**94.6** 21278	**76.9** 17283	**58.4** 13129	**47.4** 10664	**44.9** 10097	**42.0** 9443	**39.8** 8940	**38.0** 8536	**36.5** 8201	
				50	100	200	500	1000	1200[1]	1500[1]	1800[1]	2100[1]		
115 4 7/16, 4 1/2	22226	**757** 170000	10000	**272.6** 61279	**221.4** 49774	**179.8** 40429	**136.6** 30712	**111.0** 24946	**105.1** 23618	**98.3** 22089	**93.0** 20913	**88.8** 19968		
			30000	**196.1** 44074	**159.2** 35799	**129.3** 29078	**98.3** 22089	**79.8** 17942	**75.6** 16987	**70.7** 15887	**66.9** 15041	**63.9** 14362		
			40000	**179.8** 40429	**146.1** 32839	**118.6** 26673	**90.1** 20263	**73.2** 16458	**69.3** 15582	**64.8** 14573	**61.4** 13798	**58.6** 13174		
			60000	**159.2** 35799	**129.3** 29078	**105.1** 23618	**79.8** 17942	**64.8** 14573	**61.4** 13798	**57.4** 12904	**54.3** 12217	**51.9** 11665		
			100000	**136.6** 30712	**111.0** 24946	**90.1** 20263	**68.5** 15393	**55.6** 12503	**52.7** 11837	**49.2** 11071	**46.6** 10482	**44.5** 10008		
				50	100	200	500	1000[1]	1200[1]	1500[1]	1800[1]			
125 4 15/16, 5	22228	**863** 194000	10000	**311.1** 69931	**252.7** 56801	**205.2** 46137	**155.9** 35048	**126.6** 28468	**119.9** 26953	**112.1** 25208	**106.2** 23866			
			30000	**223.7** 50296	**181.7** 40853	**147.6** 33183	**112.1** 25208	**91.1** 20475	**86.2** 19385	**80.6** 18130	**76.4** 17165			
			40000	**205.2** 46137	**166.7** 37475	**135.4** 30439	**102.9** 23123	**83.5** 18782	**79.1** 17782	**74.0** 16631	**70.0** 15746			
			60000	**181.7** 40853	**147.6** 33183	**119.9** 26953	**91.1** 20475	**74.0** 16631	**70.0** 15746	**65.5** 14726	**62.0** 13942			
			100000	**155.9** 35048	**126.6** 28468	**102.9** 23123	**78.1** 17566	**63.5** 14268	**60.1** 13508	**56.2** 12634	**53.2** 11961			

[1]Speeds referenced here may be higher than speed rating for seals. Please refer to the charts on pages C-25 and C-26.
[2]For speeds greater than thermal reference speed, contact your Timken engineer.

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HOUSING LOADS

Because solid-block housed unit bearings are made of cast steel, they are built to last with high allowable load in multiple orientations.

Refer to tables below for allowable housing loads.

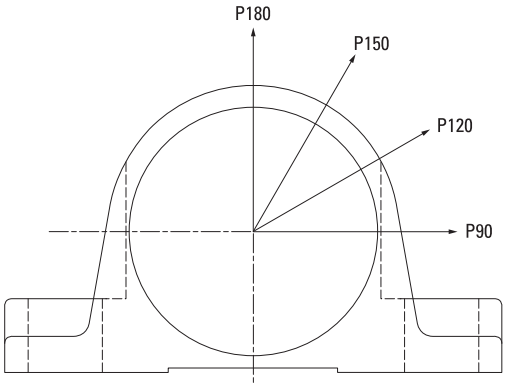


Fig. C-15. Allowable housing loads.

TABLE C-9. HOUSING CAPACITY CHART (222XX SERIES)

Bearing No.	Static Capacity	Fs Ratio 1:5	Timken Factor 180	Housing Capacity 180	Timken Factor 150	Housing Capacity 150	Timken Factor 120	Housing Capacity 120	Timken Factor 90	Housing Capacity 90
	kN lbs.			**kN** lbs.		**kN** lbs.		**kN** lbs.		**kN** lbs.
22208	**99.7** 22400	0.20	1	**20** 4480	0.86	**17** 3850	1	**20** 4480	1.73	**34** 7750
22209	**108** 24200	0.20	1	**22** 4840	0.86	**18** 4160	1	**22** 4840	1.73	**37** 8370
22210	**118** 26600	0.20	1	**24** 5320	0.86	**20** 4570	1	**24** 5320	1.73	**41** 9200
22211	**142** 31900	0.20	1	**28** 6380	0.86	**24** 5490	1	**28** 6380	1.73	**49** 11040
22212	**174** 39000	0.20	1	**35** 7800	0.86	**30** 6710	1	**35** 7800	1.73	**60** 13490
22213	**216** 48600	0.20	1	**43** 9720	0.86	**37** 8360	1	**43** 9720	1.73	**75** 16820
22214	**231** 52000	0.20	1	**46** 10400	0.86	**40** 8940	1	**46** 10400	1.73	**800** 179990
22215	**240** 54100	0.20	1	**48** 10820	0.86	**41** 9310	1	**48** 10820	1.73	**83** 18720
22216	**278** 62500	0.20	1	**56** 12500	0.86	**48** 10750	1	**56** 12500	1.73	**96** 21630
22217	**320** 71900	0.20	1	**64** 14380	0.86	**55** 12370	1	**64** 14380	1.73	**111** 24880
22218	**388** 87200	0.20	1	**78** 17440	0.86	**67** 15000	1	**78** 17440	1.73	**134** 30170
22219	**441** 99000	0.20	1	**88** 19800	0.86	**76** 17030	1	**88** 19800	1.73	**152** 34250
22220	**502** 113000	0.20	1	**100** 22600	0.86	**86** 19440	1	**100** 22600	1.73	**174** 39100
22222	**653** 147000	0.20	1	**131** 29400	0.86	**112** 25290	1	**131** 29400	1.73	**226** 50860
22224	**772** 174000	0.20	1	**155** 34800	0.86	**133** 29930	1	**155** 34800	1.73	**268** 60200
22226	**945** 212000	0.20	1	**188** 42400	0.86	**162** 36460	1	**188** 42400	1.73	**326** 73350
22228	**1060** 237000	0.20	1	**211** 47400	0.86	**181** 40760	1	**211** 47400	1.73	**364** 82000

TABLE C-10. HOUSING CAPACITY CHART (232XX SERIES)

Bearing	Static Capacity	Fs Ratio 1:5	Timken Factor 180	Housing Capacity 180	Timken Factor 150	Housing Capacity 150	Timken Factor 120	Housing Capacity 120	Timken Factor 90	Housing Capacity 90
	kN lbs.			**kN** lbs.		**kN** lbs.		**kN** lbs.		**kN** lbs.
23230	**1660** 372000	0.17	1	**281** 63240	0.86	**242** 54390	1	**281** 63240	1.73	**486** 109400
23234	**2200** 494000	0.17	1	**373** 83980	0.86	**321** 72220	1	**373** 83980	1.73	**646** 145290

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NORMAL SPEED RATINGS FOR SEALS

TABLE C-11. V-LOCK SERIES NORMAL SEAL SPEED RATINGS (RPM)

Shaft Dia.	Bearing No.	Oil Lubrication			Grease Lubrication		
		M/N Seal[1]	T Seal	B/C/O Seal[1]	M/N Seal[1]	T Seal	B/C/O Seal[1]
mm in.							
50 1 15/16, 2	22211	2200	3800	1800	2200	3200	1600
55 2 3/16, 2 1/4	22212 22213	2000 1800	3500 3200	1650 1500	2000 1800	3000 2800	1550 1500
60, 65 2 7/16, 2 1/2	22214 22215	1700 1600	3050 2900	1400 1300	1700 1600	2600 2400	1400 1300
70, 75 2 11/16, 2 3/4 2 15/16, 3	22216 22217	1500 1400	2650 2400	1200 1100	1500 1400	2200 2000	1150 1100
80, 85, 90 3 3/16, 3 1/4 3 7/16, 3 1/2	22219 22220	1300 1200	2200 2000	1000 900	1300 1200	1800 1600	950 900
100 3 11/16, 3 3/4 3 15/16, 4	22222	900	1700	600	900	1200	600
110, 115 4 7/16, 4 1/2	22224 22226	700	1500	400	700	1000	400
125, 130 4 15/16, 5	22228	650	1200	350	650	900	350

[1]Bearings with contact seals will have higher operating temperatures than bearings with labyrinth seals.

TABLE C-12. CL SERIES NORMAL SEAL SPEED RATINGS (RPM)

Shaft Dia.	Bearing No.	Oil Lubrication			Grease Lubrication		
		M/N Seal[1]	T Seal	B/C/O Seal[1]	M/N Seal[1]	T Seal	B/C/O Seal[1]
mm in.							
35 1 7/16, 1 1/2	22208	2700	4500	1950	2700	4000	1950
40, 45 1 11/16, 1 3/4	22209	2700	4500	1950	2700	4000	1950
50 1 15/16, 2	22210	2400	4200	1800	2400	3550	1800
55 2 3/16, 2 1/4	22211	2200	3800	1600	2200	3200	1600
60, 65 2 7/16, 2 1/2	22213	1800	3200	1500	1800	2800	1500
70, 75 2 11/16, 2 3/4 2 15/16, 3	22215	1600	2900	1300	1600	2400	1300
80, 85, 90 3 3/16, 3 1/4 3 7/16, 3 1/2	22218	1400	2400	1000	1400	2000	1000
100 3 15/16, 4	22220	1200	2000	900	1200	1600	900
110, 115 4 7/16, 4 1/2	22222	900	1700	600	900	1200	600
125, 130 4 15/16, 5	22226	700	1500	400	700	1000	400

[1]Bearings with contact seals will have higher operating temperatures than bearings with labyrinth seals.

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TABLE C-13. EC SERIES NORMAL SEAL SPEED RATINGS (RPM)

Shaft Dia.	Bearing No.	Oil Lubrication			Grease Lubrication		
		M/N Seal[1]	T Seal	B/C/O Seal[1]	M/N Seal[1]	T Seal	B/C/O Seal[1]
mm in.							
35 1 7/16, 1 1/2	22208	2700	4500	1950	2700	4000	1950
40, 45 1 11/16, 1 3/4	22209	2700	4500	1950	2700	4000	1950
50 1 15/16, 2	22210	2400	4200	1800	2400	3550	1800
55 2 3/16, 2 1/4	22211	2200	3800	1600	2200	3200	1600
60, 65 2 7/16, 2 1/2	22213	1800	3200	1500	1800	2800	1500
70, 75 2 11/16, 2 3/4, 2 15/16, 3	22215	1600	2900	1300	1600	2400	1300
80, 85, 90 3 3/16, 3 1/4 3 7/16, 3 1/2	22218	1400	2400	1000	1400	2000	1000
100 3 11/16, 3 3/4 3 15/16, 4	22220	1200	2000	900	1200	1600	900
110,115 4 7/16, 4 1/2	22222	900	1700	600	900	1200	600
125, 130 4 15/16, 5	22226	700	1500	400	700	1000	400
140, 150 5 7/16, 5 1/2 5 15/16, 6	23230	650	950	350	600	800	350
170, 180 6 7/16, 6 1/2 6 15/16, 7	23234	600	900	350	600	800	350

[1]Bearings with contact seals will have higher operating temperatures than bearings with labyrinth seals.

TABLE C-14. TA/DV SERIES NORMAL SEAL SPEED RATINGS (RPM)

Shaft Dia.	Bearing No.	Oil Lubrication			Grease Lubrication		
		M/N Seal[1]	T Seal	B/C/O Seal[1]	M/N Seal[1]	T Seal	B/C/O Seal[1]
mm in.							
40 1 7/16, 1 1/2	22209	2700	4500	1950	2700	4000	1950
45 1 11/16, 1 3/4	22210	2400	4200	1800	2400	3550	1800
50 1 15/16, 2	22211	2200	3800	1800	2200	3200	1600
55 –	22212	2000	3500	1650	2000	3000	1550
60 2 3/16, 2 1/4	22213	1800	3200	1500	1800	2800	1500
65 2 7/16, 2 1/2	22215	1600	2900	1300	1600	2400	1300
70 2 11/16, 2 3/4	22216	1500	2650	1200	1500	2200	1150
75 2 15/16, 3	22217	1400	2400	1100	1400	2000	1100
80 3 3/16, 3 1/4	22218	1400	2400	1000	1400	2000	1000
85 –	22219	1300	2200	1000	1300	1800	950
90 3 7/16, 3 1/2	22220	1200	2000	900	1200	1600	900
100 3 15/16, 4	22222	900	1700	600	900	1200	600
110 4 3/16, 4 1/4	22224	800	1600	500	800	1100	500
115 4 7/16, 4 1/2	22226	700	1500	400	700	1000	400
125 4 15/16, 5	22228	650	1200	350	650	900	350

[1]Bearings with contact seals will have higher operating temperatures than bearings with labyrinth seals.

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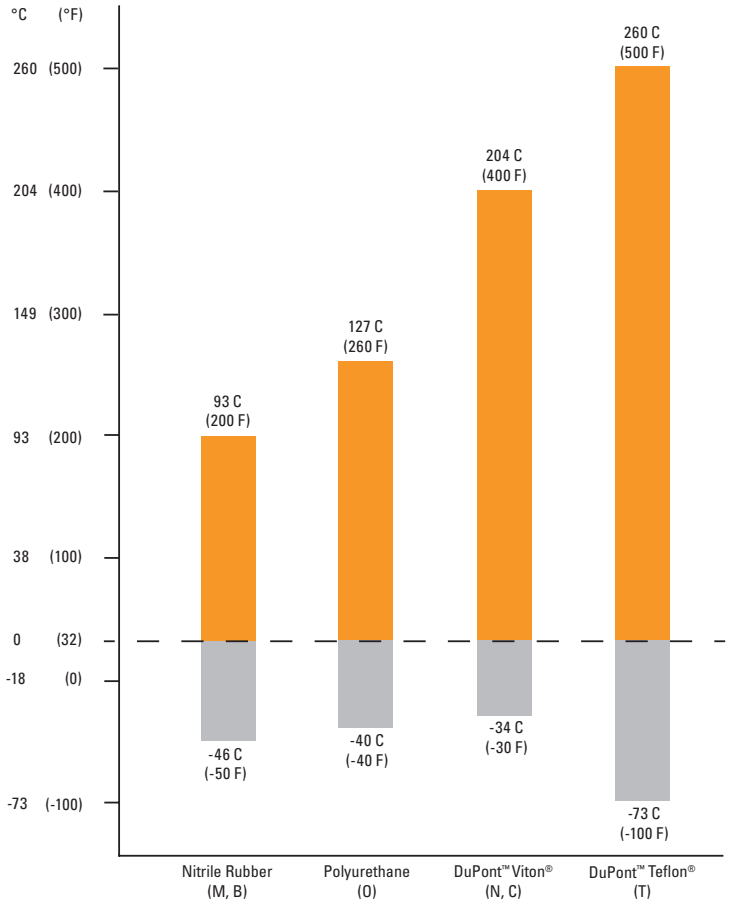


Fig. C-16. Seal temperature ratings based on analytics.

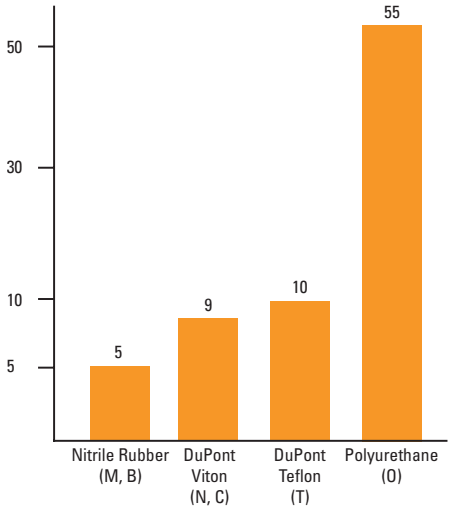


Fig. C-17. Relative abrasion resistance ratings.

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SEAL MATERIAL CHEMICAL COMPATIBILITY

A - Little to no effect B - Minor to moderate effect C - Severe effect to destruction N - No data – test prior to use.	Urethane	Nitrile rubber	DuPont™ Viton®	DuPont™ Teflon®
Acetaldehyde	C	C	C	A
Acetamide	N	A	B	A
Acetic Acid	C	B	B	A
Acetic Anhydride	C	C	C	A
Acetone	C	C	C	A
Acetyl Bromide	C	N	N	N
Acetyl Chloride	C	C	A	A
Acetylene	C	A	A	A
Adipic Acid	A	A	N	A
Aero Shell Grease	B	A-B	A	A
Aero Lubriplate	A	A	A	A
Aero Safe 2300	N	C	C	A
Aerozine 50	N	C	C	A
Aluminum Acetate	N	A	C	A
Aluminum Bromide	N	A	A	A
Aluminum Chloride	B	A	A	A
Aluminum Sulfate	B	A	A	A
Ammonia	B	B	C	A
Ammonium Carbonate	B	C	N	A
Ammonium Chloride	N	A	A	A
Ammonium Hydroxide	B	C	A	A
Ammonium Nitrate	B	A	N	A
Ammonium Persulfate	B	C	N	A
Ammonium Sulfate	B	A	C	A
Ammonium Sulfide	B	A	C	A
Ammonium Thiocyanate	B	N	N	A
Ammonium Acetate	C	N	N	A
Amyl Acetate	C	C	C	A
Amyl Alcohol	C	B	C	A
Aniline	C	C	C	A
Aniline Hydrochloride	C	B	B	B
Animal Fats and Oils	B	A	A	A
Antimony Salts	B	N	N	A
Aqua Regia	C	C	B	A
Arsenic Salts	B	N	N	A
ASTM Oil #1	A	A	A	A
ASTM Oil #2	B	A	A	A
ASTM Oil #3	B	A	A	A
ASTM Reference Fuel A	A	A	A	A
ASTM Reference Fuel B	B	B	A	A
Atlantic Oil	A	A	A	A
Barium Carbonate	B	A	A	A
Barium Hydroxide	A	A	A	A
Beer	A	A	A	A
Benzaldehyde	B	C	C	A
Benzene	C	C	B	A
Benzoic Acid	B	C	A	A
Black Sulphate Liquors	N	B	A	A

A - Little to no effect B - Minor to moderate effect C - Severe effect to destruction N - No data – test prior to use.	Urethane	Nitrile rubber	DuPont™ Viton®	DuPont™ Teflon®
Bleach Solutions	N	C	A	B
Boric Acid	A	A	A	A
Brake Fluid	N	C	C	N
Bromine	B	C	A	C
Bunker Oil	A	A	A	A
Butane	A	A	A	A
Butyl Acetate	C	C	C	A
Butyl Alcohol	B	A	A	A
Calcium Carbonate	B	A	A	A
Calcium Chloride	A	A	A	A
Calcium Hydroxide	A	A	A	A
Calcium Nitrate	B	A	A	A
Calcium Sulfate	B	B	B	A
Carbon Dioxide	A	A	A	A
Carbon Disulfide	B	C	A	A
Carbon Monoxide	A	A	A	A
Carbon Tetrachloride	C	C	A	A
Chlorine	N	C	A	B
Chloroacetic Acid	C	C	C	N
Chloroform	C	N	N	B
Chromic Acid	C	C	A	B
Chromium Potassium Sulfate	A	N	N	N
Citric Acid	B	A	A	A
Corn Oil	A	A	A	A
Cottonseed Oil	A	A	A	A
Cresol	C	C	A	A
Crude Oil	B	B	A	A
Cupric Chloride	A	B	B	A
Cupric Nitrate	B	N	N	A
Cupric Sulfate	B	B	B	A
Cutting Oil	B	A	A	A
Cyclohexane	B	A	A	A
Cyclohexanone	C	C	A	A
Dibutyl Phthalate	C	C	C	B
Dichlorobenzene	C	N	N	B
Diesel Fuel	B	A	A	A
Diester Oil	B	B	A	A
Dimethyl Acetamide	C	N	N	A
Dimethyl Formamide	C	B	C	A
Dodecyl Mercaptan	B	N	N	N
DTE Oil	B	A	N	N
Dubutyl Ether	B	C	C	N
EP Lubes	A	A	A	A
Esso #90 Lube Oil	A	A	A	A
Ether	B	N	N	A
Ethyl Acetate	C	C	C	A
Ethyl Alcohol (Ethanol)	C	A	C	A
Formic Acid	C	B	C	A

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Continued from previous page.

A - Little to no effect B - Minor to moderate effect C - Severe effect to destruction N - No data – test prior to use.	Urethane	Nitrile rubber	DuPont™ Viton®	DuPont™ Teflon®
Freon, 12 or 113	A	A	B	A
Fuel Oil	B	A	A	A
Gasoline	B	B	A	A
Glucose	A	A	A	A
Glue	N	A	A	A
Glycerin	A	A	A	A
Heptane	A	N	N	A
Hexane	A	A	A	A
Hydrazine	C	B	C	B
Hydrobromic Acid	B	C	A	A
Hydrocarbon Oil	A	A	A	A
Hydrochloric Acid	B	C	B	A
Hydrofluoric Acid	B	C	C	A
Hydrogen	A	A	A	A
Hydrogen Peroxide	B	C	A	B
Hydrogen Sulfide	C	C	C	A
Hydrologic Acid	B	N	N	N
Iodine	A	B	A	A
Isobutyl Alcohol	N	B	A	A
Isopropyl Chloride	N	C	A	A
Isopropyl Ether	B	B	C	N
Isopropyl Alcohol (Propanol)	B	A	A	N
JP4 Oil	B	A	A	A
JP5 and 6 Oil	C	A	A	A
Kerosene	B	A	A	A
Lactic Acid	B	B	A	A
Lead Acetate	B	B	C	A
Linseed Oil	B	A	A	A
Liquefied Petroleum Gas	A	A	A	N
Lubrication Oil	B	A	A	A
Lye	N	B	B	A
Magnesium Chloride	N	A	A	A
Magnesium Hydroxide	A	B	A	A
Magnesium Salts	B	A	A	A
Maleic Acid	C	C	A	A
Mercury	B	A	A	A
Methyl Alcohol (Methanol)	A	C	A	N
Methyl Ethyl Ketone	C	C	C	A
Methylene Chloride	C	C	B	A
MIL-D-5606 Oil	C	A	A	A
MIL-L7808 Oil	B	B	A	A
Mineral Oil	A	A	A	A
Mineral Spirits	N	B	A	A
Naphthalene	B	C	A	A
Natural Gas	B	A	A	A
Nickel Salts	C	A	A	A
Oxygen	A	B	A	A
Ozone	A	C	A	A

A - Little to no effect B - Minor to moderate effect C - Severe effect to destruction N - No data – test prior to use.	Urethane	Nitrile rubber	DuPont™ Viton®	DuPont™ Teflon®
Palmitic Acid	A	A	A	A
Paint Thinner	B	C	B	A
Peanut Oil	A	A	A	A
Perchloric Acid	C	C	A	A
Perchloroethylene	C	B	A	A
Petroleum	B	A	A	A
Phenol (Carbolic Acid)	C	C	A	A
Phosphoric Acid	C	C	A	A
Potassium Cyanide	A	A	A	A
Potassium Salts	B	A	A	A
Propane	B	A	A	A
Propyl Alcohol	B	A	A	A
Propylene Glycol	B	N	N	A
Pydraul Oil	C	C	A	A
SAE #10 Oil	A	A	A	A
Seawater	A	A	A	A
Silicic Acid	B	N	N	A
Silver Nitrate	B	B	A	A
Skydrol Oil	C	C	C	A
Soap	B	A	A	A
Sodium Acetate	A	B	C	A
Sodium Bicarbonate	B	A	A	A
Sodium Borate	B	A	A	A
Sodium Carbonate	B	A	A	A
Sodium Chloride	B	A	A	A
Sodium Cyanide	B	A	A	A
Sodium Hydrosulfite	B	N	N	A
Sodium Hydroxide	B	B	B	A
Sodium Hypochlorite	C	B	A	A
Sodium Nitrate	B	B	N	A
Sodium Silicate	A	A	A	A
Sodium Sulfate	B	A	A	A
Sodium Sulfide	B	A	A	A
Steam	C	C	C	A
Styrene	B	C	B	A
Sulfur Dioxide	B	C	A	A
Sulfuric Acid	C	C	A	A
Tannic Acid	A	A	A	A
Tartaric Acid	A	A	A	A
Toluene	C	N	N	A
Transformer Oil	B	N	N	A
Turpentine	C	A	A	A
Urea	B	N	N	A
Varnish	B	B	A	A
Water	B	A	A	A

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INTERNAL RADIAL CLEARANCES

TABLE C-15. V-LOCK SERIES (TAPERED BORE, C3)

Shaft Dia.	Bearing No.	Clearance	
		Min.	Max.
mm in.		**mm** in.	**mm** in.
50 1 15/16, 2	22211	**0.075** 0.003	**0.095** 0.0037
55 2 3/16, 2 1/4	22212	**0.075** 0.003	**0.095** 0.0037
55 2 3/16, 2 1/4	22213	**0.075** 0.003	**0.095** 0.0037
60, 65 2 7/16, 2 1/2	22214	**0.075** 0.003	**0.095** 0.0037
60, 65 2 7/16, 2 1/2	22215	**0.075** 0.003	**0.095** 0.0037
70, 75 2 11/16, 2 3/4, 2 15/16, 3	22216	**0.095** 0.0037	**0.120** 0.0047
70, 75 2 11/16, 2 3/4, 2 15/16, 3	22217	**0.095** 0.0037	**0.120** 0.0047
80, 85, 90 3 3/16, 3 1/4, 3 7/16, 3 1/2	22219	**0.110** 0.0043	**0.140** 0.0055
80, 85, 90 3 3/16, 3 1/4, 3 7/16, 3 1/2	22220	**0.110** 0.0043	**0.140** 0.0055
100 3 11/16, 3 3/4, 3 15/16, 4	22222	**0.135** 0.0053	**0.170** 0.0067
110 –	22224	**0.135** 0.0053	**0.170** 0.0067
110, 115 4 7/16, 4 1/2	22226	**0.135** 0.0053	**0.170** 0.0067
125, 130 4 15/16, 5	22228	**0.160** 0.0063	**0.200** 0.0079

TABLE C-16. CL SERIES (STRAIGHT BORE, C NORMAL)

Shaft Dia.	Bearing No.	Clearance	
		Min.	Max.
mm in.		**mm** in.	**mm** in.
35 1 7/16, 1 1/2	22208	**0.030** 0.0012	**0.045** 0.0018
40, 45 1 11/16, 1 3/4	22209	**0.035** 0.0014	**0.055** 0.0022
50 1 15/16, 2	22210	**0.040** 0.0016	**0.065** 0.0026
55 2 3/16, 2 1/4	22211	**0.040** 0.0016	**0.065** 0.0026
60, 65 2 7/16, 2 1/2	22213	**0.040** 0.0016	**0.065** 0.0026
70, 75 2 11/16, 2 3/4, 2 15/16, 3	22215	**0.050** 0.002	**0.080** 0.0031
80, 85, 90 3 3/16, 3 1/4, 3 7/16, 3 1/2	22218	**0.060** 0.0024	**0.100** 0.0039
100 3 15/16, 4	22220	**0.075** 0.003	**0.120** 0.0047
110, 115 4 7/16, 4 1/2	22222	**0.075** 0.003	**0.120** 0.0047
125, 130 4 15/16, 5	22226	**0.095** 0.0037	**0.145** 0.0057

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TABLE C-17. EC SERIES (STRAIGHT BORE, C NORMAL)

Shaft Dia.	Bearing No.	Clearance	
		Min.	Max.
mm in.		**mm** in.	**mm** in.
35 1 7/16, 1 1/2	22208	**0.030** 0.0012	**0.045** 0.0018
40, 45 1 11/16, 1 3/4	22209	**0.0350** 0.0014	**0.055** 0.0022
50 1 15/16, 2	22210	**0.040** 0.0016	**0.065** 0.0026
55 2 3/16, 2 1/4	22211	**0.040** 0.0016	**0.065** 0.0026
60, 65 2 7/16, 2 1/2	22213	**0.040** 0.0016	**0.065** 0.0026
70, 75 2 11/16, 2 3/4 2 15/16, 3	22215	**0.050** 0.002	**0.080** 0.0031

Shaft Dia.	Bearing No.	Clearance	
		Min.	Max.
mm in.		**mm** in.	**mm** in.
80, 85, 90 3 3/16, 3 1/4 3 7/16, 3 1/2	22218	**0.060** 0.0024	**0.100** 0.0039
100 3 11/16, 3 3/4 3 15/16, 4	22220	**0.075** 0.003	**0.120** 0.0047
110, 115 4 7/16, 4 1/2	22222	**0.075** 0.003	**0.120** 0.0047
125, 130 4 15/16, 5	22226	**0.095** 0.0037	**0.145** 0.0057
140, 150 5 7/16, 5 1/2 5 15/16, 6	23230	**0.110** 0.0043	**0.170** 0.0067
170, 180 6 7/16, 6 1/2, 6 15/16, 7	23234	**0.120** 0.0047	**0.180** 0.0071

TABLE C-18. TA/DV SERIES (TAPERED BORE, C3)

Shaft Dia.	Bearing No.	Clearance Prior To Installation		Recommended Reduction Of Internal Radial Clearance		Recommended Axial Movement Of Adapter Sleeve		Minimum Internal
		Min.	Max.	Min.	Max.	Min.	Max.	
mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
40 1 7/16, 1 1/2	22209	**0.061** 0.0024	**0.079** 0.0031	**0.025** 0.0010	**0.030** 0.0012	**0.381** 0.015	**0.457** 0.018	**0.030** 0.0012
45 1 11/16, 1 3/4	22210	**0.061** 0.0024	**0.079** 0.0031	**0.025** 0.0010	**0.030** 0.0012	**0.381** 0.015	**0.457** 0.018	**0.030** 0.0012
50 1 15/16, 2	22211	**0.076** 0.0030	**0.094** 0.0037	**0.030** 0.0012	**0.038** 0.0015	**0.457** 0.018	**0.559** 0.022	**0.038** 0.0015
55 –	22212	**0.076** 0.0030	**0.094** 0.0037	**0.030** 0.0012	**0.038** 0.0015	**0.457** 0.018	**0.559** 0.022	**0.038** 0.0015
60 2 3/16, 2 1/4	22213	**0.076** 0.0030	**0.094** 0.0037	**0.030** 0.0012	**0.038** 0.0015	**0.457** 0.018	**0.559** 0.022	**0.038** 0.0015
65 2 7/16, 2 1/2	22215	**0.094** 0.0037	**0.119** 0.0047	**0.038** 0.0015	**0.051** 0.0020	**0.559** 0.022	**0.762** 0.030	**0.043** 0.0017
70 2 11/16, 2 3/4	22216	**0.094** 0.0037	**0.119** 0.0047	**0.038** 0.0015	**0.051** 0.0020	**0.559** 0.022	**0.762** 0.030	**0.043** 0.0017
75 2 15/16, 3	22217	**0.109** 0.0043	**0.140** 0.0055	**0.046** 0.0018	**0.064** 0.0025	**0.686** 0.027	**0.965** 0.038	**0.051** 0.0020
80 3 3/16, 3 1/4	22218	**0.109** 0.0043	**0.140** 0.0055	**0.046** 0.0018	**0.064** 0.0025	**0.686** 0.027	**0.965** 0.038	**0.051** 0.0020
85 –	22219	**0.109** 0.0043	**0.140** 0.0055	**0.046** 0.0018	**0.064** 0.0025	**0.686** 0.027	**0.965** 0.038	**0.051** 0.0020
90 3 7/16, 3 1/2	22220	**0.109** 0.0043	**0.140** 0.0055	**0.046** 0.0018	**0.064** 0.0025	**0.686** 0.027	**0.965** 0.038	**0.051** 0.0020
100 3 15/16, 4	22222	**0.135** 0.0053	**0.170** 0.0067	**0.051** 0.0020	**0.071** 0.0028	**0.762** 0.030	**1.067** 0.042	**0.064** 0.0025
110 4 3/16, 4 1/4	22224	**0.135** 0.0053	**0.170** 0.0067	**0.051** 0.0020	**0.071** 0.0028	**0.762** 0.030	**1.067** 0.042	**0.064** 0.0025
115 4 7/16, 4 1/2	22226	**0.160** 0.0063	**0.201** 0.0079	**0.064** 0.0025	**0.089** 0.0035	**0.889** 0.035	**1.270** 0.050	**0.076** 0.0030
125 4 15/16, 5	22228	**0.160** 0.0063	**0.201** 0.0079	**0.064** 0.0025	**0.089** 0.0035	**0.889** 0.035	**1.270** 0.050	**0.076** 0.0030

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SHAFTING

When installing and using housed unit bearings, all shafting should be straight, clean, free from burrs and within the recommended shaft tolerances in tables C-19 and C-20 below. For applications that involve high speed or extreme vibration conditions, we recommend that all shafting be machined to one-half the recommended tolerances below.

SHAFT EXPANSION

Steel expands or contracts 0.0000113 millimeter per millimeter for each degree Celsius (0.0000063 inch per inch for each degree Fahrenheit) relative temperature increase or decrease respectively. Expansion bearings are used to accommodate thermal expansion of steel. Where the shafting and the framework on which the bearings and shafting are mounted are made from steel, the relative difference in expansion between the shaft and the framework will be minimal. In these conditions, fixed bearings can be used on both ends of the shaft. However, if there is a difference in material between the shaft and the framework, or if the application involves different temperatures from the shaft to the frame, then only one fixed bearing should be used on each shaft. All other bearings on the same shaft should be converted to floating to accommodate thermal expansion of the shaft.

TABLE C-19. V-LOCK, CL AND EC SERIES – RECOMMENDED SHAFT TOLERANCES

Shaft Dia.	Shaft Tolerance
mm in.	**mm** in.
35 1 7/16, 1 1/2	**+0.00/-0.025** +0.00/-0.0010
40, 45 1 11/16, 1 3/4	**+0.00/-0.038** + 0.00/-0.0015
50 1 15/16, 2	**+0.00/-0.038** + 0.00/-0.0015
55 2 3/16, 2 1/4	**+0.00/-0.038** + 0.00/-0.0015
60, 65 2 7/16, 2 1/2	**+0.00/-0.038** + 0.00/-0.0015
70, 75 2 11/16, 2 3/4, 2 15/16, 3	**+0.00/-0.051** + 0.00/-0.0020
80, 85, 90 3 3/16, 3 1/4, 3 7/16, 3 1/2	**+0.00/-0.076** + 0.00/-0.0030
100 3 11/16, 3 3/4, 3 15/16, 4	**+0.00/-0.076** + 0.00/-0.0030
110, 115 4 7/16, 4 1/2	**+0.00/-0.127** + 0.00/-0.0050
125, 130 4 15/16, 5	**+0.00/-0.127** + 0.00/-0.0050
140, 150 5 7/16, 5 1/2, 5 15/16, 6	**+0.00/-0.127** + 0.00/-0.0050
170, 180 6 7/16, 6 1/2, 6 15/16, 7	**+0.00/-0.127** + 0.00/-0.0050

TABLE C-20. TA/DV SERIES – RECOMMENDED SHAFT TOLERANCES

Shaft Dia.	Shaft Tolerance
mm in.	**mm** in.
40 1 7/16, 1 1/2	**+0.00/-0.025** +0.00/-0.0010
45 1 11/16, 1 3/4	**+0.00/-0.051** +0.00/-0.0020
50 1 15/16, 2	**+0.00/-0.076** + 0.00/-0.0030
55 –	**+0.00/-0.076** –
60 2 3/16, 2 1/4	**+0.00/-0.076** + 0.00/-0.0030
65 2 7/16, 2 1/2	**+0.00/-0.089** + 0.00/-0.0035
70 2 11/16, 2 3/4	**+0.00/-0.102** + 0.00/-0.0040
75 2 15/16, 3	**+0.00/-0.102** + 0.00/-0.0040
80 3 3/16, 3 1/4	**+0.00/-0.102** + 0.00/-0.0040
85 –	**+0.00/-0.102** –
90 3 7/16, 3 1/2	**+0.00/-0.102** + 0.00/-0.0040
100 3 15/16, 4	**+0.00/-0.102** + 0.00/-0.0040
110 4 3/16, 4 1/4	**+0.00/-0.102** + 0.00/-0.0040
115 4 7/16, 4 1/2	**+0.00/-0.102** + 0.00/-0.0040
125 4 15/16, 5	**+0.00/-0.127** + 0.00/-0.0050

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TABLE C-21. AMOUNT OF FLOAT PER ONE ROTATION OF EXTERNAL HOUSING NUT

Bearing Number	Float	Bearing Number	Float	Bearing Number	Float
	mm in.		**mm** in.		**mm** in.
22208	**1.270** 0.050	22215	**2.108** 0.083	22224	**2.108** 0.083
22209	**1.270** 0.050	22216	**2.108** 0.083	22226	**2.108** 0.083
22210	**1.270** 0.050	22217	**2.108** 0.083	22228	**2.108** 0.083
22211	**1.270** 0.050	22218	**2.108** 0.083	23230	**2.108** 0.083
22212	**1.270** 0.050	22219	**2.108** 0.083	23234	**2.108** 0.083
22213	**2.108** 0.083	22220	**2.108** 0.083	–	–
22214	**2.108** 0.083	22222	**2.108** 0.083	–	–

CONVERSION FROM FIXED TO FLOATING

Housed unit bearings are easily converted from fixed to floating in the field (see the appropriate installation guide in this catalog for instructions). The following table will help you determine the amount of float for each bearing based on the number of revolutions the external housing nut is backed out.

MISALIGNMENT

All spherical roller bearing housed units utilize self-aligning double-row spherical roller bearings. Because of this, the housed unit can accept up to ±1.5 degrees of misalignment. The performance life of our housed unit is not reduced while under misalignment conditions within these guidelines. It will accept both radial and thrust loads under static, oscillatory or dynamic load conditions.

TABLE C-22. MISALIGNMENT SCALE AT ±1.5 DEGREES

A	B
m in.	**mm** in.
0.305 1	**15.951** 0.628
1.524 5	**79.756** 3.140

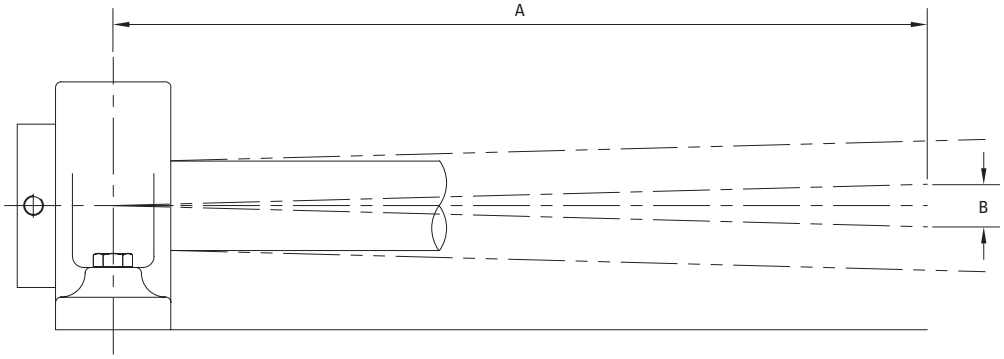


Fig. C-18. Misalignment.

LUBRICATION

Timken is dedicated to using the highest quality components in everything we do. This is why we use premium industrial grease in spherical roller bearing solid-block housed units. The lithium-complex extreme-pressure grease combines the benefits of wide operating temperatures and broad compatibility. This grease offers excellent thermal stability through temperatures ranging from -34° C to 177° C (-30° F to 350° F). When dealing with temperatures above 149° C (300° F), consult your Timken engineer for optional grease recommendations. Application-specific lubrication options are also available ranging from Timken Food Safe Grease (aluminum-complex) to Timken Mill grease (calcium-sulfonate) along with many others.

European REACH Compliance

Timken lubricants, greases and similar products sold in stand-alone containers or delivery systems are subject to the European REACH (**R**egistration, **E**valuation, **A**uthorization and **R**estriction of **CH**emicals) directive. For import into the European Union, Timken can sell and provide only those lubricants and greases that are registered with ECHA (**E**uropean **CH**emical **A**gency). For further information, please contact your Timken engineer.

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INSTALLATION GUIDES
V-LOCK® SERIES

Timken® solid-block housed unit V-Lock® bearings are easy to install and remove because of their unique adapters.

Please complete the following steps to install and/or remove Timken steel housed unit V-Lock bearings.
(Refer to fig. C-19.)

- Ensure that the shaft is clean, free from nicks and burrs, straight and of proper diameter. See table C-24 for recommended shaft tolerances. The housed unit should not be mounted on a worn section of the shaft. Using shafts with hardness greater than HRC 45 will reduce the effectiveness of locking devices.
- If using an open-end cover, slide the open-end cover/seal combination into position on the shaft.
- Remove the wedge assembly from the sleeve by unscrewing the wedge nut. See fig. C-19.
- Clean oil off of the sleeve and wedge.
- Apply a thin oil film to the shaft only.
  - For **QV** single-nut housed units:
  - Slide the sleeve, non-threaded end first, into position on the shaft.
  - For **QVV** double-nut housed units:
  - Make sure the sleeve nut is flush with the end of the sleeve.
  - Slide the sleeve/nut assembly, nut end first, into position on the shaft.
- Slide the housed unit into place over the sleeve.
- Loosely install the housed unit mounting bolts. Check the housed unit alignment. Verify that the mounting surfaces are in the same flat plane to help achieve good alignment. If shimming is required to minimize misalignment, use full shims across the entire housing base where possible (fig. C-20). Washers should be properly sized to bolt diameter and should not be an SAE grade, which is smaller.
- Seat the sleeve as best as possible into the mounted unit.
- Tighten the wedge assembly by turning the wedge nut clockwise until tight. Please note that it is designed to prevent overtightening.
- If installing a double-nut housed unit, tighten the sleeve assembly by turning the sleeve nut clockwise until snug.
- Tighten both the wedge nut and sleeve nut set screws alternately according to fig. C-19.
- Install the housed unit mounting bolts. Check the housed unit alignment. Verify that the mounting surfaces are in the same flat plane to achieve good alignment. If shimming is required to minimize misalignment, use full shims across the entire housing base where possible (fig. C-20). The bolts then need to be alternately torqued securely to their mounting supports.
- Tighten the housing mounting bolts.

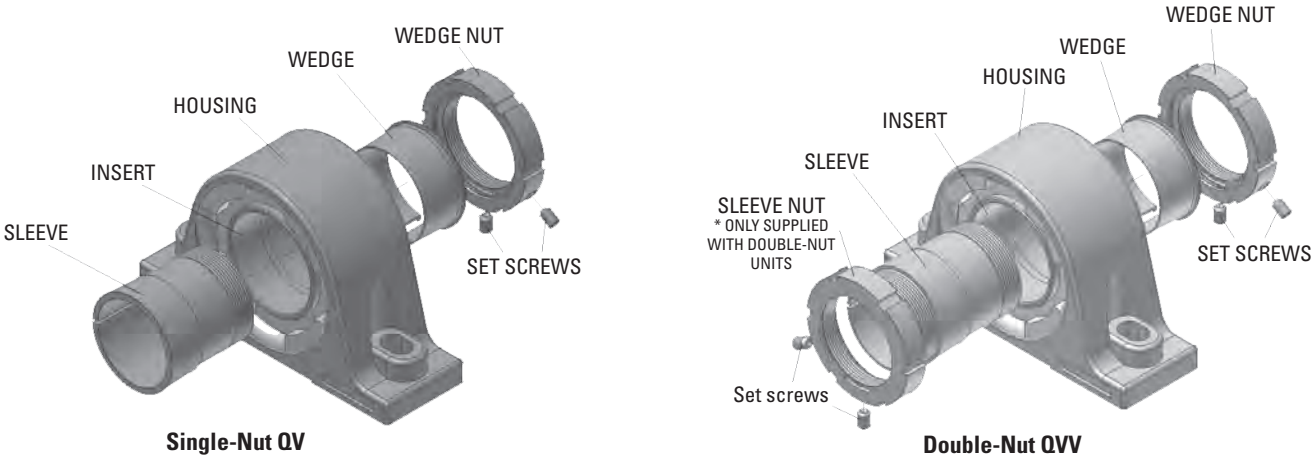


Fig. C-19. V-Lock® insert components.

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TABLE C-23. SET SCREW TORQUE VALUES

Bearing Size	Set Screw Size	Torque
		Nm in. - lbs.
SLV11 to SLV20	3/8 - 24 TPI	**32.8** 290
SLV22	7/16 - 20 TPI	**47.5** 420
SLV24 to SLV28	1/2 - 20 TPI	**70.1** 620

If using covers:

- Make sure the mating surface of the cover and retaining nuts are clean and dry.
  - Urethane cover: slightly roughen the mating surface of the cover, place a 3 mm – 6 mm (⅛ in. – ¼ in.) bead of polyurethane adhesive sealant on the roughened surface.
  - Steel cover: place a 3 mm – 6 mm (⅛ in. – ¼ in.) bead of silicone adhesive sealant on the mating surface of the cover.
- Align the cover mounting holes with the mounting holes on the retaining housing nut (make sure that the grease fitting on the cover is accessible when doing so).
- Apply and tighten the cover mounting hardware.

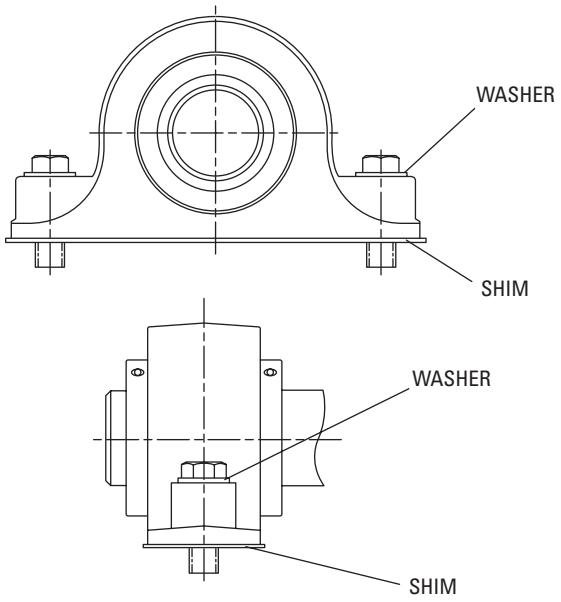


Fig. C-20. Use washers and full shims.

REMOVAL

- Remove covers, if applicable, by removing cover hardware and disengaging the cover from the housed unit retaining nut.
- Loosen the set screws on the wedge nut.
- Turn the wedge nut counterclockwise to remove the wedge from the locked position.
- Completely remove the wedge/wedge nut assembly.
  - For **QV** housed units:
  - Remove the bearing and sleeve from the shaft.
  - For **QVV** housed units:
  - Loosen the set screws on the sleeve nut.
  - Turn the sleeve nut clockwise to un-seat the sleeve.
  - Remove the bearing and sleeve/sleeve nut from the shaft.

TABLE C-24. RECOMMENDED SHAFT TOLERANCES

Shaft Dia.	Bearing No.	Tolerance
mm in.		**mm** in.
50 1 15/16, 2	22211	**+0.00/0.038** +0.00/-0.0015
55 2 3/16, 2 1/4	22212 22213	
60, 65 2 7/16, 2 1/2	22214 22215	
70, 75 2 11/16, 2 3/4, 2 15/16, 3	22216 22217	**+0.00/-0.051** +0.00/-0.0020
80, 85, 90 3 3/16, 3 1/4, 3 7/16, 3 1/2	22219 22220	**+0.00/-0.076** +0.00/-0.0030
100 3 11/16, 3 15/16, 4	22222	**+0.00/-0.076** +0.00/-0.0030
110, 115 4 7/16, 4 1/2	22224 22226	**+0.00/-0.127** +0.00/-0.0050
125, 130 4 15/16, 5	22228	

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HOW TO CONVERT A SOLID-BLOCK HOUSED UNIT FROM FIXED TO EXPANSION (FLOATING)

Flange Cartridge and Flange Block

- Make a reference mark on the housing and retaining nut.
- Loosen the Teflon-tipped set screw that locks the retaining nut in place.
- Loosen the retaining nut by tapping it with a hammer and punch, rotating the retaining nut counterclockwise one complete revolution.
- Tighten the Teflon-tipped set screw.

Pillow Block

- Decide the amount and direction of expansion that's needed. If unidirectional expansion is required, follow the directions outlined in the previous page for flange housed units on the nut that is on the side you want the expansion.
- If multi-directional expansion is required, follow the directions outlined in the previous section for both nuts on flange housed units.

⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

Overheated bearings can ignite explosive atmospheres. Special care must be taken to properly select, install, maintain, and lubricate housed unit bearings that are used in or near atmospheres that may contain explosive levels of combustible gases or accumulations of dust such as from grain, coal, or other combustible materials. Consult your equipment designer or supplier for installation and maintenance instructions.

HOW TO CONVERT A SOLID-BLOCK HOUSED UNIT FROM EXPANSION (FLOATING) TO FIXED

Flange Cartridge and Flange Block

- Loosen the Teflon-tipped set screw that locks the retaining nut in place.
- Tighten the retaining nut by tapping it with a hammer and punch, rotating the retaining nut clockwise until it's tight. It is not possible to overtighten the retaining nut.
- Tighten the Teflon-tipped set screw.

NOTE

When converting a solid-block housed unit bearing from fixed to expansion, it is imperative that the unit that is going to be converted is correctly oriented. Since the insert in a steel housed unit flange bearing is held against either a shoulder or snap ring opposite the housing retaining nut, a flange bearing that has been converted to expansion can only float in the direction of the retaining nut. Based on this, the retaining nut must be on the side of the housing opposite the fixed bearing.

Pillow Block

- Follow the directions above for flange housed units on both nuts on either side of the housing.

NOTE

When converting a solid-block housed unit from expansion to fixed on a mounted bearing, the locking-collar set screws must be released to allow the insert to move both in the housing and on the shaft.

LUBRICATION

This information is to aid in the proper lubrication of Timken spherical roller bearing solid-block housed units for the majority of applications.

Housed units have been factory-prelubricated with an NLGI No. 2 lithium-complex, extreme-pressure synthetic grease that combines the benefits of wide operating temperatures and broad compatibility with varied materials. This grease offers excellent thermal stability through temperatures ranging from -40° C to 177° C (-40° F to 350° F). Housed units should be relubricated with this grease or one that is compatible and made for roller bearings. It is vital that the greases used are compatible. Please consult with your Timken engineer for the grease specifications if the use of a grease other than the grease mentioned above is needed.

Normal service is considered as operation in a clean, dry environment at temperatures between -34° C to +82° C (-30° F to +180° F). If service is beyond normal conditions due to speed, temperature, or exposure to moisture, dirt or corrosive chemicals,

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more frequent relubrication may be necessary. For extreme conditions or conditions in which special chemicals are used, consult with your Timken engineer.

After extended storage or periods when the housed unit is not in operation, fresh grease should be added.

It's important to have the right amount of lubrication, because it affects the housed unit bearing operating temperature as well. An inadequate amount of grease could lead to higher operating temperatures due to inadequate lubrication film thickness. Excessive grease also will lead to higher operating temperatures due to grease churning, which can cause bearing overheating. It is best to observe the bearing and its temperature and adjust the lubrication as needed. If necessary, use the purge valve or seals that purge to reduce the amount of grease.

NOTE

Please check with the manufacturer of your grease delivery system for specific information.

RELUBRICATION

Adequate lubrication is an essential element to the housed unit bearing life. Use table C-25 as a suggested initial point of reference. Relubrication frequency and quantity intervals are best determined through experience for each application, based on types of service, which may differ from the suggestions in the table.

When the housed unit is not in operation for an extended period of time, grease should be added to prevent corrosion.

Table C-25 shows general lubrication suggested starting points only. Please read the entire installation instructions prior to using these tables. Applications should be regularly reviewed and lubrication amounts and intervals modified as needed to ensure best results.

TABLE C-25. RELUBRICATION INTERVALS

Shaft Diameter	Bearing No.	Initial Weight	Relubrication Weight	Relubrication Interval (Hours of Service based on RPM and Temperature deg. F)											
				100 RPM		250 RPM		500 RPM		1000 RPM		2000 RPM		3000 RPM	
				<160°	>160°	<160°	>160°	<160°	>160°	<160°	>160°	<160°	>160°	<160°	>160°
mm in.		**g** oz.	**g** oz.												
50 1 15/16, 2	22211	**28.4** 1	**8.5** 0.3	1200	600	800	400	440	220	160	80	100	50	60	30
55 2 3/16, 2 1/4	22212	**34.0** 1.2	**8.5** 0.3	1150	580	750	380	400	200	140	70	90	50	50	20
	22213	**36.9** 1.3	**11.3** 0.4	1130	570	740	370	380	190	130	65	85	45	45	20
60, 65 2 7/16, 2 1/2	22214	**39.7** 1.4	**11.3** 0.4	1120	560	720	360	360	180	120	60	80	40	40	20
	22215	**56.7** 2	**14.2** 0.5	1080	540	700	350	350	175	110	55	70	35		
70, 75 2 11/16, 2 3/4 2 15/16, 3	22216	**76.5** 2.7	**19.9** 0.7	1040	520	680	340	340	170	100	50	60	30		
	22217	**96.4** 3.4	**25.5** 0.9	1000	500	640	320	320	160	100	50	60	30		
80, 85, 90 3 3/16, 3 1/4 3 7/16, 3 1/2	22219	**104.9** 3.7	**25.5** 0.9	960	480	600	300	300	150	80	40	40	20		
	22220	**184.3** 6.5	**45.4** 1.6	840	420	520	260	240	120	70	35	30	18		
100 3 11/16, 3 3/4 3 15/16, 4	22222	**209.8** 7.4	**53.9** 1.9	680	340	440	220	200	100	60	30	20	16		
110, 115 4 7/16, 4 1/2	22224	**260.8** 9.2	**68.0** 2.4	640	320	400	200	180	90	50	25				
	22226	**300.5** 10.6	**76.5** 2.7	560	280	360	180	160	80						
125, 130 4 15/16, 5	22228	**396.9** 14	**99.2** 3.5	520	260	340	170	140	75						

DISCLAIMER: Every reasonable effort has been made to ensure the accuracy of the information in this writing, but no liability is accepted for errors, omissions or for any other reason.

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CL SERIES

Please complete the following steps to install Timken solid-block housed unit CL Series bearings.

- Ensure that the shaft is clean, free from nicks and burrs, straight and of proper diameter. See table C-26 for recommended shaft tolerances. The housed unit should not be mounted on a worn section of the shaft. Using shafts with hardness greater than HRC 45 will reduce the effectiveness of locking devices.
- If using an open-end cover, slide the open-end cover/seal combination into position on the shaft.
- Apply a thin oil film to the shaft and bearing bore.
- Slide the housed unit into position on the shaft.
- Install the housed unit mounting bolts. Check the housed unit alignment. Verify mounting surfaces are in the same flat plane to help achieve good alignment. If shimming is required to minimize misalignment, use full shims across the entire housing base where possible (fig. C-22). The bolts then need to be alternately torqued securely to their mounting supports.
- Tighten set screws alternately as per table C-27. Set screws in multiple units should be aligned to each other (fig. C-21).

If using covers:

- Make sure the mating surface of the cover and retaining nuts are clean and dry.
  - Urethane cover: slightly roughen the mating surface of the cover, place a 3 mm – 6 mm (1/8 in. – 1/4 in.) bead of polyurethane adhesive sealant on the roughened surface.
  - Steel cover: place a 3 mm – 6 mm (1/8 in. – 1/4 in.) bead of silicone adhesive sealant on the mating surface of the cover.
- Align the cover mounting holes with the mounting holes on the retaining housing nut (make sure that the grease fitting on the cover is accessible when doing so).
- Apply and tighten the cover mounting hardware.

TABLE C-26. RECOMMENDED SHAFT TOLERANCES

Shaft Dia.	Bearing No.	Tolerance
mm in.		**mm** in.
35 1 7/16, 1 1/2	22208	**+0.00/-0.025** +0.00/0.0010
40, 45 1 11/16, 1 3/4	22209	**+0.00/-0.038** +0.00/0.0015
50 1 15/16, 2	22210	**+0.00/-0.038** +0.00/-0.0015
55 2 3/16, 2 1/4	22211	**+0.00/-0.038** +0.00/-0.0015
60, 65 2 7/16, 2 1/2	22213	**+0.00/-0.038** +0.00/-0.0015
70, 75 2 11/16, 2 3/4 2 15/16, 3	22215	**+0.00/-0.51** +0.00/-0.0020
80, 85, 90 3 3/16, 3 1/4 3 7/16, 3 1/2	22218	**+0.00/-0.076** +0.00/-0.0030
100 3 15/16, 4	22220	**+0.00/-0.076** +0.00/-0.0030
110, 115 4 7/16, 4 1/2	22222	**+0.00/-0.127** +0.00/-0.0050
125, 130 4 15/16, 5	22226	**+0.00/-0.127** +0.00/-0.0050

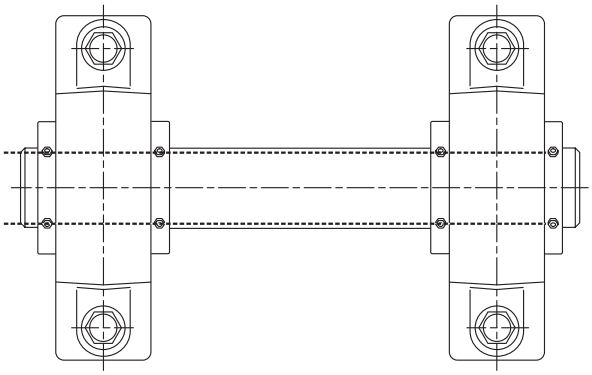


Fig. C-21. Line up set screws in multiple units.

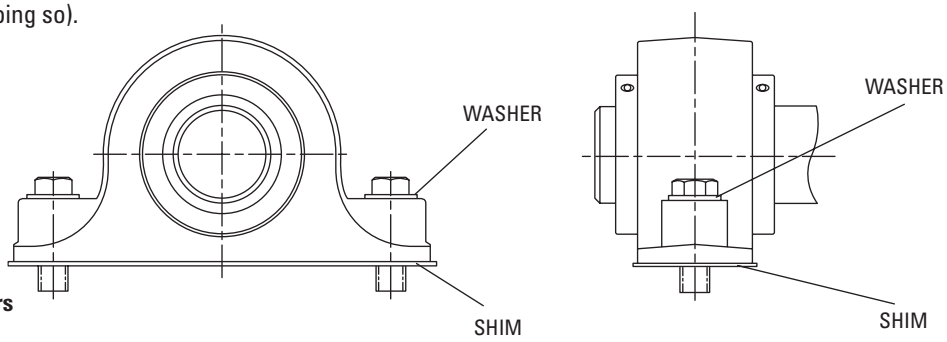


Fig. C-22. Use washers and full shims.

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TABLE C-27. SET SCREW TORQUE VALUES

Shaft Dia.	Bearing No.	Set Screw Size	Torque
mm in.			**Nm** in. - lbs.
35 1 7/16, 1 1/2	22208	3/8 - 24TPI	**32.8** 290
40 1 11/16, 1 3/4	22209	3/8 - 24TPI	**32.8** 290
50 1 15/16, 2	22210	3/8 in. - 24TPI	**32.8** 290
55 2 3/16, 2 1/4	22211	3/8 in. - 24TPI	**32.8** 290
60, 65 2 7/16, 2 1/2	22213	1/2 in. - 20TPI	**70.1** 620
70, 75 2 11/16, 2 3/4 2 15/16, 3	22215	1/2 in. - 20TPI	**70.1** 620
80, 85, 90 3 3/16, 3 1/4 3 7/16, 3 1/2	22218	1/2 in. - 20TPI	**70.1** 620
100 3 15/16, 4	22220	5/8 in. - 18TPI	**149.7** 1325
110, 115 4 7/16, 4 1/2	22222	5/8 in. - 18TPI	**149.7** 1325
125, 130 4 15/16, 5	22226	5/8 in. - 18TPI	**149.7** 1325

LUBRICATION

This information is to aid in the proper lubrication of Timken spherical roller bearing solid-block housed units for the majority of applications.

Housed units have been factory-prelubricated with an NLGI No. 2 lithium-complex, extreme pressure synthetic grease that combines the benefits of wide operating temperatures and broad compatibility with varied materials. This grease offers excellent thermal stability through temperatures ranging from -40° C to 177° C (-40° F to 350° F). Housed units should be relubricated with this grease or one that is compatible and made for roller bearings. It is vital that the greases used are compatible. Please consult with your Timken engineer for the grease specifications if the use of a grease other than the grease mentioned above is needed.

Normal service is considered as operation in a clean, dry environment at temperatures between -34° C to +82° C (-30° F to +180° F). If service is beyond normal conditions due to speed, temperature, or exposure to moisture, dirt or corrosive chemicals, periodic relubrication may be necessary. For extreme conditions or conditions in which special chemicals are used, consult with your Timken engineer.

After extended storage or periods when the housed unit is not in operation, fresh grease should be added.

It's important to have the right amount of lubrication, because it affects the housed unit bearing operating temperature as well. An inadequate amount of grease could lead to higher operating temperatures due to inadequate lubrication film thickness. Excessive grease also will lead to higher operating temperatures due to grease churning, which can cause bearing overheating. It is best to observe the bearing and its temperature and adjust the lubrication as needed. If necessary, use the purge valve or seals that purge to reduce the amount of grease.

NOTE

Please check with the manufacturer of your grease delivery system for specific information.

WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

Overheated bearings can ignite explosive atmospheres. Special care must be taken to properly select, install, maintain, and lubricate housed unit bearings that are used in or near atmospheres that may contain explosive levels of combustible gases or accumulations of dust such as from grain, coal, or other combustible materials. Consult your equipment designer or supplier for installation and maintenance instructions.

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RELUBRICATION

Adequate lubrication is an essential element to the housed unit bearing life. Use table C-28 as a suggested initial point of reference. Relubrication frequency and quantity intervals are best determined through experience for each application based on types of service, which may differ from the suggestions in the table.

When the housed unit is not in operation for an extended period of time, grease should be added to prevent corrosion.

Table C-28 shows general lubrication suggested starting points only. Please read the entire installation instructions prior to using these tables. Applications should be regularly reviewed and lubrication amounts and intervals modified as needed to ensure the best results.

TABLE C-28. RELUBRICATION INTERVALS

Shaft Dia.	Bearing No.	Initial Weight	Relubrication Weight	Relubrication Interval (Hours of Service based on RPM and Temperature deg. F)											
				100 RPM		250 RPM		500 RPM		1000 RPM		2000 RPM		3000 RPM	
				<160°	>160°	<160°	>160°	<160°	>160°	<160°	>160°	<160°	>160°	<160°	>160°
mm in.		**g** oz.	**g** oz.												
35 1 7/16, 1 1/2	22208	**14.2** 0.5	**2.4** 0.1	2200	1000	1400	700	1000	500	240	120	120	60	40	20
40, 45 1 11/16, 1 3/4	22209	**317.5** 0.7	**5.7** 0.2	2000	1000	1200	600	800	400	320	160	160	80	80	40
50 1 15/16, 2	22210	**22.7** 0.8	**5.7** 0.2	1600	800	1000	500	640	320	240	120	120	60	60	30
55 2 3/16, 2 1/4	22211	**28.4** 1	**8.5** 0.3	1200	600	800	400	440	220	160	80	100	50	60	30
60, 65 2 7/16, 2 1/2	22213	**39.7** 1.4	**11.3** 0.4	1120	560	720	360	360	180	120	60	80	40	40	20
70, 75 2 11/16, 2 3/4 2 15/16, 3	22215	**76.5** 2.7	**19.4** 0.7	1040	520	680	340	340	170	100	50	60	30		
80, 85, 90 3 3/16, 3 1/4 3 7/16, 3 1/2	22218	**104.9** 3.7	**25.5** 0.9	960	480	600	300	300	150	80	40	40	20		
100 3 15/16, 4	22220	**184.3** 6.5	**45.4** 1.6	840	420	520	260	240	120	60	30	20	16		
110, 115 4 7/16, 4 1/2	22222	**209.8** 7.4	**53.9** 1.9	680	340	440	220	200	100	60	30	20	16		
125, 130 4 15/16, 5	22226	**300.5** 10.6	**76.5** 2.7	560	280	360	180	160	80						

DISCLAIMER: Every reasonable effort has been made to ensure the accuracy of the information in this writing, but no liability is accepted for errors, omissions or for any other reason.

08-19-13 DRAFT

HOW TO CONVERT A SOLID-BLOCK HOUSED UNIT FROM FIXED TO EXPANSION (FLOATING)

Flange Cartridge and Flange Block

- Make a reference mark on the housing and retaining nut.
- Loosen the Teflon-tipped set screw that locks the retaining nut in place.
- Loosen the retaining nut by tapping it with a hammer and punch, rotating the retaining nut counterclockwise one complete revolution.
- Tighten the Teflon-tipped set screw.

NOTE

When converting a solid-block housed unit bearing from fixed to expansion, it is imperative that the unit that is going to be converted is correctly oriented. Since the insert in a steel housed unit flange bearing is held against either a shoulder or snap ring opposite the housing retaining nut, a flange bearing that has been converted to expansion can only float in the direction of the retaining nut. Based on this, the retaining nut must be on the side of the housing opposite the fixed bearing.

Pillow Block

- Decide the amount and direction of expansion that's needed. If unidirectional expansion is required, follow the directions outlined above for flange bearings on the nut that is on the side you want the expansion.
- If multi-directional expansion is required, follow the directions as outlined above for both nuts on flange housed units.

HOW TO CONVERT A SOLID-BLOCK HOUSED UNIT FROM EXPANSION (FLOATING) TO FIXED

Flange Cartridge and Flange Block

- Loosen the Teflon-tipped set screw that locks the retaining nut in place.
- Tighten the retaining nut by tapping it with a hammer and punch, rotating the retaining nut clockwise until it's tight. It is not possible to overtighten the retaining nut.
- Tighten the Teflon-tipped set screw.

Pillow Block

- Follow the directions above for flange bearings on both nuts on either side of the housing.

NOTE

When converting a solid-block housed unit from expansion to fixed on a mounted bearing, the locking-collar set screws must be released to allow the insert to move both in the housing and on the shaft.

08-19-13 DRAFT

EC SERIES

Please complete the following steps to install Timken EC series spherical roller bearing solid-block housed units.

- Ensure that the shaft is clean, free from nicks and burrs, straight and of proper diameter. See table C-29 for recommended shaft tolerances. The housed unit should not be mounted on a worn section of the shaft. Using shafts with hardness greater than HRC 45 will reduce the effectiveness of locking devices.
- If using an open-end cover, slide the open-end cover/seal combination into position on the shaft.
- Apply a thin oil film to the shaft and bearing bore.
- Slide the housed unit into position on the shaft.
- Install the housed unit mounting bolts. Check the housed unit alignment. Verify that the mounting surfaces are in the same flat plane to help achieve good alignment. If shimming is required to minimize misalignment, use full shims across the entire housing base where possible (fig. C-23). The bolts then need to be alternately torqued securely to their mounting supports.
- Slide the eccentric locking collar along shaft and onto the extended portion of the bearing's inner ring.
- Rotate the eccentric locking collar until it is hand-tight (the direction of rotation does not matter).
- Lock the eccentric locking collar firmly in place by using a spanner wrench or a hammer and drift.

  When using a hammer and drift, one or two firm, but not too hard, blows will be sufficient due to the shallow eccentric ramp on EC series housed units. Make sure you drive the collar in the same direction in which you hand-tightened it so as to turn it to a tighter position on the bearing's inner ring.
- Tighten the eccentric locking collar set screws alternately as per table C-30.

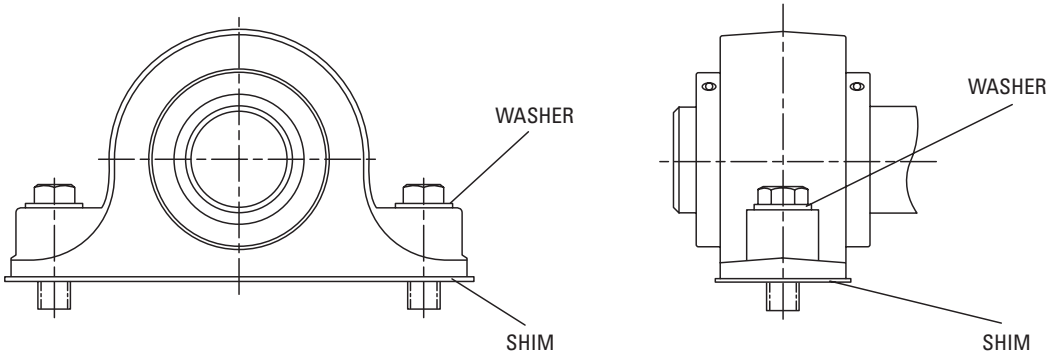


Fig. C-23. Use washers and full shims.

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If using covers:

- Make sure the mating surface of the cover and retaining nuts are clean and dry.
  - Urethane cover: slightly roughen the mating surface of the cover, place a 3 mm – 6 mm (⅛ in. – ¼ in.) bead of polyurethane adhesive sealant on the roughened surface.
  - Steel cover: place a 3 mm – 6 mm (⅛ in. – ¼ in.) bead of silicone adhesive sealant on the mating surface of the cover.
- Align the cover mounting holes with the mounting holes on the retaining housing nut (make sure that the grease fitting on the cover is accessible when doing so).
- Apply and tighten the cover mounting hardware.

TABLE C-29. RECOMMENDED SHAFT TOLERANCES

Shaft Dia.	Bearing No.	Tolerance
mm in.		**mm** in.
35 1 7/16, 1 ½	22208	**+0.00/-0.025** +0.00/-0.0010
40, 45 1 11/16, 1 ¾	22209	**+0.00/-0.038** +0.00/-0.0015
50 1 15/16, 2	22210	**+0.00/-0.038** +0.00/-0.0015
55 2 3/16, 2 ¼	22211	**+0.00/-0.038** +0.00/-0.0015
60, 65 2 7/16, 2 ½	22213	**+0.00/-0.038** +0.00/-0.0015
70, 75 2 11/16, 2 ¾ 2 15/16, 3	22215	**+0.00/-0.051** +0.00/-0.0020
80, 85, 90 3 3/16, 3 ¼ 3 7/16, 3 ½	22218	**+0.00/-0.076** +0.00/-0.0030
100 3 11/16, 3 ¾ 3 15/16, 4	22220	**+0.00/-0.076** +0.00/-0.0030
110, 115 4 7/16, 4 ½	22222	**+0.00/-0.127** +0.00/-0.0050
125, 130 4 15/16, 5	22226	**+0.00/-0.127** +0.00/-0.0050
140, 150 5 7/16, 5 ½ 5 15/16, 6	23230	**+0.00/-0.127** +0.00/-0.0050
170, 180 6 7/16, 6 ½ 6 15/16, 7	23234	**+0.00/-0.127** +0.00/-0.0050

TABLE C-30. SET SCREW TORQUE VALUES

Shaft Dia.	Bearing No.	Set Screw Size	Torque
mm in.			**Nm** in. - lbs.
35 1 7/16, 1 ½	22208	3/8-24TPI	**32.8** 290
40, 45 1 11/16, 1 ¾	22209	3/8-24TPI	**32.8** 290
50 1 15/16, 2	22210	3/8-24TPI	**32.8** 290
55 2 3/16, 2 ¼	22211	3/8-24TPI	**32.8** 290
60, 65 2 7/16, 2 ½	22213	7/16-20TPI	**48.6** 430
70, 75 2 11/16, 2 ¾ 2 15/16, 3	22215	7/16-20TPI	**48.6** 430
80, 85, 90 3 3/16, 3 ¼ 3 7/16, 3 ½	22218	7/16-20TPI	**48.6** 430
100 3 11/16, 3 ¾ 3 15/16, 4	22220	9/16-18TPI	**70.1** 620
110, 115 4 7/16, 4 ½	22222	5/8-18TPI	**149.7** 1325
125, 130 4 15/16, 5	22226	5/8-18TPI	**149.7** 1325
140, 150 5 7/16, 5 ½ 5 15/16, 6	23230	5/8-18TPI	**149.7** 1325
170, 180 6 7/16, 6 ½ 6 15/16, 7	23234	5/8-18TPI	**149.7** 1325

08-19-13 DRAFT

LUBRICATION

This information is to aid in the proper lubrication of Timken spherical roller bearing solid-block housed units for the majority of applications.

Housed units have been factory-prelubricated with an NLGI No. 2 lithium-complex, extreme-pressure synthetic grease that combines the benefits of wide operating temperatures and broad compatibility with varied materials. This grease offers excellent thermal stability through temperatures ranging from -40° C to 177° C (-40° F to 350° F). Housed units should be relubricated with this grease or one that is compatible and made for roller bearings. It is vital that the greases used are compatible. Please consult with your Timken engineer for the grease specifications if the use of a grease other than the grease mentioned above is needed.

Normal service is considered as operation in a clean, dry environment at temperatures between -34° C to +82° C (-30° F to +180° F). If service is beyond normal conditions due to speed, temperature, or exposure to moisture, dirt or corrosive chemicals, periodic relubrication may be necessary. For extreme conditions or conditions in which special chemicals are used, consult with your Timken engineer.

After extended storage or periods when the housed unit is not in operation, fresh grease should be added.

It's important to have the right amount of lubrication, because it affects the housed unit bearing operating temperature as well. An inadequate amount of grease could lead to higher operating temperatures due to inadequate lubrication film thickness. Excessive grease also will lead to higher operating temperatures due to grease churning, which can cause bearing overheating. It is best to observe the bearing and its temperature and adjust the lubrication as needed. If necessary, use the purge valve or seals that purge to reduce the amount of grease.

NOTE

Please check with the manufacturer of your grease delivery system for specific information.

RELUBRICATION

Adequate lubrication is an essential element to the housed unit bearing life. Use table C-31 as a suggested initial point of reference. Relubrication frequency and quantity intervals are best developed through experience for each application based on types of service, which may differ from the suggestions in the table.

When the housed unit is not in operation for an extended period of time, grease should be added to prevent corrosion.

Table C-31 shows general lubrication suggested starting points only. Please read the entire installation instructions prior to using these tables. Applications should be regularly reviewed and lubrication amounts and intervals modified as needed to ensure the best results.

⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

Overheated bearings can ignite explosive atmospheres. Special care must be taken to properly select, install, maintain, and lubricate housed unit bearings that are used in or near atmospheres that may contain explosive levels of combustible gases or accumulations of dust such as from grain, coal, or other combustible materials. Consult your equipment designer or supplier for installation and maintenance instructions.

DISCLAIMER

Every reasonable effort has been made to ensure the accuracy of the information in this writing, but no liability is accepted for errors, omissions or for any other reason.

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TABLE C-31. RELUBRICATION INTERVALS

Shaft Dia.	Bearing No.	Initial Weight	Relubrication Weight	Relubrication Interval (Hours of Service based on RPM and Temperature deg. F)											
				100 RPM		250 RPM		500 RPM		1000 RPM		2000 RPM		3000 RPM	
				<160˚	>160˚	<160˚	>160˚	<160˚	>160˚	<160˚	>160˚	<160˚	>160˚	<160˚	>160˚
mm in.		**g** oz.	**g** oz.												
35 1 7/16, 1 1/2	22208	**14.2** 0.5	**2.8** 0.1	2200	1000	1400	700	1000	500	240	120	120	60	40	20
40, 45 1 11/16, 1 3/4	22209	**19.9** 0.7	**5.7** 0.2	2000	1000	1200	600	800	400	320	160	160	80	80	40
50 1 15/16, 2	22210	**22.7** 0.8	**5.7** 0.2	1600	800	1000	500	640	320	240	120	120	60	60	30
55 2 3/16, 2 1/4	22211	**28.4** 1	**8.5** 0.3	1200	600	800	400	440	220	160	80	100	50	60	30
60, 65 2 7/16, 2 1/2	22213	**39.7** 1.4	**11.3** 0.4	1120	560	720	360	360	180	120	60	80	40	40	20
70, 75 2 11/16, 2 3/4 2 15/16, 3	22215	**76.5** 2.7	**19.8** 0.7	1040	520	680	340	340	170	100	50	60	30		
80, 85, 90 3 3/16, 3 1/4 3 7/16, 3 1/2	22218	**104.9** 3.7	**25.5** 0.9	960	480	600	300	300	150	80	40	40	20		
100 3 11/16, 3 3/4 3 15/16, 4	22220	**184.3** 6.5	**45.4** 1.6	840	420	520	260	240	120	60	30	20	16		
110, 115 4 7/16, 4 1/2	22222	**209.8** 7.4	**53.9** 1.9	680	340	440	220	200	100	60	30	20	16		
125, 130 4 15/16, 5	22226	**300.5** 10.6	**76.5** 2.7	560	280	360	180	160	80						
140, 150 5 7/16, 5 1/2 5 15/16, 6	23230	**589.7** 20.8	**147.4** 5.2	480	240	320	160	120	68						
170,180 6 7/16, 6 1/2 6 15/16, 7	23234	**85.0** 30.0	**241.0** 8.5	400	160	240	160	110	60						

08-19-13 DRAFT

HOW TO CONVERT A SOLID-BLOCK HOUSED UNIT FROM FIXED TO EXPANSION (FLOATING)

Flange Cartridge and Flange Block

- Make a reference mark on the housing and retaining nut.
- Loosen the Teflon-tipped set screw that locks the retaining nut in place.
- Loosen the retaining nut by tapping it with a hammer and punch, rotating the retaining nut counterclockwise one complete revolution.
- Tighten the Teflon-tipped set screw.

NOTE

When converting a solid-block housed unit bearing from fixed to expansion, it is imperative that the unit that is going to be converted is correctly oriented. Since the insert in a steel housed unit flange bearing is held against either a shoulder or snap ring opposite the housing retaining nut, a flange bearing that has been converted to expansion can only float in the direction of the retaining nut. Based on this, the retaining nut must be on the side of the housing opposite the fixed bearing.

Pillow Block

- Decide the amount and direction of expansion that's needed. If unidirectional expansion is required, follow the directions outlined above for flange bearings on the nut that is on the side you want the expansion.
- If multi-directional expansion is required, follow the directions outlined above for both nuts on flange housed units.

HOW TO CONVERT A SOLID-BLOCK HOUSED UNIT FROM EXPANSION (FLOATING) TO FIXED

Flange Cartridge and Flange Block

- Loosen the Teflon-tipped set screw that locks the retaining nut in place.
- Tighten the retaining nut by tapping it with a hammer and punch, rotating the retaining nut clockwise until it's tight. It is not possible to overtighten the retaining nut.
- Tighten the Teflon-tipped set screw.

Pillow Block

- Follow the directions above for flange bearings on both nuts on either side of the housing.

NOTE

When converting a solid-block housed unit from expansion to fixed on a mounted bearing, the locking collar set screws must be released to allow the insert to move both in the housing and on the shaft.

08-19-13 DRAFT

TA/DV SERIES

Choose one of the following two methods for installing your housed unit depending on your situation. Timken recommends the axial drive-up method for most applications. If your application is not as critical, the simpler tang counting method is fine.

AXIAL DRIVE-UP METHOD

- Clean all components of any debris and apply a thin oil film to all mating surfaces to ensure proper seating.
- If using an open-end cover, slide the open-end cover/seal combination into position on the shaft.
- Slide the adapter sleeve into position on the shaft, then put the housed unit into place on the adapter sleeve.
- Loosely install the housed unit mounting bolts. Check the housed unit alignment. Verify mounting surfaces are in the same flat plane to help achieve good alignment. If shimming is required to minimize misalignment, use full shims across the entire housing base where possible (fig. C-24). Washers should be properly sized to the bolt diameter and should not be an SAE grade, which is smaller.
- Put the lockwasher on and thread the locknut onto the adapter sleeve leaving approximately 6.350 mm (¼ in.) between the lockwasher and the inner ring of the bearing.
- Use a large screwdriver or pry bar to lever the sleeve into position until there is no relative movement between the shaft, the adapter sleeve, and the bearing's inner ring.
- Rotate the locknut until hand-tight.
- Tighten the locknut while using a dial indicator to measure the axial movement of the tapered adapter sleeve relative to the bearing's inner ring (see table C-32).
- Bend a tang on the lockwasher into a slot on the locknut to prevent the locknut from loosening.
- Tighten the housed unit mounting bolts.

If using covers:

- Make sure the mating surface of the cover and retaining nuts are clean and dry.
  - Urethane cover: slightly roughen the mating surface of the cover, place a 3 mm – 6 mm (⅛ in. – ¼ in.) bead of polyurethane adhesive sealant on the roughened surface.
  - Steel cover: place a 3 mm – 6 mm (⅛ in. – ¼ in.) bead of silicone adhesive sealant on the mating surface of the cover.
- Align the cover mounting holes with the mounting holes on the retaining housing nut (make sure that the grease fitting on the cover is accessible when doing so).
- Apply and tighten the cover mounting hardware.

TABLE C-32. AXIAL MOVEMENT OF TAPERED ADAPTER SLEEVE RELATIVE TO INNER RING

Shaft Dia.	Bearing No.	Minimum Axial Movement	Maximum Axial Movement
mm in.		**mm** in.	**mm** in.
40 1 7/16, 1 ½	22209	**0.38** 0.015	**0.46** 0.018
45 1 11/16, 1 ¾	22210	**0.38** 0.015	**0.46** 0.018
50 1 15/16, 2	22211	**0.46** 0.018	**0.56** 0.022
55 –	22212	**0.46** 0.018	**0.56** 0.022
60 2 3/16, 2 ¼	22213	**0.46** 0.018	**0.56** 0.022
65 2 7/16, 2 ½	22215	**0.64** 0.025	**0.76** 0.030
70 2 11/16, 2 ¾	22216	**0.64** 0.025	**0.76** 0.030
75 2 15/16, 3	22217	**0.69** 0.027	**0.97** 0.038
80 3 3/16, 3 ¼	22218	**0.69** 0.027	**0.97** 0.038
85 –	22219	**0.69** 0.027	**0.97** 0.038
90 3 7/16, 3 ½	22220	**0.69** 0.027	**0.97** 0.038
100 3 15/16, 4	22222	**0.76** 0.030	**1.07** 0.042
110 4 3/16, 4 ¼	22224	**0.76** 0.030	**1.07** 0.042
115 4 7/16, 4 ½	22226	**0.89** 0.035	**1.27** 0.050
125 4 15/16, 5	22228	**0.89** 0.035	**1.27** 0.050

08-19-13 DRAFT

TANG COUNTING METHOD

- Clean all components of any debris and apply a thin oil film to all mating surfaces to ensure proper seating.
- If using an open-end cover, slide the open-end cover/seal combination into position on the shaft.
- Slide the adapter sleeve into the correct position on the shaft, then put the housed unit into place on the adapter sleeve.
- Loosely install the housed unit mounting bolts. Check the housed unit alignment. Verify mounting surfaces are in the same flat plane to help achieve good alignment. If shimming is required to minimize misalignment, use full shims across the entire housing base where possible (fig. C-24). Washers should be properly sized to the bolt diameter and should not be an SAE grade, which is smaller.
- Put the lockwasher on and thread the locknut onto the adapter sleeve, leaving approximately ¼ in. between the lockwasher and the inner ring of the bearing.
- Use a large screwdriver or pry bar to lever the sleeve into position until there is no relative movement between the shaft, the adapter sleeve and the bearing's inner ring.
- Rotate the locknut until hand-tight.
- Note which tang is in line with one slot on the locknut.
- Tighten the locknut until the slot on the locknut passes the number of tangs shown in table C-33.
- Bend a tang on the lockwasher into a slot on the locknut to prevent the locknut from loosening.
- Tighten the housed unit mounting bolts.

If using covers:

- Make sure the mating surface of the cover and retaining nuts are clean and dry.
  - Urethane cover: slightly roughen the mating surface of the cover, place a 3 mm – 6 mm (⅛ in. – ¼ in.) bead of polyurethane adhesive sealant on the roughened surface.
  - Steel cover: place a 3 mm – 6 mm (⅛ in. – ¼ in.) bead of silicone adhesive sealant on the mating surface of the cover.
- Align the cover mounting holes with the mounting holes on the retaining housing nut (make sure that the grease fitting on the cover is accessible when doing so).
- Apply and tighten the cover mounting hardware.

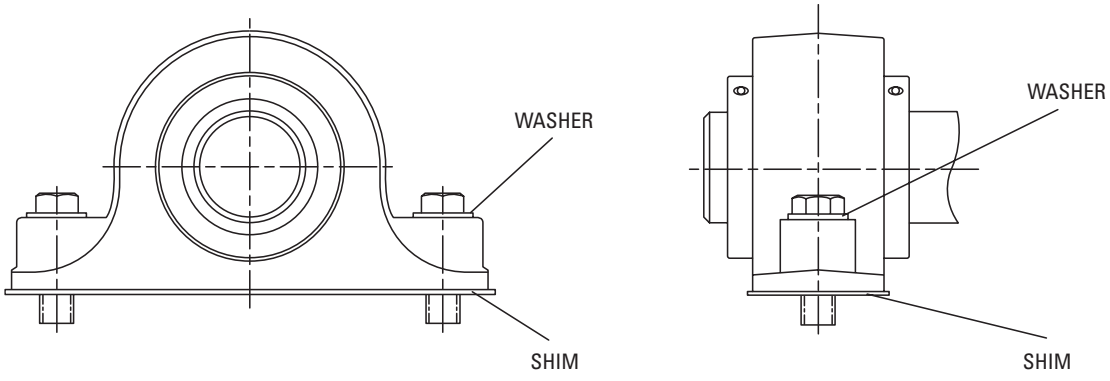


Fig. C-24. Use washers and full shims.

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TABLE C-33. NUMBER OF TANGS TO LOCKING

Shaft Dia.	Bearing No.	Number of Tangs
mm in.		
40 1 7/16, 1 1/2	22209	3-4
45 1 11/16, 1 3/4	22210	3-4
50 1 15/16, 2	22211	4-5
55 –	22212	4-5
60 2 3/16, 2 1/4	22213	4-5
65 2 7/16, 2 1/2	22215	5-6
70 2 11/16, 2 3/4	22216	5-6
75 2 15/16, 3	22217	8-9
80 3 3/16, 3 1/4	22218	8-9
85 –	22219	8-9
90 3 7/16, 3 1/2	22220	8-9
100 3 15/16, 4	22222	10-11
110 4 3/16, 4 1/4	22224	10-11
115 4 7/16, 4 1/2	22226	10-11
125 4 15/16, 5	22228	10-11

LUBRICATION

This information is to aid in the proper lubrication of Timken spherical roller bearing solid-block housed units for the majority of applications.

Housed units have been factory-prelubricated with an NLGI No. 2 lithium-complex, extreme-pressure synthetic grease that combines the benefits of wide operating temperatures and broad compatibility with varied materials. This grease offers excellent thermal stability through temperatures ranging from -40° C to 177° C (-40° F to 350° F). Housed units should be relubricated with this grease or one that is compatible and made for roller bearings. It is vital that the greases used are compatible. Please consult with your Timken engineer for the grease specifications if the use of a grease other than the grease mentioned above is needed.

Normal service is considered as operation in a clean, dry environment at temperatures between -34° C to +82° C (-30° F to +180° F). If service is beyond normal conditions due to speed, temperature or exposure to moisture, dirt or corrosive chemicals, periodic relubrication may be necessary. For extreme conditions or conditions in which special chemicals are used, consult with your Timken engineer.

After extended storage or periods when the housed unit is not in operation, fresh grease should be added.

It's important to have the right amount of lubrication, because it affects the housed unit bearing operating temperature as well. An inadequate amount of grease could lead to higher operating temperatures due to inadequate lubrication film thickness. Excessive grease will lead to higher operating temperatures due to grease churning, which can cause bearing overheating. It is best to observe the bearing and its temperature and adjust the lubrication as needed. If necessary, use the purge valve or seals that purge to reduce the amount of grease.

NOTE

Please check with the manufacturer of your grease delivery system for specific information.

08-19-13 DRAFT

RELUBRICATION

Adequate lubrication is an essential element to the housed unit bearing life. Use table C-34 as a suggested initial point of reference. Relubrication frequency and quantity intervals are best determined through experience for each application based on types of service, which may differ from the suggestions in the table.

When the housed unit is not in operation for an extended period of time, grease should be added to prevent corrosion.

Table C-34 shows general lubrication suggested starting points only. Please read the entire installation instructions prior to using these tables. Applications should be regularly reviewed and lubrication amounts and intervals modified as needed to ensure the best results.

⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

Overheated bearings can ignite explosive atmospheres. Special care must be taken to properly select, install, maintain, and lubricate housed unit bearings that are used in or near atmospheres that may contain explosive levels of combustible gases or accumulations of dust such as from grain, coal, or other combustible materials. Consult your equipment designer or supplier for installation and maintenance instructions.

TABLE C-34. RELUBRICATION INTERVALS

Shaft Dia.	Bearing No.	Initial Weight	Relubrication Weight	Relubrication Interval (Hours of Service based on RPM and Temperature deg. F)											
				100 RPM		250 RPM		500 RPM		1000 RPM		2000 RPM		3000 RPM	
				<160°	>160°	<160°	>160°	<160°	>160°	<160°	>160°	<160°	>160°	<160°	>160°
mm in.		**g** oz.	**g** oz.												
40 1 7/16, 1 1/2	22209	**19.8** 0.7	**5.7** 0.2	2000	1000	1200	600	800	400	320	160	160	80	80	40
45 1 11/16, 1 3/4	22210	**22.7** 0.8	**5.7** 0.7	1600	800	1000	500	640	320	240	120	120	60	60	30
50 1 15/16, 2	22211	**28.4** 1.0	**8.5** 0.3	1200	600	800	400	440	220	160	80	100	50	60	30
55 –	22212	**34.0** 1.2	**8.5** 0.3	1150	580	750	380	400	200	140	70	90	50	50	20
60 2 3/16, 2 1/4	22213	**39.7** 1.4	**11.3** 0.4	1120	560	720	360	360	180	120	60	80	40	40	20
65 2 7/16, 2 1/2	22215	**76.5** 2.7	**19.8** 0.7	1040	520	680	340	340	170	100	50	60	30		
70 2 11/16, 2 3/4	22216	**76.5** 2.7	**19.8** 0.7	1040	520	680	340	340	170	10	50	60	30		
75 2 15/16, 3	22217	**96.4** 3.4	**25.5** 0.9	1000	500	640	320	320	160	100	50	60	30		
80 3 3/16, 3 1/4	22218	**104.9** 3.7	**25.5** 0.9	960	480	600	300	300	150	80	40	40	20		
85 –	22219	**104.9** 3.7	**25.5** 0.9	960	480	600	300	300	150	80	40	40	20		
90 3 7/16, 3 1/2	22220	**184.3** 6.5	**45.4** 1.6	840	420	520	260	240	120	60	30				
100 3 15/16, 4	22222	**209.8** 7.4	**53.9** 1.9	680	340	440	220	200	100	60	30				
110 4 3/16, 4 1/4	22224	**260.8** 9.2	**68.0** 2.4	640	320	400	200	180	90	50	25				
115 4 7/16, 4 1/2	22226	**340.2** 12.0	**85.0** 3.0	600	300	360	180	160	80	40	20				
125 4 15/16, 5	22228	**396.9** 14.0	**99.2** 3.5	520	260	340	170	140	75						

DISCLAIMER: Every reasonable effort has been made to ensure the accuracy of the information in this writing, but no liability is accepted for errors, omissions or for any other reason.

08-19-13 DRAFT

HOW TO CONVERT A SOLID-BLOCK HOUSED UNIT FROM FIXED TO EXPANSION (FLOATING)

Flange Cartridge and Flange Block

- Make a reference mark on the housing and retaining nut.
- Loosen the Teflon-tipped set screw that locks the retaining nut in place.
- Loosen the retaining nut by tapping it with a hammer and punch, rotating the retaining nut counterclockwise one complete revolution.
- Tighten the Teflon-tipped set screw.

NOTE

When converting a solid-block housed unit bearing from fixed to expansion, it is imperative that the unit that is going to be converted is correctly oriented. Since the insert in a steel housed unit flange bearing is held against either a shoulder or snap ring opposite the housing retaining nut, a flange bearing that has been converted to expansion can only float in the direction of the retaining nut. Based on this, the retaining nut must be on the side of the housing opposite the fixed bearing.

Pillow Block

- Decide the amount and direction of expansion that's needed. If unidirectional expansion is required, follow the directions outlined above for flange bearings on the nut that is on the side you want the expansion.
- If multi-directional expansion is required, follow the directions above for both nuts on flange housed units.

HOW TO CONVERT A SOLID-BLOCK HOUSED UNIT FROM EXPANSION (FLOATING) TO FIXED

Flange Cartridge and Flange Block

- Loosen the Teflon-tipped set screw that locks the retaining nut in place.
- Tighten the retaining nut by tapping it with a hammer and punch, rotating the retaining nut clockwise until tight. It is not possible to overtighten the retaining nut.
- Tighten the Teflon-tipped set screw.

Pillow Block

- Follow the directions above for flange bearings on both nuts on either side of the housing.

NOTE

When converting a solid-block housed unit from expansion to fixed on a mounted bearing, the locking-collar set screws must be released to allow the insert to move both in the housing and on the shaft.

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SPHERICAL ROLLER BEARING SOLID-BLOCK HOUSED UNITS

08-19-13 DRAFT

SPHERICAL ROLLER BEARING SOLID-BLOCK HOUSED UNITS

SPHERICAL ROLLER BEARING SOLID-BLOCK HOUSED UNITS PRODUCT DATA TABLES

When your equipment faces harsh environments, you need spherical roller bearing solid-block housed units rugged enough to withstand tough conditions and deliver exceptional performance. You gain both with Timken® spherical roller bearing solid-block housed units.

Nomenclatures. C-54
Seal and Cover Options. C-59
V-Lock® Series (double taper lock). C-73
CL Series (concentric [set screw] lock). C-99
EC Series (eccentric lock) C-129
TA/DV Series (tapered adapter lock) C-153
Take-Up Frames C-169



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SPHERICAL ROLLER BEARING SOLID-BLOCK HOUSED UNIT NOMENCLATURE

QM	P	13	J	207	S	E	M

LOCKING STYLE
QM – eccentric lock
QA – concentric (set screw) lock, single-collar
QAA – concentric (set screw) lock, double-collar
QV – V-Lock®, single-nut
QVV – V-Lock, double-nut
DV – tapered adapter lock (heavy-duty block)
TA – tapered adapter lock (extreme-duty block)

HOUSING STYLE
P – Type E dimension two-bolt pillow block
PL – two-bolt pillow block, S2000 style
PA – SAF-style two-bolt pillow block
PN – SN-style two-bolt pillow block
SN – SN-style two-bolt pillow block
PKT – 9000 series two-bolt pillow block
PXT – 5000 series two-bolt pillow block
PR – Type E dimension four-bolt pillow block
PF – four-bolt pillow block, S2000 style
PH – SAF-style four-bolt pillow block
PG – SN-style four-bolt pillow block
PK – 9000 series four-bolt pillow block
PX – 5000 series four-bolt pillow block
F – square flange block
FB – square flange block
FL – square flange block
FX – 5000 series flange block
FY – round flange block
FK – 9000 series flange block
C – piloted flange cartridge
CW – piloted flange cartridge
FC – piloted flange cartridge
MC – cartridge block
TU – take-up block

BEARING INSERT BORE SERIES
222XX (i.e., 13 = 22213)
232XX (for size 30 and 34 bearing only)

BEARING INSERT LOCKING TYPE
J – EC series
A and AA – CL series
V – V-Lock series
K – TA/DV series

SHAFT DIAMETER
In inch (i.e., 207 = 2 7/16 in.) and metric (i.e., 050 = 50 mm) sizes

CAST-STEEL HOUSING

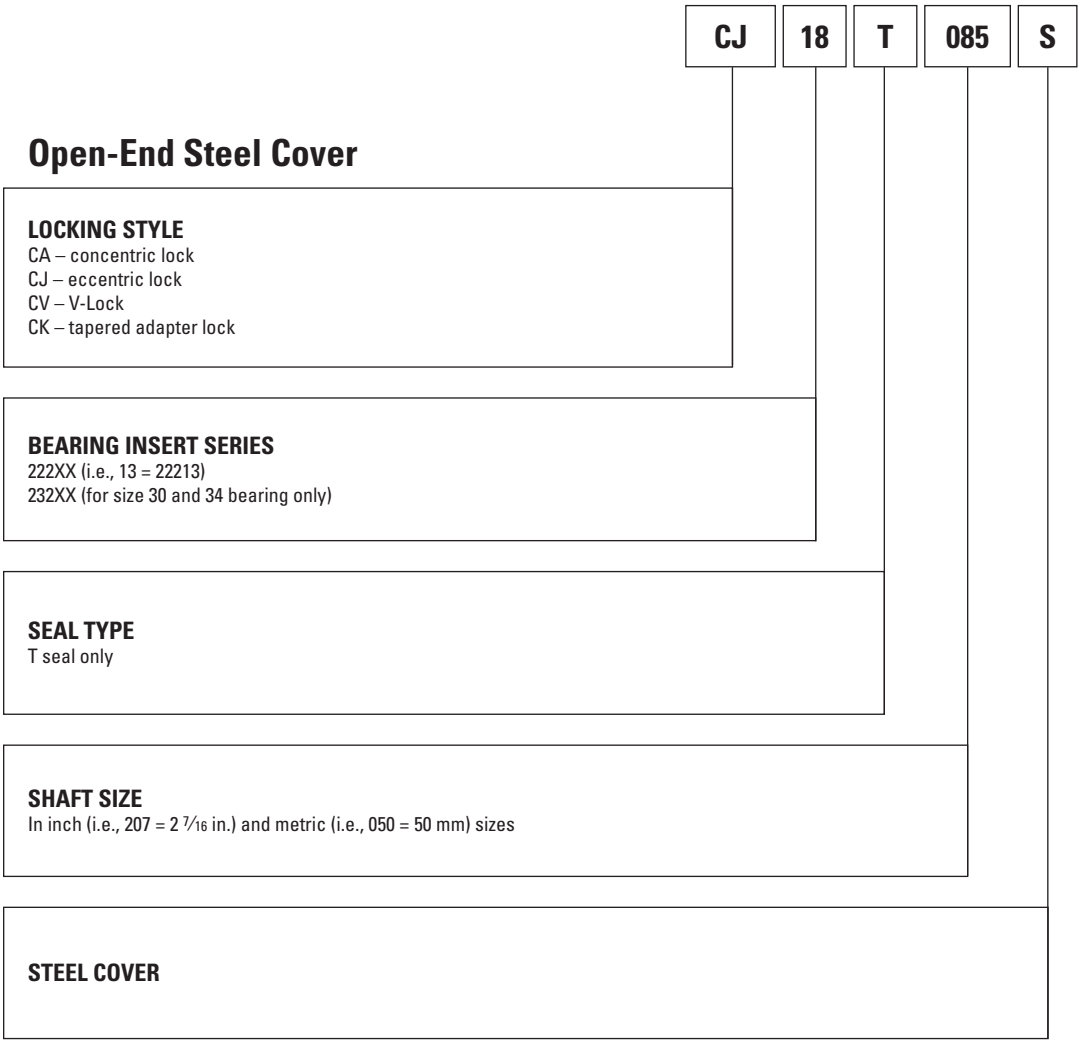
EXPANSION OR NON-EXPANSION
BLANK (No letter) – Non-expansion (fixed)
E – Expansion (floating)

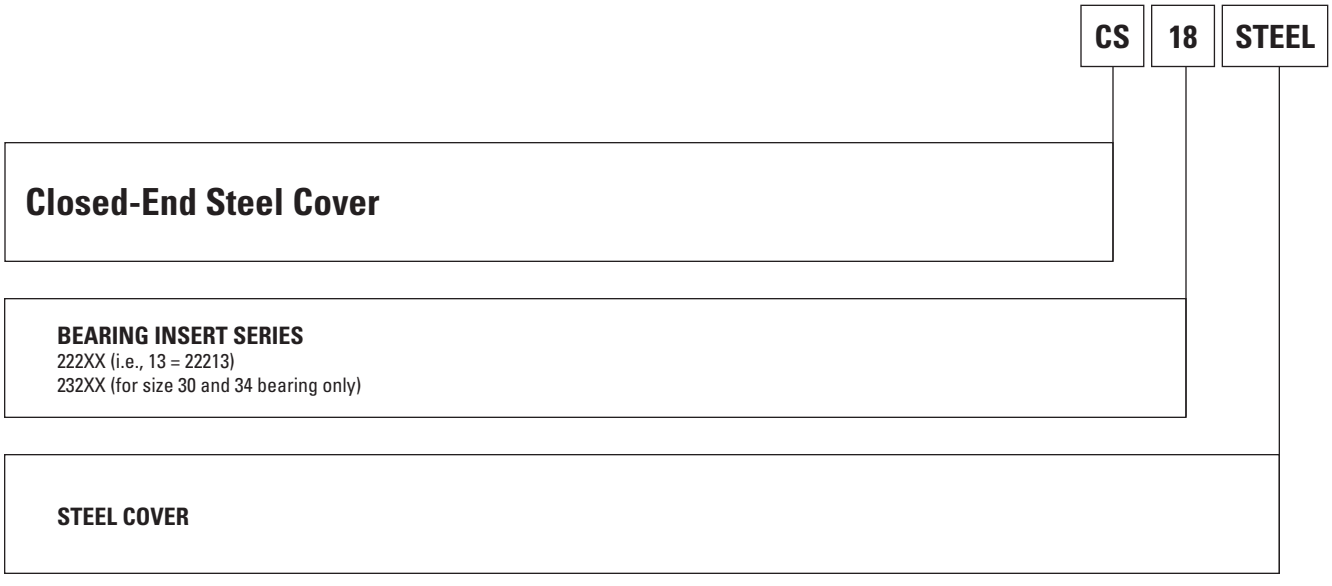
SEAL TYPE
M – M seal (triple-lip nitrile rubber)
N – N seal (triple-lip DuPont™ Viton®)
O – O seal (triple-lip urethane)
B – B seal (double-lip nitrile rubber)
C – C seal (double-lip Viton)
T – T seal (DuPont™ Teflon® labyrinth)
YDR – flange cartridge backing plate with DR triple-lip seal

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STEEL COVER NOMENCLATURE





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URETHANE COVER NOMENCLATURE

Open-End Cover with DR Seal

CJ DR 207

LOCKING STYLE
CA – concentric lock
CJ – eccentric lock
CK – tapered adapter lock

TRIPLE-LIP SECONDARY SEAL

SHAFT SIZE
In inch (i.e., 207 = 2 7/16 in.) and metric (i.e., 050 = 50 mm) sizes

Open-End Cover with VR Seal

CJ VR 13

LOCKING STYLE
CV – V-Lock
CA – concentric lock
CJ – eccentric lock
CK – tapered adapter lock

SEAL TYPE
VR ring

BEARING INSERT SERIES
222XX (i.e., 13 = 22213)
232XX (for size 30 and 34 bearing only)

V-Lock® Open-End Cover with DR Seal

CV DR 13 – 085

LOCKING STYLE
CV – V-Lock

TRIPLE-LIP SECONDARY SEAL

BEARING INSERT SERIES
222XX (i.e., 13 = 22213)
232XX (for size 30 and 34 bearing only)

SHAFT SIZE
In inch (i.e., 207 = 2 7/16 in.) and metric (i.e., 050 = 50 mm) sizes

CS 13

Closed-End Cover

BEARING INSERT SERIES
222XX (i.e., 13 = 22213)
232XX (for size 30 and 34 bearing only)

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BACKING PLATE NOMENCLATURE

UFP **207**

Backing Plate
(Only Available for CA and CJ Series Bearings)

SQUARE FLANGE BLOCK WITH VR SEAL

SHAFT SIZE
In inch (i.e., 207 = 2 7⁄16 in.) and metric (i.e., 050 = 50 mm) sizes

HSY **085**

Backing Plate
(Only Available for CA and CJ Series Bearings)

ROUND PILOTED FLANGE CARTRIDGE WITH DR SEAL

SHAFT SIZE
In inch (i.e., 207 = 2 7⁄16 in.) and metric (i.e., 050 = 50 mm) sizes

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ORDERING SOLID-BLOCK HOUSED UNITS

Every solid-block housed unit is made of cast steel for greater strength (compared to cast iron). All bearings feature a double-row, spherical roller bearing design for a high load-carrying capacity, misalignment tolerance and reduced friction.

Starting with these standard design advantages, you can choose from a wide range of sizes, locking styles, seal options and housing styles suited precisely for your application.

There are many ways to determine the correct solid-block housed unit part number for ordering purposes:

- Once you determine the best locking style, housing and seal options for your application, you can easily find the correct part number in the tables included in the following sections.
- If you are ordering a replacement for an existing housed unit, locate the part number for that housed unit on the housing tag.
- If none of the above apply, or if you have additional questions or concerns about ordering the correct housed unit, contact your Timken engineer.

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SEAL AND COVER OPTIONS
PRIMARY SEALS

Primary seals are installed between the inner ring of the bearing and the housing. They are held securely in place by the external housing nut. Primary seals can be contacting or non-contacting, purging or non-purging and are available in several material compounds for a variety of applications.

TRIPLE-LIP SEALS – CONTACTING, SELF-PURGING, LOW TO MODERATE SPEEDS[1]

Timken offers three kinds of medium-contact triple-lip seals. Choose from seals made of nitrile synthetic rubber (acrylonitrile butadiene), DuPont™ Viton® fluoroelastomer or urethane.

- **M Seal** – This seal, made of nitrile rubber, offers superior sealing in moist and dirty applications. It is chemical- and corrosion-resistant and provides excellent lubrication retention. It also allows excess grease to purge from the bearing cavity.
- **N Seal** – Made of DuPont Viton, this seal provides excellent chemical resistance and can operate at higher temperatures than nitrile rubber.
- **O Seal** – Made of high-strength urethane for superior abrasion resistance.

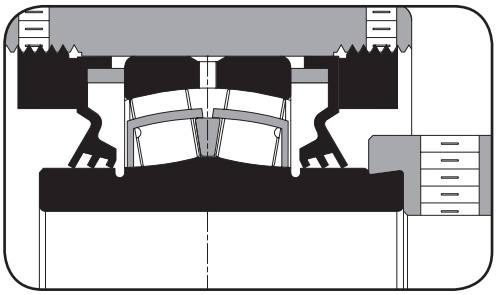


Fig. C-25. Triple-lip seals.

LABYRINTH SEALS – NON-CONTACTING, NON-PURGING, ALL SPEEDS[2]

Instead of trying to form a seal with a single strong barrier, a labyrinth seal uses a winding passageway to accomplish the same reduction in flow. Not only is seal friction reduced, but so is seal wear.

- **T Seal** – This seal consists of a DuPont™ Teflon® ring pressed onto the inner ring of the bearing that floats between two pieces of formed steel to accommodate misalignment. When using this seal, the housing comes with a vent fitting. Developed for higher-speed applications involving dirty conditions or moisture-affected areas, it is able to operate at higher temperatures and is impervious to most chemicals.

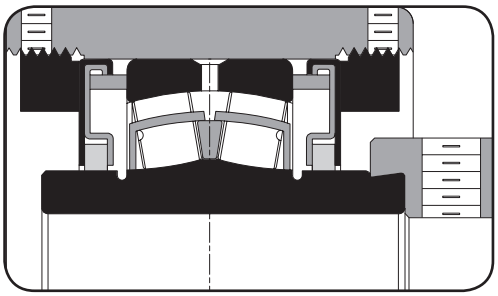


Fig.C-26. T seal.

DOUBLE-LIP SEALS – CONTACTING, NON-PURGING, LOW SPEEDS[1][2]

These seals incorporate a double-lip seal, a garter spring for maximum contact, and a heavy-duty steel shield that protects the seal from large pieces of debris that could damage the seal itself.

- **B Seal** – Made of nitrile rubber, this seal offers superior protection in applications with oil lubrication and is designed for extreme moisture, fine dust or extremely dirty applications. When using this seal, the housing comes with a vent fitting.
- **C Seal** – Made of DuPont Viton, this seal provides excellent chemical and abrasion resistance and can operate at higher temperatures than nitrile rubber. When using this seal, the housing comes with a vent fitting.

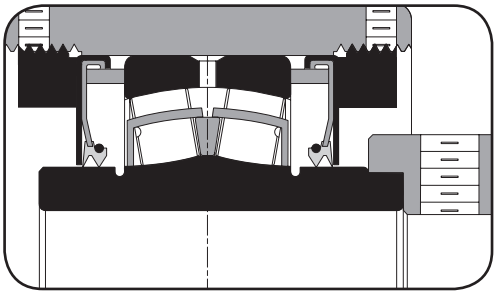


Fig. C-27. Double-lip seals.

[1]Temperature limit -40° C to 121° C (-40° F to 250° F) continuous, 149° C (300° F) intermittent. Constant seal-lip pressure on the inner ring results in higher operating temperatures of the complete unit. (See pages C-25 and C-26).
[2]Relief valve is standard.

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SECONDARY SEALS

In many circumstances, bearings become damaged in housed units due to premature primary seal wear. This is usually the result of harsh operating environments or lubrication issues. Timken offers secondary sealing options that provide an additional barrier to protect the primary seal. These economical secondary seals and covers are easily outfitted on virtually all solid-block housed units.

STEEL COVERS

Labyrinth Seals – Non-Contacting, Non-Purging, All Speeds

A labyrinth seal uses a winding passageway to accomplish a reduction in flow instead of trying to form a seal with a single strong barrier. Seal friction and wear is reduced.

- **T Seal** – This seal, which is used in the open-end steel covers, consists of a DuPont Teflon ring pressed onto the shaft that floats between two pieces of formed steel to accommodate misalignment. Developed for higher-speed applications involving dirty conditions or moisture-affected areas, it is able to operate at higher temperatures and is impervious to most chemicals, while avoiding shaft damage.

URETHANE COVERS

DR Triple-Lip Secondary Seal – low speeds

The DR seal is the standard triple-lip seal adapted for use on the open-end covers and piloted flange cartridge backing plates (HSY). This seal can move within the cover or backing plate opening to accommodate misalignment while maintaining full contact to the shaft for positive sealing.

VR V-Ring Secondary Seal – high speeds

The VR seal, made of nitrile rubber, rides on the shaft and seals against the open-end covers and flange block backing plates (UFP).

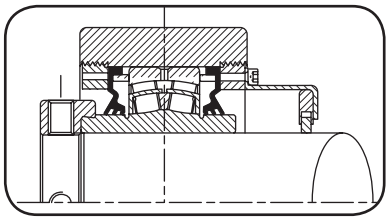


Fig. C-28. Open-end steel cover with T seal.

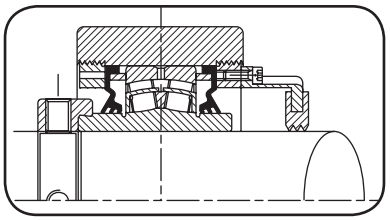


Fig. C-29. Open-end urethane cover with DR seal.

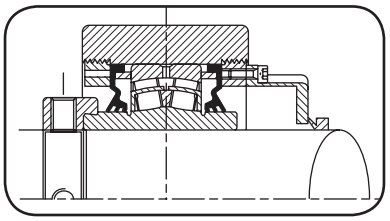


Fig. C-30. Open-end urethane cover with VR seal.

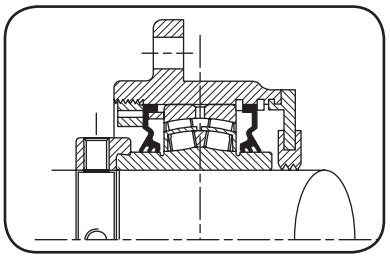


Fig. C-31. HSY backing plate with DR seal.

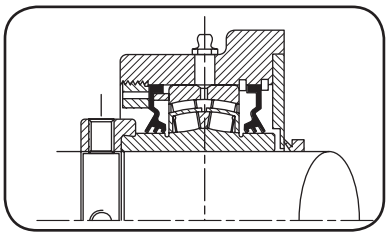


Fig. C-32. UFP backing plate with VR seal.

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STEEL AUXILIARY COVERS

Steel auxiliary covers bolt directly onto spherical roller bearing solid-block housed units. A DuPont Teflon labyrinth seal on the open-ended covers guards against shaft damage and gives protection at high running speeds. Made from steel to withstand the toughest applications, the covers are black-oxide treated for improved corrosion protection.

These covers are available in both open-ended and closed-ended designs for standard and custom configurations of Timken spherical roller bearing solid-block housed units.

Closed-End Covers (CS)

These bolt-on covers are designed to be virtually indestructible and extremely convenient. They are made from structural steel or urethane and are easy to install. The cover completely seals the bearing, preventing contamination from reaching the primary seal. Every cover is outfitted with a grease fitting to fill the cover cavity for an added barrier against contamination.



Fig. C-33. Closed-end covers.

Open-End Covers (CJ/CK/CV)

These bolt-on covers are made from structural steel or urethane for repeated and continuous use. The covers are used with either a DuPont Teflon (T seal), triple-lip seal (DR) or a V-ring seal (VR) to help prevent contamination from reaching the primary seal. Every cover is outfitted with a grease fitting to fill the cover cavity for an added barrier against contamination.



Fig. C-34. Open-end covers.

PILOTED FLANGE CARTRIDGE BACKING PLATES (HSY)

The HSY backing plate is designed to work in conjunction with the piloted flange cartridge housed units. Made of structural urethane, these plates are fitted to the back side of the pilot for extra protection. The HSY plate comes supplied with a triple-lip seal (DR) or a contamination collar (optional) to form an additional barrier against contamination for the most demanding applications.



Fig. C-35. Piloted flange cartridge backing plates.

FLANGE BLOCK BACKING PLATES (UFP)

These backing plates are made from structural urethane and are uniquely designed to work with our flange block housed units. Made to fit flush against the back of the housing, these plates create a labyrinth over the inner ring for additional contamination protection. The UFP plate, when used with an optional V-ring seal (VR), provides an extra barrier against extreme contamination.



Fig. C-36. Flange block backing plates.

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STEEL COVER DIMENSIONS

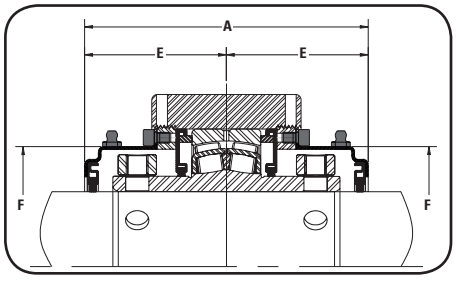


Fig. C-37. Double open-end cover.[1]

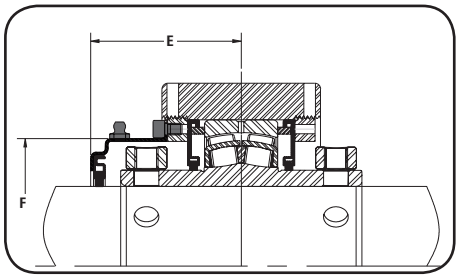


Fig. C-38. Single open-end cover.

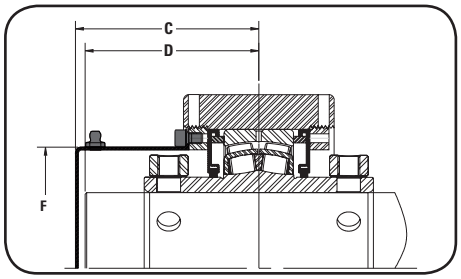


Fig. C-39. Single closed-end cover.

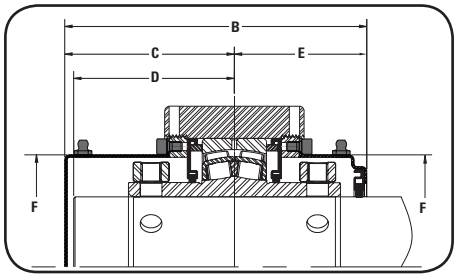


Fig. C-40. Single closed-end cover and single open-end cover.[1]

TABLE C-35. V-LOCK® SERIES – STRAIGHT BORE EQUIVALENTS

Cover Part No.	Shaft Dia.	Bearing No.	Steel Cover Dimensions					
			A	B	C	D	E	F
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
CS11STEEL	CLOSED	22211	**128.5** 5.06	**143.3** 5.64	**79.2** 3.12	**75.2** 2.96	**64.3** 2.53	**89.7** 3.53
CV11T115S	1 15/16 in.							
CV11T050S	**50 mm**							
CV11T200S	2 in.							
CS12STEEL	CLOSED	22212	**129.0** 5.08	**141.5** 5.57	**77.0** 3.03	**72.9** 2.87	**64.5** 2.54	**98.6** 3.88
CV12T055S	**55 mm**							
CV12T203S	2 3/16 in.							
CV12T204S	2 1/4 in.							
CS14STEEL	CLOSED	22214	**135.4** 5.33	**159.3** 6.27	**91.4** 3.60	**87.4** 3.44	**67.8** 2.67	**103.6** 4.08
CV14T060S	**60 mm**							
CV14T207S	2 7/16 in.							
CV14T208S	2 1/2 in.							
CV14T065S	**65 mm**							
CS16STEEL	CLOSED	22216	**150.1** 5.91	**167.6** 6.60	**92.5** 3.64	**88.4** 3.48	**75.2** 2.96	**116.1** 4.57
CV16T211S	2 11/16 in.							
CV16T212S	2 3/4 in.							
CV16T070S	**70 mm**							
CV16T215S	2 15/16 in.							
CV16T075S	**75 mm**							
CV16T300S	3 in.							
CS19STEEL	CLOSED	22219	**167.9** 6.61	**191.0** 7.52	**106.9** 4.21	**102.9** 4.05	**84.1** 3.31	**139.4** 5.49
CV19T080S	**80 mm**							
CV19T303S	3 3/16 in.							
CV19T304S	3 1/4 in.							
CV19T085S	**85 mm**							
CV19T307S	3 7/16 in.							
CV19T308S	3 1/2 in.							
CV19T090S	**90 mm**							
CS22STEEL	CLOSED	22222	**217.7** 8.57	**241.8** 9.52	**133.1** 5.24	**129.0** 5.08	**109.0** 4.29	**180.1** 7.09
CV22T311S	3 11/16 in.							
CV22T312S	3 3/4 in.							
CV22T100S	**100 mm**							
CV22T315S	3 15/16 in.							
CV22T400S	4 in.							
CS26STEEL	CLOSED	22226	**219.7** 8.65	**242.8** 9.56	**133.1** 5.24	**129.0** 5.08	**110.0** 4.33	**209.3** 8.24
CV26T110S	**110 mm**							
CV26T407S	4 7/16 in.							
CV26T408S	4 1/2 in.							
CV26T115S	**115 mm**							
CS28STEEL	CLOSED	22228	**223.5** 8.80	**246.9** 9.72	**135.1** 5.32	**131.1** 5.16	**111.8** 4.40	**209.3** 8.24
CV28T125S	**125 mm**							
CV28T415S	4 15/16 in.							
CV28T500S	5 in.							
CV28T130S	**130 mm**							

[1]Double covers available only on pillow block and take-up style bearings.

08-19-13 DRAFT

TABLE C-36. V-LOCK SERIES – TAPERED BORE EQUIVALENTS

Cover Part No.	Shaft Dia.	Bearing No.	Steel Cover Dimensions					
			A	B	C	D	E	F
	mm in.		mm in.	mm in.	mm in.	mm in.	mm in.	mm in.
CS11STEEL	CLOSED	22211	124.2 4.89	139.2 5.48	77.0 3.03	72.9 2.87	62.2 2.45	89.7 3.53
CV11T115S	1 15/16 in.							
CV11T050S	50 mm							
CV11T200S	2 in.							
CS13STEEL	CLOSED	22213	130.3 5.13	154.2 6.07	88.9 3.50	84.8 3.34	65.3 2.57	103.6 4.08
CV13T055S	55 mm							
CV13T203S	2 3/16 in.							
CV13T204S	2 1/4 in.							
CS15STEEL	CLOSED	22215	142.7 5.62	160.3 6.31	88.9 3.50	84.8 3.34	71.4 2.81	116.1 4.57
CV15T060S	60 mm							
CV15T207S	2 7/16 in.							
CV15T208S	2 1/2 in.							
CV15T065S	65 mm							
CS17STEEL	CLOSED	22217	133.9 5.27	156.0 6.14	88.9 3.50	84.8 3.34	67.1 2.64	132.1 5.2
CV17T211S	2 11/16 in.							
CV17T212S	2 3/4 in.							
CV17T070S	70 mm							
CV17T215S	2 15/16 in.							
CV17T075S	75 mm							
CV17T300S	3 in.							
CS20STEEL	CLOSED	22220	170.4 6.71	193.0 7.60	108.0 4.25	103.9 4.09	85.3 3.36	160.3 6.31
CV20T080S	80 mm							
CV20T303S	3 3/16 in.							
CV20T304S	3 1/4 in.							
CV20T085S	85 mm							
CV20T307S	3 7/16 in.							
CV20T308S	3 1/2 in.							
CV20T090S	90 mm							
CS22STEEL	CLOSED	22222	208.5 8.21	232.9 9.17	128.5 5.06	124.5 4.90	104.4 4.11	180.1 7.09
CV22T311S	3 11/16 in.							
CV22T312S	3 3/4 in.							
CV22T100S	100 mm							
CV22T315S	3 15/16 in.							
CV22T400S	4 in.							
CS24STEEL	CLOSED	22224	213.6 8.41	237.7 9.36	131.1 5.16	127.0 5.00	106.7 4.20	180.1 7.09
CV24T110S	110 mm							
CS26STEEL	CLOSED	22226	210.6 8.29	233.9 9.21	128.5 5.06	124.5 4.90	105.4 4.15	209.3 8.24
CV26T110S	110 mm							
CV26T407S	4 7/16 in.							
CV26T408S	4 1/2 in.							
CV26T115S	115 mm							
CS28STEEL	CLOSED	22228	214.6 8.45	238.0 9.37	130.6 5.14	126.5 4.98	107.2 4.22	209.3 8.24
CV28T125S	125 mm							
CV28T415S	4 15/16 in.							
CV28T500S	5 in.							
CV28T130S	130 mm							

TABLE C-37. CL SERIES – SINGLE AND DOUBLE SET SCREW LOCKS

Cover Part No.	Shaft Dia.	Bearing No.	Steel Cover Dimensions					
			A	B	C	D	E	F
	mm in.		mm in.	mm in.	mm in.	mm in.	mm in.	mm in.
CS08STEEL	CLOSED	22208	115.6 4.55	127.8 5.03	69.9 2.75	65.8 2.59	57.9 2.28	69.6 2.74
CA08T035S	35 mm							
CA08T107S	1 7/16 in.							
CA08T108S	1 1/2 in.							
CS09STEEL	Closed	22209	121.7 4.79	130.8 5.15	69.9 2.75	65.8 2.59	61.0 2.40	74.7 2.94
CA09T040S	40 mm							
CA09T111S	1 11/16 in.							
CA09T112S	1 3/4 in.							
CA09T045S	45 mm							
CS10STEEL	CLOSED	22210	122.7 4.83	132.8 5.23	73.2 2.88	69.1 2.72	61.5 2.42	79.8 3.14
CA10T115S	1 15/16 in.							
CA10T050S	50 mm							
CA10T200S	2 in.							
CS11STEEL	CLOSED	22211	128.5 5.06	143.3 5.64	79.2 3.12	75.2 2.96	64.3 2.53	89.7 3.53
CA11T055S	55 mm							
CA11T203S	2 3/16 in.							
CA11T204S	2 1/4 in.							
CS13STEEL	CLOSED	22213	135.4 5.33	159.3 6.27	91.4 3.60	87.4 3.44	67.8 2.67	103.6 4.08
CA13T060S	60 mm							
CA13T207S	2 7/16 in.							
CA13T208S	2 1/2 in.							
CA13T065S	65 mm							
CS15STEEL	CLOSED	22215	148.1 5.83	165.6 6.52	91.4 3.60	87.4 3.44	74.2 2.92	116.1 4.57
CA15T211S	2 11/16 in.							
CA15T212S	2 3/4 in.							
CA15T070S	70 mm							
CA15T215S	2 15/16 in.							
CA15T075S	75 mm							
CA15T300S	3 in.							
CS18STEEL	CLOSED	22218	164.8 6.49	188.0 7.40	105.7 4.16	101.6 4.00	82.6 3.25	139.4 5.49
CA18T080S	80 mm							
CA18T303S	3 3/16 in.							
CA18T304S	3 1/4 in.							
CA18T085S	85 mm							
CA18T307S	3 7/16 in.							
CA18T308S	3 1/2 in.							
CA18T090S	90 mm							
CS20STEEL	CLOSED	22220	179.6 7.07	202.2 7.96	112.5 4.43	108.5 4.27	89.9 3.54	160.3 6.31
CA20T311S	3 11/16 in.							
CA20T312S	3 3/4 in.							
CA20T100S	100 mm							
CA20T315S	3 15/16 in.							
CA20T400S	4 in.							
CS22STEEL	CLOSED	22222	217.7 8.57	241.8 9.52	133.1 5.24	129.0 5.08	109.0 4.29	180.1 7.09
CA22T110S	110 mm							
CA22T407S	4 7/16 in.							
CA22T408S	4 1/2 in.							
CA22T115S	115 mm							
CS26STEEL	CLOSED	22226	219.7 8.65	242.8 9.56	133.1 5.24	129.0 5.08	110.0 4.33	209.3 8.24
CA26T125S	125 mm							
CA26T415S	4 15/16 in.							
CA26T500S	5 in.							
CA26T130S	130 mm							

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TABLE C-38. EC SERIES – ECCENTRIC LOCK

Cover Part No.	Shaft Dia.	Bearing No.	Steel Cover Dimensions					
			A	B	C	D	E	F
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
CS08STEEL	CLOSED	22208	**115.6** 4.55	**127.8** 5.03	**69.9** 2.75	**65.8** 2.59	**57.9** 2.28	**69.6** 2.74
CJ08T035S	**35 mm**							
CJ08T107S	1 7/16 in.							
CJ08T108S	1 1/2 in.							
CS09STEEL	Closed	22209	**121.7** 4.79	**130.8** 5.15	**69.9** 2.75	**65.8** 2.59	**61.0** 2.40	**74.7** 2.94
CJ09T040S	**40 mm**							
CJ09T111S	1 11/16 in.							
CJ09T112S	1 3/4 in.							
CJ09T045S	**45 mm**							
CS10STEEL	CLOSED	22210	**122.7** 4.83	**132.8** 5.23	**73.2** 2.88	**69.1** 2.72	**61.5** 2.42	**79.8** 3.14
CJ10T115S	1 15/16 in.							
CJ10T050S	**50 mm**							
CJ10T200S	2 in.							
CS11STEEL	CLOSED	22211	**128.5 5.06**	**143.3** 5.64	**79.2** 3.12	**75.2** 2.96	**64.3** 2.53	**89.7** 3.53
CJ11T055S	**55 mm**							
CJ11T203S	2 3/16 in.							
CJ11T204S	2 1/4 in.							
CS13STEEL	CLOSED	22213	**135.4** 5.33	**159.3** 6.27	**91.4** 3.60	**87.4** 3.44	**67.8** 2.67	**103.6** 4.08
CJ13T060S	**60 mm**							
CJ13T207S	2 7/16 in.							
CJ13T208S	2 1/2 in.							
CJ13T065S	**65 mm**							
CS15STEEL	CLOSED	22215	**148.1** 5.83	**165.6** 6.52	**91.4** 3.60	**87.4** 3.44	**74.2** 2.92	**116.1** 4.57
CJ15T211S	2 11/16 in.							
CJ15T212S	2 3/4 in.							
CJ15T070S	**70 mm**							
CJ15T215S	2 15/16 in.							
CJ15T075S	**75 mm**							
CJ15T300S	3 in.							
CS18STEEL	CLOSED	22218	**164.8** 6.49	**188.0** 7.40	**105.7** 4.16	**101.6** 4.00	**82.6** 3.25	**139.4** 5.49
CJ18T080S	**80 mm**							
CJ18T303S	3 3/16 in.							
CJ18T304S	3 1/4 in.							
CJ18T085S	**85 mm**							
CJ18T307S	3 7/16 in.							
CJ18T308S	3 1/2 in.							
CJ18T090S	**90 mm**							

Cover Part No.	Shaft Dia.	Bearing No.	Steel Cover Dimensions					
			A	B	C	D	E	F
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
CS20STEEL	CLOSED	22220	**179.6** 7.07	**202.2** 7.96	**112.5** 4.43	**108.5** 4.27	**89.9** 3.54	**160.3** 6.31
CJ20T311S	3 11/16 in.							
CJ20T312S	3 3/4 in.							
CJ20T100S	**100 mm**							
CJ20T315S	3 15/16 in.							
CJ20T400S	4 in.							
CS22STEEL	CLOSED	22222	**217.7** 8.57	**241.8** 9.52	**133.1** 5.24	**129.0** 5.08	**109.0** 4.29	**180.1** 7.09
CJ22T110S	**110 mm**							
CJ22T407S	4 7/16 in.							
CJ22T408S	4 1/2 in.							
CJ22T115S	**115 mm**							
CS26STEEL	CLOSED	22226	**219.7** 8.65	**242.8** 9.56	**133.1** 5.24	**129.0** 5.08	**110.0** 4.33	**209.3** 8.24
CJ26T125S	**125 mm**							
CJ26T415S	4 15/16 in.							
CJ26T500S	5 in.							
CJ26T130S	**130 mm**							
CS30STEEL	CLOSED	23230	**270.3** 10.64	**283.2** 11.15	**148.1** 5.83	**144.0** 5.67	**135.1** 5.32	**239.5** 9.43
CJ30T507S	5 7/16 in.							
CJ30T508S	5 1/2 in.							
CJ30T140S	**140 mm**							
CJ30T515S	5 15/16 in.							
CJ30T600S	6 in.							
CJ30T150S	**150 mm**							
CS34STEEL	CLOSED	23234	**300.5** 11.83	**305.3** 12.02	**155.2** 6.11	**151.1** 5.95	**150.1** 5.91	**279.4** 11.00
CJ34T607S	6 7/16 in.							
CJ34T608S	6 1/2 in.							
CJ34T170S	**170 mm**							
CJ34T615S	6 15/16 in.							
CJ34T700S	7 in.							
CJ34T180S	**180 mm**							

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TABLE C-39. TA/DV SERIES – TAPERED ADAPTER LOCK

Cover Part No.	Shaft Dia.	Bearing No.	Steel Cover Dimensions					
			A	B	C	D	E	F
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
CS09STEEL	CLOSED	22209	**118.4** 4.66	**127.5** 5.02	**68.3** 2.69	**64.3** 2.53	**59.2** 2.33	**74.7** 2.94
CK09T107S	1 7/16 in.							
CK09T108S	1 1/2 in.							
CK09T040S	**40 mm**							
CS10STEEL	CLOSED	22210	**118.4** 4.66	**130.0** 5.12	**70.9** 2.79	**66.8** 2.63	**59.2** 2.33	**79.8** 3.14
CK10T111S	1 11/16 in.							
CK10T112S	1 3/4 in.							
CK10T045S	**45 mm**							
CS11STEEL	CLOSED	22211	**124.2** 4.89	**139.2** 5.48	**77.0** 3.03	**72.9** 2.87	**62.2** 2.45	**89.7** 3.53
CK11T115S	1 15/16 in.							
CK11T050S	**50 mm**							
CK11T200S	2 in.							
CS12STEEL	CLOSED	22212	**123.7** 4.87	**136.4** 5.37	**74.4** 2.93	**70.4** 2.77	**62.0** 2.44	**98.6** 3.88
CK12T055S	**55 mm**							
CS13STEEL	CLOSED	22213	**130.3** 5.13	**154.2** 6.07	**88.9** 3.50	**84.8** 3.34	**65.3** 2.57	**103.6** 4.08
CK13T203S	2 3/16 in.							
CK13T204S	2 1/4 in.							
CK13T060S	**60 mm**							
CS15STEEL	CLOSED	22215	**142.7** 5.62	**160.3** 6.31	**88.9** 3.50	**84.8** 3.34	**71.4** 2.81	**116.1** 4.57
CK15T207S	2 7/16 in.							
CK15T208S	2 1/2 in.							
CK15T065S	**65 mm**							
CS16STEEL	CLOSED	22216	**144.8** 5.70	**162.3** 6.39	**89.9** 3.54	**85.9** 3.38	**72.4** 2.85	**116.1** 4.57
CK16T211S	2 11/16 in.							
CK16T212S	2 3/4 in.							
CK16T070S	70 mm							
CS17STEEL	CLOSED	22217	**133.9** 5.27	**156.0** 6.14	**88.9** 3.50	**84.8** 3.34	**67.1** 2.64	**132.1** 5.20
CK17T215S	2 15/16 in.							
CK17T075S	**75 mm**							
CK17T300S	3 in.							
CS18STEEL	CLOSED	22218	**159.5** 6.28	**182.9** 7.20	**102.9** 4.05	**98.8** 3.89	**79.8** 3.14	**139.4** 5.49
CK18T080S	**80 mm**							
CK18T303S	3 3/16 in.							
CK18T304S	3 1/4 in.							
CS19STEEL	CLOSED	22219	**162.6** 6.40	**185.7** 7.31	**104.4** 4.11	**100.3** 3.95	**81.3** 3.20	**139.4** 5.49
CK19T085S	**85 mm**							
CS20STEEL	CLOSED	22220	**170.4** 6.71	**193.0** 7.60	**108.0** 4.25	**103.9** 4.09	**85.3** 3.36	**160.3** 6.31
CK20T307S	3 7/16 in.							
CK20T308S	3 1/2 in.							
CK20T090S	**90 mm**							
CS22STEEL	CLOSED	22222	**208.5** 8.21	**232.9** 9.17	**128.5** 5.06	**124.5** 4.90	**104.4** 4.11	**180.1** 7.09
CK22T315S	3 15/16 in.							
CK22T400S	4 in.							
CK22T100S	**100 mm**							
CS24STEEL	CLOSED	22224	**213.6** 8.41	**237.7** 9.36	**131.1** 5.16	**127.0** 5.00	**106.7** 4.20	**180.1** 7.09
CK24T403S	4 3/16 in.							
CK24T404S	4 1/4 in.							
CK24T110S	**110 mm**							
CS26STEEL	CLOSED	22226	**210.6** 8.29	**233.9** 9.21	**128.5** 5.06	**124.5** 4.90	**105.4** 4.15	**209.3** 8.24
CK26T407S	4 7/16 in.							
CK26T408S	4 1/2 in.							
CK26T115S	**115 mm**							
CS28STEEL	CLOSED	22228	**214.6** 8.45	**238.0** 9.37	**130.6** 5.14	**126.5** 4.98	**107.2** 4.22	**209.3** 8.24
CK28T415S	4 15/16 in.							
CK28T500S	5 in.							
CK28T125S	**125 mm**							

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CLOSED-END COVER DIMENSIONS

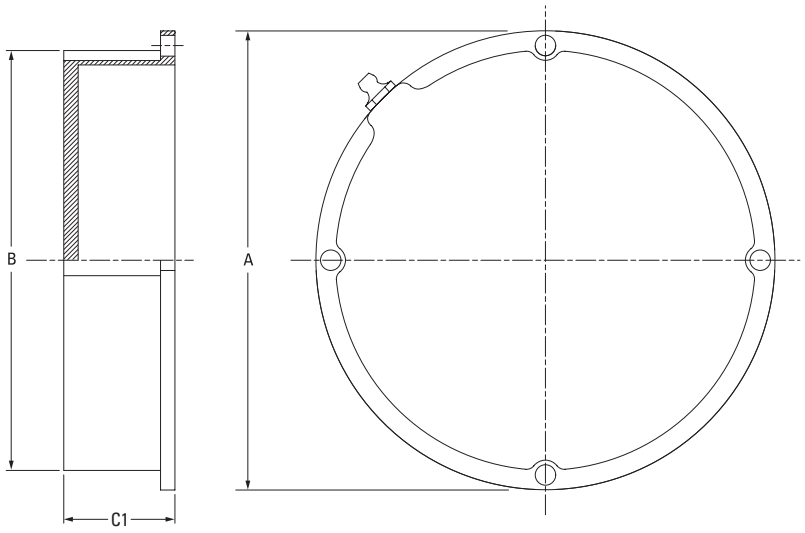


TABLE C-40. CLOSED-END COVER DIMENSIONS

Cover Part No.[1]	A	B	C1[2]
	mm in.	**mm** in.	**mm** in.
CS08	**97.0** 3.82	**76.7** 3.02	**31.8** 1.25
CS09	**101.8** 4.01	**81.5** 3.21	**31.8** 1.25
CS10	**106.9** 4.21	**86.6** 3.41	**31.8** 1.25
CS11	**117.1** 4.61	**96.8** 3.81	**31.8** 1.25
CS12V	**126.0** 4.96	**105.7** 4.16	**31.8** 1.25
CS13/CS14V	**132.1** 5.20	**116.1** 4.57	**31.8** 1.08
CS15/CS16V	**142.0** 5.59	**122.9** 4.84	**33.0** 1.30
CS17	**160.5** 6.32	**141.5** 5.57	**31.0** 1.22
CS18/CS19V	**168.1** 6.62	**149.1** 5.87	**38.9** 1.53
CS20	**192.0** 7.56	**174.7** 6.88	**44.5** 1.75
CS22	**212.1** 8.35	**194.8** 7.67	**52.6** 2.07
CS24	**212.1** 8.35	**194.8** 7.67	**52.6** 2.07
CS26/CS28V	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24
CS30	**271.5** 10.69	**254.0** 10.00	**56.9** 2.24
CS34	**304.8** 12.00	**287.3** 11.31	**56.9** 2.24

[1]Cover part number, CSXX, is determined by the bearing insert series of unit on which cover will be installed. See nomenclature guide on page C-54 to determine bearing insert series.
[2]Extended covers available upon request.

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OPEN-END COVERS WITH DR SEALS

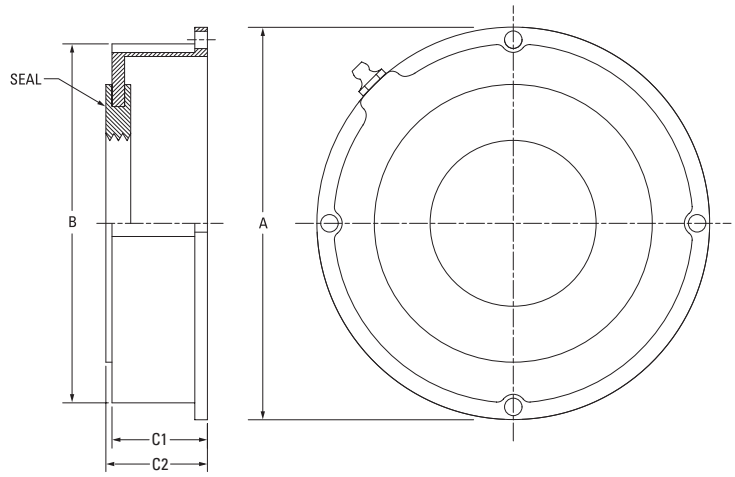


TABLE C-41. V-LOCK SERIES – STRAIGHT BORE EQUIVALENT – OPEN-END COVER WITH DR SEAL – (QV[V]...P, PL, SN, PF, PR, C, CW, F, FL, FY, FX, TU)

Cover Part No.	Shaft Dia.	A	B	C1	C2
	mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
CVDR115	1 15/16 in.	**117.1** 4.61	**96.8** 3.81	**31.8** 1.25	**34.3** 1.35
CVDR200	2 in.				
CVDR050MM	**50 mm**				
CVDR203	2 3/16 in.	**126.0** 4.96	**105.7** 4.16	**31.8** 1.25	**34.3** 1.35
CVDR204	2 1/4 in.				
CVDR055MM	**55 mm**				
CVDR060MM	**60 mm**	**132.1** 5.20	**116.1** 4.57	**27.4** 1.08	**30.0** 1.18
CVDR207	2 7/16 in.				
CVDR208	2 1/2 in.				
CVDR065MM	**65 mm**				
CVDR211	2 11/16 in.	**142.0** 5.59	**122.9** 4.84	**33.0** 1.30	**35.6** 1.40
CVDR212	2 3/4 in.				
CVDR070MM	**70 mm**				
CVDR215	2 15/16 in.				
CVDR300	3 in.				
CVDR075MM	**75 mm**				
CVDR303	3 3/16 in.	**168.1** 6.62	**149.1** 5.87	**38.9** 1.53	**41.4** 1.63
CVDR304	3 1/4 in.				
CVDR080MM	**80 mm**				
CVDR085MM	**85 mm**				
CVDR307	3 7/16 in.				
CVDR308	3 1/2 in.				
CVDR090MM	**90 mm**				
CVDR311	3 11/16 in.	**212.1** 8.35	**194.8** 7.67	**52.6** 2.07	**55.1** 2.17
CVDR312	3 3/4 in.				
CVDR100MM	**100 mm**				
CVDR315	3 15/16 in.				
CVDR400	4 in.				
CVDR110MM	**110 mm**	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**59.4** 2.34
CVDR407	4 7/16 in.				
CVDR408	4 1/2 in.				
CVDR115MM	**115 mm**				
CVDR125MM	**125 mm**	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**59.4** 2.34
CVDR415	4 15/16 in.				
CVDR500	5 in.				
CVDR130MM	**130 mm**				

TABLE C-42. V-LOCK SERIES – TAPERED ADAPTER EQUIVALENT – OPEN-END COVER WITH DR SEAL – (QV[V]...PA, PN, PKT, PK, PH, PG, FC, FB, MC)

Cover Part No.	Shaft Dia.	A	B	C1	C2
	mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
CKDR115	1 15/16 in.	**117.1** 4.61	**96.8** 3.81	**31.8** 1.25	**34.3** 1.35
CKDR200	2 in.				
CKDR050MM	**50 mm**				
CKDR203	2 3/16 in.	**132.1** 5.20	**116.1** 4.57	**27.4** 1.08	**30.0** 1.18
CKDR204	2 1/4 in.				
CKDR055MM	**55 mm**				
CKDR060MM	**60 mm**	**142.0** 5.59	**122.9** 4.84	**33.0** 1.30	**35.6** 1.40
CKDR207	2 7/16 in.				
CKDR208	2 1/2 in.				
CKDR065MM	**65 mm**				
CKDR211	2 11/16 in.	**160.5** 6.32	**141.5** 5.57	**31.0** 1.22	**33.5** 1.32
CKDR212	2 3/4 in.				
CKDR070MM	**70 mm**				
CKDR215	2 15/16 in.				
CKDR300	3 in.				
CKDR075MM	**75 mm**				
CKDR303	3 3/16 in.	**192.0** 7.56	**174.8** 6.88	**44.5** 1.75	**47.0** 1.85
CKDR304	3 1/4 in.				
CKDR080MM	**80 mm**				
CKDR085MM	**85 mm**				
CKDR307	3 7/16 in.				
CKDR308	3 1/2 in.				
CKDR090MM	**90 mm**				
CKDR311	3 11/16 in.	**212.1** 8.35	**194.8** 7.67	**52.6** 2.07	**55.1** 2.17
CKDR312	3 3/4 in.				
CKDR100MM	100 mm				
CKDR315	3 15/16 in.				
CKDR400	4 in.				
CKDR110MM	**110 mm**	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**59.4** 2.34
CKDR407	4 7/16 in.				
CKDR408	4 1/2 in.				
CKDR115MM	**115 mm**				
CKDR125MM	**125 mm**	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**59.4** 2.34
CKDR415	4 15/16 in.				
CKDR500	5 in.				
CKDR130MM	**130 mm**				

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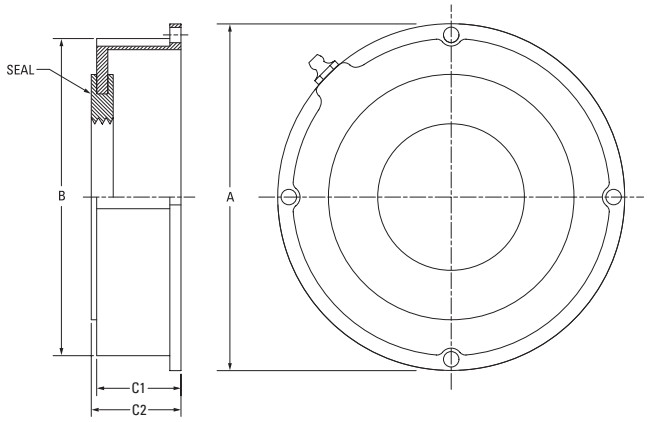


TABLE C-43. CL AND EC SERIES – OPEN-END COVER WITH DR SEAL

Cover Part No.	Shaft Dia.	A	B	C1	C2
	mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
CJDR035MM	**35 mm**	**97.0** 3.82	**76.7** 3.02	**31.8** 1.25	**34.3** 1.35
CJDR107	1 7/16 in.				
CJDR108	1 1/2 in.				
CJDR040MM	**40 mm**	**101.9** 4.01	**81.6** 3.21	**31.8** 1.25	**34.3** 1.35
CJDR111	1 11/16 in.				
CJDR112	1 3/4 in.				
CJDR045MM	**45 mm**				
CJDR115	1 15/16 in.	**106.9** 4.21	**86.6** 3.41	**31.8** 1.25	**34.3** 1.35
CJDR200	2 in.				
CJDR050MM	**50 mm**				
CJDR203	2 3/16 in.	**117.1** 4.61	**96.8** 3.81	**31.8** 1.25	**34.3** 1.35
CJDR204	2 1/4 in.				
CJDR055MM	**55 mm**				
CJDR060MM	**60 mm**	**132.1** 5.20	**116.1** 4.57	**27.4** 1.08	**30.0** 1.18
CJDR207	2 7/16 in.				
CJDR208	2 1/2 in.				
CJDR065MM	**65 mm**				
CJDR211	2 11/16 in.	**142** 5.59	**122.9** 4.84	**33.0** 1.30	**35.6** 1.40
CJDR070MM	**70 mm**				
CJDR212	2 3/4 in.				
CJDR215	2 15/16 in.				
CJDR300	3 in.				
CJDR075MM	**75 mm**				
CJDR303	3 3/16 in.	**168.1** 6.62	**149.1** 5.87	**38.9** 1.53	**41.4** 1.63
CJDR304	3 1/4 in.				
CJDR080MM	**80 mm**				
CJDR085MM	**85 mm**				
CJDR307	3 7/16 in.				
CJDR308	3 1/2 in.				
CJDR090MM	**90 mm**				
CJDR315	3 15/16 in.	**192** 7.56	**174.8** 6.88	**44.5** 1.75	**47.0** 1.85
CJDR400	4 in.				
CJDR100MM	**100 mm**				
CJDR110MM	**110 mm**	**212.1** 8.35	**194.8** 7.67	**52.6** 2.07	**55.1** 2.17
CJDR407	4 7/16 in.				
CJDR408	4 1/2 in.				
CJDR115MM	**115 mm**				
CJDR125MM	**125 mm**	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**59.4** 2.34
CJDR415	4 15/16 in.				
CJDR500	5 in.				
CJDR130MM	**130 mm**				
CJDR507	5 7/16 in.	**271.6** 10.69	**254.0** 10.00	**56.9** 2.24	**59.4** 2.34
CJDR508	5 1/2 in.				
CJDR140MM	**140 mm**				
CJDR515	5 15/16 in.				
CJDR600	6 in.				
CJDR150MM	**150 mm**				
CJDR607	6 7/16 in.	**304.8** 12.00	**287.3** 11.31	**56.9** 2.24	**59.4** 2.34
CJDR608	6 1/2 in.				
CJDR170MM	**170 mm**				
CJDR615	6 15/16 in.				
CJDR700	7 in.				
CJDR180MM	**180 mm**				

TABLE C-44. TA/DV SERIES – OPEN-END COVER WITH DR SEAL

Cover Part No.	Shaft Dia.	A	B	C1	C2
	mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
CKDR107	1 7/16 in.	**101.9** 4.01	**81.5** 3.21	**31.8** 1.25	**34.3** 1.35
CKDR108	1 1/2 in.				
CKDR040MM	**40 mm**				
CKDR111	1 11/16 in.	**106.9** 4.21	**86.6** 3.41	**31.8** 1.25	**34.3** 1.35
CKDR112	1 3/4 in.				
CKDR045MM	**45mm**				
CKDR115	1 15/16 in.	**117.1** 4.61	**96.8** 3.81	**31.8** 1.25	**34.3** 1.35
CKDR200	2 in.				
CKDR050MM	**50 mm**				
CKDR055MM	**55 mm**	**126.0** 4.96	**105.7** 4.16	**31.8** 1.25	**34.3** 1.35
CKDR203	2 3/16 in.	**132.1** 5.20	**116.1** 4.57	**27.4** 1.08	**30.0** 1.18
CKDR204	2 1/4 in.				
CKDR060MM	**60 mm**				
CKDR207	2 7/16 in.	**142.0** 5.59	**122.9** 4.84	**33.0** 1.30	**35.6** 1.40
CKDR208	2 1/2 in.				
CKDR065MM	**65 mm**				
CKDR211	2 11/16 in.	**142.0** 5.59	**122.9** 4.84	**33.0** 1.30	**35.6** 1.40
CKDR212	2 3/4 in.				
CKDR070MM	**70 mm**				
CKDR215	2 15/16 in.	**160.5** 6.32	**141.5** 5.57	**31.0** 1.22	**33.5** 1.32
CKDR300	3 in.				
CKDR075MM	**75 mm**				
CKDR080MM	**80 mm**	**168.1** 6.62	**149.1** 5.87	**38.9** 1.53	**41.4** 1.63
CKDR303	3 3/16 in.				
CKDR304	3 1/4 in.				
CKDR085MM	**85 mm**	**168.1** 6.62	**149.1** 5.87	**38.9** 1.53	**41.4** 1.63
CKDR307	3 7/16 in.	**192.0** **7.56**	**174.8** 6.88	**44.5** 1.75	**47.0** 1.85
CKDR308	3 1/2 in.				
CKDR090MM	**90 mm**				
CKDR315	3 15/16 in.	**212.1** 8.35	**194.8** 7.67	**52.6** 2.07	**55.1** 2.17
CKDR400	4 in.				
CKDR100MM	**100 mm**				
CKDR403	4 3/16 in.	**212.1** 8.35	**194.8** 7.67	**52.6** 2.07	**55.1** 2.17
CKDR404	4 1/4 in.				
CKDR110MM	**110 mm**				
CKDR407	4 7/16 in.	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**59.4** 2.34
CKDR408	4 1/2 in.				
CKDR115MM	**115 mm**				
CKDR415	4 15/16 in.	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**59.4** 2.34
CKDR500	5 in.				
CKDR125MM	**125 mm**				

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OPEN-END COVERS WITH VR SEALS

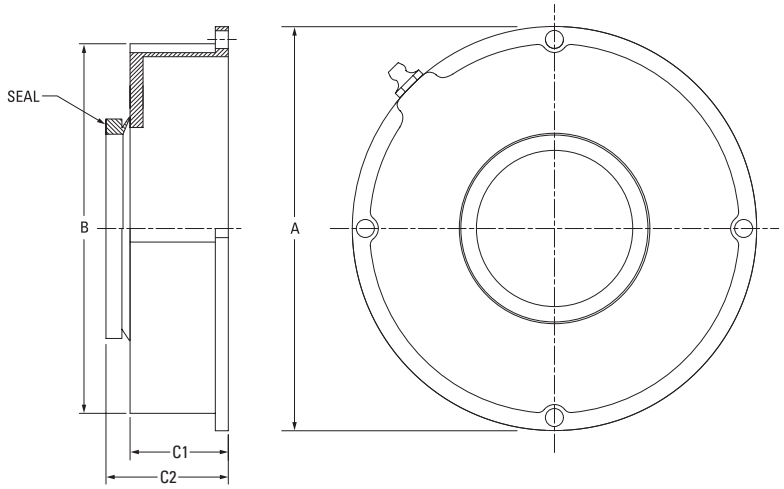


TABLE C-45. V-LOCK SERIES – STRAIGHT BORE EQUIVALENT – OPEN-END COVER WITH VR SEAL – (QV[V])...P, PL, SN, PF, PR, PX, PXT, C, CW, F, FL, FY, FX, TU)

Cover Part No.[1]	Shaft Dia.	A	B	C1	C2
	mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
CVVR11	1 15/16 in.	**117.1** 4.61	**96.8** 3.81	**31.8** 1.25	**40.6** 1.60
	2 in.				
	50 mm				
CVVR12	2 3/16 in.	**126.0** 4.96	**105.7** 4.16	**31.8** 1.25	**40.6** 1.60
	2 1/4 in.				
	55 mm				
CVVR14	**60 mm**	**132.1** 5.20	**116.1** 4.57	**27.4** 1.08	**36.3** 1.43
	2 7/16 in.				
	2 1/2 in.				
	65 mm				
CVVR16	2 11/16 in.	**142.0** 5.59	**122.9** 4.84	**33.0** 1.30	**44.0** 1.73
	2 3/4 in.				
	70 mm				
	2 15/16 in.				
	3 in.				
	75 mm				
CVVR19	3 3/16 in.	**168.1** 6.62	**149.1** 5.87	**38.9** 1.53	**50.0** 1.96
	3 1/4 in.				
	80 mm				
	85 mm				
	3 7/16 in.				
	3 1/2 in.				
	90 mm				
CVVR22	3 11/16 in.	**212.1** 8.35	**194.8** 7.67	**52.6** 2.07	**63.5** 2.50
	3 3/4 in.				
	100 mm				
	3 15/16 in.				
	4 in.				
CVVR26	**110 mm**	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**69.6** 2.74
	4 7/16 in.				
	4 1/2 in.				
	115 mm				
CVVR28	**125 mm**	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**69.6** 2.74
	4 15/16 in.				
	5 in.				
	130 mm				

[1]Please refer to bore size when choosing cover for straight-bore V-Lock®.

TABLE C-46. V-LOCK SERIES – TAPERED ADAPTER EQUIVALENT – OPEN-END COVER WITH VR SEAL – (QV[V]...PA, PN, PKT, PK, PH, PG, FC, FB, MC)

Cover Part No.	Shaft Dia.	A	B	C1	C2
	mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
CKVR11	1 15/16 in.	**117.1** 4.61	**96.8** 3.81	**31.8** 1.25	**40.6** 1.60
	2 in.				
	50 mm				
CKVR13	2 3/16 in.	**132.1** 5.20	**116.1** 4.57	**27.4** 1.08	**36.3** 1.43
	2 1/4 in.				
	55 mm				
CKVR15	**60 mm**	**142.0** 5.59	**122.9** 4.84	**33.0** 1.30	**41.9** 1.65
	2 7/16 in.				
	2 1/2 in.				
	65 mm				
CKVR17	2 11/16 in.	**160.6** 6.32	**141.5** 5.57	**31.0** 1.22	**41.9** 1.65
	2 3/4 in.				
	70 mm				
	2 15/16 in.				
	3 in.				
	75 mm				
CKVR20	3 3/16 in.	**192.0** 7.56	**174.8** 6.88	**44.4** 1.75	**55.4** 2.18
	3 1/4 in.				
	80 mm				
	85 mm				
	3 7/16 in.				
	3 1/2 in.				
	90 mm				
CKVR22	3 11/16 in.	**212.1** 8.35	**194.8** 7.67	**52.6** 2.07	**63.5** 2.50
	3 3/4 in.				
	100 mm				
	3 15/16 in.				
	4 in.				
CKVR24	**110 mm**	**212.1** 8.35	**194.8** 7.67	**52.6** 2.07	**63.5** 2.5
CKVR26	**110 mm**	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**69.6** 2.74
	4 7/16 in.				
	4 1/2 in.				
	115 mm				
CKVR28	**125 mm**	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**69.6** 2.74
	4 15/16 in.				
	5 in.				
	130 mm				

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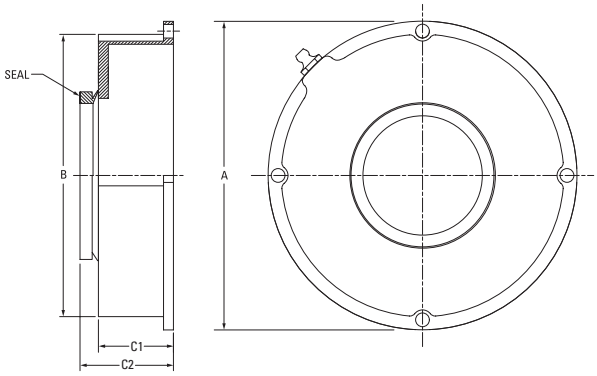


TABLE C-47. CL AND EC SERIES – OPEN-END COVER WITH VR SEAL

Cover Part No.	Shaft Dia.	A	B	C1	C2
	mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
CJVR08	**35 mm**	**97.0** 3.82	**76.7** 3.02	**31.8** 1.25	**39.4** 1.55
	1 7/16 in.				
	1 1/2 in.				
CJVR09	**40 mm**	**101.9** 4.01	**81.5** 3.21	**31.8** 1.25	**40.6** 1.60
	1 11/16 in.				
	1 3/4 in.				
	45 mm				
CJVR10	1 15/16 in.	**106.9** 4.21	**86.6** 3.41	**31.8** 1.25	**40.6** 1.60
	2 in.				
	50 mm				
CJVR11	2 3/16 in.	**117.1** 4.61	**96.8** 3.81	**31.8** 1.25	**40.6** 1.60
	2 1/4 in.				
	55 mm				
CJVR13	**60 mm**	**132.1** 5.20	**116.1** 4.57	**27.4** 1.08	**36.3** 1.43
	2 7/16 in.				
	2 1/2 in.				
	65 mm				
CJVR15	2 11/16 in.	**142.0** 5.59	**122.9** 4.84	**33.0** 1.30	**44.0** 1.73
	70 mm				
	2 3/4 in.				
	2 15/16 in.				
	3 in.				
	75 mm				
CJVR18	3 3/16 in.	**168.1** 6.62	**149.1** 5.87	**38.9** 1.53	**49.8** 1.96
	3 1/4 in.				
	80 mm				
	85 mm				
	3 7/16 in.				
	3 1/2 in.				
	90 mm				
CJVR20	3 15/16 in.	**192.0** 7.56	**174.8** 6.88	**44.5** 1.75	**55.4** 2.18
	4 in.				
	100 mm				
CJVR22	**110 mm**	**212.1** 8.35	**194.8** 7.67	**52.6** 2.07	**65.3** 2.57
	4 7/16 in.				
	4 1/2 in.				
	115 mm				
CJVR26	**125 mm**	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**69.6** 2.74
	4 15/16 in.				
	5 in.				

TABLE C-48. TA/DV SERIES – OPEN-END COVER WITH VR SEAL

Cover Part No.	Shaft Dia.	A	B	C1	C2
	mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
CKVR09	1 7/16 in.	**101.9** 4.01	**81.5** 3.21	**31.8** 1.25	**39.4** 1.55
	1 1/2 in.				
	40 mm				
CKVR10	1 11/16 in.	**106.9** 4.21	**86.6** 3.41	**31.8** 1.25	**40.6** 1.6
	1 3/4 in.				
	45 mm				
CKVR11	1 15/16 in.	**117.1** 4.61	**96.8** 3.81	**31.8** 1.25	**40.6** 1.60
	2 in.				
	50 mm				
CKVR12	**55 mm**	**126.0** 4.96	**105.7** 4.16	**31.8** 1.25	**40.6** 1.6
CKVR13	2 3/16 in.	**132.1** 5.20	**116.1** 4.57	**27.4** 1.08	**36.3** 1.43
	2 1/4 in.				
	60 mm				
CKVR15	2 7/16 in.	**142.0** 5.59	**122.9** 4.84	**33.0** 1.30	**41.9** 1.65
	2 1/2 in.				
	65 mm				
CKVR16	2 11/16 in.	**142.0** 5.59	**122.9** 4.84	**33.0** 1.30	**41.9** 1.65
	2 3/4 in.				
	70 mm				
CKVR17	2 15/16 in.	**160.5** 6.32	**141.5** 5.57	**31.0** 1.22	**41.9** 1.65
	3 in.				
	75 mm				
CKVR18	**80 mm**	**168.1** 6.62	**149.1** 5.87	**38.9** 1.53	**49.8** 1.96
	3 3/16 in.				
	3 1/4 in.				
CKVR19	**85 mm**	**168.1** 6.62	**149.1** 5.87	**38.9** 1.53	**49.8** 1.96
CKVR20	3 7/16 in.	**192.0** 7.56	**174.8** 6.88	**44.5** 1.75	**55.4** 2.18
	3 1/2 in.				
	90 mm				
CKVR22	3 15/16 in.	**212.1** 8.35	**194.8** 7.67	**52.6** 2.07	**63.5** 2.50
	4 in.				
	100 mm				
CKVR24	4 3/16 in.	**212.1** 8.35	**194.8** 7.67	**52.6** 2.07	**63.5** 2.50
	4 1/4 in.				
	110 mm				
CKVR26	4 7/16 in.	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**69.6** 2.74
	4 1/2 in.				
	115 mm				
CKVR28	4 15/16 in.	**241.3** 9.50	**223.8** 8.81	**56.9** 2.24	**69.6** 2.74
	5 in.				
	125 mm				

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UFP AND HSY FLANGE BLOCK BACKING PLATE DIMENSIONS

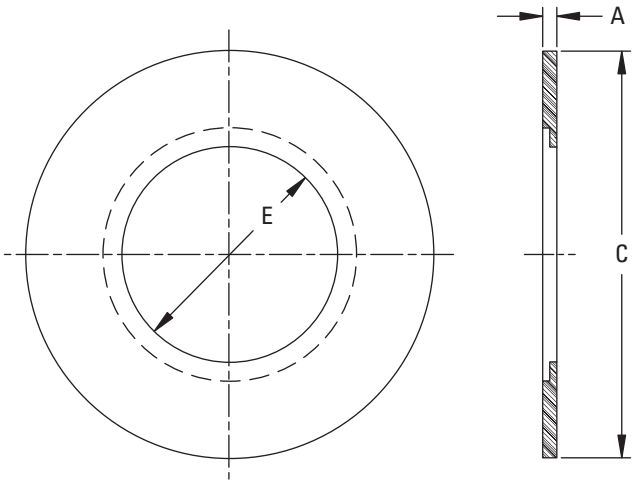


TABLE C-49. UFP BACKING PLATE DIMENSIONS[1]

Cover Part No.	A	C	E
	mm in.	**mm** in.	**mm** in.
UFP08	**5.1** 0.20	**95.3** 3.75	**39.4** 1.55
UFP09	**5.1** 0.20	**105.9** 4.17	**44.7** 1.76
UFP10	**3.8** 0.15	**106.4** 4.19	**51.8** 2.04
UFP11	**6.4** 0.25	**114.6** 4.51	**59.7** 2.35
UFP13	**5.1** 0.20	**146.1** 5.75	**64.8** 2.55
UFP15	**5.1** 0.20	**146.6** 5.77	**78.0** 3.07
UFP18	**5.1** 0.20	**187.5** 7.38	**90.4** 3.56
UFP20	**5.1** 0.20	**206.5** 8.13	**104.1** 4.10
UFP22	**5.1** 0.20	**215.9** 8.50	**130.3** 5.13
UFP26	**5.1** 0.20	**299** 11.77	**128.3** 5.05

[1]Actual backing plate may differ from drawing.

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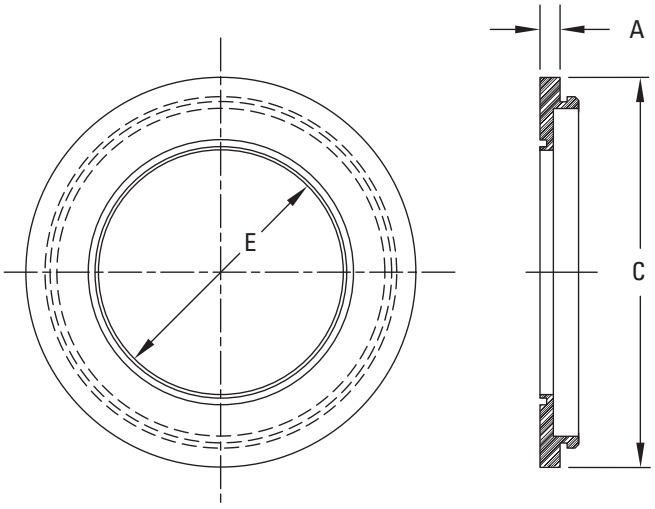


TABLE C-50. HSY BACKING PLATE DIMENSIONS

Cover Part No.	A	C	E
	mm in.	**mm** in.	**mm** in.
HSY10	**5.1** 0.20	**108.0** 4.25	**68.3** 2.69
HSY11	**5.1** 0.20	**120.1** 4.73	**74.7** 2.94
HSY13	**6.4** 0.25	**133.4** 5.25	**81.0** 3.19
HSY14	**6.4** 0.25	**133.4** 5.25	**81.0** 3.19
HSY15	**6.4** 0.25	**155.7** 6.13	**93.7** 3.69
HSY16	**8.9** 0.35	**155.7** 6.13	**93.7** 3.69
HSY18	**5.1** 0.20	**181.1** 7.13	**106.4** 4.19
HSY19	**7.6** 0.30	**181.1** 7.13	**106.4** 4.19
HSY20	**5.1** 0.20	**199.9** 7.87	**119.1** 4.69
HSY22	**7.6** 0.30	**254.0** 10.00	**131.8** 5.19

08-19-13 DRAFT

V-LOCK® SERIES

The V-Lock® locking mechanism (U.S. Pat. No. 7344313) evenly distributes force on the shaft, helping eliminate fretting corrosion. V-Lock provides maximum holding power and prevents overtightening.

In response to customer input, V-Lock was specifically designed to address common spherical roller bearing solid-block housed unit problems:

- Reliable mechanical withdrawal.
- Preset spherical inner ring radial internal clearances (feeler gages are not required).
- Quick installation (typically 10 minutes or less).
- Highest shaft-holding power.
- Works well in high-speed applications where shaft centering is an issue.



Fig. C-41. V-Lock® series insert.

YOU HAVE CHOICES

For the V-Lock series, you can select either single-nut or double-nut versions and choose from many seal configurations and housing styles, which are shown on page C-74.

HOUSINGS

- Two-bolt pillow blocks.
- Four-bolt pillow blocks.
- Flange blocks.
- Piloted flange cartridges.
- Cartridge blocks.
- Take-up blocks.

SEALS

- Labyrinth: DuPont Teflon (T).
- Triple-lip: nitrile rubber (M), urethane (O) and DuPont Viton (N).
- Double-lip: nitrile rubber (B) and DuPont Viton (C).
- Steel and urethane closed-end covers (CS).
- Steel and urethane open-end covers (CV) with:
  - DuPont Teflon (T).
  - Triple-lip seal (DR).
  - V-ring seal (VR).

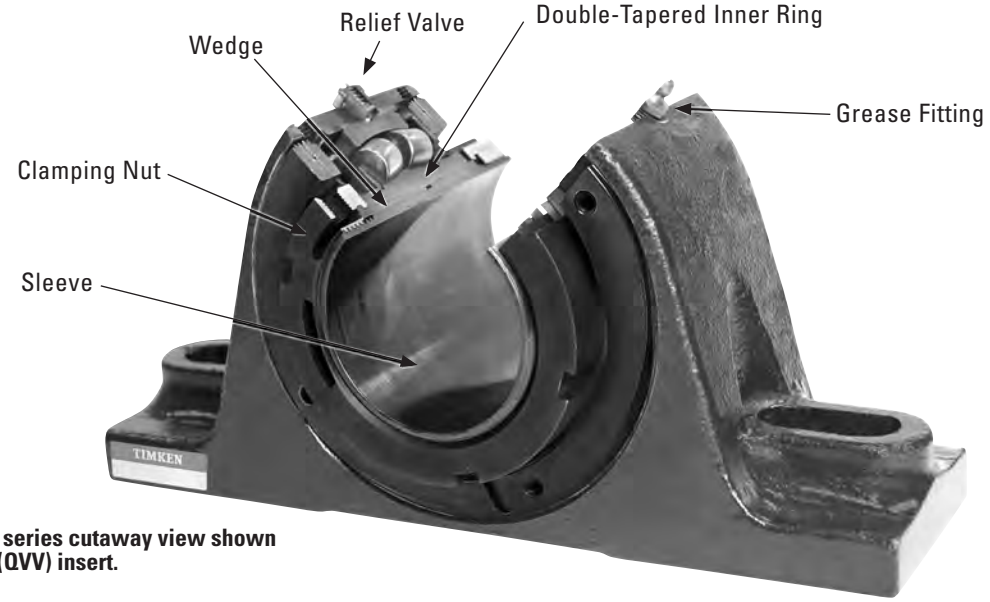


Fig. C-42. V-Lock series cutaway view shown with double-nut (QVV) insert.

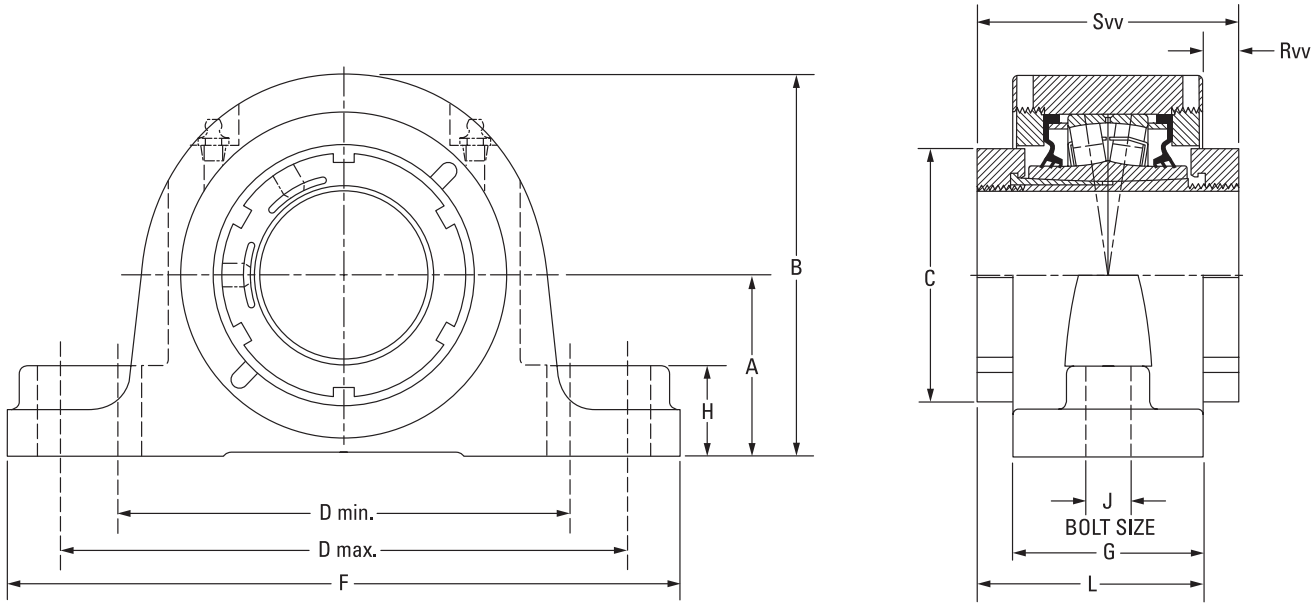
08-19-13 DRAFT

V-LOCK SERIES (ADAPTER LOCK) U.S. PAT. NO. 7344313

		Primary Seals						Secondary Seals and Covers					
								Open-End Cover			Closed-End Cover	HSY Flange Cartridge Backing Plate	UFP Backing Plate
	Housing Type	M	N	O	B	C	T	DR	VR	T		DR	
V-Lock® (Timken Exclusive Double Taper Lock)	Pillow Block	•	•	•	•	•	•	•	•	•	•		
	Flange Block	•	•	•	•	•	•	•	•	•	•		
	Piloted Flange Cartridge	•	•	•	•	•	•	•	•	•	•		
	Take-Up Block	•	•	•	•	•	•	•	•	•	•		
	Cartridge Block	•	•	•	•	•	•	•	•	•	•		
CL Series (Set Screw Lock)	Pillow Block	•	•	•	•	•	•	•	•	•	•		
	Flange Block	•	•	•	•	•	•	•	•	•	•		•
	Piloted Flange Cartridge	•	•	•	•	•	•	•	•	•	•	•	
	Take-Up Block	•	•	•	•	•	•	•	•	•	•		
	Cartridge Block	•	•	•	•	•	•	•	•	•	•		
	Hangar Block	•	•	•	•	•	•	•	•	•	•		
EC Series (Eccentric Lock)	Pillow Block	•	•	•	•	•	•	•	•	•	•		
	Flange Block	•	•	•	•	•	•	•	•	•	•		•
	Piloted Flange Cartridge	•	•	•	•	•	•	•	•	•	•	•	
	Take-Up Block	•	•	•	•	•	•	•	•	•	•		
	Cartridge Block	•	•	•	•	•	•	•	•	•	•		
	Hangar Block	•	•	•	•	•	•	•	•	•	•		
TA Series (Tapered Adapter Lock)	Pillow Block	•	•	•	•	•	•	•	•	•	•		
	Flange Block	•	•	•	•	•	•	•	•	•	•		
	Piloted Flange Cartridge	•	•	•	•	•	•	•	•	•	•		
	Cartridge Block	•	•	•	•	•	•	•	•	•	•		
DV Series (Tapered Adapter Lock)	Pillow Block	•	•	•	•	•	•	•	•	•	•		
	Flange Block	•	•	•	•	•	•	•	•	•	•		
	Piloted Flange Cartridge	•	•	•	•	•	•	•	•	•	•		

08-19-13 DRAFT

QVVP TWO-BOLT PILLOW BLOCKS – STRAIGHT BORE EQUIVALENT

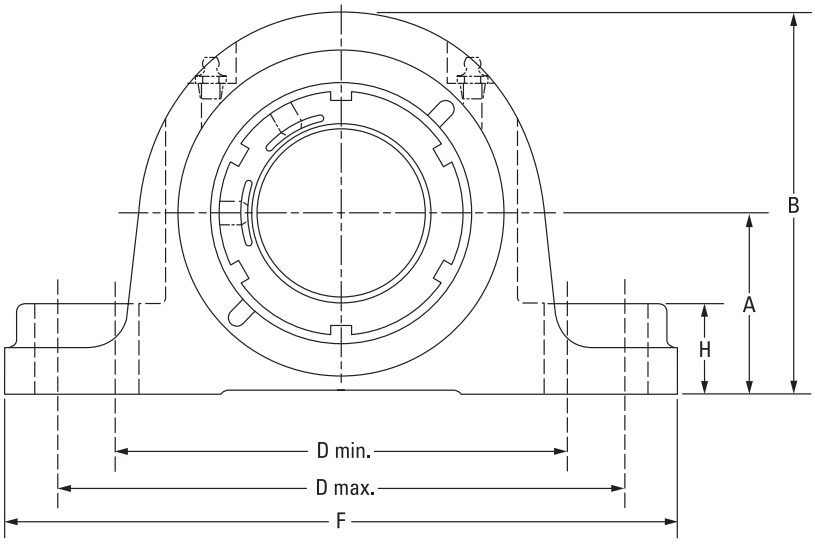


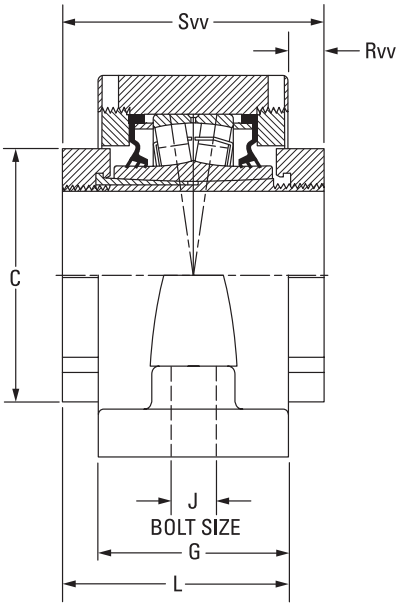
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	L	Rvv	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVVP11V115S	1 15/16 in.	22211	**57.2** 2.25	**122.2** 4.81	**75.9** 2.99	**152.4** 6.00	**181.1** 7.13	**225.6** 8.88	**62.0** 2.44	**31.8** 1.25	**16** 5/8	**82.0** 3.23	**20.1** 0.79	**102.1** 4.02	**6.4** 14
QVVP11V200S	2 in.														
QVVP11V050S	**50 mm**														
QVVP12V203S	2 3/16 in.	22212	**63.5** 2.50	**133.4** 5.25	**80.3** 3.16	**165.1** 6.50	**200.2** 7.88	**244.6** 9.63	**66.8** 2.63	**31.8** 1.25	**16** 5/8	**84.6** 3.33	**17.8** 0.70	**102.1** 4.02	**7.7** 17
QVVP12V204S	2 1/4 in.														
QVVP12V055S	**55 mm**														
QVVP14V060S	**60 mm**	22214	**69.9** 2.75	**147.3** 5.80	**94.0** 3.70	**174.8** 6.88	**219.2** 8.63	**260.4** 10.25	**73.7** 2.90	**35.1** 1.38	**16** 5/8	**88.9** 3.50	**15.2** 0.60	**103.9** 4.09	**10.0** 22
QVVP14V207S	2 7/16 in.														
QVVP14V208S	2 1/2 in.														
QVVP14V065S	**65 mm**														
QVVP16V211S	2 11/16 in.	22216	**79.5** 3.13	**164.3** 6.47	**106.4** 4.19	**200.2** 7.88	**244.6** 9.63	**295.4** 11.63	**76.2** 3.00	**35.1** 1.38	**20** 3/4	**91.2** 3.59	**15.0** 0.59	**106.2** 4.18	**12.7** 28
QVVP16V212S	2 3/4 in.														
QVVP16V070S	**70 mm**														
QVVP16V215S	2 15/16 in.														
QVVP16V300S	3 in.														
QVVP16V075S	**75 mm**														
QVVP19V303S	3 3/16 in.	22219	**95.3** 3.75	**195.3** 7.69	**124.5** 4.90	**238.3** 9.38	**285.8** 11.25	**342.9** 13.50	**86.6** 3.41	**47.8** 1.88	**24** 7/8	**102.1** 4.02	**15.5** 0.61	**117.6** 4.63	**20.4** 45
QVVP19V304S	3 1/4 in.														
QVVP19V080S	**80 mm**														
QVVP19V085S	**85 mm**														
QVVP19V307S	3 7/16 in.														
QVVP19V308S	3 1/2 in.														
QVVP19V090S	**90 mm**														
QVVP22V311S	3 11/16 in.	22222	**104.9** 4.13	**219.7** 8.65	**139.7** 5.50	**255.0** 10.04	**320.0** 12.60	**362.0** 14.25	**102.6** 4.04	**50.8** 2.00	**24** 1	**116.6** 4.59	**14.0** 0.55	**130.3** 5.13	**26.8** 59
QVVP22V312S	3 3/4 in.														
QVVP22V100S	**100 mm**														
QVVP22V315S	3 15/16 in.														
QVVP22V400S	4 in.														

[1]Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

08-19-13 DRAFT

QVVPL TWO-BOLT PILLOW BLOCKS – STRAIGHT BORE EQUIVALENT



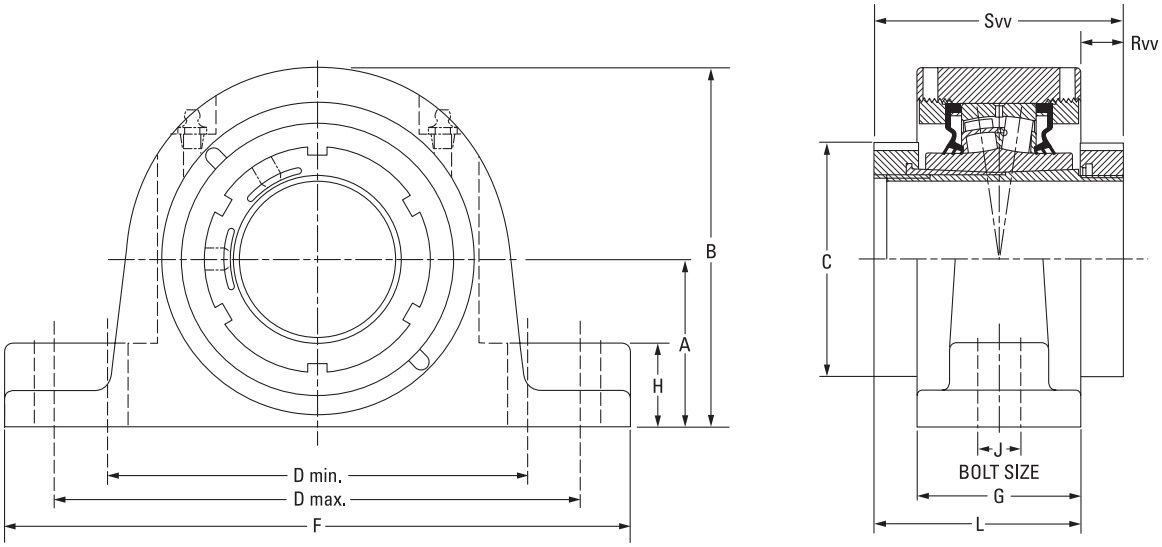


Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	L	Rvv	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVVPL11V115S	1 15/16 in.	22211	**57.2** 2.25	**122.2** 4.81	**75.9** 2.99	**150.6** 5.93	**161.5** 6.36	**212.9** 8.38	**62.0** 2.44	**31.8** 1.25	**16** 5/8	**82.0** 3.23	**20.1** 0.79	**102.1** 4.02	**6.4** 14
QVVPL11V200S	2 in.														
QVVPL11V050S	**50 mm**														
QVVPL12V203S	2 3/16 in.	22212	**63.5** 2.50	**133.4** 5.25	**80.3** 3.16	**165.1** 6.50	**179.3** 7.06	**225.6** 8.88	**65.5** 2.58	**31.8** 1.25	**16** 5/8	**83.8** 3.30	**18.3** 0.72	**102.1** 4.02	**7.7** 17
QVVPL12V204S	2 1/4 in.														
QVVPL12V055S	**55 mm**														
QVVPL14V060S	**60 mm**	22214	**69.9** 2.75	**147.3** 5.80	**94.0** 3.70	**173** 6.81	**189.0** 7.44	**235.0** 9.25	**73.7** 2.90	**35.1** 1.38	**16** 5/8	**88.9** 3.50	**15.2** 0.60	**103.9** 4.09	**10.0** 22
QVVPL14V207S	2 7/16 in.														
QVVPL14V208S	2 1/2 in.														
QVVPL14V065S	**65 mm**														
QVVPL16V211S	2 11/16 in.	22216	**82.6** 3.25	**167.4** 6.59	**106.4** 4.19	**195.6** 7.70	**213.4** 8.40	**265.2** 10.44	**76.2** 3.00	**35.1** 1.38	**20** 3/4	**91.2** 3.59	**15.0** 0.59	**106.2** 4.18	**12.7** 28
QVVPL16V212S	2 3/4 in.														
QVVPL16V070S	**70 mm**														
QVVPL16V215S	2 15/16 in.														
QVVPL16V300S	3 in.														
QVVPL16V075S	**75 mm**														
QVVPL19V303S	3 3/16 in.	22219	**95.3** 3.75	**195.3** 7.69	**124.5** 4.90	**235.0** 9.25	**273.1** 10.75	**330.2** 13.00	**86.6** 3.41	**47.8** 1.88	**24** 7/8	**102.1** 4.02	**15.5** 0.61	**117.6** 4.63	**20.4** 45
QVVPL19V304S	3 1/4 in.														
QVVPL19V080S	**80 mm**														
QVVPL19V085S	**85 mm**														
QVVPL19V307S	3 7/16 in.														
QVVPL19V308S	3 1/2 in.														
QVVPL19V090S	**90 mm**														
QVVPL22V311S	3 11/16 in.	22222	**108** 4.25	**223** 8.78	**139.7** 5.50	**255.0** 10.04	**320.0** 12.60	**362.0** 14.25	**102.6** 4.04	**53.8** 2.12	**24** 1	**116.6** 4.59	**14.0** 0.55	**130.3** 5.13	**26.8** 59
QVVPL22V312S	3 3/4 in.														
QVVPL22V100S	**100 mm**														
QVVPL22V315S	3 15/16 in.														
QVVPL22V400S	4 in.														

[1] Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

08-19-13 DRAFT

QVVPA SAF TWO-BOLT PILLOW BLOCKS – TAPERED BORE EQUIVALENT

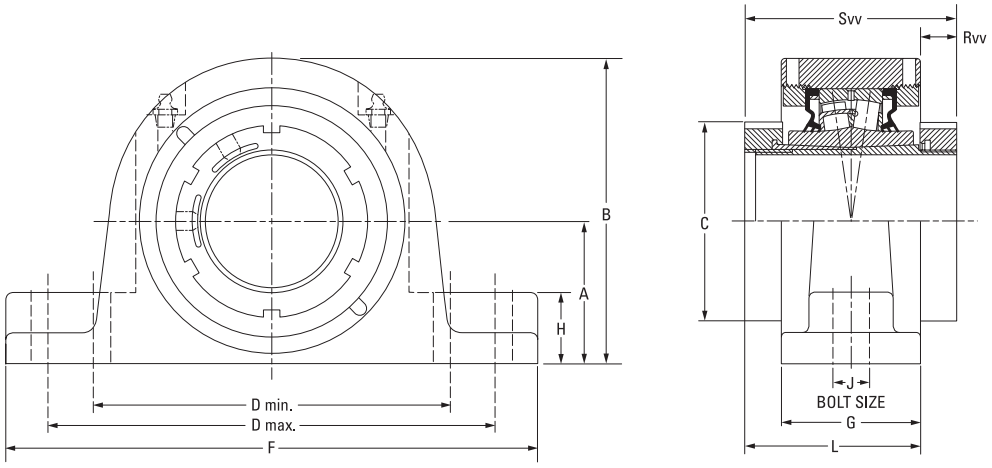


Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	L	Rvv	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVVPA13V203S	2 3/16 in.	22213	**76.2** 3.00	**151.1** 5.95	**80.3** 3.16	**182.9** 7.20	**233.7** 9.20	**261.9** 10.31	**68.6** 2.70	**31.2** 1.23	**16** 5/8	**85.3** 3.36	**16.8** 0.66	**102.1** 4.02	**10.4** 23
QVVPA13V204S	2 1/4 in.														
QVVPA13V055S	**55 mm**														
QVVPA15V060S	**60 mm**	22215	**82.6** 3.25	**163.3** 6.43	**94.0** 3.70	**200.2** 7.88	**244.6** 9.63	**276.4** 10.88	**68.6** 2.70	**31.8** 1.25	**16** 5/8	**86.4** 3.40	**17.8** 0.70	**103.9** 4.09	**12.2** 27
QVVPA15V207S	2 7/16 in.														
QVVPA15V208S	2 1/2 in.														
QVVPA15V065S	**65 mm**														
QVVPA17V211S	2 11/16 in.	22217	**95.3** 3.75	**186** 7.32	**106.4** 4.19	**241.3** 9.50	**279.4** 11.00	**320.8** 12.63	**76.2** 3.00	**33.8** 1.33	**20** 3/4	**91.2** 3.59	**15.0** 0.59	**106.2** 4.18	**15.0** 33
QVVPA17V212S	2 3/4 in.														
QVVPA17V070S	**70 mm**														
QVVPA17V215S	2 15/16 in.														
QVVPA17V300S	3 in.														
QVVPA17V075S	**75 mm**														
QVVPA20V303S	3 3/16 in.	22220	**114.3** 4.50	**219.2** 8.63	**124.5** 4.90	**276.4** 10.88	**327.2** 12.88	**368.3** 14.50	**86.9** 3.42	**41.4** 1.63	**24** 7/8	**102.4** 4.03	**15.5** 0.61	**117.6** 4.63	**29.5** 65
QVVPA20V304S	3 1/4 in.														
QVVPA20V080S	**80 mm**														
QVVPA20V085S	**85 mm**														
QVVPA20V307S	3 7/16 in.														
QVVPA20V308S	3 1/2 in.														
QVVPA20V090S	**90 mm**														
QVVPA22V311S	3 11/16 in.	22222	**125.5** 4.94	**240.5** 9.47	**139.7** 5.50	**317.5** 12.50	**368.3** 14.50	**406.4** 16.00	**100.6** 3.96	**50.8** 2.00	**24** 7/8	**115.6** 4.55	**15.0** 0.59	**130.3** 5.13	**38.1** 84
QVVPA22V312S	3 3/4 in.														
QVVPA22V100S	**100 mm**														
QVVPA22V315S	3 15/16 in.														
QVVPA22V400S	4 in.														
QVVPA26V110S	**110 mm**	22226	**152.4** 6.00	**284.0** 11.18	**174.8** 6.88	**362.0** 14.25	**400.1** 15.75	**444.5** 17.50	**128** 5.04	**51.8** 2.04	**24** 1	**153.2** 6.03	**25.1** 0.99	**178.3** 7.02	**61.7** 136
QVVPA26V407S	4 7/16 in.														
QVVPA26V408S	4 1/2 in.														
QVVPA26V115S	**115 mm**														
QVVPA28V125S	**125 mm**	22228	**152.4** 6.00	**290.8** 11.45	**190.0** 7.48	**384.3** 15.13	**447.8** 17.63	**499.9** 19.68	**85.6** 3.37	**51.8** 2.04	**30** 1 1/4	**132.0** 5.20	**46.5** 1.83	**178.3** 7.02	**61.8** 136
QVVPA28V415S	4 15/16 in.														
QVVPA28V500S	5 in.														
QVVPA28V130S	**130 mm**														

[1]Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

08-19-13 DRAFT

QVVPN SN-STYLE TWO-BOLT PILLOW BLOCKS – TAPERED BORE EQUIVALENT

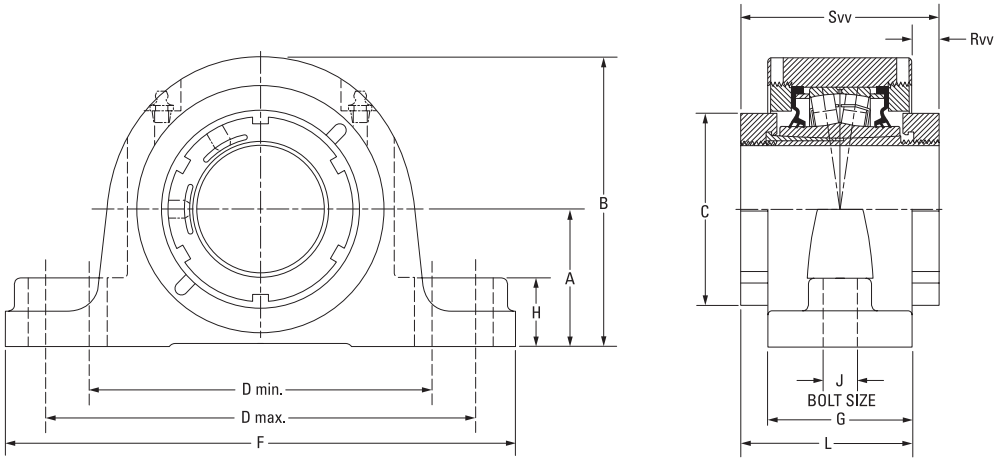


Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	L	Rvv	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVVPN11V115S	1 15/16 in.	22211	**69.9** 2.750	**135.4** 5.33	**75.9** 2.99	**165.1** 6.50	**221.0** 8.70	**251.0** 9.88	**60.5** 2.38	**31.8** 1.25	**16** 5/8	**81.3** 3.20	**20.8** 0.82	**102.1** 4.02	**7.7** 17
QVVPN11V200S	2 in.														
QVVPN11V050S	**50 mm**														
QVVPN12V055S	**55 mm**	22212	**70.0** 2.756	**140.5** 5.53	**80.0** 3.15	**177.8** 7.00	**219.2** 8.63	**254.0** 10.00	**60.5** 2.38	**31.8** 1.25	**16** 5/8	**81.3** 3.20	**20.8** 0.82	**102.1** 4.02	**9.1** 20
QVVPN13V203S	2 3/16 in.	22213	**80.0** 3.150	**154.9** 6.10	**80.3** 3.16	**182.9** 7.20	**233.7** 9.20	**261.9** 10.31	**68.6** 2.70	**35.1** 1.38	**16** 5/8	**85.3** 3.36	**16.8** 0.66	**102.1** 4.02	**10.4** 23
QVVPN13V204S	2 1/4 in.														
QVVPN14V060S	**60 mm**	22214	**80.0** 3.150	**154.9** 6.10	**94.0** 3.70	**182.9** 7.20	**233.7** 9.20	**261.9** 10.31	**68.6** 2.70	**35.1** 1.38	**16** 5/8	**86.4** 3.40	**17.8** 0.70	**104.0** 4.09	**10.4** 23
QVVPN15V207S	2 7/16 in.	22215	**80.0** 3.150	**160.8** 6.33	**94.0** 3.70	**200.2** 7.88	**244.6** 9.63	**276.4** 10.88	**68.6** 2.70	**29.2** 1.15	**16** 5/8	**86.4** 3.40	**17.8** 0.70	**103.9** 4.09	**12.2** 27
QVVPN15V208S	2 1/2 in.														
QVVPN15V065S	**65 mm**														
QVVPN16V211S	2 11/16 in.	22216	**95.0** 3.74	**180.3** 7.10	**106.0** 4.17	**235.0** 9.25	**266.7** 10.50	**315.0** 12.40	**72.6** 2.86	**31.8** 1.25	**20** 3/4	**89.4** 3.52	**16.8** 0.66	**106.0** 4.17	**13.6** 30
QVVPN16V212S	2 3/4 in.														
QVVPN16V070S	**70 mm**														
QVVPN17V215S	2 15/16 in.	22217	**95.3** 3.750	**185.9** 7.32	**106.4** 4.19	**241.3** 9.50	**279.4** 11.00	**320.8** 12.63	**76.2** 3.00	**33.8** 1.33	**20** 3/4	**91.2** 3.59	**15.0** 0.59	**106.2** 4.18	**15.0** 33
QVVPN17V300S	3 in.														
QVVPN17V075S	**75 mm**														
QVVPN19V303S	3 3/16 in.	22219	**100.0** 3.937	**195.3** 7.69	**124.0** 4.88	**285.8** 11.25	**295.4** 11.63	**346.2** 13.63	**79.8** 3.14	**38.9** 1.53	**20** 3/4	**99.1** 3.90	**19.3** 0.76	**118.1** 4.65	**22.2** 49
QVVPN19V304S	3 1/4 in.														
QVVPN19V080S	**80 mm**														
QVVPN19V085S	**85 mm**	22219	**112.0** 4.409	**212.3** 8.36	**124.0** 4.88	**285.8** 11.25	**295.4** 11.63	**346.2** 13.63	**82.8** 3.26	**38.9** 1.53	**20** 3/4	**100.6** 3.96	**17.8** 0.70	**118.1** 4.65	**23.1** 51
QVVPN20V307S	3 7/16 in.	22220	**112.0** 4.409	**216.9** 8.54	**124.5** 4.90	**276.4** 10.88	**327.2** 12.88	**368.3** 14.50	**86.9** 3.42	**38.9** 1.53	**24** 7/8	**102.4** 4.03	**15.5** 0.61	**117.6** 4.63	**29.5** 65
QVVPN20V308S	3 1/2 in.														
QVVPN20V090S	**90 mm**														
QVVPN22V311S	3 11/16 in.	22222	**125.0** 4.921	**240.5** 9.47	**139.7** 5.50	**317.5** 12.50	**368.3** 14.50	**406.4** 16.00	**100.6** 3.96	**50.8** 2.00	**24** 7/8	**115.6** 4.55	**15.0** 0.59	**130.3** 5.13	**38.1** 84
QVVPN22V312S	3 3/4 in.														
QVVPN22V100S	**100 mm**														
QVVPN22V315S	3 15/16 in.														
QVVPN22V400S	4 in.														
QVVPN24V110S	**110 mm**	22224	**140.0** 5.512	**262.9** 10.35	**174.8** 6.88	**344.4** 13.56	**355.6** 14.00	**409.7** 16.13	**97.8** 3.85	**50.8** 2.00	**24** 7/8	**138.2** 5.44	**40.4** 1.59	**178.3** 7.02	**49.9** 110
QVVPN26V407S	4 7/16 in.	22226	**150.0** 5.906	**281.7** 11.09	**174.8** 6.88	**367.3** 14.46	**400.1** 15.75	**444.5** 17.50	**128.0** 5.04	**49.3** 1.94	**24** 1	**153.2** 6.03	**25.1** 0.99	**178.3** 7.02	**61.7** 136
QVVPN26V408S	4 1/2 in.														
QVVPN26V115S	**115 mm**														
QVVPN28V125S	**125 mm**	22228	**150.0** 5.906	**288.5** 11.36	**190.0** 7.48	**384.3** 15.13	**447.8** 17.63	**499.9** 19.68	**85.6** 3.37	**49.3** 1.94	**30** 1 1/4	**132.0** 5.20	**46.5** 1.83	**178.3** 7.02	**61.8** 136
QVVPN28V415S	4 15/16 in.														
QVVPN28V500S	5 in.														
QVVPN28V130S	**130 mm**														

[1]Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

08-19-13 DRAFT

QVVSN SN-STYLE TWO-BOLT PILLOW BLOCKS – PURE METRIC DESIGN

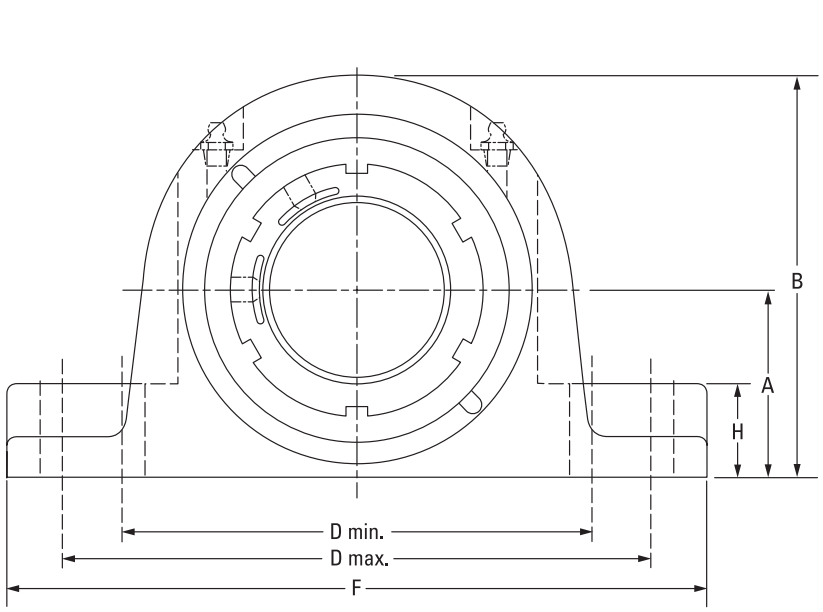


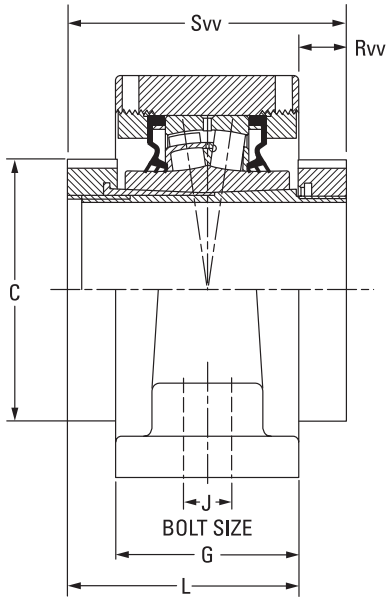
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	L	Rvv	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVVSN11V115S	1 15/16 in.	22211	**70** 2.76	**136** 5.35	**76** 2.99	**183** 7.20	**216** 8.50	**254** 10.00	**68** 2.68	**25** 1.00	**16** 5/8	**85** 3.35	**17** 0.67	**102** 4.02	**13.2** 29
QVVSN11V200S	2 in.														
QVVSN11V050S	**50 mm**														
QVVSN12V203S	2 3/16 in.	22212	**70** 2.76	**141** 5.55	**80** 3.15	**183** 7.20	**216** 8.50	**254** 10.00	**68** 2.68	**25** 1.00	**16** 5/8	**85** 3.35	**17** 0.67	**102** 4.02	**13.2** 29
QVVSN12V204S	2 1/4 in.														
QVVSN12V055S	**55 mm**														
QVVSN14V060S	**60 mm**	22214	**80** 3.15	**157** 6.18	**94** 3.70	**196** 7.72	**235** 9.25	**275** 10.83	**74** 2.91	**35** 1.38	**16** 5/8	**89** 3.50	**15** 0.59	**104** 4.09	**16.8** 37
QVVSN14V207S	2 7/16 in.														
QVVSN14V208S	2 1/2 in.														
QVVSN14V065S	**65 mm**														
QVVSN16V211S	2 11/16 in.	22216	**95** 3.74	**183** 7.2	**106** 4.17	**241** 9.49	**279** 10.98	**316** 12.44	**76** 2.99	**34** 1.33	**20** 3/4	**91** 3.58	**15** 0.59	**106** 4.17	**20.9** 46
QVVSN16V212S	2 3/4 in.														
QVVSN16V070S	**70 mm**														
QVVSN16V215S	2 15/16 in.														
QVVSN16V300S	3 in.														
QVVSN16V075S	**75 mm**														
QVVSN19V303S	3 3/16 in.	22219	**100** 3.94	**200** 7.87	**124** 4.88	**279** 10.98	**292** 11.50	**345** 13.58	**86** 3.39	**39** 1.53	**20** 3/4	**102** 4.02	**16** 0.63	**118** 4.65	**25.4** 56
QVVSN19V304S	3 1/4 in.														
QVVSN19V080S	**80 mm**														
QVVSN19V085S	**85 mm**	22219	**112** 4.41	**212** 8.34	**124** 4.88	**279** 10.98	**292** 11.50	**345** 13.58	**86** 3.39	**39** 1.53	**20** 3/4	**102** 4.02	**16** 0.63	**118** 4.65	**25.4** 56
QVVSN19V307S	3 7/16 in.	22219	**112** 4.41	**212** 8.34	**124** 4.88	**290** 11.42	**327** 12.87	**380** 14.96	**86** 3.39	**39** 1.53	**24** 7/8	**102** 4.02	**16** 0.63	**118** 4.65	**25.4** 56
QVVSN19V308S	3 1/2 in.														
QVVSN19V090S	**90 mm**														
QVVSN22V311S	3 11/16 in.	22222	**125** 4.92	**241** 9.49	**140** 5.51	**319** 12.56	**366** 14.41	**410** 16.14	**101** 3.98	**50** 2.00	**24** 7/8	**116** 4.57	**15** 0.59	**130** 5.12	**35.8** 79
QVVSN22V312S	3 3/4 in.														
QVVSN22V100S	**100 mm**														
QVVSN22V315S	3 15/16 in.														
QVVSN22V400S	4 in.														
QVVSN26V110S	**110 mm**	22226	**140** 5.51	**270** 10.63	**175** 6.89	**332** 13.07	**365** 14.37	**410** 16.14	**113** 4.45	**39** 1.53	**24** 7/8	**146** 5.75	**33** 1.30	**178** 7.01	**39.9** 88
QVVSN26V407S	4 7/16 in.	22226	**150** 5.91	**280** 11.02	**175** 6.89	**367** 14.45	**400** 15.75	**445** 17.52	**113** 4.45	**49** 1.92	**24** 7/8	**146** 5.75	**33** 1.30	**178** 7.01	**39.9** 88
QVVSN26V408S	4 1/2 in.														
QVVSN26V115S	**115 mm**														
QVVSN28V125S	**125 mm**	22228	**150** 5.91	**290** 11.41	**190** 7.48	**402** 15.83	**435** 17.13	**500** 19.68	**117** 4.61	**49** 1.92	**30** 1 1/4	**148** 5.83	**31** 1.22	**178** 7.01	**39.9** 88
QVVSN28V415S	4 15/16 in.														
QVVSN28V500S	5 in.														
QVVSN28V130S	**130 mm**														

[1]Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

08-19-13 DRAFT

QVVPKT 9000 SERIES TWO-BOLT PILLOW BLOCKS – TAPERED BORE EQUIVALENT



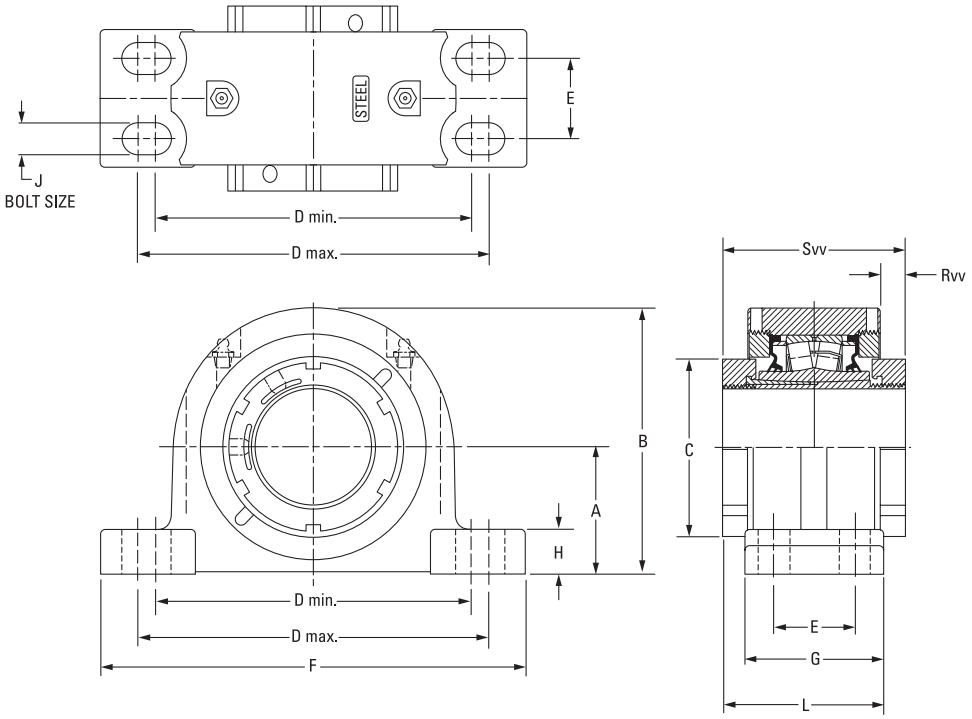


Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	L	Rvv	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVVPKT13V203S	2 3/16 in.	22213	**76.2** 3.00	**153.7** 6.05	**80.3** 3.16	**194.6** 7.66	**223.0** 8.78	**285.8** 11.25	**73.7** 2.90	**35.1** 1.38	**20** 3/4	**87.9** 3.46	**14.2** 0.56	**102.1** 4.02	**10.0** 22
QVVPKT13V204S	2 1/4 in.														
QVVPKT13V055S	**55 mm**														
QVVPKT15V060S	**60 mm**	22215	**88.9** 3.50	**173.7** 6.84	**94.0** 3.70	**230.1** 9.06	**265.2** 10.44	**330.2** 13.00	**75.7** 2.98	**35.1** 1.38	**24** 7/8	**89.9** 3.54	**14.2** 0.56	**103.9** 4.09	**12.7** 28
QVVPKT15V207S	2 7/16 in.														
QVVPKT15V208S	2 1/2 in.														
QVVPKT15V065S	**65 mm**														

[1]Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

08-19-13 DRAFT

QVVPF FOUR-BOLT PILLOW BLOCKS – STRAIGHT BORE EQUIVALENT

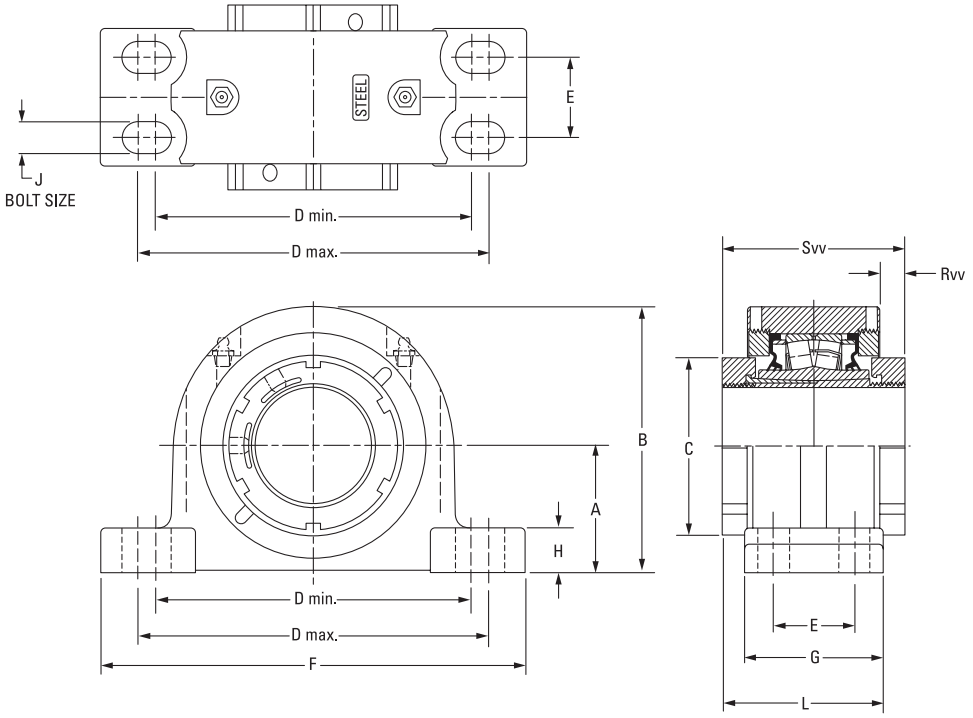


Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	L	Rvv	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVVPF14V060S	**60 mm**	22214	**69.9** 2.75	**147.3** 5.80	**94.0** 3.70	**174.8** 6.88	**193.8** 7.63	**44.5** 1.75	**235.0** 9.25	**76.2** 3.00	**24.9** 0.98	**16** 5/8	**90.2** 3.55	**15.2** 0.60	**103.9** 4.09	**9.1** 20
QVVPF14V207S	2 7/16 in.															
QVVPF14V208S	2 1/2 in.															
QVVPF14V065S	**65 mm**															
QVVPF16V211S	2 11/16 in.	22216	**82.6** 3.25	**167.4** 6.59	**106.4** 4.19	**193.0** 7.60	**231.1** 9.10	**47.8** 1.88	**265.2** 10.44	**79.5** 3.13	**32.8** 1.29	**16** 5/8	**93.0** 3.66	**15.2** 0.60	**106.2** 4.18	**12.2** 27
QVVPF16V212S	2 3/4 in.															
QVVPF16V070S	**70 mm**															
QVVPF16V215S	2 15/16 in.															
QVVPF16V300S	3 in.															
QVVPF16V075S	**75 mm**															
QVVPF19V303S	3 3/16 in.	22219	**95.3** 3.75	**195.3** 7.69	**124.5** 4.90	**225.6** 8.88	**276.4** 10.88	**50.8** 2.00	**312.4** 12.30	**95.3** 3.75	**39.6** 1.56	**20** 3/4	**106.4** 4.19	**14.5** 0.57	**117.6** 4.63	**22.2** 49
QVVPF19V304S	3 1/4 in.															
QVVPF19V080S	**80 mm**															
QVVPF19V085S	**85 mm**															
QVVPF19V307S	3 7/16 in.															
QVVPF19V308S	3 1/2 in.															
QVVPF19V090S	**90 mm**															
QVVPF22V311S	3 11/16 in.	22222	**108.0** 4.25	**223.0** 8.78	**139.7** 5.50	**276.4** 10.88	**339.9** 13.38	**57.2** 2.25	**378.0** 14.88	**109.5** 4.31	**35.6** 1.40	**20** 3/4	**119.9** 4.72	**14.7** 0.58	**130.3** 5.13	**30.4** 67
QVVPF22V312S	3 3/4 in.															
QVVPF22V100S	**100 mm**															
QVVPF22V315S	3 15/16 in.															
QVVPF22V400S	4 in.															
QVVPF26V110S	**110 mm**	22226	**120.7** 4.75	**250.7** 9.87	**174.8** 6.88	**301.8** 11.88	**368.3** 14.50	**63.5** 2.50	**409.7** 16.13	**120.7** 4.75	**40.1** 1.58	**20** 3/4	**149.6** 5.89	**32.8** 1.29	**178.3** 7.02	**37.2** 82
QVVPF26V407S	4 7/16 in.															
QVVPF26V408S	4 1/2 in.															
QVVPF26V115S	**115 mm**															
QVVPF28V125S	**125 mm**	22228	**139.7** 5.50	**279.7** 11.01	**190.0** 7.48	**349.3** 13.75	**403.4** 15.88	**69.9** 2.75	**444.5** 17.50	**128.0** 5.04	**39.1** 1.54	**24** 7/8	**153.2** 6.03	**31.5** 1.24	**178.3** 7.02	**60.8** 134
QVVPF28V415S	4 15/16 in.															
QVVPF28V500S	5 in.															
QVVPF28V130S	**130 mm**															

[1]Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

08-19-13 DRAFT

QVVPR FOUR-BOLT PILLOW BLOCKS – STRAIGHT BORE EQUIVALENT

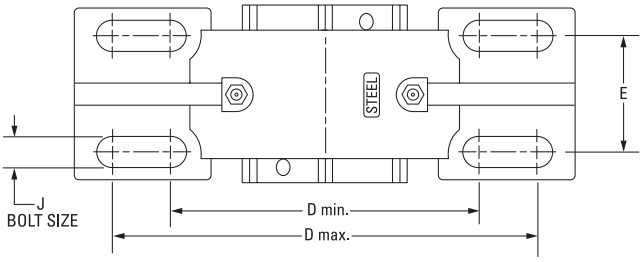


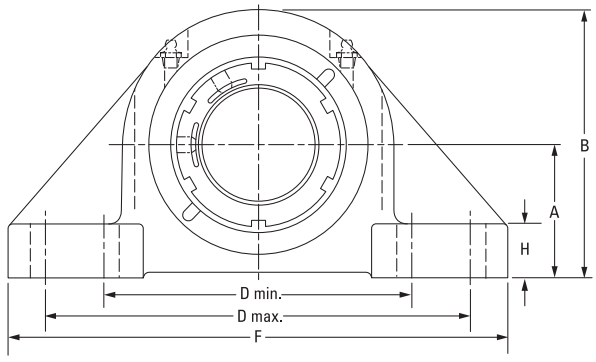
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	L	Rvv	Svv	Wt.
			mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVVPR14V060S	**60 mm**	22214	**69.9** 2.75	**147.3** 5.80	**94.0** 3.70	**181.1** 7.13	**222.2** 8.75	**47.8** 1.88	**260.4** 10.25	**82.6** 3.25	**24.9** 0.98	**16** 5/8	**93.2** 3.67	**15.2** 0.60	**103.9** 4.09	**9.1** 20
QVVPR14V207S	2 7/16 in.															
QVVPR14V208S	2 1/2 in.															
QVVPR14V065S	**65 mm**															
QVVPR16V211S	2 11/16 in.	22216	**79.5** 3.13	**164.3** 6.47	**106.4** 4.19	**203.2** 8.00	**243.8** 9.60	**54.1** 2.13	**275.1** 10.83	**85.9** 3.38	**29.5** 1.16	**16** 5/8	**96.0** 3.78	**15.2** 0.60	**106.2** 4.18	**12.2** 27
QVVPR16V212S	2 3/4 in.															
QVVPR16V070S	**70 mm**															
QVVPR16V215S	2 15/16 in.															
QVVPR16V300S	3 in.															
QVVPR16V075S	**75 mm**															
QVVPR19V303S	3 3/16 in.	22219	**95.3** 3.75	**195.3** 7.69	**124.5** 4.90	**235.0** 9.25	**285.8** 11.25	**60.5** 2.38	**346.2** 13.63	**95.3** 3.75	**39.6** 1.56	**20** 3/4	**106.4** 4.19	**14.5** 0.57	**117.6** 4.63	**22.2** 49
QVVPR19V304S	3 1/4 in.															
QVVPR19V080S	**80 mm**															
QVVPR19V085S	**85 mm**															
QVVPR19V307S	3 7/16 in.															
QVVPR19V308S	3 1/2 in.															
QVVPR19V090S	**90 mm**															

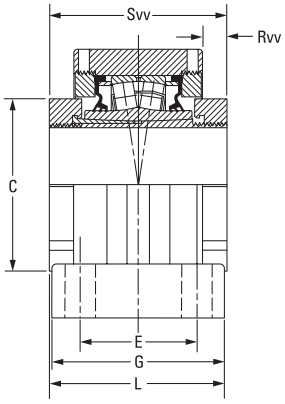
[1]Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

08-19-13 DRAFT

QVVPX 5000 SERIES FOUR-BOLT PILLOW BLOCKS – STRAIGHT BORE EQUIVALENT





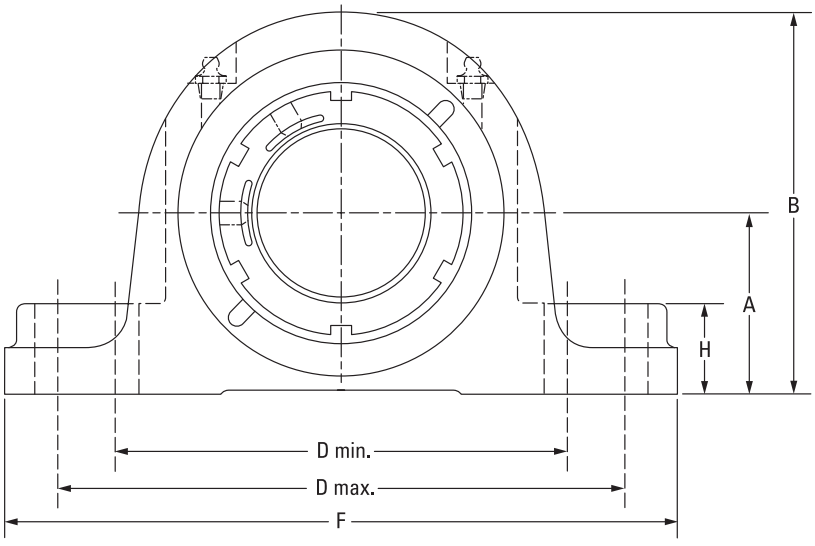


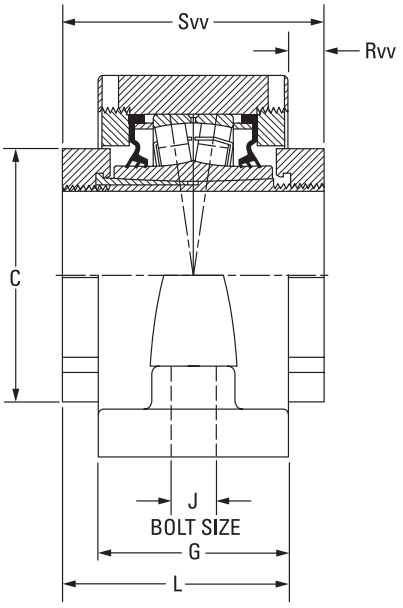
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	L	Rvv	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVVPX14V060S	**60 mm**	22214	**76.2** 3.00	**153.7** 6.05	**94.0** 3.70	**176.3** 6.94	**242.8** 9.56	**66.8** 2.63	**285.8** 11.25	**98.6** 3.88	**31.0** 1.22	**16** 5/8	**101.3** 3.99	**15.2** 0.60	**103.9** 4.09	**10.4** 23
QVVPX14V207S	2 7/16 in.															
QVVPX14V208S	2 1/2 in.															
QVVPX14V065S	**65 mm**															
QVVPX16V211S	2 11/16 in.	22216	**88.9** 3.50	**173.5** 6.83	**106.4** 4.19	**230.1** 9.06	**265.2** 10.44	**69.9** 2.75	**330.2** 13.00	**108.0** 4.25	**39.1** 1.54	**20** 3/4	**107.2** 4.22	**14.2** 0.56	**106.2** 4.18	**12.7** 28
QVVPX16V212S	2 3/4 in.															
QVVPX16V070S	**70 mm**															
QVVPX16V215S	2 15/16 in.															
QVVPX16V300S	3 in.															
QVVPX16V075S	**75 mm**															
QVVPX19V303S	3 3/16 in.	22219	**101.6** 4.00	**201.2** 7.92	**124.5** 4.90	**274.6** 10.81	**309.6** 12.19	**76.2** 3.00	**381.0** 15.00	**120.7** 4.75	**38.1** 1.50	**20** 3/4	**119.1** 4.69	**14.5** 0.57	**117.6** 4.63	**22.2** 49
QVVPX19V304S	3 1/4 in.															
QVVPX19V080S	**80 mm**															
QVVPX19V085S	**85 mm**															
QVVPX19V307S	3 7/16 in.															
QVVPX19V308S	3 1/2 in.															
QVVPX19V090S	**90 mm**															
QVVPX22V311S	3 11/16 in.	22222	**127.0** 5.00	**239.8** 9.44	**139.7** 5.50	**317.5** 12.50	**355.6** 14.00	**88.9** 3.50	**425.5** 16.75	**139.7** 5.50	**41.4** 1.63	**24** 7/8	**135.1** 5.32	**15.2** 0.60	**130.3** 5.13	**30.4** 67
QVVPX22V312S	3 3/4 in.															
QVVPX22V315S	3 15/16 in.															
QVVPX22V400S	4 in.															
QVVPX22V100S	**100 mm**															
QVVPX26V110S	**110 mm**	22226	**146.1** 5.75	**273.8** 10.78	**174.8** 6.88	**354.1** 13.94	**395.2** 15.56	**101.6** 4.00	**469.9** 18.50	**158.8** 6.25	**45.7** 1.80	**24** 1	**168.7** 6.64	**38.4** 1.51	**178.3** 7.02	**37.2** 82
QVVPX26V407S	4 7/16 in.															
QVVPX26V408S	4 1/2 in.															
QVVPX26V115S	**115 mm**															
QVVPX28V125S	**125 mm**	22228	**155.6** 6.125	**293.4** 11.55	**190.0** 7.48	**387.4** 15.25	**452.5** 16.75	**108.0** 4.25	**514.4** 20.25	**171.5** 6.75	**50.8** 2.00	**24** 1 1/8	**175.0** 6.89	**30.7** 1.21	**178.3** 7.02	**61.7** 136
QVVPX28V415S	4 15/16 in.															
QVVPX28V500S	5 in.															
QVVPX28V130S	**130 mm**															

[1]Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

08-19-13 DRAFT

QVVPXT 5000 SERIES TWO-BOLT PILLOW BLOCKS – STRAIGHT BORE EQUIVALENT



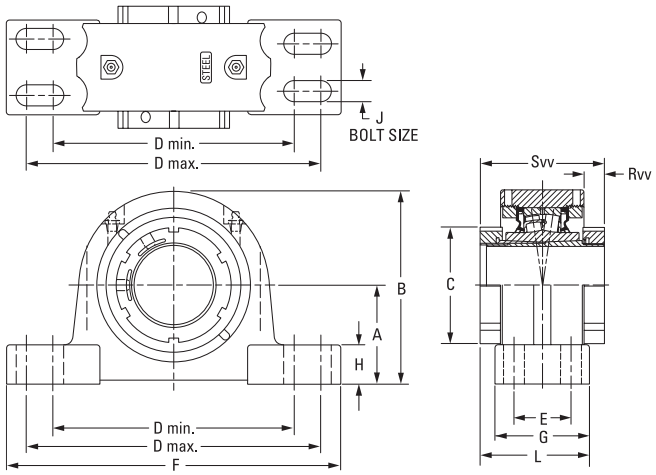


Bearing Part No.[1]	Shaft Size	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	L	Rvv	Svv	Wt.
			mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVVPXT14V060S	**60 mm**	22214	**76.2** 3.00	**153.7** 6.05	**94.0** 3.70	**194.6** 7.66	**233.0** 8.78	**285.8** 11.25	**73.7** 2.90	**35.1** 1.38	**20** 3/4	**88.9** 3.50	**15.2** 0.60	**103.9** 4.09	**10.0** 22
QVVPXT14V207S	2 7/16 in.														
QVVPXT14V208S	2 1/2 in.														
QVVPXT14V065S	**65 mm**														
QVVPXT16V211S	2 11/16 in.	22216	**88.9** 3.50	**173.7** 6.84	**106.4** 4.19	**230.1** 9.06	**265.2** 10.44	**330.2** 13.00	**75.7** 2.98	**35.1** 1.38	**24** 7/8	**90.9** 3.58	**15.2** 0.60	**106.2** 4.18	**12.7** 28
QVVPXT16V212S	2 3/4 in.														
QVVPXT16V070S	**70 mm**														
QVVPXT16V215S	2 15/16 in.														
QVVPXT16V300S	3 in.														
QVVPXT16V075S	**75 mm**														

[1]Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

08-19-13 DRAFT

QVVPG SN-STYLE FOUR-BOLT PILLOW BLOCKS – TAPERED BORE EQUIVALENT

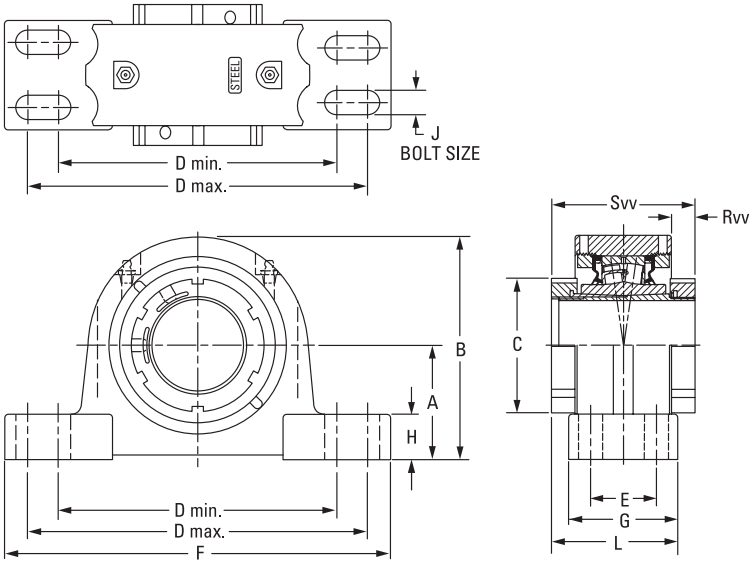


Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	L	Rvv	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVVPG11V115S	1 15/16 in.	22211	**69.9** 2.75	**134.9** 5.31	**75.9** 2.99	**182.4** 7.18	**217.4** 8.56	**39.9** 1.57	**251.0** 9.88	**68.6** 2.70	**31.8** 1.25	**16** 5/8	**85.3** 3.36	**20.8** 0.82	**102.1** 4.02	**8.6** 19
QVVPG11V200S	2 in.															
QVVPG11V050S	**50 mm**															
QVVPG12V055S	**55 mm**	22212	**70.0** 2.756	**140.5** 5.53	**80.0** 3.15	**177.8** 7.00	**219.2** 8.63	**35.1** 1.38	**254.0** 10.00	**69.9** 2.75	**31.8** 1.25	**12** 1/2	**86.1** 3.39	**20.8** 0.82	**102.1** 4.02	**9.9** 22
QVVPG13V203S	2 3/16 in.	22213	**80.0** 3.15	**154.9** 6.10	**80.3** 3.16	**182.4** 7.18	**217.4** **8.56**	**48.0** 1.89	**261.9** 10.31	**82.6** 3.25	**35.1** 1.38	**16** 5/8	**92.5** 3.64	**17.0** 0.67	**102.1** 4.02	**11.3** 25
QVVPG13V204S	2 1/4 in.															
QVVPG14V060S	**60 mm**	22214	**80.0** 3.15	**154.9** 6.10	**94.0** 3.70	**182.4** 7.18	**217.4** 8.56	**48.0** 1.89	**261.9** 10.31	**82.6** 3.25	**35.1** 1.38	**16** 5/8	**93.2** 3.67	**86.1** 3.39	**103.9** 4.09	**11.3** 25
QVVPG15V207S	2 7/16 in.	22215	**80.0** 3.15	**162.1** 6.38	**94.0** 3.70	**201.7** 7.94	**246.1** 9.69	**39.6** 1.56	**276.4** 10.88	**79.5** 3.13	**30.2** 1.19	**16** 5/8	**91.7** 3.61	**15.7** 0.62	**103.9** 4.09	**13.2** 29
QVVPG15V208S	2 1/2 in.															
QVVPG15V065S	**65 mm**															
QVVPG16V211S	2 11/16 in.	22216	**95.0** 3.74	**180.3** 7.10	**105.9** 4.17	**235.0** 9.25	**266.7** 10.50	**50.0** 1.97	**315.0** 12.4	**89.9** 3.54	**31.8** 1.25	**16** 5/8	**98.0** 3.86	**16.8** 0.66	**105.9** 4.17	**14.9** 33
QVVPG16V212S	2 3/4 in.															
QVVPG16V070S	**70 mm**															
QVVPG17V215S	2 15/16 in.	22217	**95.0** 3.74	**182.9** 7.20	**106.4** 4.19	**240.0** 9.44	**287.3** 11.31	**52.3** 2.06	**320.8** 12.63	**92.2** 3.63	**31.8** 1.25	**20** 3/4	**99.3** 3.91	**15.0** 0.59	**106.2** 4.18	**16.8** 37
QVVPG17V300S	3 in.															
QVVPG17V075S	**75 mm**															
QVVPG19V303S	3 3/16 in.	22219	**100.0** 3.937	**195.3** 7.69	**124.0** 4.88	**282.7** 11.13	**298.5** 11.75	**50.0** 1.97	**344.9** 13.58	**100.1** 3.94	**39.6** 1.56	**16** 5/8	**109.2** 4.30	**19.3** 0.76	**118.1** 4.65	**24.5** 54
QVVPG19V304S	3 1/4 in.															
QVVPG19V080S	**80 mm**															
QVVPG19V085S	**85 mm**	22219	**112.0** 4.409	**212.3** 8.36	**124.0** 4.88	**282.7** 11.13	**298.5** 11.75	**50.0** 1.97	**344.9** 13.58	**100.1** 3.94	**39.6** 1.56	**16** 5/8	**109.2** 4.30	**17.8** 0.70	**118.1** 4.65	**25.4** 56
QVVPG20V307S	3 7/16 in.	22220	**112.0** 4.409	**214.6** 8.45	**124.5** 4.90	**276.4** 10.88	**339.9** 13.38	**60.5** 2.38	**381.0** 15.00	**109.5** 4.31	**39.6** 1.56	**20** 3/4	**113.5** 4.47	**11.2** 0.44	**117.6** 4.63	**31.8** 70
QVVPG20V308S	3 1/2 in.															
QVVPG20V090S	**90 mm**															
QVVPG22V311S	3 11/16 in.	22222	**125.0** 4.921	**238.3** 9.38	**139.7** 5.50	**301.8** 11.88	**368.3** 14.50	**69.9** 2.75	**409.7** 16.13	**120.7** 4.75	**44.5** 1.75	**20** 3/4	**125.5** 4.94	**14.5** 0.57	**130.3** 5.13	**39.5** 87
QVVPG22V312S	3 3/4 in.															
QVVPG22V100S	**100 mm**															
QVVPG22V315S	3 15/16 in.															
QVVPG22V400S	4 in.															
QVVPG24V110S	**110 mm**	22224	**140.0** 5.512	**262.9** 10.35	**174.8** 6.88	**342.9** 13.50	**355.6** 14.00	**70.1** 2.76	**410.0** 16.14	**120.7** 4.75	**50.8** 2.00	**16** 5/8	**149.6** 5.89	**40.4** 1.59	**178.3** 7.02	**49.9** 110
QVVPG26V407S	4 7/16 in.	22226	**150.0** 5.906	**281.7** 11.09	**174.8** 6.88	**367.3** 14.46	**400.1** 15.75	**81.0** 3.19	**444.5** 17.50	**128.0** 5.04	**49.3** 1.94	**24** 1	**153.2** 6.03	**36.6** 1.44	**178.3** 7.02	**61.7** 136
QVVPG26V408S	4 1/2 in.															
QVVPG26V115S	**115 mm**															
QVVPG28V125S	**125 mm**	22228	**150.0** 5.906	**288.5** 11.36	**190.0** 7.48	**384.3** 15.13	**447.8** 17.63	**80.0** 3.15	**500.4** 19.70	**128.0** 5.04	**49.3** 1.94	**24** 1	**152.9** 6.02	**31.8** 1.25	**178.3** 7.02	**61.7** 136
QVVPG28V415S	4 15/16 in.															
QVVPG28V500S	5 in.															
QVVPG28V130S	**130 mm**															

[1] Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

08-19-13 DRAFT

QVVPH SAF-STYLE FOUR-BOLT PILLOW BLOCKS – TAPERED BORE EQUIVALENT

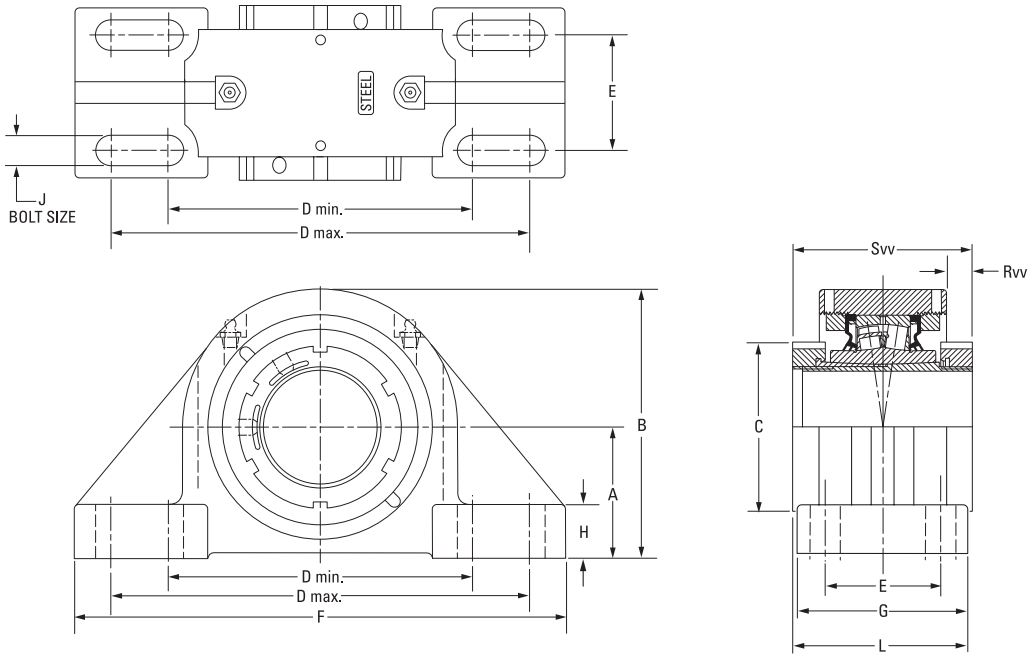


Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	L	Rvv	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVVPH11V115S	1 15/16 in.	22211	**69.9** 2.75	**134.9** 5.31	**75.9** 2.99	**182.4** 7.18	**217.4** 8.56	**39.9** 1.57	**251.0** 9.88	**68.6** 2.70	**31.8** 1.25	**16** 5/8	**85.3** 3.36	**20.8** 0.82	**102.1** 4.02	**8.6** 19
QVVPH11V200S	2 in.															
QVVPH11V050S	**50 mm**															
QVVPH13V203S	2 3/16 in.	22213	**76.2** 3.00	**151.1** 5.95	**80.3** 3.16	**182.4** 7.18	**217.4** 8.56	**50.8** 2.00	**261.9** 10.31	**82.6** 3.25	**31.2** 1.23	**12** 1/2	**92.5** 3.64	**17.0** 0.67	**102.1** 4.02	**11.3** 25
QVVPH13V204S	2 1/4 in.															
QVVPH13V055S	**55 mm**															
QVVPH15V060S	**60 mm**	22215	**82.6** 3.25	**162.1** 6.38	**94.0** 3.70	**201.7** 7.94	**246.1** 9.69	**47.8** 1.88	**276.4** 10.88	**79.5** 3.13	**32.8** 1.29	**12** 1/2	**91.7** 3.61	**18.0** 0.71	**103.9** 4.09	**13.2** 29
QVVPH15V207S	2 7/16 in.															
QVVPH15V208S	2 1/2 in.															
QVVPH15V065S	**65 mm**															
QVVPH17V211S	2 11/16 in.	22217	**95.3** 3.75	**182.9** 7.20	**106.4** 4.19	**240.0** 9.44	**287.3** 11.31	**54.1** 2.13	**320.8** 12.63	**92.2** 3.63	**32.0** 1.26	**16** 5/8	**99.3** 3.91	**15.0** 0.59	**106.2** 4.18	**16.8** 37
QVVPH17V212S	2 3/4 in.															
QVVPH17V070S	**70 mm**															
QVVPH17V215S	2 15/16 in.															
QVVPH17V300S	3 in.															
QVVPH17V075S	**75 mm**															
QVVPH20V303S	3 3/16 in.	22220	**114.3** 4.50	**216.9** 8.54	**124.5** 4.90	**276.4** 10.88	**339.9** 13.38	**60.5** 2.38	**381.0** 15.00	**109.5** 4.31	**41.9** 1.65	**20** 3/4	**113.5** 4.47	**11.2** 0.44	**117.6** 4.63	**31.8** 70
QVVPH20V304S	3 1/4 in.															
QVVPH20V080S	**80 mm**															
QVVPH20V085S	**85 mm**															
QVVPH20V307S	3 7/16 in.															
QVVPH20V308S	3 1/2 in.															
QVVPH20V090S	**90 mm**															
QVVPH22V311S	3 11/16 in.	22222	**125.5** 4.94	**238.3** 9.38	**139.7** 5.50	**301.8** 11.88	**368.3** 14.50	**69.9** 2.75	**406.4** 16.00	**120.7** 4.75	**45.0** 1.77	**20** 3/4	**125.5** 4.94	**14.5** 0.57	**130.3** 5.13	**39.5** 87
QVVPH22V312S	3 3/4 in.															
QVVPH22V100S	**100 mm**															
QVVPH22V315S	3 15/16 in.															
QVVPH22V400S	4 in.															
QVVPH26V110S	**110 mm**	22226	**152.4** 6.00	**284.0** 11.18	**174.8** 6.88	**362.0** 14.25	**400.1** 15.75	**82.6** 3.25	**444.5** 17.50	**128.0** 5.04	**51.8** 2.04	**20** 3/4	**153.2** 6.03	**36.6** 1.44	**178.3** 7.02	**61.7** 136
QVVPH26V407S	4 7/16 in.															
QVVPH26V408S	4 1/2 in.															
QVVPH26V115S	**115 mm**															
QVVPH28V125S	**125 mm**	22228	**152.4** 6.00	**290.8** 11.45	**190.0** 7.48	**406.4** 16.00	**435.1** 17.13	**85.9** 3.38	**500.4** 19.70	**128.0** 5.04	**51.8** 2.04	**24** 1	**152.9** 6.02	**31.8** 1.25	**178.3** 7.02	**61.7** 136
QVVPH28V415S	4 15/16 in.															
QVVPH28V500S	5 in.															
QVVPH28V130S	**130 mm**															

[1]Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

08-19-13 DRAFT

QVVPK 9000 SERIES FOUR-BOLT PILLOW BLOCKS – TAPERED BORE EQUIVALENT

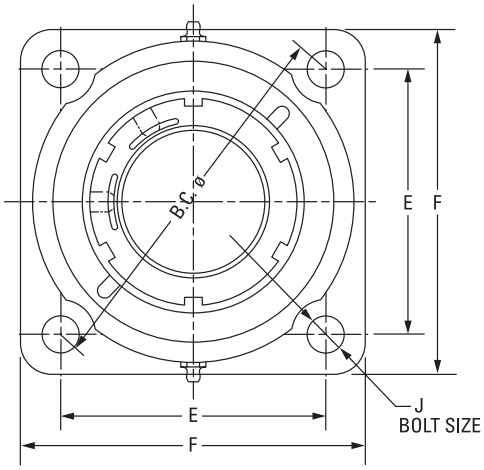


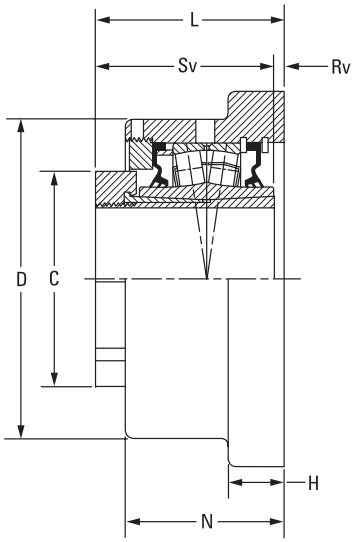
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	L	Rvv	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVVPK15V060S	**60 mm**	22215	**88.9** 3.50	**176.0** 6.83	**94.0** 3.70	**230.1** 9.06	**265.2** 10.44	**69.9** 2.75	**330.2** 13.00	**108.0** 4.25	**39.1** 1.54	**20** ¾	**105.9** 4.17	**12.6** 0.51	**103.9** 4.09	**13.2** 29
QVVPK15V207S	2 7/16 in.															
QVVPK15V208S	2 ½ in.															
QVVPK15V065S	**65 mm**															
QVVPK17V211S	2 11/16 in.	22217	**101.6** 4.00	**201.2** 7.92	**106.4** 4.19	**274.6** 10.81	**309.6** 12.19	**76.2** 3.00	**381.0** 15.00	**120.7** 4.75	**38.1** 1.50	**20** ¾	**113.5** 4.47	**8.64** 0.34	**106.2** 4.18	**16.8** 37
QVVPK17V212S	2 ¾ in.															
QVVPK17V070S	**70 mm**															
QVVPK17V215S	2 15/16 in.															
QVVPK17V300S	3 in.															
QVVPK17V075S	**75 mm**															
QVVPK20V303S	3 3/16 in.	22220	**127.0** 5.00	**240.0** 9.44	**124.5** 4.90	**317.5** 12.50	**355.6** 14.00	**88.9** 3.50	**425.5** 16.75	**139.7** 5.50	**41.4** 1.63	**24** 7/8	**128.8** 5.07	**8.9** 0.35	**117.6** 4.63	**31.8** 70
QVVPK20V304S	3 ¼ in.															
QVVPK20V080S	**80 mm**															
QVVPK20V085S	**85 mm**															
QVVPK20V307S	3 7/16 in.															
QVVPK20V308S	3 ½ in.															
QVVPK20V090S	**90 mm**															
QVVPK22V311S	3 11/16 in.	22222	**146.1** 5.75	**273.8** 10.78	**139.7** 5.50	**354.1** 13.94	**395.2** 15.56	**101.6** 4.00	**469.9** 18.50	**158.8** 6.25	**45.7** 1.80	**24** 1	**138.4** 5.45	**14.5** 0.57	**130.3** 5.13	**39.5** 87
QVVPK22V312S	3 ¾ in.															
QVVPK22V100S	**100 mm**															
QVVPK22V315S	3 15/16 in.															
QVVPK22V400S	4 in.															
QVVPK26V110S	**110 mm**	22226	**155.7** 6.13	**283.2** 11.15	**174.8** 6.88	**387.4** 15.25	**425.5** 16.75	**108.0** 4.25	**514.4** 20.25	**171.5** 6.75	**50.8** 2.00	**24** 1	**175.3** 6.90	**31.5** 1.24	**178.3** 7.02	**61.7** 136
QVVPK26V407S	4 7/16 in.															
QVVPK26V408S	4 ½ in.															
QVVPK26V115S	**115 mm**															

[1]Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

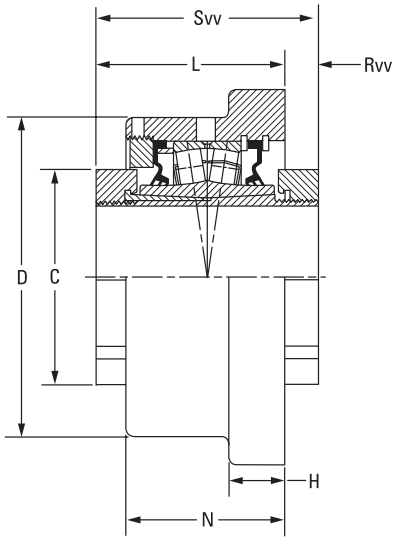
08-19-13 DRAFT

QVF AND QVVF SQUARE FLANGE BLOCKS – STRAIGHT BORE EQUIVALENT





QV Single-Nut Unit[1]



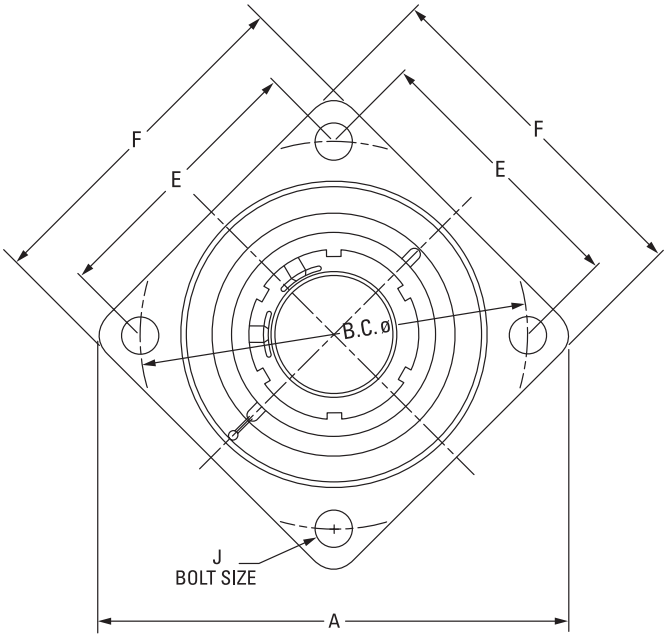
QVV Double-Nut Unit[1]

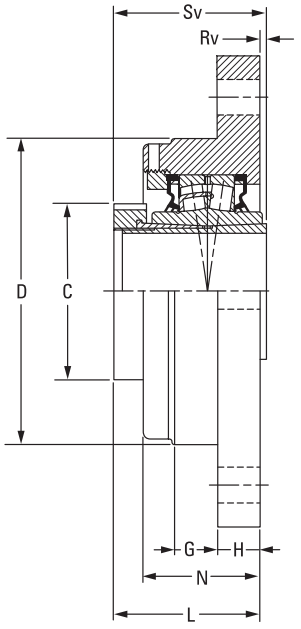
Bearing Part No.[1][2]	Shaft Dia.	Bearing No.	C	D	E	B.C.	F	H	J	L FIX	L EXP	N	Rv[1]	Rvv	Sv[1]	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVF11V115S	1 15/16 in.	22211	**75.9** 2.99	**120.7** 4.75	**111.3** 4.38	**157.0** 6.18	**139.7** 5.50	**22.4** 0.88	**12** 1/2	**84.1** 3.31	**86.1** 3.39	**65.0** 2.56	**4.1** 0.16	**18.3** 0.72	**79.8** 3.14	**102.1** 4.02	**5.0** 11
QVF11V200S	2 in.																
QVF11V050S	**50 mm**																
QVF12V203S	2 3/16 in.	22212	**80.3** 3.16	**130.3** 5.13	**124.0** 4.88	**175.0** 6.89	**157.2** 6.19	**25.4** 1.00	**16** 5/8	**84.3** 3.32	**86.4** 3.40	**66.8** 2.63	**4.6** 0.18	**17.8** 0.70	**79.8** 3.14	**102.1** 4.02	**6.4** 14
QVF12V204S	2 1/4 in.																
QVF12V055S	**55 mm**																
QVF14V060S	**60 mm**	22214	**94.0** 3.70	**146.1** 5.75	**136.7** 5.38	**193.0** 7.60	**168.4** 6.63	**25.4** 1.00	**16** 5/8	**85.1** 3.35	**87.1** 3.43	**72.4** 2.85	**4.1** 0.16	**16.0** 0.63	**81.0** 3.19	**101.3** 3.99	**7.7** 17
QVF14V207S	2 7/16 in.																
QVF14V208S	2 1/2 in.																
QVF14V065S	**65 mm**																
QVF16V211S	2 11/16 in.	22216	**106.4** 4.19	**168.9** 6.65	**152.4** 6.00	**215.4** 8.48	**189.0** 7.44	**26.9** 1.06	**20** 3/4	**87.6** 3.45	**89.7** 3.53	**75.7** 2.98	**4.1** 0.16	**16.3** 0.64	**83.6** 3.29	**103.6** 4.08	**10.4** 23
QVF16V212S	2 3/4 in.																
QVF16V070S	**70 mm**																
QVF16V215S	2 15/16 in.																
QVF16V300S	3 in.																
QVF16V075S	**75 mm**																
QVF19V303S	3 3/16 in.	22219	**124.5** 4.90	**193.8** 7.63	**177.8** 7.00	**251.7** 9.91	**219.2** 8.63	**33.3** 1.31	**20** 3/4	**98.3** 3.87	**100.3** 3.95	**84.1** 3.31	**4.6** 0.18	**15.7** 0.62	**93.7** 3.69	**114.0** 4.49	**15.9** 35
QVF19V304S	3 1/4 in.																
QVF19V080S	**80 mm**																
QVF19V085S	**85 mm**																
QVF19V307S	3 7/16 in.																
QVF19V308S	3 1/2 in.																
QVF19V090S	**90 mm**																
QVF22V311S	3 11/16 in.	22222	**139.7** 5.50	**224.0** 8.82	**196.9** 7.75	**278.4** 10.96	**253.2** 9.97	**38.1** 1.50	**24** 7/8	**114.0** 4.49	**116.1** 4.57	**103.1** 4.06	**9.1** 0.36	**12.7** 0.50	**104.9** 4.13	**126.7** 4.99	**24.9** 55
QVF22V312S	3 3/4 in.																
QVF22V100S	**100 mm**																
QVF22V315S	3 15/16 in.																
QVF22V400S	4 in.																
QVF26V110S	**110 mm**	22226	**174.8** 6.88	**256.8** 10.11	**222.3** 8.75	**314.5** 12.38	**276.4** 10.88	**38.1** 1.50	**24** 7/8	**140.5** 5.53	**142.7** 5.62	**106.9** 4.21	**7.4** 0.29	**37.8** 1.49	**147.8** 5.82	**178.3** 7.02	**28.6** 63
QVF26V407S	4 7/16 in.																
QVF26V408S	4 1/2 in.																
QVF26V115S	**115 mm**																

[1]Bearing part numbers use QV to designate single-nut units (uses Rv and Sv dimensions) and QVV to designate double-nut units (uses Rvv and Svv dimensions).
[2]Single-nut (QV) part number shown. Double-nut (QVV) version available upon request.

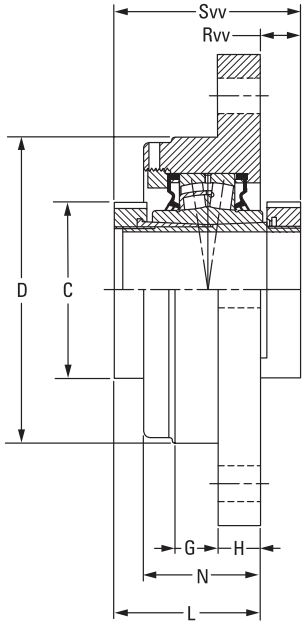
08-19-13 DRAFT

QVFB AND QVVFB FLANGE BLOCKS – TAPERED ADAPTER EQUIVALENT





QV Single-Nut Unit[1]



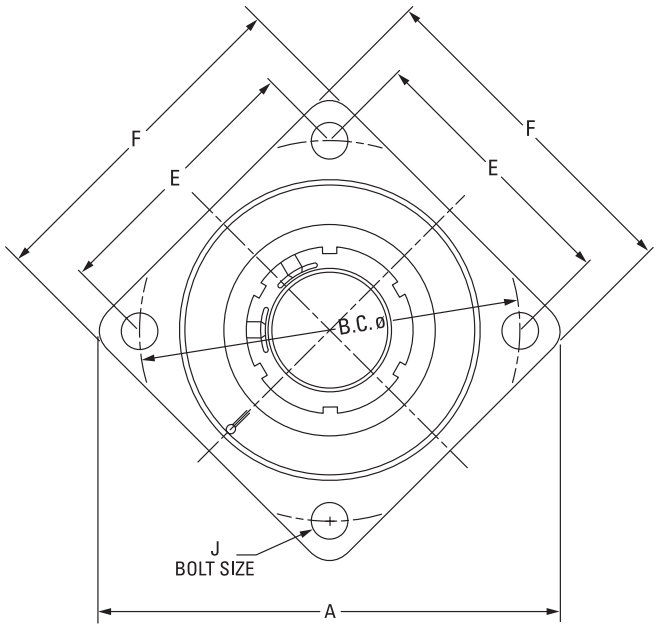
QVV Double-Nut Unit[1]

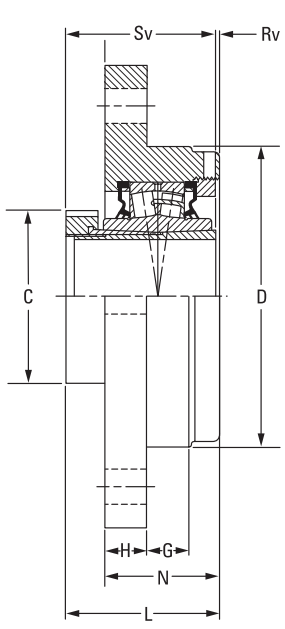
Bearing Part No.[1][2]	Shaft Dia.	Bearing No.	A	B.C.	C	D	E	F	G	H	J	L	N	Rv[1]	Rvv	Sv[1]	Svv	Wt.
	mm in.		mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg lbs.
QVFB15V060S	**60 mm**	22215	**255.0** 10.04	**215.1** 8.47	**94.0** 3.70	**169.9** 6.69	**152.4** 6.00	**192.0** 7.56	**25.4** 1.00	**23.9** 0.94	**16** 5/8	**81.5** 3.21	**64.8** 2.55	**0.8** 0.03	**22.4** 0.88	**82.6** 3.25	**103.9** 4.09	**11.3** 25
QVFB15V207S	2 7/16 in.																	
QVFB15V208S	2 1/2 in.																	
QVFB15V065S	**65 mm**																	
QVFB17V211S	2 11/16 in.	22217	**282.4** 11.12	**240.0** 9.45	**106.4** 4.19	**190.0** 7.48	**169.7** 6.68	**212.1** 8.35	**25.4** 1.00	**25.4** 1.00	**16** 5/8	**83.8** 3.30	**69.9** 2.75	**1.0** 0.04	**22.4** 0.88	**84.6** 3.33	**106.2** 4.18	**13.6** 30
QVFB17V212S	2 3/4 in.																	
QVFB17V070S	**70 mm**																	
QVFB17V215S	2 15/16 in.																	
QVFB17V300S	3 in.																	
QVFB17V075S	**75 mm**																	
QVFB20V303S	3 3/16 in.	22220	**330.2** 13.00	**279.9** 11.02	**124.5** 4.90	**230.1** 9.06	**197.9** 7.79	**247.9** 9.76	**31.8** 1.25	**28.7** 1.13	**20** 3/4	**106.7** 4.20	**94.2** 3.71	**11.4** 0.45	**10.9** 0.43	**95.3** 3.75	**117.3** 4.62	**18.1** 40
QVFB20V304S	3 1/4 in.																	
QVFB20V080S	**80 mm**																	
QVFB20V085S	**85 mm**																	
QVFB20V307S	3 7/16 in.																	
QVFB20V308S	3 1/2 in.																	
QVFB20V090S	**90 mm**																	
QVFB22V311S	3 11/16 in.	22222	**367.0** 14.45	**309.9** 12.20	**139.7** 5.50	**255.0** 10.04	**219.2** 8.63	**274.3** 10.80	**44.5** 1.75	**26.4** 1.04	**20** 3/4	**112.0** 4.41	**101.1** 3.98	**7.4** 0.29	**14.7** 0.58	**104.9** 4.13	**126.7** 4.99	**27.2** 60
QVFB22V312S	3 3/4 in.																	
QVFB22V100S	**100 mm**																	
QVFB22V315S	3 15/16 in.																	
QVFB22V400S	4 in.																	
QVFB26V110S	**110 mm**	22226	**416.1** 16.38	**355.1** 13.98	**174.8** 6.88	**290.1** 11.42	**251.0** 9.88	**298.5** 11.75	**41.9** 1.65	**32.0** 1.26	**24** 7/8	**148.3** 5.84	**114.3** 4.50	**0.5** 0.02	**30.0** 1.18	**147.8** 5.82	**178.3** 7.02	**42.6** 94
QVFB26V407S	4 7/16 in.																	
QVFB26V408S	4 1/2 in.																	
QVFB26V115S	**115 mm**																	

[1]Bearing part numbers use QV to designate single-nut units (uses Rv and Sv dimensions) and QVV to designate double-nut units (uses Rvv and Svv dimensions).
[2]Single-nut (QV) part number shown. Double-nut (QVV) version available upon request.

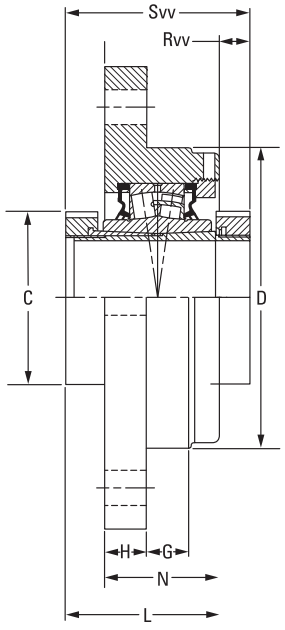
08-19-13 DRAFT

QVFC AND QVVFC PILOTED FLANGE CARTRIDGES – TAPERED ADAPTER EQUIVALENT





QV Single-Nut Unit[1]



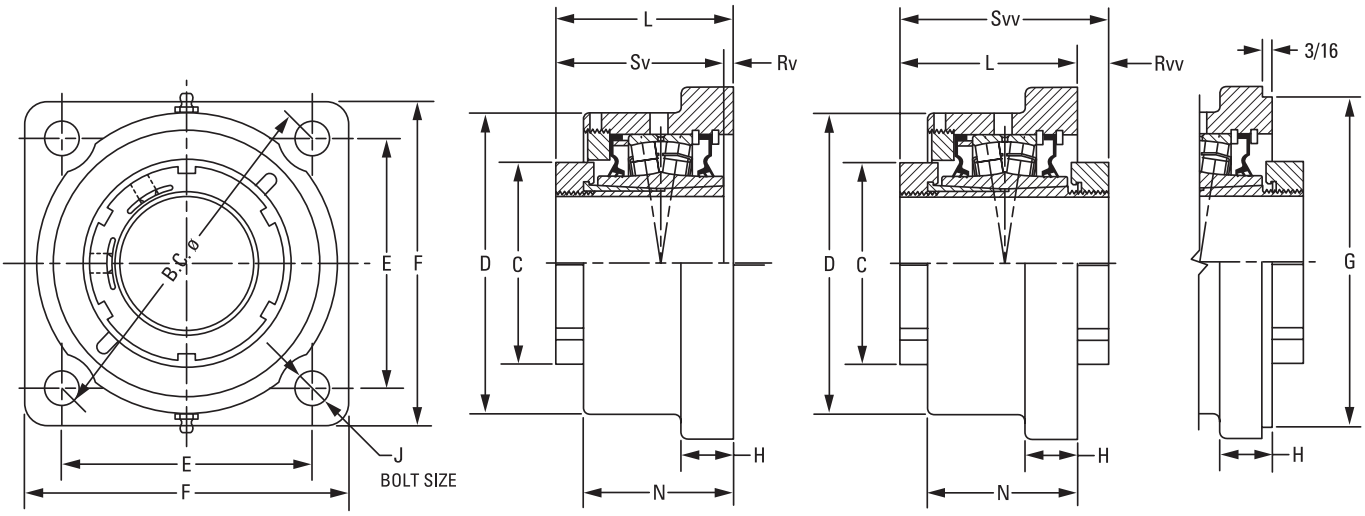
QVV Double-Nut Unit[1]

Bearing Part No.[1][2]	Shaft Dia.	Bearing No.	A	B.C.	C	D[3]	E	F	G	H	J	L	N	Rv[1]	Rvv	Sv[1]	Svv	Wt.
	mm in.		mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg lbs.
QVFC15V060S	**60 mm**	22215	**255.0** 10.04	**215.1** 8.47	**94.0** 3.70	**169.9** 6.690	**152.4** 6.00	**192.0** 7.56	**25.4** 1.00	**23.9** 0.94	**16** 5/8	**87.1** 3.43	**64.8** 2.55	**4.6** 0.18	**16.8** 0.66	**82.6** 3.25	**103.9** 4.09	**11.3** 25
QVFC15V207S	2 7/16 in.																	
QVFC15V208S	2 1/2 in.																	
QVFC15V065S	**65 mm**																	
QVFC17V211S	2 11/16 in.	22217	**282.4** 11.12	**240.0** 9.45	**106.4** 4.19	**190.0** 7.480	**169.7** 6.68	**212.1** 8.35	**25.4** 1.00	**25.4** 1.00	**16** 5/8	**91.7** 3.61	**69.9** 2.75	**6.6** 0.26	**14.5** 0.57	**84.6** 3.33	**106.2** 4.18	**13.6** 30
QVFC17V212S	2 3/4 in.																	
QVFC17V070S	**70 mm**																	
QVFC17V215S	2 15/16 in.																	
QVFC17V300S	3 in.																	
QVFC17V075S	**75 mm**																	
QVFC20V303S	3 3/16 in.	22220	**330.2** 13.00	**279.9** 11.02	**124.5** 4.90	**230.1** 9.060	**197.9** 7.79	**247.9** 9.76	**31.8** 1.25	**28.7** 1.13	**20** 3/4	**105.2** 4.14	**94.2** 3.71	**9.7** 0.38	**12.4** 0.49	**95.3** 3.75	**117.3** 4.62	**18.1** 40
QVFC20V304S	3 1/4 in.																	
QVFC20V080S	**80 mm**																	
QVFC20V085S	**85 mm**																	
QVFC20V307S	3 7/16 in.																	
QVFC20V308S	3 1/2 in.																	
QVFC20V090S	**90 mm**																	
QVFC22V311S	3 11/16 in.	22222	**367.0** 14.45	**309.9** 12.20	**139.7** 5.50	**255.0** 10.040	**219.2** 8.63	**274.3** 10.80	**44.5** 1.75	**26.4** 1.04	**20** 3/4	**112.8** 4.44	**101.1** 3.98	**8.1** 0.32	**5.8** 0.23	**104.9** 4.13	**126.7** 4.99	**27.2** 60
QVFC22V312S	3 3/4 in.																	
QVFC22V100S	**100 mm**																	
QVFC22V315S	3 15/16 in.																	
QVFC22V400S	4 in.																	
QVFC26V110S	**110 mm**	22226	**416.1** 16.38	**355.1** 13.98	**174.8** 6.88	**290.0** 11.417	**251.0** 9.88	**298.5** 11.75	**41.9** 1.65	**32.0** 1.26	**24** 7/8	**144.3** 5.68	**114.3** 4.50	**3.6** 0.14	**34.0** 1.34	**147.8** 5.82	**178.3** 7.02	**42.6** 94
QVFC26V407S	4 7/16 in.																	
QVFC26V408S	4 1/2 in.																	
QVFC26V115S	**115 mm**																	

[1]Bearing part numbers use QV to designate single-nut units (uses Rv and Sv dimensions) and QVV to designate double-nut units (uses Rvv and Svv dimensions).
[2]Single-nut (QV) part number shown. Double-nut (QVV) version available upon request.
[3]Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).

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QVFL AND QVVFL SQUARE FLANGE BLOCKS – STRAIGHT BORE EQUIVALENT



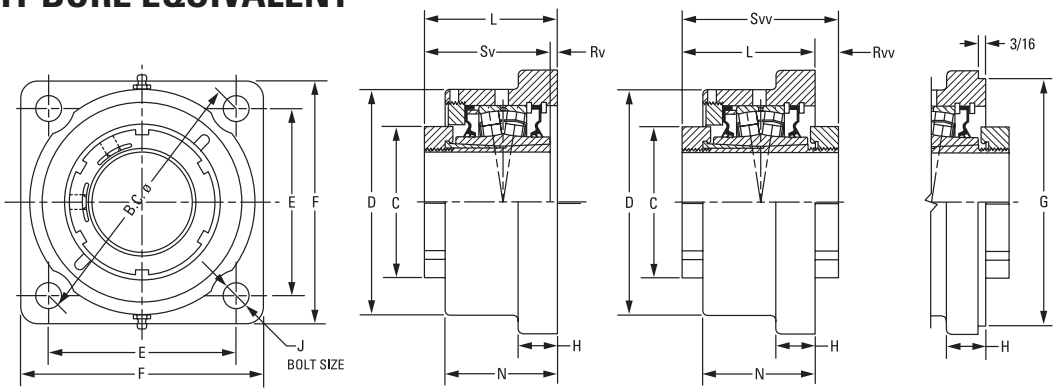
QV Single-Nut Unit[1] **QVV Double-Nut Unit[1]**

Bearing Part No.[1][2]	Shaft Dia.	Bearing No.	C	D	E	B.C.	F	G[3][4][5]	H	J	L FIX	L EXP	N	Rv[1]	Rvv	Sv[1]	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVFL11V115S	1 15/16 in.	22211	**75.9** 2.99	**115.3** 4.54	**103.4** 4.07	**146.1** 5.75	**131.8** 5.19	N/A	**23.1** 0.91	**12** ½	**82.6** 3.25	**84.6** 3.33	**61.2** 2.41	**2.5** 0.10	**19.8** 0.78	**79.8** 3.14	**102.1** 4.02	**5.0** 11
QVFL11V200S	2 in.																	
QVFL11V050S	**50 mm**																	
QVFL12V203S	2 3/16 in.	22212	**80.3** 3.16	**130.3** 5.13	**114.6** 4.51	**162.1** 6.38	**149.4** 5.88	N/A	**19.1** 0.75	**16** 5/8	**84.3** 3.32	**86.4** 3.40	**66.8** 2.63	**4.6** 0.18	**17.8** 0.70	**79.8** 3.14	**102.1** 4.02	**6.4** 14
QVFL12V204S	2 ¼ in.																	
QVFL12V055S	**55 mm**																	
QVFL14V060S	**60 mm**	22214	**94.0** 3.70	**146.1** 5.75	**121.2** 4.77	**171.5** 6.75	**157.2** 6.19	N/A	**25.4** 1.00	**16** 5/8	**86.1** 3.39	**88.1** 3.47	**72.6** 2.86	**5.1** 0.20	**15.2** 0.60	**81.0** 3.19	**101.3** 3.99	**7.7** 17
QVFL14V207S	2 7/16 in.																	
QVFL14V208S	2 ½ in.																	
QVFL14V065S	**65 mm**																	
QVFL16V211S	2 11/16 in.	22216	**106.4** 4.19	**168.4** 6.63	**141.2** 5.56	**200.2** 7.88	**182.6** 7.19	N/A	**26.9** 1.06	**20** ¾	**86.9** 3.42	**88.9** 3.50	**74.4** 2.93	**3.3** 0.13	**17.0** 0.67	**83.6** 3.29	**103.6** 4.08	**10.4** 23
QVFL16V212S	2 ¾ in.																	
QVFL16V070S	**70 mm**																	
QVFL16V215S	2 15/16 in.																	
QVFL16V300S	3 in.																	
QVFL16V075S	**75 mm**																	
QVFL19V303S	3 3/16 in.	22219	**124.5** 4.90	**193.8** 7.63	**170.7** 6.72	**241.3** 9.50	**212.9** 8.38	**187.33** 7.375	**32.5** 1.28	**20** ¾	**97.3** 3.83	**99.3** 3.91	**86.4** 3.40	**3.6** 0.14	**17.0** 0.67	**93.7** 3.69	**114.0** 4.49	**15.9** 35
QVFL19V304S	3 ¼ in.																	
QVFL19V080S	**80 mm**																	
QVFL19V085S	**85 mm**																	
QVFL19V307S	3 7/16 in.																	
QVFL19V308S	3 ½ in.																	
QVFL19V090S	**90 mm**																	
QVFL22V311S	3 11/16 in.	22222	**139.7** 5.50	**229.6** 9.04	**193.0** 7.60	**273.1** 10.75	**241.3** 9.50	**215.90** 8.500	**38.1** 1.50	**24** 1	**116.8** 4.60	**118.9** 4.68	**104.6** 4.12	**11.9** 0.47	**9.9** 0.39	**104.9** 4.13	**126.7** 4.99	**24.9** 55
QVFL22V312S	3 ¾ in.																	
QVFL22V100S	**100 mm**																	
QVFL22V315S	3 15/16 in.																	
QVFL22V400S	4 in.																	

[1] Bearing part numbers use QV to designate single-nut units (uses Rv and Sv dimensions) and QVV to designate double-nut units (uses Rvv and Svv dimensions).
[2] Single-nut (QV) part number shown. Double-nut (QVV) version available upon request.
[3] Pilot tolerance: +0/-0.08 mm (+0/-0.003 in.).
[4] Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
[5] Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.

08-19-13 DRAFT

QVFX AND QVVFX 5000 SERIES SQUARE FLANGE BLOCKS – STRAIGHT BORE EQUIVALENT



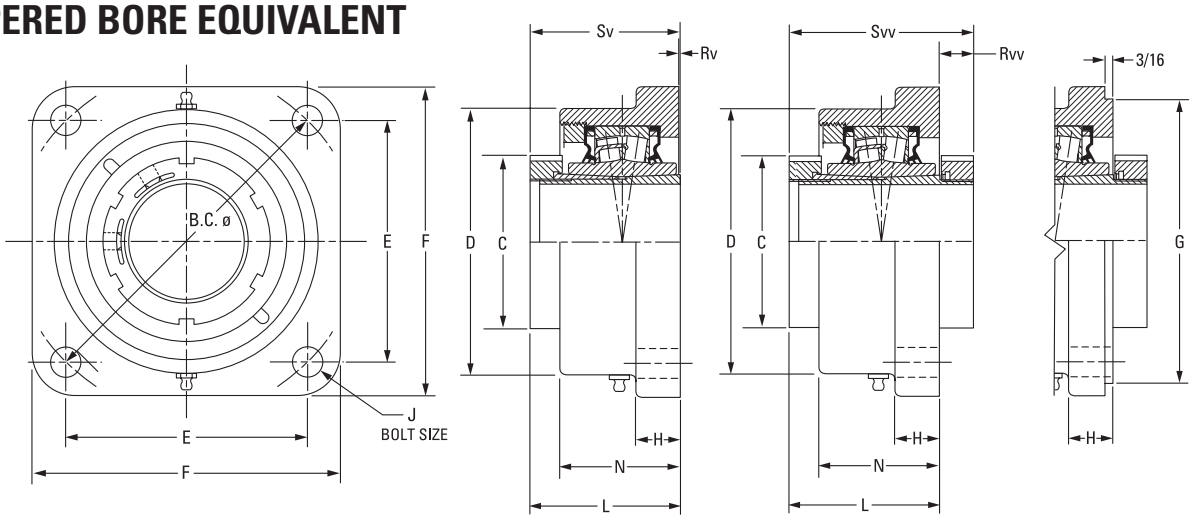
QV Single-Nut Unit(1) **QVV Double-Nut Unit(1)**

Bearing Part No.(1)(2)	Shaft Dia.	Bearing No.	C	D	E	B.C.	F	G(3)(4)(5)	H	J	L FIX	L EXP	N	Rv(1)	Rvv	Sv(1)	Svv	Wt.
	mm in.		mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg lbs.
QVFX11V115S	1 15/16 in.	22211	75.9 2.99	120.7 4.75	103.6 4.08	146.1 5.75	134.9 5.31	111.13 4.375	22.4 0.88	12 1/2	84.1 3.31	86.1 3.39	65.0 2.56	4.1 0.16	18.3 0.72	79.8 3.14	102.1 4.02	5.0 11
QVFX11V200S	2 in.																	
QVFX11V050S	**50 mm**																	
QVFX12V203S	2 3/16 in.	22212	80.3 3.16	130.3 5.13	114.3 4.50	161.5 6.36	149.4 5.88	127.00 5.000	25.4 1.00	16 5/8	84.3 3.32	86.4 3.40	66.8 2.63	4.6 0.18	17.5 0.69	79.8 3.14	102.1 4.02	6.4 14
QVFX12V204S	2 1/4 in.																	
QVFX12V055S	**55 mm**																	
QVFX14V060S	60 mm	22214	94.0 3.70	146.1 5.75	127.8 5.03	180.8 7.12	157.2 6.19	138.13 5.438	25.4 1.00	16 5/8	85.1 3.35	87.4 3.44	72.4 2.85	4.1 0.16	16.0 0.63	81.0 3.19	101.3 3.99	7.7 17
QVFX14V207S	2 7/16 in.																	
QVFX14V208S	2 1/2 in.																	
QVFX14V065S	**65 mm**																	
QVFX16V211S	2 11/16 in.	22216	106.4 4.19	168.9 6.65	152.7 6.01	215.9 8.50	189.0 7.44	160.35 6.313	26.9 1.06	20 3/4	87.6 3.45	89.7 3.53	76.2 3.00	4.1 0.16	16.3 0.64	83.6 3.29	103.6 4.08	10.4 23
QVFX16V212S	2 3/4 in.																	
QVFX16V070S	**70 mm**																	
QVFX16V215S	2 15/16 in.																	
QVFX16V300S	3 in.																	
QVFX16V075S	**75 mm**																	
QVFX19V303S	3 3/16 in.	22219	124.5 4.90	193.8 7.63	170.7 6.72	241.3 9.50	212.6 8.37	187.33 7.375	33.3 1.31	20 3/4	98.3 3.87	100.6 3.96	84.1 3.31	4.8 0.19	15.7 0.62	93.7 3.69	114.0 4.49	15.9 35
QVFX19V304S	3 1/4 in.																	
QVFX19V080S	**80 mm**																	
QVFX19V085S	**85 mm**																	
QVFX19V307S	3 7/16 in.																	
QVFX19V308S	3 1/2 in.																	
QVFX19V090S	**90 mm**																	
QVFX22V311S	3 11/16 in.	22222	139.7 5.50	215.9 8.50	211.1 8.31	298.5 11.75	268.2 10.56	225.43 8.875	38.1 1.50	24 1	114.0 4.49	116.3 4.58	100.6 3.96	9.4 0.37	12.7 0.50	104.9 4.13	126.7 4.99	24.9 55
QVFX22V312S	3 3/4 in.																	
QVFX22V100S	**100 mm**																	
QVFX22V315S	3 15/16 in.																	
QVFX22V400S	4 in.																	
QVFX26V110S(6)	**110 mm**	22226	174.8 6.88	256.5 10.10	163.6 6.44(6)	327.2 12.88(6)	384.3 15.13	263.53 10.375	38.1 1.50	24 1(6)	140.5 5.53	142.7 5.62	106.9 4.21	7.4 0.29	37.8 1.49	147.8 5.82	178.3 7.02	49.0 108
QVFX26V407S(6)	4 7/16 in.																	
QVFX26V408S(6)	4 1/2 in.																	
QVFX26V115S(6)	**115 mm**																	
QVFX28V125S(6)	**125 mm**	22228	189.7 7.47	284.2 11.19	177.8 7.00(6)	355.6 14.00(6)	419.1 16.50	284.18 11.188	38.1 1.50	24 1 1/8(6)	166.1 6.54	168.1 6.62	138.4 5.45	18.3 0.72	12.2 0.48	147.8 5.82	178.3 7.02	52.2 115
QVFX28V415S(6)	4 15/16 in.																	
QVFX28V500S(6)	5 in.																	
QVFX28V130S(6)	**130 mm**																	

(1)Bearing part numbers use QV to designate single-nut units (uses Rv and Sv dimensions) and QVV to designate double-nut units (uses Rvv and Svv dimensions).
(2)Single-nut (QV) part number shown. Double-nut (QVV) version available upon request.
(3)Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
(4)Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
(5)Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.
(6)Six-bolt round housing.

08-19-13 DRAFT

QVFK AND QVVFK 9000 SERIES SQUARE FLANGE BLOCKS – TAPERED BORE EQUIVALENT



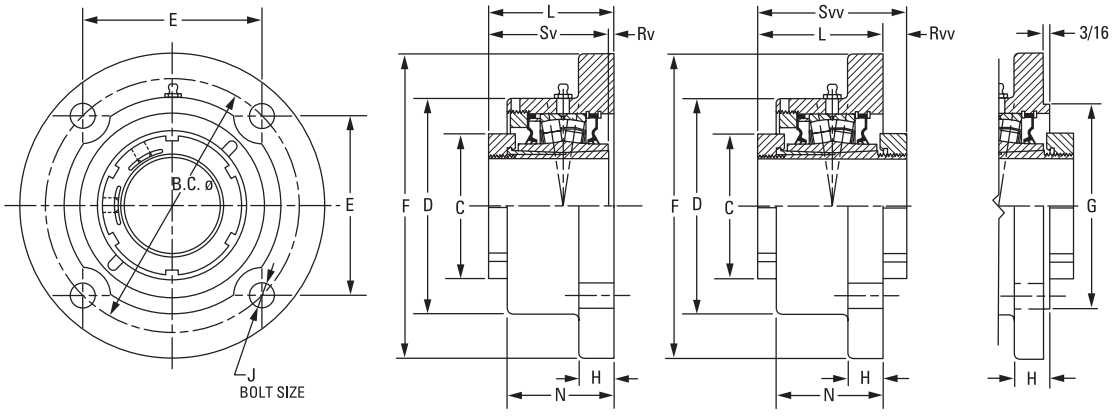
QV Single-Nut Unit(1) **QVV Double-Nut Unit(1)**

Bearing Part No.(1)(2)	Shaft Dia.	Bearing No.	C	D	E	B.C.	F	G(3)(4)(5)	H	J	L FIX	L EXP	N	Rv(1)	Rvv	Sv(1)	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVFK11V115S	1 15/16 in.	22211	**75.9** 2.99	**130.3** 5.13	**114.3** 4.50	**161.5** 6.36	**149.4** 5.88	**127.00** 5.000	**25.4** 1.00	**16** 5/8	**87.1** 3.43	**88.4** 3.48	**66.8** 2.63	**7.4** 0.29	**15.0** 0.59	**79.8** 3.14	**102.1** 4.02	**5.0** 11
QVFK11V200S	2 in.																	
QVFK11V050S	**50 mm**																	
QVFK13V203S	2 3/16 in.	22213	**80.3** 3.16	**146.1** 5.75	**127.8** 5.03	**180.8** 7.12	**157.2** 6.19	**138.13** 5.438	**25.4** 1.00	**16** 5/8	**92.2** 3.63	**94.2** 3.71	**72.4** 2.85	**6.9** 0.27	**15.5** 0.61	**85.3** 3.36	**107.7** 4.24	**6.4** 14
QVFK13V204S	2 1/4 in.																	
QVFK13V055S	**55 mm**																	
QVFK15V060S	**60 mm**	22215	**94.0** 3.70	**168.9** 6.65	**152.7** 6.01	**215.9** 8.50	**189.0** 7.44	**160.35** 6.313	**26.9** 1.06	**20** 3/4	**92.5** 3.64	**94.5** 3.72	**76.2** 3.00	**9.9** 0.39	**11.4** 0.45	**82.6** 3.25	**103.9** 4.09	**7.7** 17
QVFK15V207S	2 7/16 in.																	
QVFK15V208S	2 1/2 in.																	
QVFK15V065S	**65 mm**																	
QVFK17V211S	2 11/16 in.	22217	**106.4** 4.19	**193.8** 7.63	**170.7** 6.72	**241.3** 9.50	**212.9** 8.38	**187.33** 7.375	**33.3** 1.31	**20** 3/4	**92.5** 3.64	**101.1** 3.98	**84.1** 3.31	**14.5** 0.57	**7.1** 0.28	**84.6** 3.33	**106.2** 4.18	**10.4** 23
QVFK17V212S	2 3/4 in.																	
QVFK17V070S	**70 mm**																	
QVFK17V215S	2 15/16 in.																	
QVFK17V300S	3 in.																	
QVFK17V075S	**75 mm**																	
QVFK20V303S	3 3/16 in.	22220	**124.5** 4.90	**215.9** 8.50	**211.1** 8.31	**298.5** 11.75	**268.2** 10.56	**225.43** 8.875	**38.1** 1.50	**24** 7/8	**113.3** 4.46	**115.3** 4.54	**103.1** 4.06	**18.0** 0.71	**4.1** 0.16	**95.3** 3.75	**117.3** 4.62	**15.9** 35
QVFK20V304S	3 1/4 in.																	
QVFK20V080S	**80 mm**																	
QVFK20V085S	**85 mm**																	
QVFK20V307S	3 7/16 in.																	
QVFK20V308S	3 1/2 in.																	
QVFK20V090S	**90 mm**																	
QVFK22V311S(6)	3 11/16 in.	22222	**139.7** 5.50	**256.5** 10.10	**168.7** 6.64(6)	**327.2** 12.88(6)	**384.3** 15.13	**263.53** 10.375	**31.8** 1.25	**24** 1(6)	**117.3** 4.62	**119.4** 4.70	**106.9** 4.21	**12.4** 0.49	**9.7** 0.38	**104.9** 4.13	**126.7** 4.99	**24.9** 55
QVFK22V312S(6)	3 3/4 in.																	
QVFK22V100S(6)	**100 mm**																	
QVFK22V315S(6)	3 15/16 in.																	
QVFK22V400S(6)	4 in.																	
QVFK26V110S(6)	**110 mm**	22226	**174.8** 6.88	**284.2** 11.19	**177.8** 7.00(6)	**355.6** 14.00(6)	**419.1** 16.50	**124.18** 4.89	**38.1** 1.50	**28.6** 1 1/8(6)	**164.6** 6.48	**166.6** 6.56	**135.1** 5.32	**11.7** 0.46	**13.7** 0.54	**147.8** 5.82	**178.3** 7.02	**49.0** 108
QVFK26V407S(6)	4 7/16 in.																	
QVFK26V408S(6)	4 1/2 in.																	
QVFK26V115S(6)	**115 mm**																	

(1) Bearing part numbers use QV to designate single-nut units (uses Rv and Sv dimensions) and QVV to designate double-nut units (uses Rvv and Svv dimensions).
(2) Single-nut (QV) part number shown. Double-nut (QVV) version available upon request.
(3) Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
(4) Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
(5) Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.
(6) Six-bolt round housing.

08-19-13 DRAFT

QVFY AND QVVFY ROUND FLANGE BLOCKS – STRAIGHT BORE EQUIVALENT



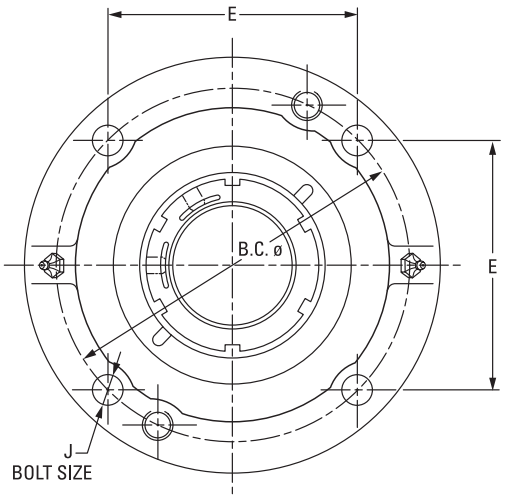
QV Single-Nut Unit[1] **QVV Double-Nut Unit[1]**

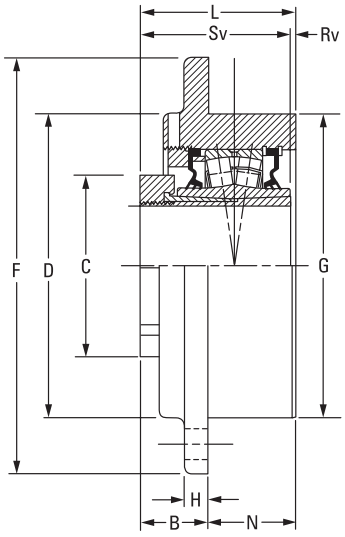
Bearing Part No.[1][2]	Shaft Dia.	Bearing No.	C	D	E	B.C.	F	G[3][4][5]	H	J	L FIX	L EXP	N	Rv[1]	Rvv	Sv[1]	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVFY11V115S	1 15/16 in.	22211	**75.9** 2.99	**115.3** 4.54	**103.4** 4.07	**146.1** 5.75	**177.8** 7.00	**111.13** 4.375	**19.1** 0.75	**12** 1/2	**78.5** 3.09	**80.5** 3.17	**58.4** 2.30	**1.5** 0.06	**23.9** 0.94	**79.8** 3.14	**102.1** 4.02	**5.4** 12
QVFY11V200S	2 in.																	
QVFY11V050S	**50 mm**																	
QVFY12V203S	2 3/16 in.	22212	**80.3** 3.16	**130.3** 5.13	**114.6** 4.51	**162.1** 6.38	**196.9** 7.75	**127.00** 5.000	**19.1** 0.75	**16** 5/8	**80.0** 3.15	**82.0** 3.23	**62.0** 2.44	**0.3** 0.01	**22.1** 0.87	**79.8** 3.14	**102.1** 4.02	**6.8** 15
QVFY12V204S	2 1/4 in.																	
QVFY12V055S	**55 mm**																	
QVFY14V060S	**60 mm**	22214	**94.0** 3.70	**146.1** 5.75	**121.2** 4.77	**171.5** 6.75	**206.5** 8.13	**138.13** 5.438	**23.9** 0.94	**16** 5/8	**84.8** 3.34	**86.9** 3.42	**72.4** 2.85	**3.8** 0.15	**16.5** 0.65	**81.0** 3.19	**101.3** 3.99	**8.6** 19
QVFY14V207S	2 7/16 in.																	
QVFY14V208S	2 1/2 in.																	
QVFY14V065S	**65 mm**																	
QVFY16V211S	2 11/16 in.	22216	**106.4** 4.19	**168.4** 6.63	**141.2** 5.56	**200.2** 7.88	**241.3** 9.50	**160.35** 6.313	**23.9** 0.94	**20** 3/4	**88.4** 3.48	**90.4** 3.56	**76.2** 3.00	**4.8** 0.19	**15.2** 0.60	**83.6** 3.29	**103.6** 4.08	**12.7** 28
QVFY16V212S	2 3/4 in.																	
QVFY16V070S	**70 mm**																	
QVFY16V215S	2 15/16 in.																	
QVFY16V300S	3 in.																	
QVFY16V075S	**75 mm**																	
QVFY19V303S	3 3/16 in.	22219	**124.5** 4.90	**193.8** 7.63	**170.7** 6.72	**241.3** 9.50	**282.7** 11.13	**187.33** 7.375	**28.7** 1.13	**24** 7/8	**98.3** 3.87	**116.1** 4.57	**85.3** 3.36	**4.8** 0.19	**15.7** 0.62	**93.7** 3.69	**114.0** 4.49	**19.1** 42
QVFY19V304S	3 1/4 in.																	
QVFY19V080S	**80 mm**																	
QVFY19V085S	**85 mm**																	
QVFY19V307S	3 7/16 in.																	
QVFY19V308S	3 1/2 in.																	
QVFY19V090S	**90 mm**																	
QVFY22V311S	3 11/16 in.	22222	**139.7** 5.50	**222.5** 8.76	**193.0** 7.60	**273.1** 10.75	**320.8** 12.63	N/A	**28.7** 1.13	**24** 1	**115.3** 4.54	**117.3** 4.62	**103.1** 4.06	**10.4** 0.41	**11.4** 0.45	**104.9** 4.13	**126.7** 4.99	**29.9** 66
QVFY22V312S	3 3/4 in.																	
QVFY22V100S	**100 mm**																	
QVFY22V315S	3 15/16 in.																	
QVFY22V400S	4 in.																	
QVFY26V110S[6]	**110 mm**	22226	**174.8** 6.88	**230.1** 9.06	**163.6** 6.44[6]	**327.2** 12.88[6]	**384.3** 15.13	N/A	**38.1** 1.50	**24** 1[6]	**140.5** 5.53	**142.7** 5.62	**106.9** 4.21	**7.4** 0.29	**37.8** 1.49	**147.8** 5.82	**178.3** 7.02	**49.0** 108
QVFY26V407S[6]	4 7/16 in.																	
QVFY26V408S[6]	4 1/2 in.																	
QVFY26V115S[6]	**115 mm**																	
QVFY28V125S[6]	**125 mm**	22228	**190.0** 7.48	**284.2** 11.19	**177.8** 7.00[6]	**355.6** 14.00[6]	**419.1** 16.50	N/A	**38.1** 1.50	**24** 1 1/8[6]	**166.1** 6.54	**168.1** 6.62	**138.4** 5.45	**18.3** 0.72	**12.2** 0.48	**147.8** 5.82	**178.3** 7.02	**52.2** 115
QVFY28V415S[6]	4 15/16 in.																	
QVFY28V500S[6]	5 in.																	
QVFY28V130S[6]	**130 mm**																	

[1]Bearing part numbers use QV to designate single-nut units (uses Rv and Sv dimensions) and QVV to designate double-nut units (uses Rvv and Svv dimensions).
[2]Single-nut (QV) part number shown. Double-nut (QVV) version available upon request.
[3]Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[4]Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
[5]Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.
[6]Six-bolt round housing.

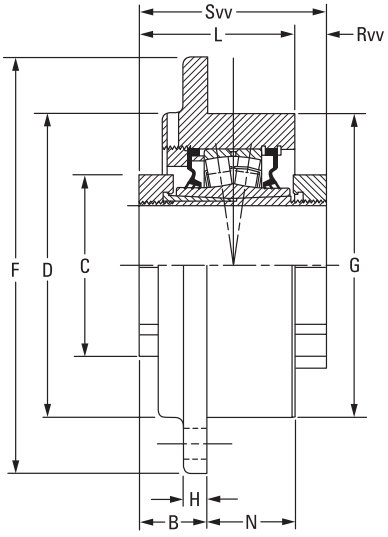
08-19-13 DRAFT

QVC AND QVVC PILOTED FLANGE CARTRIDGES – STRAIGHT BORE EQUIVALENT





QV Single-Nut Unit[1]



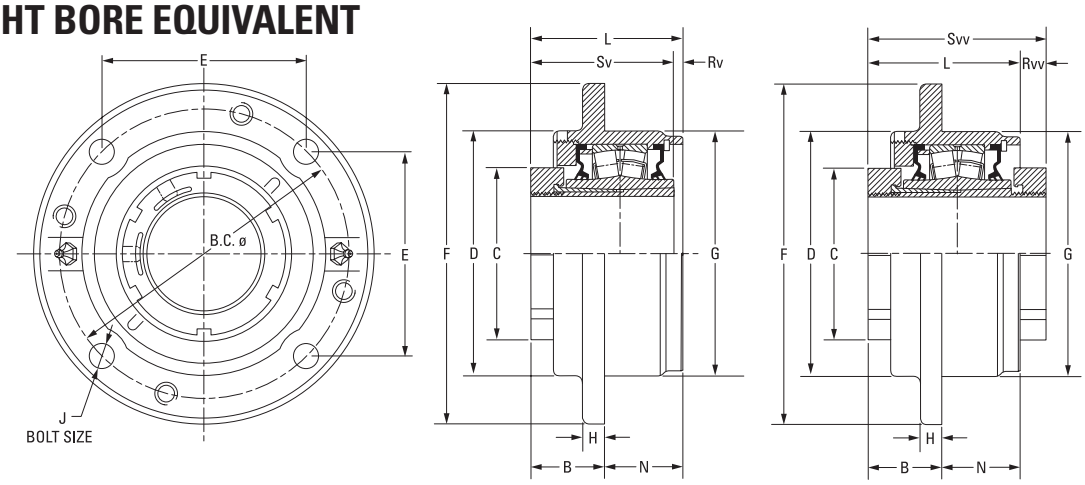
QVV Double-Nut Unit[1]

Bearing Part No.[1][2]	Shaft Dia.	Bearing No.	B FIX	B EXP	C	D	B.C.	E	F	G[3]	H	J	L	N	Rv[1]	Rvv	Sv[1]	Svv	Wt.
	mm in.		mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg lbs.
QVC11V115S	1 15/16 in.	22211	**53.8** 2.12	**55.9** 2.20	**75.9** 2.99	**113.5** 4.47	**136.7** 5.38	**96.5** 3.80	**162.1** 6.38	**114.3** 4.500	**16.0** 0.63	**10** 7/16	**80.8** 3.18	**26.9** 1.06	**0.8** 0.03	**21.6** 0.85	**79.8** 3.14	**102.1** 4.02	**4.5** 10
QVC11V200S	2 in.																		
QVC11V050S	**50 mm**																		
QVC12V203S	2 3/16 in.	22212	**51.3** 2.02	**53.3** 2.10	**80.3** 3.16	**127.0** 5.00	**152.4** 6.00	**107.7** 4.24	**185.4** 7.30	**127.0** 5.000	**14.7** 0.58	**12** 1/2	**80.0** 3.15	**28.7** 1.13	**0.3** 0.01	**22.1** 0.87	**79.8** 3.14	**102.1** 4.02	**5.9** 13
QVC12V204S	2 1/4 in.																		
QVC12V055S	**55 mm**																		
QVC14V060S	**60 mm**	22214	**56.1** 2.21	**58.2** 2.29	**94.0** 3.70	**139.7** 5.50	**165.1** 6.50	**116.8** 4.60	**193.8** 7.63	**139.7** 5.500	**17.5** 0.69	**12** 1/2	**84.6** 3.33	**28.7** 1.13	**3.8** 0.15	**16.5** 0.65	**81.0** 3.19	**101.3** 3.99	**7.3** 16
QVC14V207S	2 7/16 in.																		
QVC14V208S	2 1/2 in.																		
QVC14V065S	**65 mm**																		
QVC16V211S	2 11/16 in.	22216	**52.8** 2.08	**54.9** 2.16	**106.4** 4.19	**162.1** 6.38	**190.5** 7.50	**134.6** 5.30	**222.3** 8.75	**161.9** 6.375	**20.6** 0.81	**16** 5/8	**84.6** 3.33	**31.8** 1.25	**1.0** 0.04	**19.3** 0.76	**83.6** 3.29	**103.6** 4.08	**10.0** 22
QVC16V212S	2 3/4 in.																		
QVC16V070S	**70 mm**																		
QVC16V215S	2 15/16 in.																		
QVC16V300S	3 in.																		
QVC16V075S	**75 mm**																		
QVC19V303S	3 3/16 in.	22219	**62.5** 2.46	**64.5** 2.54	**124.5** 4.90	**185.2** 7.29	**219.2** 8.63	**154.9** 6.10	**262.6** 10.34	**187.3** 7.375	**25.4** 1.00	**20** 3/4	**95.8** 3.77	**33.3** 1.31	**2.0** 0.08	**18.5** 0.73	**93.7** 3.69	**114.0** 4.49	**14.5** 32
QVC19V304S	3 1/4 in.																		
QVC19V080S	**80 mm**																		
QVC19V085S	**85 mm**																		
QVC19V307S	3 7/16 in.																		
QVC19V308S	3 1/2 in.																		
QVC19V090S	**90 mm**																		
QVC22V311S	3 11/16 in.	22222	**60.2** 2.37	**62.2** 2.45	**139.7** 5.50	**222.5** 8.76	**238.3** 9.38	**168.4** 6.63	**276.4** 10.88	**206.4** 8.125	**25.4** 1.00	**20** 3/4	**115.3** 4.54	**54.1** 2.13	**10.4** 0.41	**11.7** 0.46	**104.9** 4.13	**126.7** 4.99	**19.5** 43
QVC22V312S	3 3/4 in.																		
QVC22V100S	**100 mm**																		
QVC22V315S	3 15/16 in.																		
QVC22V400S	4 in.																		
QVC26V110S[4]	**110 mm**	22226	**86.4** 3.40	**88.4** 3.48	**174.8** 6.88	**260.4** 10.25	**298.5** 11.75[4]	**149.4** 5.88[4]	**342.9** 13.50	**260.4** 10.250	**25.4** 1.00	**20** 3/4[4]	**134.6** 5.30	**48.3** 1.90	**13.2** 0.52	**43.7** 1.72	**147.8** 5.82	**178.3** 7.02	**32.7** 72
QVC26V407S[4]	4 7/16 in.																		
QVC26V408S[4]	4 1/2 in.																		
QVC26V115S[4]	115 mm																		

[1] Bearing part numbers use QV to designate single-nut units (uses Rv and Sv dimensions) and QVV to designate double-nut units (uses Rvv and Svv dimensions).
[2] Single-nut (QV) part number shown. Double-nut (QVV) version available upon request.
[3] Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[4] Six-bolt round housing.

08-19-13 DRAFT

QVCW AND QVVCW PILOTED FLANGE CARTRIDGES – STRAIGHT BORE EQUIVALENT



QV Single-Nut Unit[1]

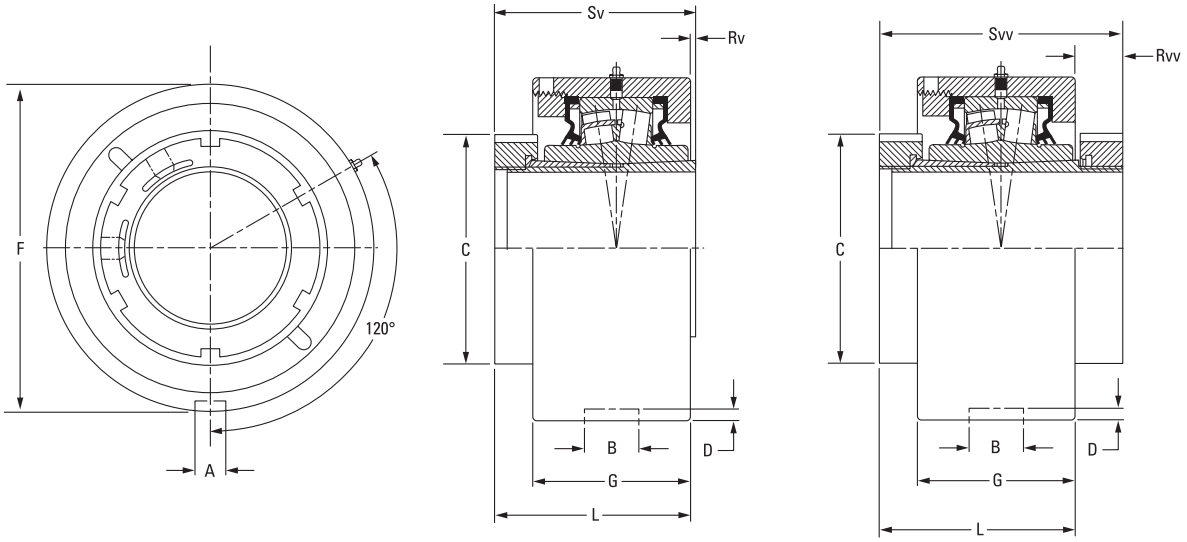
QVV Double-Nut Unit[1]

Bearing Part No.[1][2]	Shaft Dia.	Bearing No.	B FIX	B EXP	C	D	B.C.	E	F	G[3]	H	J	L	N	Rv[1]	Rvv	Sv[1]	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVCW11V115S	1 15/16 in.	22211	**42.2** 1.66	**44.2** 1.74	**75.9** 2.99	**113.5** 4.47	**136.7** 5.38	**96.5** 3.80	**162.1** 6.38	**114.3** 4.500	**9.7** 0.38	**10** 7/16	**80.3** 3.16	**38.1** 1.50	**0.8** 0.03	**21.8** 0.86	**79.8** 3.14	**102.1** 4.02	**4.5** 10
QVCW11V200S	2 in.																		
QVCW11V050S	**50 mm**																		
QVCW12V203S	2 3/16 in.	22212	**43.2** 1.70	**45.5** 1.79	**80.3** 3.16	**127.0** 5.00	**152.4** 6.00	**107.7** 4.24	**181.1** 7.13	**127.0** 5.000	**14.2** 0.56	**12** 1/2	**84.6** 3.33	**41.4** 1.63	**4.8** 0.19	**17.5** 0.69	**79.8** 3.14	**102.1** 4.02	**5.9** 13
QVCW12V204S	2 1/4 in.																		
QVCW12V055S	**55 mm**																		
QVCW14V060S	**60 mm**	22214	**41.9** 1.65	**43.9** 1.73	**94.0** 3.70	**139.7** 5.50	**165.1** 6.50	**116.8** 4.60	**193.8** 7.63	**139.7** 5.500	**12.7** 0.50	**12** 1/2	**86.4** 3.40	**42.9** 1.69	**5.3** 0.21	**15.0** 0.59	**81.0** 3.19	**101.3** 3.99	**7.3** 16
QVCW14V207S	2 7/16 in.																		
QVCW14V208S	2 1/2 in.																		
QVCW14V065S	**65 mm**																		
QVCW16V211S	2 11/16 in.	22216	**37.6** 1.48	**39.6** 1.56	**106.4** 4.19	**162.1** 6.38	**190.5** 7.50	**134.6** 5.30	**222.3** 8.75	**161.9** 6.375	**12.7** 0.50	**16** 5/8	**85.1** 3.35	**47.8** 1.88	**1.8** 0.07	**18.5** 0.73	**83.6** 3.29	**103.6** 4.08	**10.0** 22
QVCW16V212S	2 3/4 in.																		
QVCW16V070S	**70 mm**																		
QVCW16V215S	2 15/16 in.																		
QVCW16V300S	3 in.																		
QVCW16V075S	**75 mm**																		
QVCW19V303S	3 3/16 in.	22219	**49.8** 1.96	**51.8** 2.04	**124.5** 4.90	**187.5** 7.38	**219.2** 8.63	**154.9** 6.10	**260.4** 10.25	**187.3** 7.375	**22.4** 0.88	**20** 3/4	**97.5** 3.84	**47.8** 1.88	**3.8** 0.15	**16.8** 0.66	**93.7** 3.69	**114.0** 4.49	**14.5** 32
QVCW19V304S	3 1/4 in.																		
QVCW19V080S	**80 mm**																		
QVCW19V085S	**85 mm**																		
QVCW19V307S	3 7/16 in.																		
QVCW19V308S	3 1/2 in.																		
QVCW19V090S	**90 mm**																		
QVCW22V311S	3 11/16 in.	22222	**51.6** 2.03	**53.6** 2.11	**139.7** 5.50	**222.5** 8.76	**238.3** 9.38	**168.4** 6.63	**276.4** 10.88	**206.4** 8.125	**25.4** 1.00	**20** 3/4	**109.7** 4.32	**57.2** 2.25	**4.8** 0.19	**17.3** 0.68	**104.9** 4.13	**126.7** 4.99	**19.5** 43
QVCW22V312S	3 3/4 in.																		
QVCW22V100S	**100 mm**																		
QVCW22V315S	3 15/16 in.																		
QVCW22V400S	4 in.																		
QVCW26V110S[4]	**110 mm**	22226	**72.4** 2.85	**74.4** 2.93	**174.8** 6.88	**260.4** 10.25	**298.5** 11.75[4]	**149.4** 5.88[4]	**342.9** 13.50	**260.4** 10.250	**25.4** 1.00[4]	**20** 3/4	**140.5** 5.53	**68.3** 2.69	**7.4** 0.29	**37.8** 1.49	**147.8** 5.82	**178.3** 7.02	**32.7** 72
QVCW26V407S[4]	4 7/16 in.																		
QVCW26V408S[4]	4 1/2 in.																		
QVCW26V115S[4]	**115 mm**																		
QVCW28V125S[4]	**125 mm**	22228	**66.5** 2.62	**68.6** 2.70	**190.0** 7.48	**266.7** 10.50	**323.9** 12.75[4]	**162.1** 6.38[4]	**374.7** 14.75	**279.4** 11.000	**26.2** 1.03[4]	**24** 7/8	**144.5** 5.69	**78.0** 3.07	**3.3** 0.13	**33.8** 1.33	**147.8** 5.82	**178.3** 7.02	**46.3** 102
QVCW28V415S[4]	4 15/16 in.																		
QVCW28V500S[4]	5 in.																		
QVCW28V130S[4]	**130 mm**																		

[1] Bearing part numbers use QV to designate single-nut units (uses Rv and Sv dimensions) and QVV to designate double-nut units (uses Rvv and Svv dimensions).
[2] Single-nut (QV) part number shown. Double-nut (QVV) version available upon request.
[3] Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[4] Six-bolt round housing.

08-19-13 DRAFT

QVMC AND QVVMC CARTRIDGE BLOCKS – TAPERED BORE EQUIVALENT



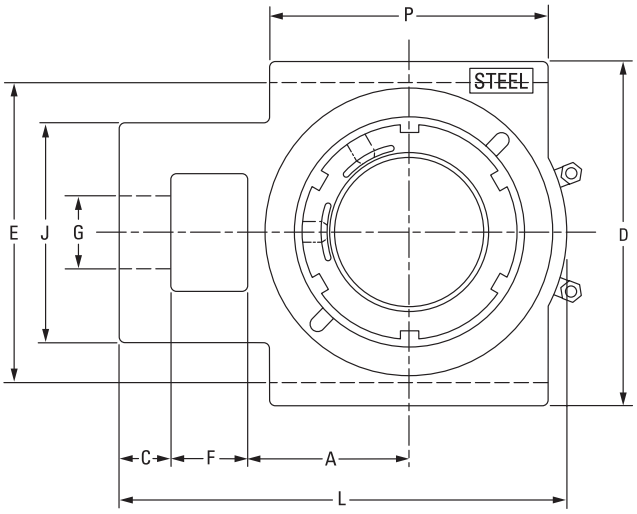
QV Single-Nut Unit(1) **QVV Double-Nut Unit(1)**

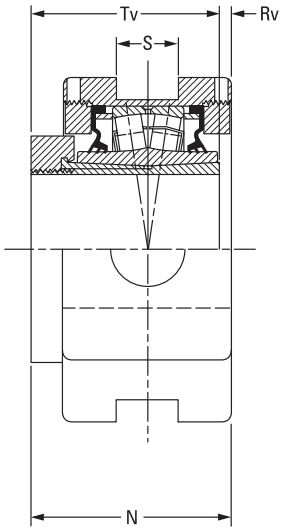
Bearing Part No.(1)(2)	Shaft Dia.	Bearing No.	A	B	C	D	F	G	L FIX	L EXP	Rv(1)	Rvv	Sv(1)	Svv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QVMC11V115S	1 15/16 in.	22211	**13.5** 0.530	**23.0** 0.906	**75.9** 2.99	**4.8** 0.188	**115.09 (+0/-0.05)** 4.531 (+0/-0.002)	**55.4** 2.180	**79.0** 3.11	**81.0** 3.19	**0.8** 0.03	**23.1** 0.91	**79.8** 3.14	**102.1** 4.02	**4.5** 10
QVMC11V200S	2 in.														
QVMC11V050S	**50 mm**														
QVMC13V203S	2 3/16 in.	22213	**13.5** 0.530	**23.0** 0.906	**80.3** 3.16	**4.8** 0.188	**127.00 (+0/-0.05)** 5.000 (+0/-0.002)	**67.1** 2.640	**85.9** 3.38	**87.9** 3.46	**0.5** 0.02	**21.8** 0.86	**85.3** 3.36	**107.7** 4.24	**5.4** 12
QVMC13V204S	2 1/4 in.														
QVMC13V055S	**55 mm**														
QVMC15V060S	**60 mm**	22215	**15.1** 0.594	**26.2** 1.032	**94.0** 3.70	**6.4** 0.250	**149.23 (+0/-0.05)** 5.875 (+0/-0.002)	**70.6** 2.780	**87.4** 3.44	**89.4** 3.52	**5.1** 0.20	**16.5** 0.65	**82.6** 3.25	**103.9** 4.09	**8.2** 18
QVMC15V207S	2 7/16 in.														
QVMC15V208S	2 1/2 in.														
QVMC15V065S	**65 mm**														
QVMC17V211S	2 11/16 in.	22217	**15.1** 0.594	**27.5** 1.083	**106.4** 4.19	**7.1** 0.281	**171.45 (+0/-0.05)** 6.75 (+0/-0.002)	**74.9** 2.950	**91.2** 3.59	**93.2** 3.67	**6.4** 0.25	**15.0** 0.59	**84.6** 3.33	**106.2** 4.18	**11.8** 26
QVMC17V212S	2 3/4 in.														
QVMC17V070S	**70 mm**														
QVMC17V215S	2 15/16 in.														
QVMC17V300S	3 in.														
QVMC17V075S	**75 mm**														
QVMC20V303S	3 3/16 in.	22220	**19.8** 0.781	**32.5** 1.281	**124.5** 4.90	**8.0** 0.313	**206.38 (+0/-0.05)** 8.125 (+0/-0.002)	**85.6** 3.370	**102.1** 4.02	**104.1** 4.10	**6.9** 0.27	**15.2** 0.60	**95.3** 3.75	**117.3** 4.62	**14.5** 32
QVMC20V304S	3 1/4 in.														
QVMC20V080S	**80 mm**														
QVMC20V085S	**85 mm**														
QVMC20V307S	3 7/16 in.														
QVMC20V308S	3 1/2 in.														
QVMC20V090S	**90 mm**														
QVMC22V311S	3 11/16 in.	22222	**19.8** 0.781	**32.5** 1.281	**139.7** 5.50	**8.0** 0.313	**222.25 (+0/-0.08)** 8.75 (+0/-0.003)	**97.8** 3.850	**113.0** 4.45	**115.1** 4.53	**8.1** 0.32	**14.0** 0.55	**104.9** 4.13	**126.7** 4.99	**18.1** 40
QVMC22V312S	3 3/4 in.														
QVMC22V100S	**100 mm**														
QVMC22V315S	3 15/16 in.														
QVMC22V400S	4 in.														
QVMC26V110S	**110 mm**	22226	**19.8** 0.780	**38.1** 1.500	**174.8** 6.88	**8.0** 0.313	**265.10 (+0/-0.08)** 10.437 (+0/-0.003)	**104.4** 4.110	**141.5** 5.57	**143.5** 5.65	**6.4** 0.25	**36.8** 1.45	**147.8** 5.82	**178.3** 7.02	**23.6** 52
QVMC26V407S	4 7/16 in.														
QVMC26V408S	4 1/2 in.														
QVMC26V115S	**115 mm**														

(1)Bearing part numbers use QV to designate single-nut units (uses Rv and Sv dimensions) and QVV to designate double-nut units (uses Rvv and Svv dimensions).
(2)Single-nut (QV) part number shown. Double-nut (QVV) version available upon request.

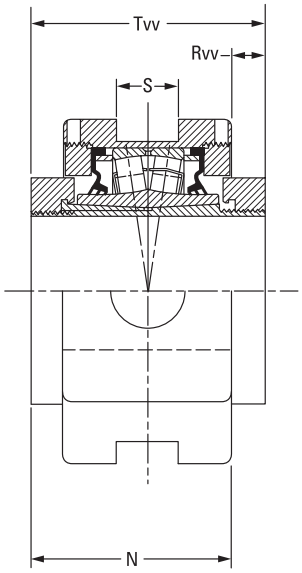
08-19-13 DRAFT

QVVTU TAKE-UP BLOCKS – STRAIGHT BORE EQUIVALENT





QV Single-Nut Unit



QVV Double-Nut Unit

Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	C	D	E	F	G	J	L	N	P	S	Rv[1]	Rvv	Tv[1]	Tvv	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** in.
QVVTU14V060S	**60 mm**	22214	**69.9** 2.75	**22.4** 0.88	**149.4** 5.88	**130.3** 5.13	**33.3** 1.31	**33.3** 1.31	**95.3** 3.75	**193.8** 7.63	**88.4** 3.48	**120.7** 4.75	**26.9** 1.06	**3.3** 0.13	**15.5** 0.61	**85.1** 3.35	**103.9** 4.09	**7.7** 17
QVVTU14V207S	2 7/16 in.																	
QVVTU14V208S	2 1/2 in.																	
QVVTU14V065S	**65 mm**																	
QVVTU16V211S	2 11/16 in.	22216	**76.2** 3.00	**25.4** 1.00	**171.5** 6.75	**150.9** 5.94	**39.6** 1.56	**39.6** 1.56	**108.0** 4.25	**219.7** 8.65	**90.2** 3.55	**120.7** 4.75	**46.0** 1.81	**2.3** 0.09	**16.3** 0.64	**87.6** 3.45	**106.2** 4.18	**15.9** 35
QVVTU16V212S	2 3/4 in.																	
QVVTU16V070S	**70 mm**																	
QVVTU16V215S	2 15/16 in.																	
QVVTU16V300S	3 in.																	
QVVTU16V075S	**75 mm**																	
QVVTU19V303S	3 3/16 in.	22219	**92.2** 3.63	**25.4** 1.00	**193.8** 7.63	**173.0** 6.81	**46.0** 1.81	**47.8** 1.88	**124.0** 4.88	**257.0** 10.12	**99.6** 3.92	**158.8** 6.25	**46.0** 1.81	**0.5** 0.02	**18.0** 0.71	**99.1** 3.90	**117.6** 4.63	**20.0** 44
QVVTU19V304S	3 1/4 in.																	
QVVTU19V080S	**80 mm**																	
QVVTU19V085S	**85 mm**																	
QVVTU19V307S	3 7/16 in.																	
QVVTU19V308S	3 1/2 in.																	
QVVTU19V090S	**90 mm**																	
QVVTU22V311S	3 11/16 in.	22222	**104.9** 4.13	**28.7** 1.13	**239.8** 9.44	**219.2** 8.63	**54.1** 2.13	**52.3** 2.06	**143.0** 5.63	**296.9** 11.69	**111.3** 4.38	**177.8** 7.00	**52.3** 2.06	**1.5** 0.06	**18.8** 0.74	**110.0** 4.33	**130.3** 5.13	**26.3** 58
QVVTU22V312S	3 3/4 in.																	
QVVTU22V100S	**100 mm**																	
QVVTU22V315S	3 15/16 in.																	
QVVTU22V400S	4 in.																	

[1]Double-nut (QVV) part number shown. Single-nut (QV) version available upon request.

08-19-13 DRAFT

CL SERIES

Available in both single-collar (QA) and double-collar (QAA) versions, the CL bearing series features a concentric locking collar with two set screws at 60 degrees to provide maximum positive locking power with minimal run out.



Fig. C-43. CL series single-collar (QA) insert available up to 100 mm (4 in.).



Fig. C-44. CL series double-collar (QAA) insert for size ranges 50 mm – 130 mm (1 15/16 in. – 5 in.).

YOU HAVE CHOICES

For the CL series, you can select either single-collar or double-collar versions and choose from many seal configurations and housing styles, which are shown on page C-100.

HOUSINGS

- Two-bolt pillow blocks.
- Four-bolt pillow blocks.
- Flange blocks.
- Piloted flange cartridges.
- Take-up blocks.
- Cartridge blocks.
- Hanger blocks.

SEALS

- Labyrinth: DuPont Teflon (T).
- Triple-lip: nitrile rubber (M), urethane (O) and DuPont Viton (N).
- Double-lip: nitrile rubber (B) and DuPont Viton (C).
- Steel and urethane closed-end covers (CS).
- Steel and urethane open-end covers (CJ) with:
  - DuPont Teflon (T).
  - Triple-lip seal (DR).
  - V-ring seal (VR).
- Piloted flange cartridge backing plates (HSY) with:
  - Triple-lip seal (DR).
- Flange block backing plates (UFP).
  - V-ring (VR).

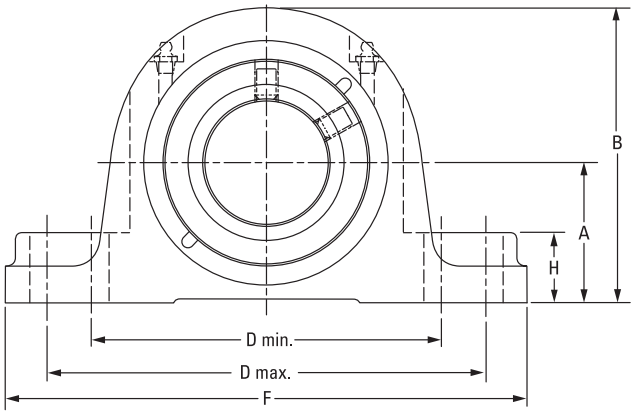
08-19-13 DRAFT

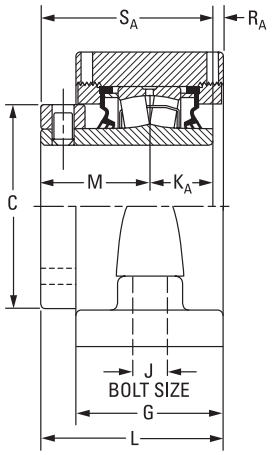
CL SERIES

		Primary Seals						Secondary Seals and Covers					
								Open-End Cover				HSY Flange Cartridge Backing Plate	
	Housing Type	M	N	O	B	C	T	DR	VR	T	Closed-End Cover	DR	UFP Backing Plate
V-Lock (Timken Exclusive Double Taper Lock)	Pillow Block	●	●	●	●	●	●	●	●	●	●		
	Flange Block	●	●	●	●	●	●	●	●	●	●		
	Piloted Flange Cartridge	●	●	●	●	●	●	●	●	●	●		
	Take-Up Block	●	●	●	●	●	●	●	●	●	●		
	Cartridge Block	●	●	●	●	●	●	●	●	●	●		
CL Series (Set Screw Lock)	Pillow Block	●	●	●	●	●	●	●	●	●	●		
	Flange Block	●	●	●	●	●	●	●	●	●	●		●
	Piloted Flange Cartridge	●	●	●	●	●	●	●	●	●	●	●	
	Take-Up Block	●	●	●	●	●	●	●	●	●	●		
	Cartridge Block	●	●	●	●	●	●	●	●	●	●		
	Hangar Block	●	●	●	●	●	●	●	●	●	●		
EC Series (Eccentric Lock)	Pillow Block	●	●	●	●	●	●	●	●	●	●		
	Flange Block	●	●	●	●	●	●	●	●	●	●		●
	Piloted Flange Cartridge	●	●	●	●	●	●	●	●	●	●	●	
	Take-Up Block	●	●	●	●	●	●	●	●	●	●		
	Cartridge Block	●	●	●	●	●	●	●	●	●	●		
	Hangar Block	●	●	●	●	●	●	●	●	●	●		
TA Series (Tapered Adapter Lock)	Pillow Block	●	●	●	●	●	●	●	●	●	●		
	Flange Block	●	●	●	●	●	●	●	●	●	●		
	Piloted Flange Cartridge	●	●	●	●	●	●	●	●	●	●		
	Cartridge Block	●	●	●	●	●	●	●	●	●	●		
DV Series (Tapered Adapter Lock)	Pillow Block	●	●	●	●	●	●	●	●	●	●		
	Flange Block	●	●	●	●	●	●	●	●	●	●		
	Piloted Flange Cartridge	●	●	●	●	●	●	●	●	●	●		

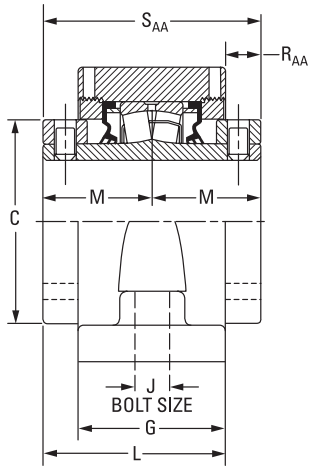
08-19-13 DRAFT

QAP AND QAAP TWO-BOLT PILLOW BLOCKS





QA Single-Collar Unit



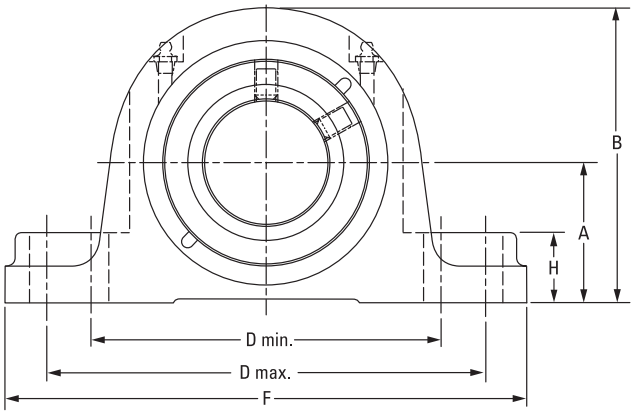
QAA Double-Collar Unit

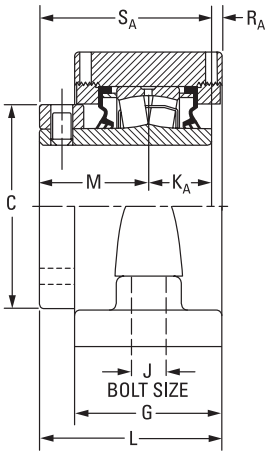
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	K_A	L	M	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAP08A035S	**35 mm**	22208	**47.8** 1.88	**94.7** 3.73	**60.5** 2.38	**119.1** 4.69	**152.4** 6.00	**174.8** 6.88	**57.2** 2.25	**25.4** 1.00	**12** ½	**25.4** 1.00	**73.2** 2.88	**44.5** 1.75	**3.3** 0.13	–	**69.9** 2.75	–	**4.1** 9
QAP08A107S	1 7⁄16 in.																		
QAP08A108S	1 ½ in.	22208	**54.1** 2.13	**101.1** 3.98	**60.5** 2.38	**119.1** 4.69	**165.1** 6.50	**200.2** 7.88	**57.2** 2.25	**25.4** 1.00	**12** ½	**25.4** 1.00	**73.2** 2.88	**44.5** 1.75	**3.3** 0.13	–	**69.9** 2.75	–	**4.1** 9
QAP09A111S	1 11⁄16 in.	22209	**54.1** 2.13	**104.9** 4.13	**66.8** 2.63	**144.8** 5.70	**165.1** 6.50	**200.2** 7.88	**60.2** 2.37	**31.8** 1.25	**12** ½	**25.4** 1.00	**78.0** 3.07	**47.8** 1.88	**4.8** 0.19	–	**73.2** 2.88	–	**4.5** 10
QAP09A040S	**40 mm**	22209	**57.2** 2.25	**108.0** 4.25	**66.8** 2.63	**158.8** 6.25	**180.8** 7.12	**225.6** 8.88	**62.0** 2.44	**31.8** 1.25	**16** ⅝	**25.4** 1.00	**78.7** 3.10	**47.8** 1.88	**5.6** 0.22	–	**73.2** 2.88	–	**4.5** 10
QAP09A112S	1 ¾ in.																		
QAP09A045S	45mm																		
QAP10A115S QAAP10A115S	1 15⁄16 in.	22210	**57.2** 2.25	**122.2** 4.81	**73.2** 2.88	**152.4** 6.00	**181.1** 7.13	**225.6** 8.88	**62.0** 2.44	**31.8** 1.25	**16** ⅝	**25.4** 1.00	**79.0** 3.11	**47.5** 1.87	**6.1** 0.24	**17.0** 0.67	**72.9** 2.87	**95.3** 3.75	**5.9** 13
QAP10A200S QAAP10A200S	2 in.																		
QAP10A050S QAAP10A050S	**50 mm**																		
QAP11A203S QAAP11A203S	2 3⁄16 in.	22211	**63.5** 2.50	**133.4** 5.25	**82.6** 3.25	**165.1** 6.50	**200.2** 7.88	**244.6** 9.63	**66.8** 2.63	**31.8** 1.25	**16** ⅝	**28.7** 1.13	**84.3** 3.32	**50.8** 2.00	**4.8** 0.19	**17.5** 0.69	**79.5** 3.13	**101.6** 4.00	**7.7** 17
QAP11A204S QAAP11A204S	2 ¼ in.																		
QAP11A055S QAAP11A055S	**55 mm**																		
QAP13A060S QAAP13A060S	**60 mm**	22213	**69.9** 2.75	**147.3** 5.80	**96.8** 3.81	**174.8** 6.88	**219.2** 8.63	**260.4** 10.25	**73.7** 2.90	**35.1** 1.38	**16** ⅝	**31.5** 1.24	**91.4** 3.60	**54.6** 2.15	**5.3** 0.21	**17.8** 0.70	**86.1** 3.39	**109.2** 4.30	**10.0** 22
QAP13A207S QAAP13A207S	2 7⁄16 in.																		
QAP13A208S QAAP13A208S	2 ½ in.																		
QAP13A065S QAAP13A065S	**65 mm**																		

[1] Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

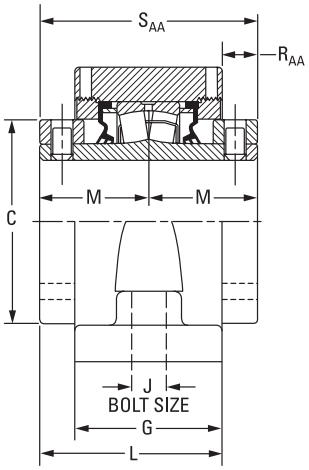
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08-19-13 DRAFT





QA Single-Collar Unit



QAA Double-Collar Unit

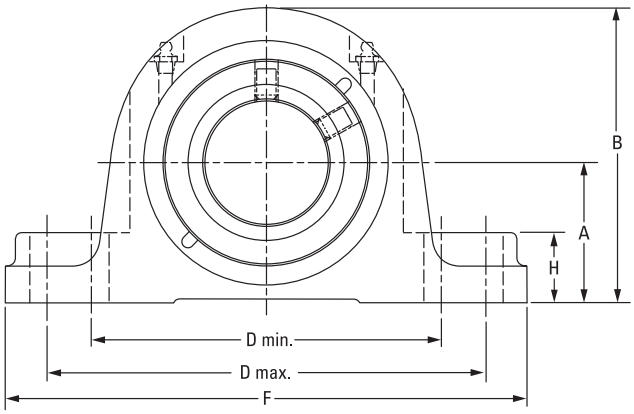
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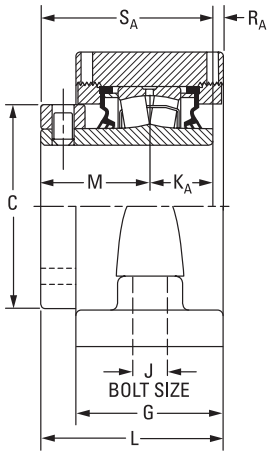
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	K_A	L	M	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAP15A211S QAAP15A211S	2 11/16 in.	22215	**79.5** 3.13	**164.3** 6.47	**109.0** 4.29	**200.2** 7.88	**244.6** 9.63	**295.4** 11.63	**76.2** 3.00	**35.1** 1.38	**20** 3/4	**31.8** 1.25	**98.3** 3.87	**60.2** 2.37	**6.4** 0.25	**22.1** 0.87	**91.9** 3.62	**120.4** 4.74	**12.7** 28
QAP15A212S QAAP15A212S	2 3/4 in.																		
QAP15A070S QAAP15A070S	**70 mm**																		
QAP15A215S QAAP15A215S	2 15/16 in.																		
QAP15A300S QAAP15A300S	3 in.																		
QAP15A075S QAAP15A075S	**75 mm**																		
QAP18A303S QAAP18A303S	3 3/16 in.	22218	**95.3** 3.75	**195.3** 7.69	**130.3** 5.13	**238.3** 9.38	**285.8** 11.25	**342.9** 13.50	**86.6** 3.41	**47.8** 1.88	**24** 7/8	**36.6** 1.44	**109.2** 4.30	**65.8** 2.59	**6.9** 0.27	**22.6** 0.89	**102.4** 4.03	**131.6** 5.18	**20.4** 45
QAP18A304S QAAP18A304S	3 1/4 in.																		
QAP18A080S QAAP18A080S	**80 mm**																		
QAP18A085S QAAP18 A085S	**85 mm**																		
QAP18A307S QAAP18A307S	3 7/16 in.																		
QAP18A308S QAAP18A308S	3 1/2 in.																		
QAP18A090S QAAP18A090S	**90 mm**																		
QAP20A315S QAAP20A315S	3 15/16 in.	22220	**104.9** 4.13	**209.8** 8.26	**152.4** 6.00	**255.0** 10.04	**320.0** 12.60	**362.0** 14.25	**94.7** 3.73	**50.8** 2.00	**24** 1	**41.4** 1.63	**122.9** 4.84	**75.4** 2.97	**6.1** 0.24	**28.2** 1.11	**116.8** 4.60	**150.9** 5.94	**26.8** 59
QAP20A400S QAAP20A400S	4 in.																		
QAP20A100S QAAP20A100S	**100 mm**																		

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

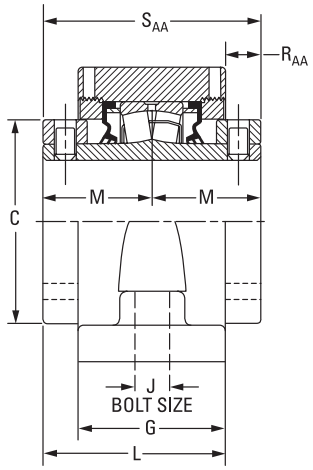
08-19-13 DRAFT

QAPL AND QAAPL TWO-BOLT PILLOW BLOCKS





QA Single-Collar Unit



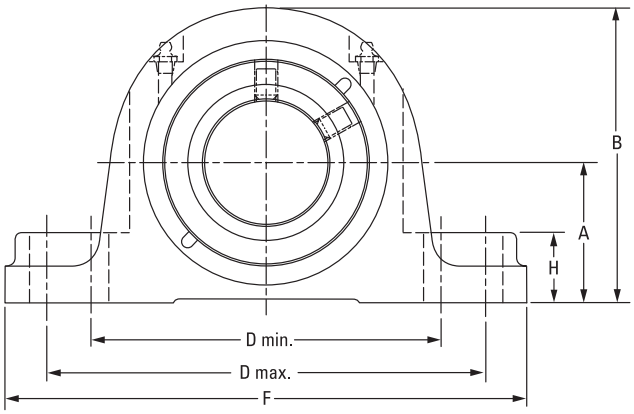
QAA Double-Collar Unit

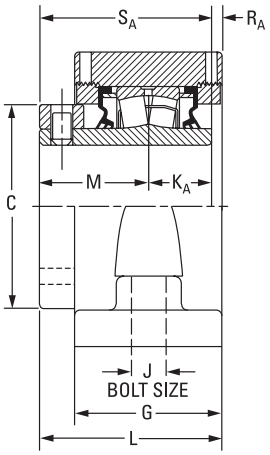
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	K_A	L	M	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAPL08A035S	**35 mm**	22208	**47.8** 1.88	**94.7** 3.73	**60.5** 2.38	**119.1** 4.69	**152.4** 6.00	**174.8** 6.88	**57.2** 2.25	**25.4** 1.00	**12** ½	**25.4** 1.00	**73.2** 2.88	**44.5** 1.75	**3.3** 0.13	–	**69.9** 2.75	–	**4.1** 9
QAPL08A107S	1 7/16 in.																		
QAPL08A108S	1 ½ in.																		
QAPL09A040S	**40 mm**	22209	**54.1** 2.13	**104.9** 4.13	**66.8** 2.63	**133.4** 5.25	**146.1** 5.75	**181.1** 7.13	**60.2** 2.37	**31.8** 1.25	**12** ½	**25.4** 1.00	**78.0** 3.07	**47.8** 1.88	**4.8** 0.19	–	**73.2** 2.88	–	**4.5** 10
QAPL09A111S	1 11/16 in.																		
QAPL09A112S	1 ¾ in.																		
QAPL09A045S	**45 mm**																		
QAPL10A115S QAAPL10A115S	1 15/16 in.	22210	**57.2** 2.25	**122.2** 4.81	**73.2** 2.88	**150.6** 5.93	**161.5** 6.36	**212.9** 8.38	**62.0** 2.44	**31.8** 1.25	**16** 5/8	**25.4** 1.00	**79.0** 3.11	**47.5** 1.87	**6.1** 0.24	**17.0** 0.67	**72.9** 2.87	**95.3** 3.75	**5.9** 13
QAPL10A200S QAAPL10A200S	2 in.																		
QAPL10A050S QAAPL10A050S	**50 mm**																		
QAPL11A203S QAAPL11A203S	2 3/16 in.	22211	**63.5** 2.50	**133.4** 5.25	**82.6** 3.25	**165.1** 6.50	**179.3** 7.06	**225.6** 8.88	**65.5** 2.58	**31.8** 1.25	**16** 5/8	**28.7** 1.13	**83.6** 3.29	**50.8** 2.00	**4.1** 0.16	**18.0** 0.71	**79.5** 3.13	**101.6** 4.00	**7.7** 17
QAPL11A204S QAAPL11A204S	2 ¼ in.																		
QAPL11A055S QAAPL11A055S	**55 mm**																		
QAPL13A060S QAAPL13A060S	**60 mm**	22213	**69.9** 2.75	**147.3** 5.80	**96.8** 3.81	**173.0** 6.81	**189.0** 7.44	**235.0** 9.25	**73.7** 2.90	**35.1** 1.38	**16** 5/8	**31.5** 1.24	**91.4** 3.60	**54.6** 2.15	**5.3** 0.21	**17.8** 0.70	**86.1** 3.39	**109.2** 4.30	**10.0** 22
QAPL13A207S QAAPL13A207S	2 7/16 in.																		
QAPL13A208S QAAPL13A208S	2 ½ in.																		
QAPL13A065S QAAPL13A065S	**65 mm**																		

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

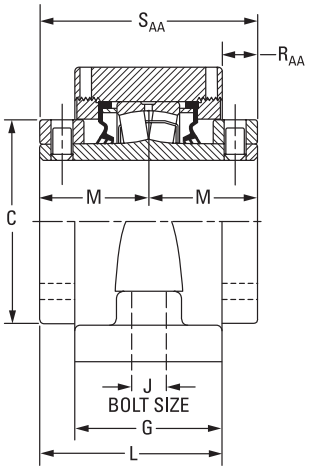
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08-19-13 DRAFT





QA Single-Collar Unit



QAA Double-Collar Unit

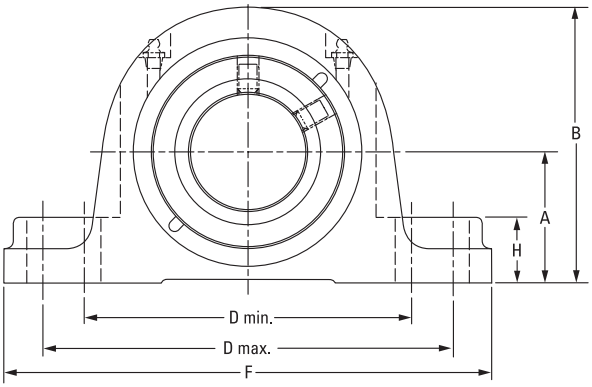
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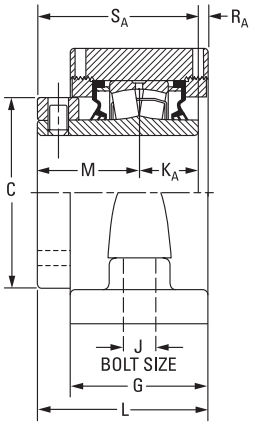
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	K_A	L	M	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAPL15A211S QAAPL15A211S	2 11/16 in.	22215	**82.6** 3.25	**167.4** 6.59	**109.0** 4.29	**195.6** 7.70	**213.4** 8.40	**265.2** 10.44	**76.2** 3.00	**35.1** 1.38	**20** 3/4	**31.8** 1.25	**98.3** 3.87	**60.2** 2.37	**6.4** 0.25	**22.1** 0.87	**91.9** 3.62	**120.4** 4.74	**12.7** 28
QAPL15A212S QAAPL15A212S	2 3/4 in.																		
QAPL15A070S QAAPL15A070S	**70 mm**																		
QAPL15A215S QAAPL15A215S	2 15/16 in.																		
QAPL15A300S QAAPL15A300S	3 in.																		
QAPL15A075S QAAPL15A075S	**75 mm**																		
QAPL18A303S QAAPL18A303S	3 3/16 in.	22218	**95.3** 3.75	**195.3** 7.69	**130.3** 5.13	**235.0** 9.25	**273.1** 10.75	**330.2** 13.00	**86.6** 3.41	**47.8** 1.88	**24** 7/8	**36.6** 1.44	**109.2** 4.30	**65.8** 2.59	**6.9** 0.27	**22.6** 0.89	**102.4** 4.03	**131.6** 5.18	**20.4** 45
QAPL18A304S QAAPL18A304S	3 1/4 in.																		
QAPL18A080S QAAPL18A080S	**80 mm**																		
QAPL18A085S QAAPL18A085S	**85 mm**																		
QAPL18A307S QAAPL18A307S	3 7/16 in.																		
QAPL18A308S QAAPL18A308S	3 1/2 in.																		
QAPL18A090S QAAPL18A090S	**90 mm**																		
QAPL20A315S QAAPL20A315S	3 15/16 in.	22220	**108.0** 4.25	**212.9** 8.38	**152.4** 6.00	**255.0** 10.04	**320.0** 12.60	**362.0** 14.25	**94.7** 3.73	**54.1** 2.13	**24** 1	**41.4** 1.63	**122.9** 4.84	**75.4** 2.97	**6.1** 0.24	**28.2** 1.11	**116.8** 4.60	**150.9** 5.94	**26.8** 59
QAPL20A400S QAAPL20A400S	4 in.																		
QAPL20A100S QAAPL20A100S	**100 mm**																		

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

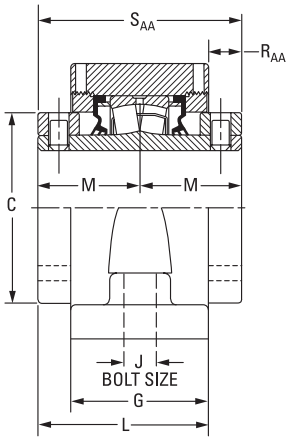
08-19-13 DRAFT

QASN AND QAASN SN-STYLE TWO-BOLT PILLOW BLOCKS – PURE METRIC DESIGN





QA Single-Collar Unit



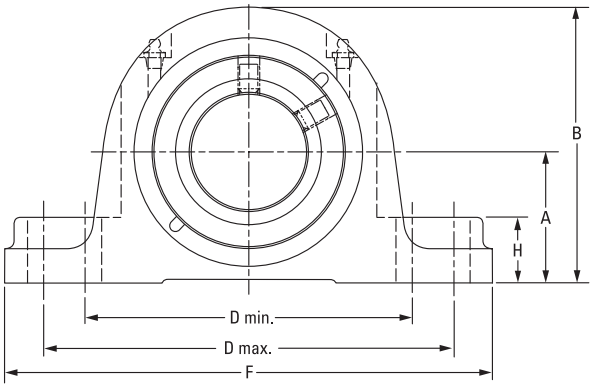
QAA Double-Collar Unit

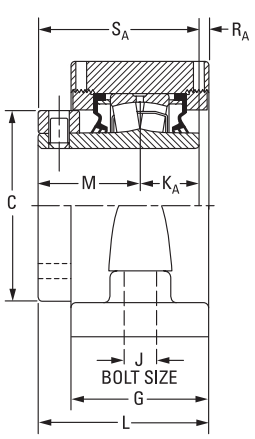
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	K_A	L	M	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QASN08A035S	**35 mm**	22208	**60** 2.36	**111** 4.37	**60.5** 2.38	**159** 6.26	**175** 6.89	**205** 8.07	**62** 2.44	**35** 1.38	**12** ½	**25** 1.00	**75** 2.95	**44** 1.75	**5** 0.20	–	**70** 2.75	–	**10.5** 23
QASN08A107S	1 7/16 in.																		
QASN08A108S	1 ½ in.																		
QASN09A040S	**40 mm**	22209	**60** 2.36	**111** 4.37	**66.8** 2.63	**159** 6.26	**175** 6.89	**205** 8.07	**62** 2.44	**35** 1.38	**12** ½	**25** 1.00	**79** 3.10	**48** 1.88	**6** 0.22	–	**73** 2.88	–	**10.5** 23
QASN09A111S	1 11/16 in.																		
QASN09A112S	1 ¾ in.																		
QASN09A045S	45mm																		
QASN10A115S QAASN10A115S	1 15/16 in.	22210	**70** 2.76	**136** 5.35	**73** 2.87	**183** 7.20	**216** 8.50	**254** 10.00	**68** 2.68	**25** 0.98	**16** 5/8	**25.4** 1	**82** 3.23	**48** 1.87	**9** 0.35	**14** 0.55	**73** 2.87	**95** 3.75	**12.7** 28
QASN10A200S QAASN10A200S	2 in.																		
QASN10A050S QAASN10A050S	**50 mm**																		
QASN11A203S QAASN11A203S	2 3/16 in.	22211	**70** 2.76	**141** 5.55	**83** 3.27	**183** 7.20	**216** 8.50	**254** 10.00	**68** 2.68	**25** 0.98	**16** 5/8	**29** 1.14	**85** 3.35	**51** 2.01	**5** 0.20	**17** 0.67	**80** 3.15	**102** 4.02	**13.2** 29
QASN11A204S QAASN11A204S	2 ¼ in.																		
QASN11A055S QAASN11A055S	**55 mm**																		
QASN13A060S QAASN13A060S	**60 mm**	22213	**80** 3.15	**157** 6.18	**96.8** 3.81	**196** 7.72	**235** 9.25	**275** 10.83	**74** 2.91	**35** 1.38	**16** 5/8	**31** 1.22	**92** 3.62	**55** 2.17	**6** 0.24	**18** 0.71	**86** 3.39	**110** 4.33	**15.9** 35
QASN13A207S QAASN13A207S	2 7/16 in.																		
QASN13A208S QAASN13A208S	2 ½ in.																		
QASN13A065S QAASN13A065S	**65 mm**																		
QASN15A211S QAASN15A211S	2 11/16 in.	22215	**95** 3.74	**183** 7.20	**109.0** 4.29	**241** 9.49	**279** 10.98	**316** 12.44	**76** 2.99	**34** 1.34	**20** ¾	**32** 1.26	**98** 3.86	**60** 2.36	**6** 0.24	**22** 0.87	**92** 3.62	**120** 4.72	**20.9** 46
QASN15A212S QAASN15A212S	2 ¾ in.																		
QASN15A070S QAASN15A070S	**70 mm**																		
QASN15A215S QAASN15A215S	2 15/16 in.																		
QASN15A300S QAASN15A300S	3 in.																		
QASN15A075S QAASN15A075S	**75 mm**																		

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

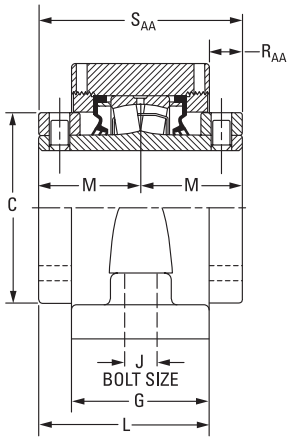
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08-19-13 DRAFT





QA Single-Collar Unit



QAA Double-Collar Unit

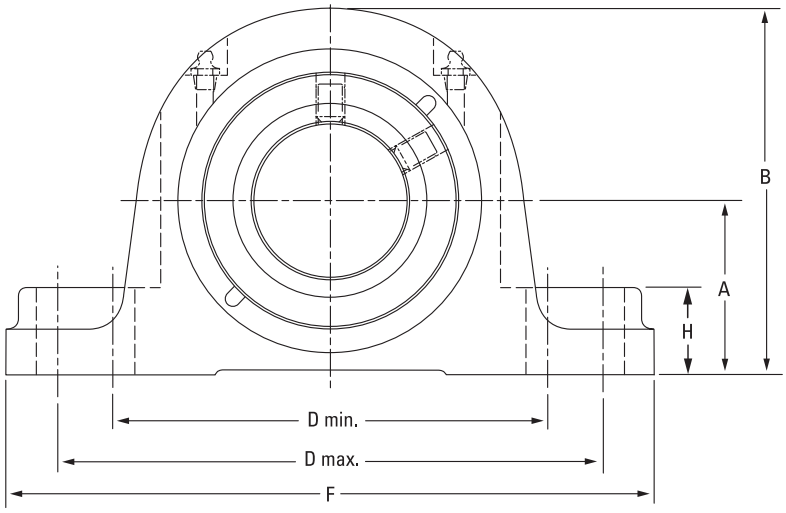
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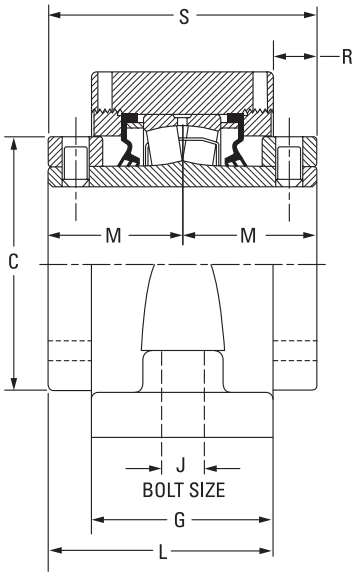
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	K_A	L	M	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QASN18A303S QAASN18A303S	3 3/16 in.	22218	**100** 3.94	**200** 7.87	**130** 5.12	**279** 10.98	**292** 11.50	**345** 13.58	**86** 3.39	**39** 1.54	**20** 3/4	**37** 1.46	**109** 4.29	**66** 2.60	**6** 0.24	**23** 0.91	**102** 4.02	**132** 5.20	**25.5** 56
QASN18A304S QAASN18A304S	3 1/4 in.																		
QASN18A080S QAASN18A080S	**80 mm**																		
QASN18A085S QAASN18A085S	**85 mm**	22218	**112** 4.41	**212** 8.35	**130** 5.12	**279** 10.98	**292** 11.50	**345** 13.58	**86** 3.39	**39** 1.54	**20** 3/4	**37** 1.46	**109** 4.29	**66** 2.60	**6** 0.24	**23** 0.91	**102** 4.02	**132** 5.20	**25.5** 56
QASN18A307S QAASN18A307S	3 7/16 in.	22218	**112** 4.41	**212** 8.35	**130** 5.12	**290** 11.42	**327** 12.87	**380** 14.96	**86** 3.39	**39** 1.54	**24** 7/8	**37** 1.46	**109** 4.29	**66** 2.60	**6** 0.24	**23** 0.91	**102** 4.02	**132** 5.20	**25.5** 56
QASN18A308S QAASN18A308S	3 1/2 in.																		
QASN18A090S QAASN18A090S	**90 mm**																		
QASN20A315S QAASN20A315S	3 15/16 in.	22220	**125** 4.92	**241** 9.49	**152** 5.98	**319** 12.56	**366** 14.41	**410** 16.14	**101** 3.98	**50** 1.97	**24** 7/8	**41** 1.61	**126** 4.96	**75** 2.95	**10** 0.39	**25** 0.98	**117** 4.61	**150** 5.91	**35.9** 79
QASN20A400S QAASN20A400S	4 in.																		
QASN20A100S QAASN20A100S	**100 mm**																		
QAASN22A110S	**110 mm**	22222	**140** 5.51	**255** 10.04	**160** 6.30	**332** 13.07	**365** 14.37	**410** 16.14	**105** 4.13	**39** 1.54	**24** 7/8	–	**133** 5.24	**80** 3.15	–	**28** 1.10	–	**160** 6.30	**35.9** 79
QAASN22A407S	4 7/16 in.	22222	**150** 5.91	**265** 10.43	**160** 6.30	**367** 14.45	**400** 15.75	**445** 17.52	**105** 4.13	**49** 1.93	**24** 7/8	–	**133** 5.24	**80** 3.15	–	**28** 1.10	–	**160** 6.30	**40.0** 88
QAASN22A408S	4 1/2 in.																		
QAASN22A115S	**115 mm**																		
QAASN26A125S	**125 mm**	22226	**150** 5.91	**282** 11.1	**175** 6.89	**402** 15.83	**435** 17.13	**500** 19.69	**113** 4.45	**49** 1.93	**30** 1 1/4	–	**151** 5.94	**94** 3.7	–	**38** 1.5	–	**188** 7.4	**40.0** 88
QAASN26A415S	4 15/16 in.																		
QAASN26A500S	5 in.																		
QAASN26A130S	**130 mm**																		

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

08-19-13 DRAFT

QAAPXT 5000 SERIES TWO-BOLT PILLOW BLOCKS

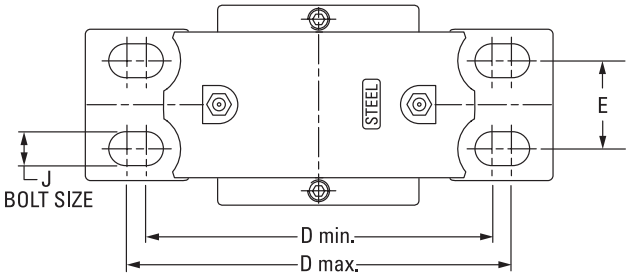


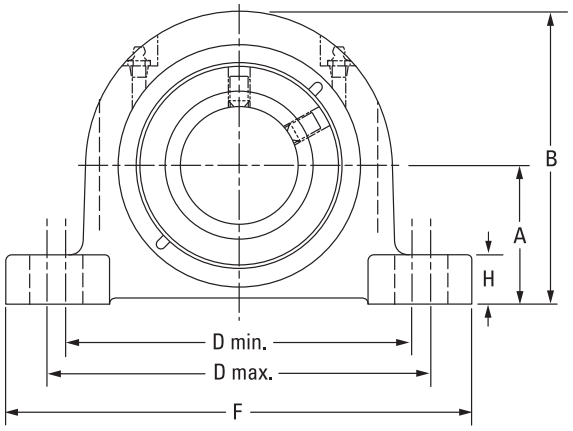


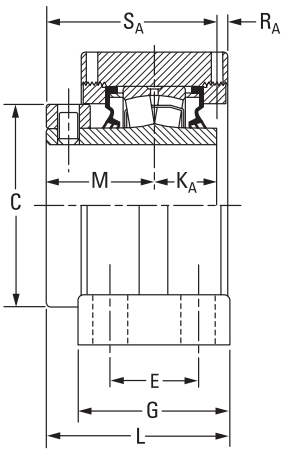
Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	L	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAAPXT13A060S	**60 mm**	22213	**76.2** 3.00	**153.7** 6.05	**96.8** 3.81	**194.6** 7.66	**223.0** 8.78	**285.8** 11.25	**73.7** 2.90	**35.1** 1.38	**20** 3/4	**91.4** 3.60	**54.6** 2.15	**17.8** 0.70	**109.2** 4.30	**10.0** 22
QAAPXT13A207S	2 7/16 in.															
QAAPXT13A208S	2 1/2 in.															
QAAPXT13A065S	**65 mm**															
QAAPXT15A211S	2 11/16 in.	22215	**88.9** 3.50	**173.7** 6.84	**109.0** 4.29	**230.1** 9.06	**265.2** 10.44	**330.2** 13.00	**75.7** 2.98	**35.1** 1.38	**24** 7/8	**98.0** 3.86	**60.2** 2.37	**22.4** 0.88	**120.4** 4.74	**12.7** 28
QAAPXT15A212S	2 3/4 in.															
QAAPXT15A070S	**70 mm**															
QAAPXT15A215S	2 15/16 in.															
QAAPXT15A300S	3 in.															
QAAPXT15A075S	**75 mm**															

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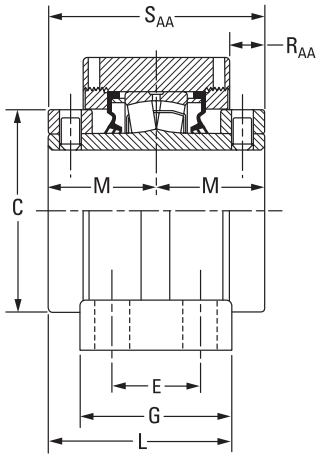
QAPF AND QAAPF FOUR-BOLT PILLOW BLOCKS







QA Single-Collar Unit



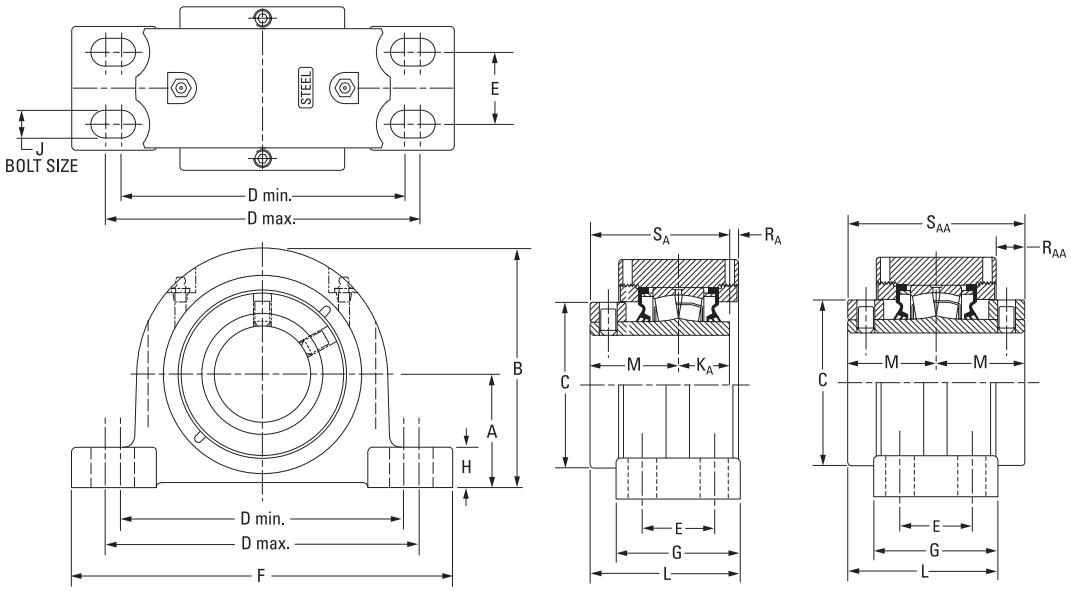
QAA Double-Collar Unit

Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	K_A	L	M	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAPF13A060S QAAPF13A060S	**60 mm**	22213	**69.9** 2.75	**147.3** 5.80	**96.8** 3.81	**174.8** 6.88	**193.8** 7.63	**44.5** 1.75	**235.0** 9.25	**76.2** 3.00	**24.9** 0.98	**16** 5/8	**31.5** 1.24	**92.7** 3.65	**54.6** 2.15	**5.3** 0.21	**17.8** 0.70	**86.1** 3.39	**109.2** 4.30	**9.1** 20
QAPF13A207S QAAPF13A207S	2 7/16 in.																			
QAPF13A208S QAAPF13A208S	2 1/2 in.																			
QAPF13A065S QAAPF13A065S	**65 mm**																			
QAPF15A211S QAAPF15A211S	2 11/16 in.	22215	**82.6** 3.25	**167.6** 6.60	**109.0** 4.29	**193.0** 7.60	**231.1** 9.10	**47.8** 1.88	**265.2** 10.44	**79.5** 3.13	**32.8** 1.29	**16** 5/8	**31.8** 1.25	**100.1** 3.94	**60.2** 2.37	**6.1** 0.24	**22.4** 0.88	**91.9** 3.62	**120.4** 4.74	**12.2** 27
QAPF15A212S QAAPF15A212S	2 3/4 in.																			
QAPF15A070S QAAPF15A070S	**70 mm**																			
QAPF15A215S QAAPF15A215S	2 15/16 in.																			
QAPF15A300S QAAPF15A300S	3 in.																			
QAPF15A075S QAAPF15A075S	**75 mm**																			

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

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QA Single-Collar Unit **QAA Double-Collar Unit**

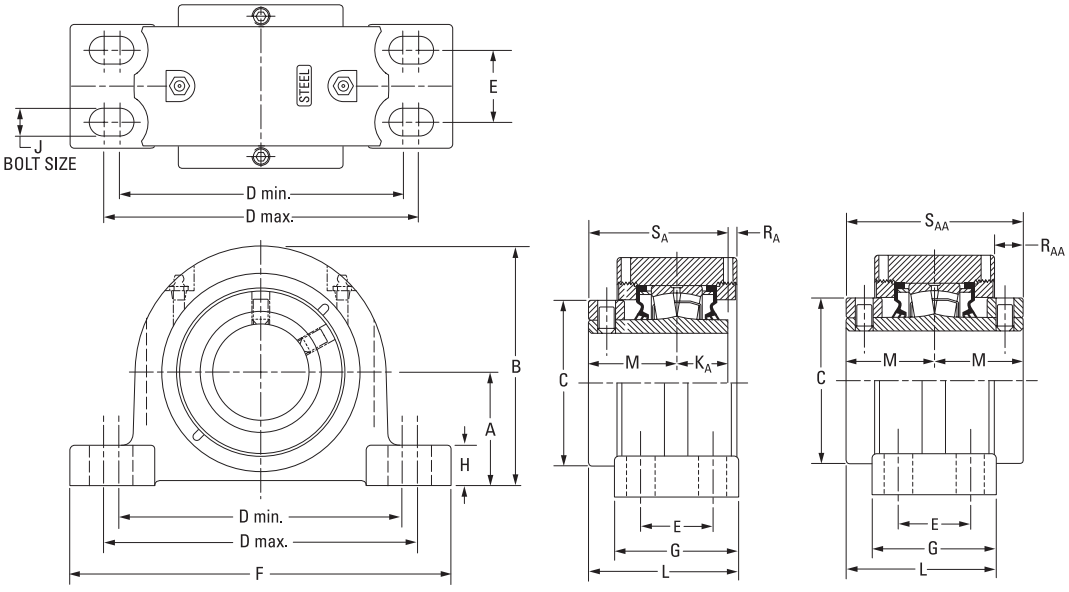
Continued from previous page.

Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	K_A	L	M	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAPF18A303S QAAPF18A303S	3 3/16 in.	22218	**95.3** 3.75	**195.3** 7.69	**130.3** 5.13	**225.6** 8.88	**276.4** 10.88	**50.8** 2.00	**312.4** 12.30	**95.3** 3.75	**39.6** 1.56	**20** 3/4	**36.6** 1.44	**113.5** 4.47	**65.8** 2.59	**7.9** 0.31	**21.3** 0.84	**102.4** 4.03	**131.6** 5.18	**22.2** 49
QAPF18A304S QAAPF18A304S	3 1/4 in.																			
QAPF18A080S QAAPF18A080S	**80 mm**																			
QAPF18A085S QAAPF18A085S	**85 mm**																			
QAPF18A307S QAAPF18A307S	3 7/16 in.																			
QAPF18A308S QAAPF18A308S	3 1/2 in.																			
QAPF18A090S QAAPF18A090S	**90 mm**																			
QAPF20A315S QAAPF20A315S	3 15/16 in.	22220	**108.0** 4.25	**223.0** 8.78	**152.4** 6.00	**276.4** 10.88	**339.9** 13.38	**57.2** 2.25	**378.0** 14.88	**109.5** 4.31	**35.6** 1.40	**20** 3/4	**41.4** 1.63	**130.3** 5.13	**75.4** 2.97	**8.9** 0.35	**25.1** 0.99	**116.6** 4.59	**150.9** 5.94	**30.4** 67
QAPF20A400S QAAPF20A400S	4 in.																			
QAPF20A100S QAAPF20A100S	**100 mm**																			
QAAPF22A110S	**110 mm**	22222	**120.7** 4.75	**233.4** 9.19	**160.0** 6.30	**301.8** 11.88	**368.3** 14.50	**63.5** 2.50	**409.7** 16.13	**120.7** 4.75	**40.1** 1.58	**20** 3/4	–	**140.0** 5.51	**79.5** 3.13	–	**28.7** 1.13	–	**158.8** 6.25	**37.2** 82
QAAPF22A407S	4 7/16 in.																			
QAAPF22A408S	4 1/2 in.																			
QAAPF22A115S	**115 mm**																			
QAAPF26A125S	**125 mm**	22226	**139.7** 5.50	**279.7** 11.01	**175.0** 6.89	**349.3** 13.75	**403.4** 15.88	**69.9** 2.75	**444.5** 17.50	**128.0** 5.04	**39.1** 1.54	**24** 7/8	–	**158.5** 6.24	**94.5** 3.72	–	**36.8** 1.45	–	**189.0** 7.44	**60.8** 134
QAAPF26A415S	4 15/16 in.																			
QAAPF26A500S	5 in.																			
QAAPF26A130S	**130 mm**																			

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

08-19-13 DRAFT

QAPR AND QAAPR FOUR-BOLT PILLOW BLOCKS



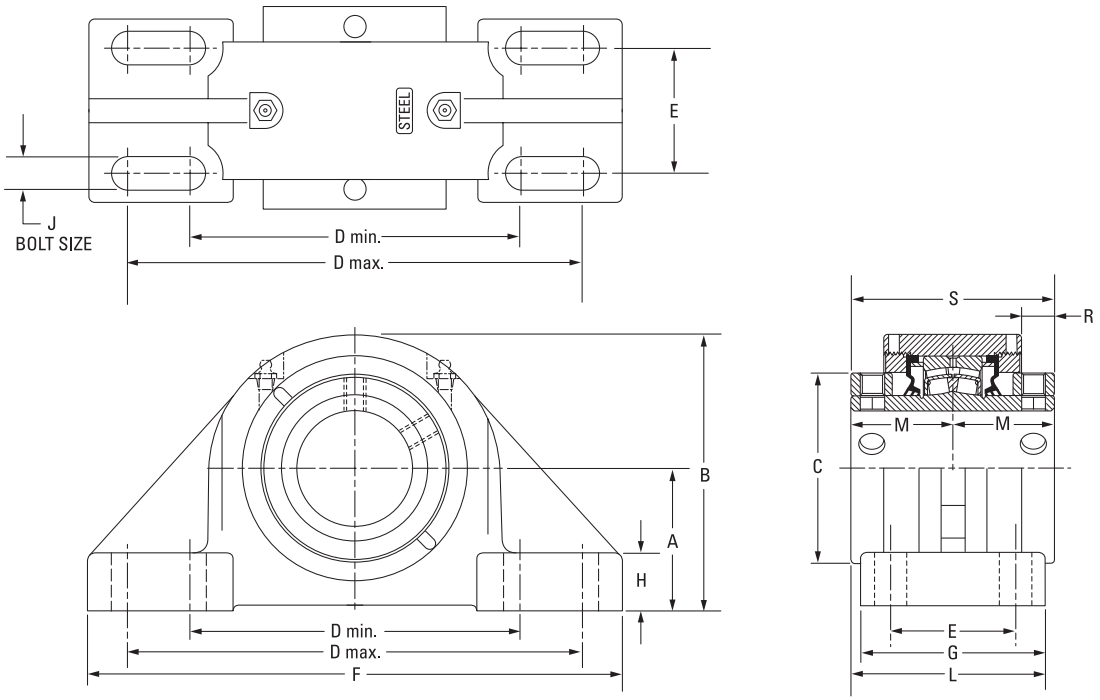
QA Single-Collar Unit **QAA Double-Collar Unit**

Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	K_A	L	M	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAPR13A060S QAAPR13A060S	**60 mm**	22213	**69.9** 2.75	**147.3** 5.80	**96.8** 3.81	**181.1** 7.13	**222.3** 8.75	**47.8** 1.88	**260.4** 10.25	**82.6** 3.25	**24.9** 0.98	**16** 5/8	**31.5** 1.24	**95.8** 3.77	**54.6** 2.15	**5.3** 0.21	**17.8** 0.70	**86.1** 3.39	**109.2** 4.30	**9.1** 20
QAPR13A207S QAAPR13A207S	2 7/16 in.																			
QAPR13A208S QAAPR13A208S	2 1/2 in.																			
QAPR13A065S QAAPR13A065S	**65 mm**																			
QAPR15A211S QAAPR15A211S	2 11/16 in.	22215	**79.5** 3.13	**164.3** 6.47	**109.0** 4.29	**203.2** 8.00	**243.8** 9.60	**54.1** 2.13	**275.1** 10.83	**85.9** 3.38	**29.5** 1.16	**16** 5/8	**31.8** 1.25	**102.1** 4.02	**60.2** 2.37	**6.1** 0.24	**22.4** 0.88	**91.9** 3.62	**120.4** 4.74	**12.2** 27
QAPR15A212S QAAPR15A212S	2 3/4 in.																			
QAPR15A070S QAAPR15A070S	**70 mm**																			
QAPR15A215S QAAPR15A215S	2 15/16 in.																			
QAPR15A300S QAAPR15A300S	3 in.																			
QAPR15A075S QAAPR15A075S	**75 mm**																			
QAPR18A303S QAAPR18A303S	3 3/16 in.	22218	**95.3** 3.75	**195.3** 7.69	**130.3** 5.13	**235.0** 9.25	**285.8** 11.25	**60.5** 2.38	**346.2** 13.63	**95.3** 3.75	**39.6** 1.56	**20** 3/4	**36.6** 1.44	**113.5** 4.47	**65.8** 2.59	**7.9** 0.31	**21.3** 0.84	**102.4** 4.03	**131.6** 5.18	**22.2** 49
QAPR18A304S QAAPR18A304S	3 1/4 in.																			
QAPR18A080S QAAPR18A080S	**80 mm**																			
QAPR18A085S QAAPR18A085S	**85 mm**																			
QAPR18A307S QAAPR18A307S	3 7/16 in.																			
QAPR18A308S QAAPR18A308S	3 1/2 in.																			
QAPR18A090S QAAPR18A090S	**90 mm**																			

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

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QAAPX 5000 SERIES FOUR-BOLT PILLOW BLOCKS

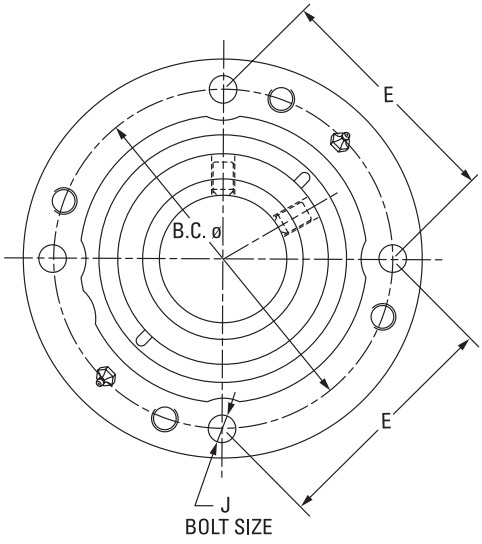


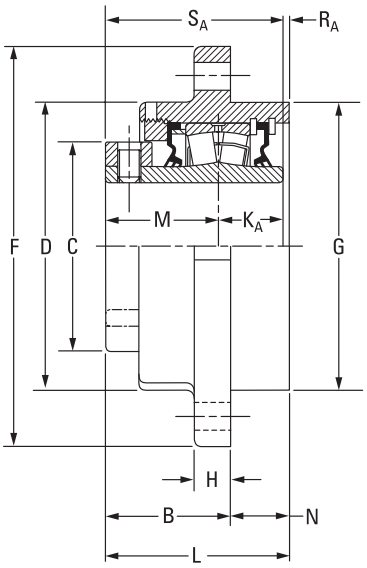
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	L	M	R	S	Wt.
	mm in.		mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg lbs.
QAAPX13A060S	**60 mm**	22213	**76.2** 3.00	**153.7** 6.05	**96.8** 3.81	**176.3** 6.94	**242.8** 9.56	**66.8** 2.63	**285.8** 11.25	**98.6** 3.88	**31.0** 1.22	**20** 3/4	**103.9** 4.09	**54.6** 2.15	**17.8** 0.70	**109.2** 4.30	**13.2** 29
QAAPX13A207S	2 7/16 in.																
QAAPX13A208S	2 1/2 in.																
QAAPX13A065S	**65 mm**																
QAAPX15A211S	2 11/16 in.	22215	**88.9** 3.50	**173.5** 6.83	**109.0** 4.29	**230.1** 9.06	**265.2** 10.44	**69.9** 2.75	**330.2** 13.00	**108.0** 4.25	**39.1** 1.54	**20** 3/4	**114.3** 4.50	**60.2** 2.37	**21.3** 0.84	**120.4** 4.74	**20.4** 45
QAAPX15A212S	2 3/4 in.																
QAAPX15A070S	**70 mm**																
QAAPX15A215S	2 15/16 in.																
QAAPX15A300S	3 in.																
QAAPX15A075S	**75 mm**																
QAAPX18A303S	3 3/16 in.	22218	**101.6** 4.00	**201.2** 7.92	**130.3** 5.13	**274.6** 10.81	**309.6** 12.19	**76.2** 3.00	**381.0** 15.00	**120.7** 4.75	**38.1** 1.50	**20** 3/4	**126.2** 4.97	**65.8** 2.59	**21.3** 0.84	**131.6** 5.18	**29.0** 64
QAAPX18A304S	3 1/4 in.																
QAAPX18A080S	**80 mm**																
QAAPX18A085S	**85 mm**																
QAAPX18A307S	3 7/16 in.																
QAAPX18A308S	3 1/2 in.																
QAAPX18A090S	**90 mm**																
QAAPX20A315S	3 15/16 in.	22220	**127.0** 5.00	**239.8** 9.44	**152.4** 6.00	**317.5** 12.50	**355.6** 14.00	**88.9** 3.50	**425.5** 16.75	**139.7** 5.50	**41.4** 1.63	**24** 7/8	**145.0** 5.71	**75.2** 2.96	**25.4** 1.00	**150.4** 5.92	**44.9** 99
QAAPX20A400S	4 in.																
QAAPX20A100S	**100 mm**																
QAAPX22A110S	**110 mm**	22222	**146.1** 5.75	**273.8** 10.78	**159.8** 6.29	**354.1** 13.94	**395.2** 15.56	**101.6** 4.00	**469.9** 18.50	**158.8** 6.25	**45.7** 1.80	**24** 1	**158.8** 6.25	**79.5** 3.13	**28.7** 1.13	**158.8** 6.25	**63.0** 139
QAAPX22A407S	4 7/16 in.																
QAAPX22A408S	4 1/2 in.																
QAAPX22A115S	**115 mm**																
QAAPX26A125S	**125 mm**	22226	**155.7** 6.13	**283.2** 11.15	**174.8** 6.88	**387.4** 15.25	**425.5** 16.75	**108.0** 4.25	**514.4** 20.25	**171.5** 6.75	**50.8** 2.00	**28.6** 1 1/8	**180.3** 7.10	**94.5** 3.72	**37.3** 1.47	**189.0** 7.44	**67.6** 149
QAAPX26A415S	4 15/16 in.																
QAAPX26A500S	5 in.																
QAAPX26A130S	**130 mm**																

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

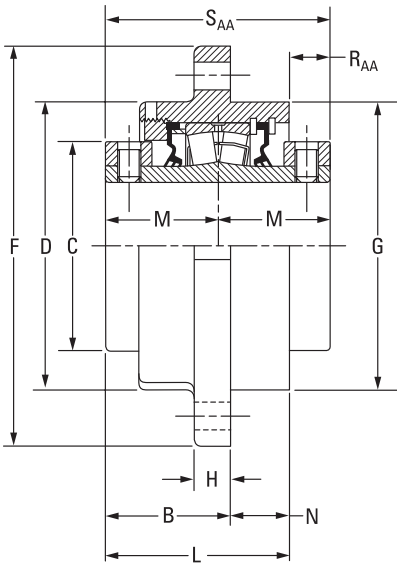
08-19-13 DRAFT

QAC AND QAAC PILOTED FLANGE CARTRIDGES





QA Single-Collar Unit



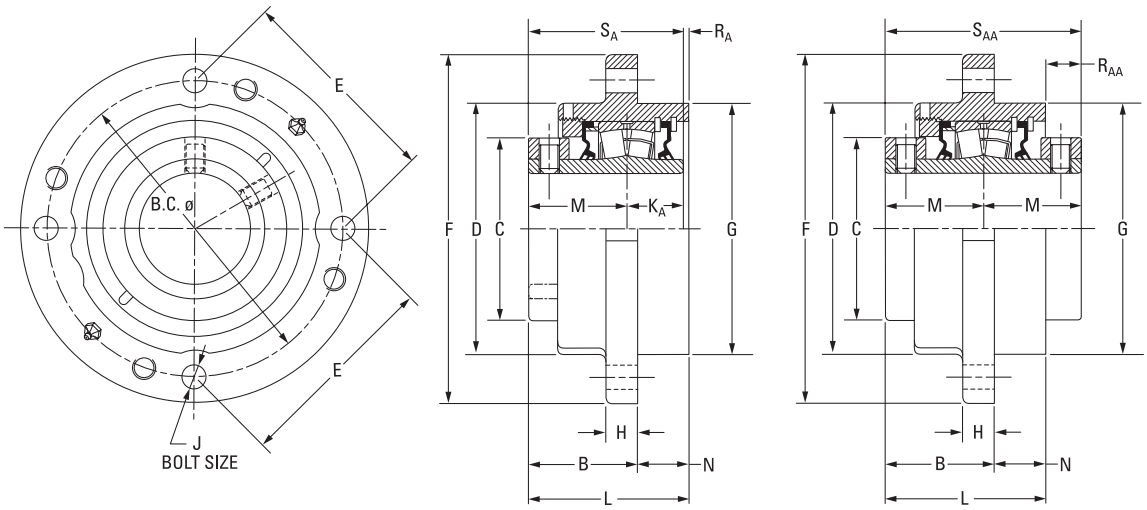
QAA Double-Collar Unit

Bearing Part No.[1]	Shaft Dia.	Bearing No.	B FIX	B EXP	B.C.	C	D	E	F	G[2]	H	J	K_A	L FIX	L EXP	M	N	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg lbs.
QAC08A035S	**35 mm**	22208	**49.8** 1.96	**51.8** 2.04	**111.3** 4.38	**60.5** 2.38	**92.2** 3.63	**78.5** 3.09	**133.4** 5.25	**92.1** 3.625	**12.7** 0.50	**10** 7/16	**25.4** 1.00	**73.7** 2.90	**75.7** 2.98	**44.5** 1.75	**23.9** 0.94	**3.8** 0.15	–	**69.9** 2.75	–	**3.6** 8
QAC08A107S	1 7/16 in.																					
QAC08A108S	1 1/2 in.																					
QAC09A040S	**40 mm**	22209	**54.6** 2.15	**56.6** 2.23	**130.3** 5.13	**66.8** 2.63	**111.3** 4.38	**91.9** 3.62	**155.7** 6.13	**108.0** 4.250	**12.7** 0.50	**10** 7/16	**25.4** 1.00	**77.0** 3.03	**78.2** 3.08	**47.8** 1.88	**22.4** 0.88	**3.8** 0.15	–	**73.2** 2.88	–	**4.1** 9
QAC09A111S	1 11/16 in.																					
QAC09A112S	1 3/4 in.																					
QAC09A045S	**45 mm**																					
QAC10A115S QAAC10A115S	1 15/16 in.	22210	**50.5** 1.99	**52.6** 2.07	**136.7** 5.38	**73.2** 2.88	**113.5** 4.47	**96.5** 3.80	**162.1** 6.38	**114.3** 4.500	**16.0** 0.63	**10** 7/16	**25.4** 1.00	**77.5** 3.05	**79.5** 3.13	**47.5** 1.87	**26.9** 1.06	**4.6** 0.18	**18.5** 0.73	**72.9** 2.87	**95.3** 3.75	**4.5** 10
QAC10A200S QAAC10A200S	2 in.																					
QAC10A050S QAAC10A050S	**50 mm**																					
QAC11A203S QAAC11A203S	2 3/16 in.	22211	**54.4** 2.14	**56.4** 2.22	**152.4** 6.00	**82.6** 3.25	**127.0** 5.00	**107.7** 4.24	**185.4** 7.30	**127.0** 5.000	**14.7** 0.58	**12** 1/2	**28.7** 1.13	**83.1** 3.27	**85.1** 3.35	**50.8** 2.00	**28.7** 1.13	**3.6** 0.14	**18.5** 0.73	**79.5** 3.13	**101.6** 4.00	**5.9** 13
QAC11A204S QAAC11A204S	2 1/4 in.																					
QAC11A055S QAAC11A055S	**55 mm**																					
QAC13A060S QAAC13A060S	**60 mm**	22213	**60.5** 2.38	**62.5** 2.46	**165.1** 6.50	**96.8** 3.81	**139.7** 5.50	**116.8** 4.60	**193.8** 7.63	**139.7** 5.500	**17.5** 0.69	**12** 1/2	**31.5** 1.24	**88.9** 3.50	**90.9** 3.58	**54.6** 2.15	**28.7** 1.13	**3.0** 0.12	**20.3** 0.80	**86.1** 3.39	**109.2** 4.30	**7.3** 16
QAC13A207S QAAC13A207S	2 7/16 in.																					
QAC13A208S QAAC13A208S	2 1/2 in.																					
QAC13A065S QAAC13A065S	**65 mm**																					

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).
[2]Pilot tolerance: +0/-0.051 mm (+0/-0.002 in.).
[3]Six-bolt housing.

Continued on next page.

08-19-13 DRAFT



QA Single-Collar Unit **QAA Double-Collar Unit**

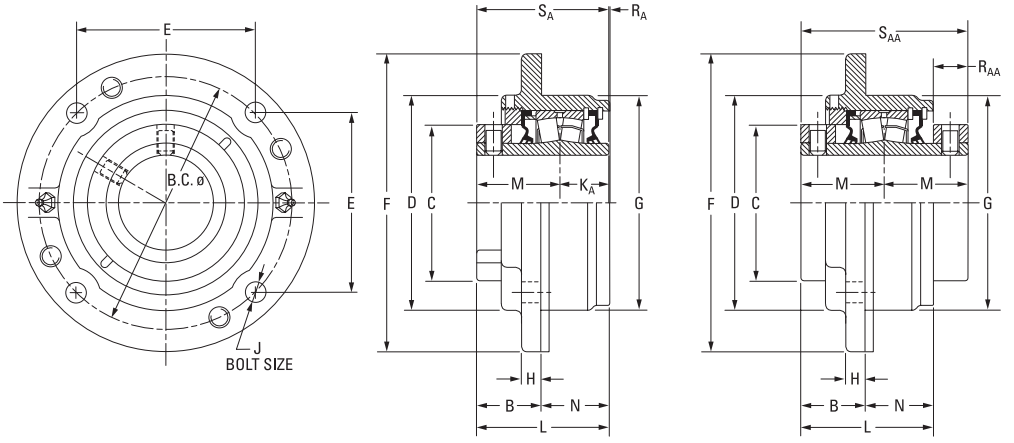
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Bearing Part No.[1]	Shaft Dia.	Bearing No.	B FIX	B EXP	B.C.	C	D	E	F	G[2]	H	J	K_A	L FIX	L EXP	M	N	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAC15A211S QAAC15A211S	2 11/16 in.	22215	**62.5** 2.46	**64.5** 2.54	**190.5** 7.50	**109.0** 4.29	**162.1** 6.38	**134.6** 5.30	**222.3** 8.75	**161.9** 6.375	**20.6** 0.81	**16** 5/8	**31.8** 1.25	**94.2** 3.71	**96.3** 3.79	**60.2** 2.37	**31.8** 1.25	**2.3** 0.09	**21.6** 0.85	**91.9** 3.62	**120.4** 4.74	**10.0** 22
QAC15A212S QAAC15A212S	2 3/4 in.																					
QAC15A070S QAAC15A070S	**70 mm**																					
QAC15A215S QAAC15A215S	2 15/16 in.																					
QAC15A300S QAAC15A300S	3 in.																					
QAC15A075S QAAC15A075S	**75 mm**																					
QAC18A303S QAAC18A303S	3 3/16 in.	22218	**73.2** 2.88	**75.2** 2.96	**219.2** 8.63	**130.3** 5.13	**187.5** 7.38	**154.9** 6.10	**262.6** 10.34	**187.3** 7.375	**25.4** 1.00	**20** 3/4	**36.6** 1.44	**106.4** 4.19	**108.5** 4.27	**65.8** 2.59	**33.3** 1.31	**4.1** 0.16	**25.1** 0.99	**102.4** 4.03	**131.6** 5.18	**14.5** 32
QAC18A304S QAAC18A304S	3 1/4 in.																					
QAC18A080S QAAC18A080S	**80 mm**																					
QAC18A085S QAAC18A085S	**85 mm**																					
QAC18A307S QAAC18A307S	3 7/16 in.																					
QAC18A308S QAAC18A308S	3 1/2 in.																					
QAC18A090S QAAC18A090S	**90 mm**																					
QAC20A315S QAAC20A315S	3 15/16 in.	22220	**72.1** 2.84	**74.2** 2.92	**238.3** 9.38	**152.4** 6.00	**206.5** 8.13	**168.4** 6.63	**276.4** 10.88	**206.4** 8.125	**25.4** 1.00	**20** 3/4	**41.4** 1.63	**126.0** 4.96	**128.0** 5.04	**75.4** 2.97	**54.1** 2.13	**9.4** 0.37	**24.9** 0.98	**116.6** 4.59	**150.9** 5.94	**19.5** 43
QAC20A400S QAAC20A400S	4 in.																					
QAC20A100S QAAC20A100S	**100 mm**																					
QAAC22A110S	**110 mm**	22222	**78.0** 3.07	**80.0** 3.15	**298.5** 11.75[3]	**160.0** 6.30	**254.0** 10.00	**149.4** 5.88[3]	**342.9** 13.50	**260.4** 10.250	**25.4** 1.00	**20** 3/4[3]	–	**126.2** 4.97	**128.3** 5.05	**79.5** 3.13	**48.3** 1.90	–	**32.8** 1.29	–	**158.8** 6.25	**32.7** 72
QAAC22A407S[3]	4 7/16 in.																					
QAAC22A408S[3]	4 1/2 in.																					
QAAC22A115S[3]	**115 mm**																					

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).
[2]Pilot tolerance: +0/-0.051 mm (+0/-0.002 in.).
[3]Six-bolt housing.

08-19-13 DRAFT

QACW AND QAACW PILOTED FLANGE CARTRIDGES



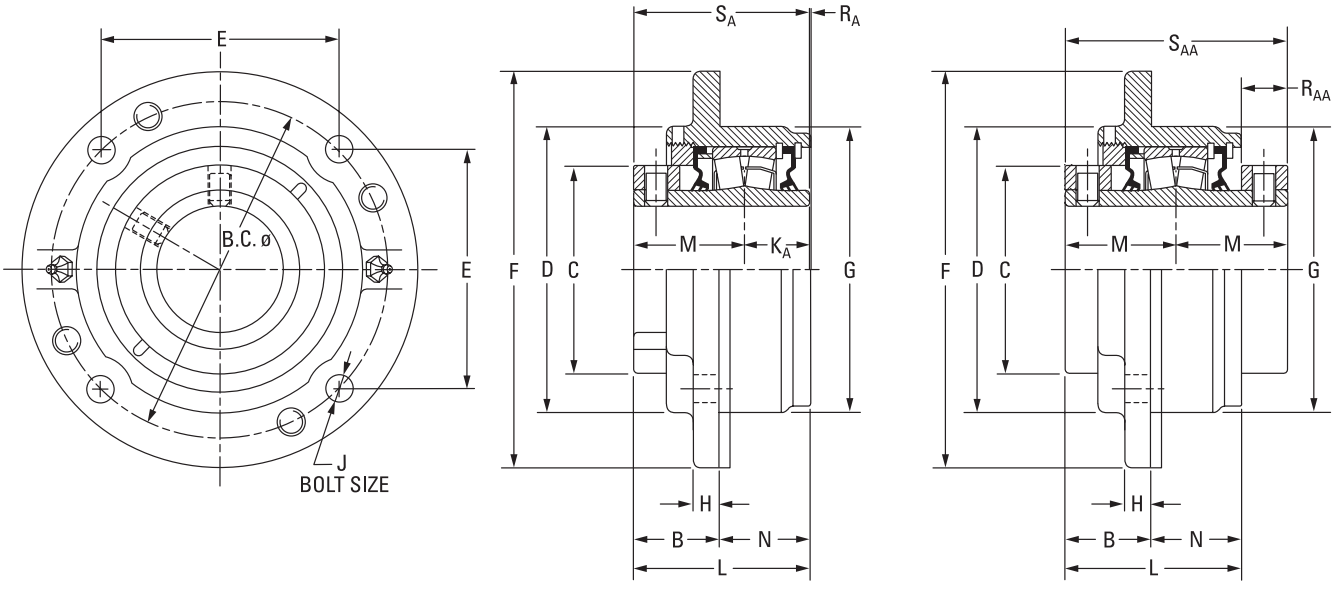
QA Single-Collar Unit **QAA Double-Collar Unit**

Bearing Part No.[1]	Shaft Dia.	Bearing No.	B FIX	B EXP	B.C.	C	D	E	F	G[2]	H	J	K_A	L FIX	L EXP	M	N	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QACW08A035S	**35 mm**	22208	**38.9** 1.53	**40.9** 1.61	**111.3** 4.38	**60.5** 2.38	**92.2** 3.63	**78.5** 3.09	**133.4** 5.25	**92.1** 3.625	**12.7** 0.50	**10** 7/16	**25.4** 1.00	**73.7** 2.90	**75.7** 2.98	**44.5** 1.75	**35.1** 1.38	**3.8** 0.15	–	**69.9** 2.75	–	**3.6** 8
QACW08A107S	1 7/16 in.																					
QACW08A108S	1 1/2 in.																					
QACW09A040S	**40 mm**	22209	**38.9** 1.53	**40.1** 1.58	**130.3** 5.13	**66.8** 2.63	**111.3** 4.38	**91.9** 3.62	**155.7** 6.13	**108.0** 4.250	**10.2** 0.40	**10** 7/16	**25.4** 1.00	**77.0** 3.03	**78.2** 3.08	**47.8** 1.88	**38.1** 1.5	**4.1** 0.16	–	**73.2** 2.88	–	**4.1** 9
QACW09A111S	1 11/16 in.																					
QACW09A112S	1 3/4 in.																					
QACW09A045S	**45 mm**																					
QACW10A115S QAACW10A115S	1 15/16 in.	22210	**35.3** 1.39	**37.3** 1.47	**136.7** 5.38	**73.2** 2.88	**113.5** 4.47	**96.5** 3.80	**162.1** 6.38	**114.3** 4.500	**9.7** 0.38	**10** 7/16	**25.4** 1.00	**73.4** 2.89	**75.4** 2.97	**47.5** 1.87	**38.1** 1.50	**0.5** 0.02	**22.6** 0.89	**72.9** 2.87	**95.3** 3.75	**4.5** 10
QACW10A200S QAACW10A200S	2 in.																					
QACW10A050S QAACW10A050S	**50 mm**																					
QACW11A203S QAACW11A203S	2 3/16 in.	22211	**38.9** 1.53	**40.9** 1.61	**152.4** 6.00	**82.6** 3.25	**126.7** 4.99	**107.7** 4.24	**181.1** 7.13	**127.0** 5.000	**14.2** 0.56	**12** 1/2	**28.7** 1.13	**80.3** 3.16	**82.3** 3.24	**50.8** 2.00	**41.4** 1.63	**0.8** 0.03	**14.7** 0.58	**79.5** 3.13	**101.6** 4.00	**5.9** 13
QACW11A204S QAACW11A204S	2 1/4 in.																					
QACW11A055S QAACW11A055S	**55 mm**																					
QACW13A060S QAACW13A060S	**60 mm**	22213	**47.2** 1.86	**49.3** 1.94	**165.1** 6.50	**96.8** 3.81	**139.7** 5.50	**116.8** 4.60	**193.8** 7.63	**139.7** 5.500	**12.7** 0.50	**12** 1/2	**31.5** 1.24	**90.2** 3.55	**92.2** 3.63	**54.6** 2.15	**42.9** 1.69	**4.3** 0.17	**19.1** 0.75	**86.1** 3.39	**109.2** 4.30	**7.3** 16
QACW13A207S QAACW13A207S	2 7/16 in.																					
QACW13A208S QAACW13A208S	2 1/2 in.																					
QACW13A065S QAACW13A065S	**65 mm**																					
QACW15A211S QAACW15A211S	2 11/16 in.	22215	**46.0** 1.81	**48.0** 1.89	**190.5** 7.50	**109.0** 4.29	**162.1** 6.38	**134.6** 5.30	**222.3** 8.75	**161.9** 6.375	**12.7** 0.50	**16** 5/8	**31.8** 1.25	**93.5** 3.68	**95.5** 3.76	**60.2** 2.37	**47.8** 1.88	**1.5** 0.06	**26.9** 1.06	**91.9** 3.62	**120.4** 4.74	**10.0** 22
QACW15A212S QAACW15A212S	2 3/4 in.																					
QACW15A070S QAACW15A070S	**70 mm**																					
QACW15A215S QAACW15A215S	2 15/16 in.																					
QACW15A300S QAACW15A300S	3 in.																					
QACW15A075S QAACW15A075S	**75 mm**																					

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).
[2]Pilot tolerance: +0/-0.051 mm (+0/-0.002 in.).
[3]Six-bolt housing.

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08-19-13 DRAFT



QA Single-Collar Unit **QAA Double-Collar Unit**

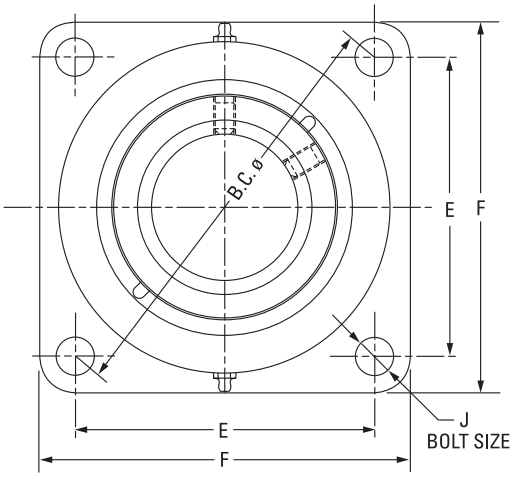
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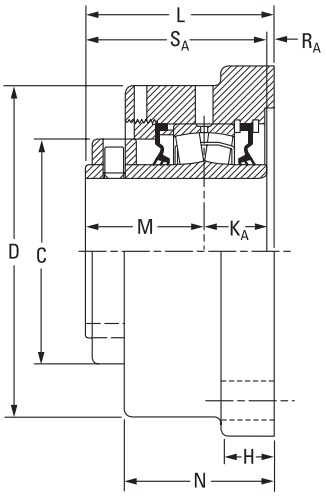
Bearing Part No.[1]	Shaft Dia.	Bearing No.	B FIX	B EXP	B.C.	C	D	E	F	G[2]	H	J	K_A	L FIX	L EXP	M	N	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QACW18A303S QAACW18A303S	3 3/16 in.	22218	**58.2** 2.29	**60.2** 2.37	**219.2** 8.63	**130.3** 5.13	**187.5** 7.38	**154.9** 6.10	**260.4** 10.25	**187.3** 7.375	**22.4** 0.88	**20** 3/4	**36.6** 1.44	**105.9** 4.17	**108.0** 4.25	**65.8** 2.59	**47.8** 1.88	**3.3** 0.13	**21.3** 0.84	**102.4** 4.03	**131.6** 5.18	**14.5** 32
QACW18A304S QAACW18A304S	3 1/4 in.																					
QACW18A080S QAACW18A080S	**80 mm**																					
QACW18A085S QAACW18A085S	**85 mm**																					
QACW18A307S QAACW18A307S	3 7/16 in.																					
QACW18A308S QAACW18A308S	3 1/2 in.																					
QACW18A090S QAACW18A090S	**90 mm**																					
QACW20A315S QAACW20A315S	3 15/16 in.	22220	**65.5** 2.58	**67.6** 2.66	**238.3** 9.38	**152.4** 6.00	**206.5** 8.13	**168.4** 6.63	**276.4** 10.88	**206.4** 8.125	**25.4** 1.00	**20** 3/4	**41.4** 1.63	**123.4** 4.86	**125.5** 4.94	**75.4** 2.97	**57.9** 2.28	**6.9** 0.27	**30.2** 1.19	**116.6** 4.59	**150.9** 5.94	**19.5** 43
QACW20A400S QAACW20A400S	4 in.																					
QACW20A100S QAACW20A100S	**100 mm**																					
QAACW22A110S	**110 mm**	22222	**62.0** 2.44	**64.0** 2.52	**298.5** 11.75[3]	**160.0** 6.30	**254.0** 10.00	**149.4** 5.88[3]	**342.9** 13.50	**260.4** 10.250	**25.4** 1.00	**20** 3/4[3]	–	**130.0** 5.12	**132.1** 5.20	**79.5** 3.13	**68.3** 2.69	–	**28.7** 1.13	–	**158.8** 6.25	**32.7** 72
QAACW22A407S[3]	4 7/16 in.																					
QAACW22A408S[3]	4 1/2 in.																					
QAACW22A115S[3]	**115 mm**																					
QAACW26A125S[3]	**125 mm**	22226	**73.7** 2.90	**75.7** 2.98	**323.9** 12.75[3]	**175.0** 6.89	**266.7** 10.50	**162.1** 6.38[3]	**374.7** 14.75	**279.4** 11.000	**26.2** 1.03	**24** 7/8[3]	–	**153.2** 6.03	**155.2** 6.11	**94.5** 3.72	**78.0** 3.07	–	**35.8** 1.41	–	**189.0** 7.44	**46.3** 102
QAACW26A415S[3]	4 15/16 in.																					
QAACW26A500S[3]	5 in.																					
QAACW26A130S[3]	**130 mm**																					

[1] Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).
[2] Pilot tolerance: +0/-0.051 mm (+0/-0.002 in.).
[3] Six-bolt housing.

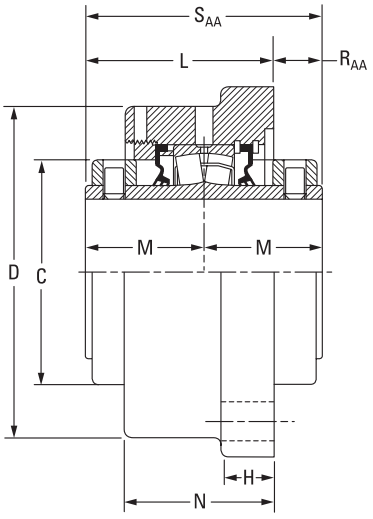
08-19-13 DRAFT

QAF AND QAAF SQUARE FLANGE BLOCKS





QA Single-Collar Unit



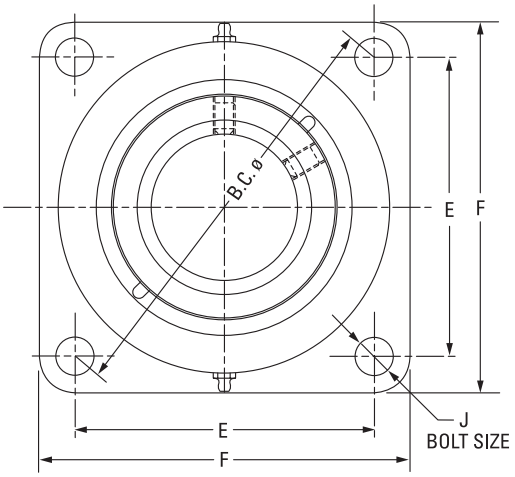
QAA Double-Collar Unit

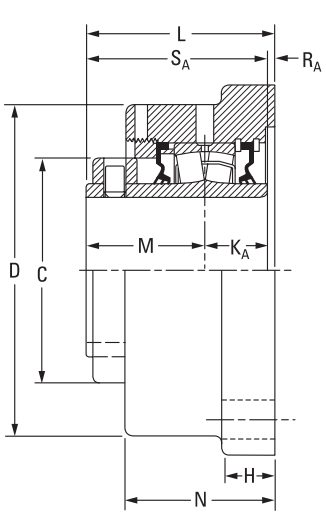
Bearing Part No.[1]	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	H	J	K_A	L FIX	L EXP	M	N	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAF08A035S	**35 mm**	22208	**125.7** 4.95	**60.5** 2.38	**93.7** 3.69	**88.9** 3.50	**117.6** 4.63	**22.4** 0.88	**12** ½	**25.4** 1.00	**72.9** 2.87	**74.9** 2.95	**44.5** 1.75	**57.2** 2.25	**3.0** 0.12	–	**69.9** 2.75	–	**4.5** 10
QAF08A107S	1 7/16 in.																		
QAF08A108S	1 ½ in.	22208	**148.3** 5.84	**60.5** 2.38	**108.0** 4.25	**104.9** 4.13	**136.7** 5.38	**22.4** 0.88	**12** ½	**25.4** 1.00	**73.7** 2.90	**75.7** 2.98	**44.5** 1.75	**59.4** 2.34	**3.8** 0.15	–	**69.9** 2.75	–	**4.5** 10
QAF09A040S	**40 mm**	22209	**148.3** 5.84	**66.8** 2.63	**118.4** 4.66	**104.9** 4.13	**136.7** 5.38	**22.4** 0.88	**12** ½	**25.4** 1.00	**79.5** 3.13	**81.5** 3.21	**47.8** 1.88	**63.5** 2.50	**6.4** 0.25	–	**73.2** 2.88	–	**5.0** 11
QAF09A111S	1 11/16 in.																		
QAF09A112S	1 ¾ in.	22209	**157.2** 6.19	**66.8** 2.63	**118.4** 4.66	**111.3** 4.38	**143.0** 5.63	**22.4** 0.88	**12** ½	**25.4** 1.00	**79.5** 3.13	**81.5** 3.21	**47.8** 1.88	**63.5** 2.50	**6.4** 0.25	–	**73.2** 2.88	–	**5.0** 11
QAF09A045S	**45 mm**																		
QAF10A115S QAAF10A115S	1 15/16 in.	22210	**157.2** 6.19	**73.2** 2.88	**120.7** 4.75	**111.3** 4.38	**139.7** 5.50	**22.4** 0.88	**12** ½	**25.4** 1.00	**80.8** 3.18	**82.8** 3.26	**47.5** 1.87	**65.0** 2.56	**7.9** 0.31	**15.2** 0.60	**72.9** 2.87	**95.3** 3.75	**5.0** 11
QAF10A200S QAAF10A200S	2 in.																		
QAF10A050S QAAF10A050S	**50 mm**																		
QAF11A203S QAAF11A203S	2 3/16 in.	22211	**175.0** 6.89	**82.6** 3.25	**130.3** 5.13	**124.0** 4.88	**157.2** 6.19	**25.4** 1.00	**16** 5/8	**28.7** 1.13	**83.1** 3.27	**85.1** 3.35	**50.8** 2.00	**66.8** 2.63	**3.8** 0.15	**18.5** 0.73	**79.5** 3.13	**101.6** 4.00	**6.4** 14
QAF11A204S QAAF11A204S	2 ¼ in.																		
QAF11A055S QAAF11A055S	**55 mm**																		
QAF13A060S QAAF13A060S	**60 mm**	22213	**193.0** 7.60	**96.8** 3.81	**146.1** 5.75	**136.7** 5.38	**168.4** 6.63	**25.4** 1.00	**16** 5/8	**31.5** 1.24	**89.2** 3.51	**91.2** 3.59	**54.6** 2.15	**72.4** 2.85	**3.0** 0.12	**20.1** 0.79	**86.1** 3.39	**109.2** 4.30	**7.7** 17
QAF13A207S QAAF13A207S	2 7/16 in.																		
QAF13A208S QAAF13A208S	2 ½ in.																		
QAF13A065S QAAF13A065S	**65 mm**																		

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

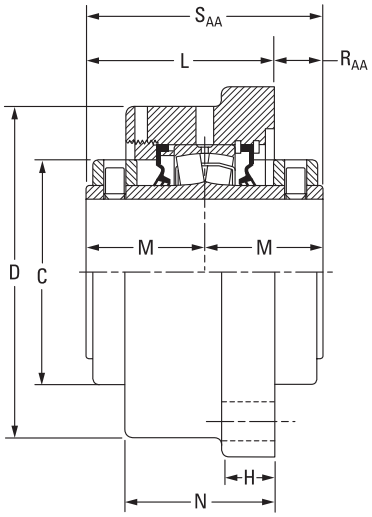
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08-19-13 DRAFT





QA Single-Collar Unit



QAA Double-Collar Unit

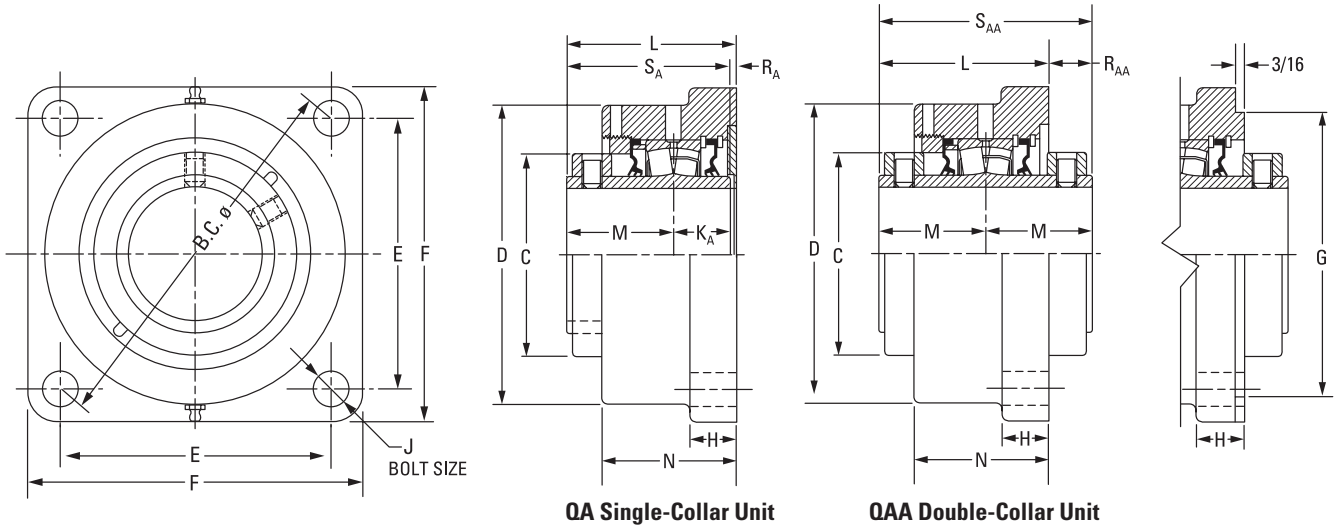
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Bearing Part No.[1]	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	H	J	K_A	L FIX	L EXP	M	N	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAF15A211S QAAF15A211S	2 11/16 in.	22215	**215.4** 8.48	**109.0** 4.29	**168.9** 6.65	**152.4** 6.00	**189.0** 7.44	**26.9** 1.06	**20** 3/4	**31.8** 1.25	**95.8** 3.77	**97.8** 3.85	**60.2** 2.37	**76.2** 3.00	**3.8** 0.15	**24.6** 0.97	**91.9** 3.62	**120.4** 4.74	**10.4** 23
QAF15A212S QAAF15A212S	2 3/4 in.																		
QAF15A070S QAAF15A070S	**70 mm**																		
QAF15A215S QAAF15A215S	2 15/16 in.																		
QAF15A300S QAAF15A300S	3 in.																		
QAF15A075S QAAF15A075S	**75 mm**																		
QAF18A303S QAAF18A303S	3 3/16 in.	22218	**251.7** 9.91	**130.3** 5.13	**193.8** 7.63	**177.8** 7.00	**219.2** 8.63	**33.3** 1.31	**20** 3/4	**36.6** 1.44	**107.2** 4.22	**109.2** 4.30	**65.8** 2.59	**84.1** 3.31	**4.8** 0.19	**24.4** 0.96	**102.4** 4.03	**131.6** 5.18	**15.9** 35
QAF18A304S QAAF18A304S	3 1/4 in.																		
QAF18A080S QAAF18A080S	**80 mm**																		
QAF18A085S QAAF18A085S	**85 mm**																		
QAF18A307S QAAF18A307S	3 7/16 in.																		
QAF18A308S QAAF18A308S	3 1/2 in.																		
QAF18A090S QAAF18A090S	**90 mm**																		
QAF20A315S QAAF20A315S	3 15/16 in.	22220	**278.4** 10.96	**152.4** 6.00	**224.0** 8.82	**196.9** 7.75	**253.2** 9.97	**38.1** 1.50	**24** 7/8	**41.4** 1.63	**126.0** 4.96	**128.0** 5.04	**75.4** 2.97	**103.1** 4.06	**9.4** 0.37	**24.1** 0.95	**116.6** 4.59	**150.4** 5.92	**24.9** 55
QAF20A400S QAAF20A400S	4 in.																		
QAF20A100S QAAF20A100S	**100 mm**																		
QAAF22A110S	**110 mm**	22222	**314.5** 12.38	**160.0** 6.30	**222.3** 8.75	**222.3** 8.75	**276.4** 10.88	**38.1** 1.50	**24** 7/8	–	**135.6** 5.34	**137.7** 5.42	**79.5** 3.13	**106.9** 4.21	–	**23.4** 0.92	–	**158.8** 6.25	**28.6** 63
QAAF22A407S	4 7/16 in.																		
QAAF22A408S	4 1/2 in.																		
QAAF22A115S	**115 mm**																		

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

08-19-13 DRAFT

QAFL AND QAAFL SQUARE FLANGE BLOCKS



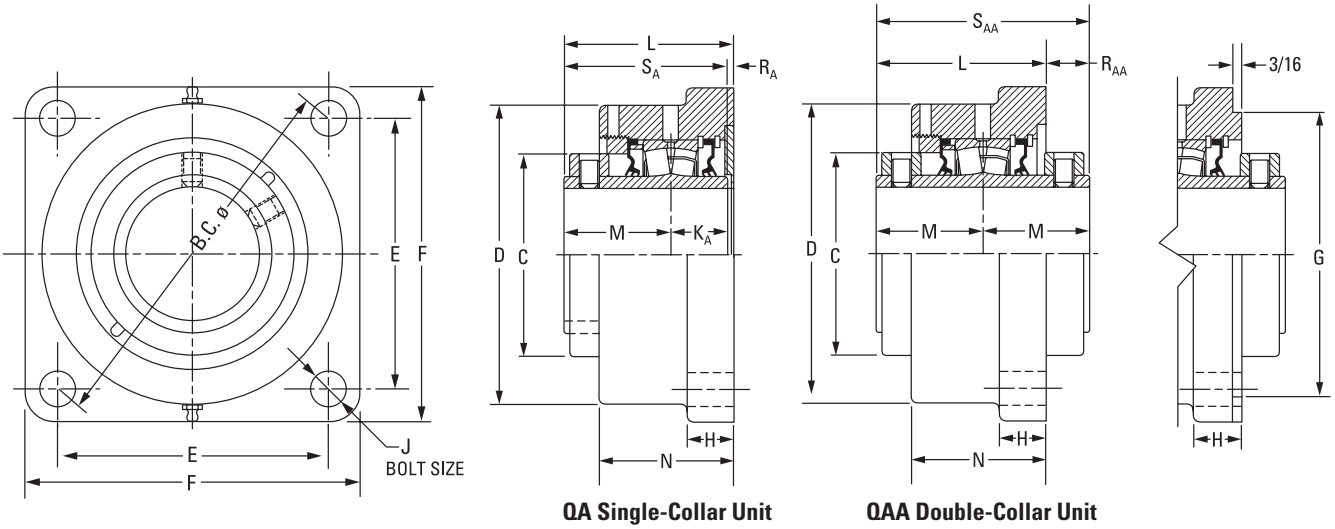
QA Single-Collar Unit **QAA Double-Collar Unit**

Bearing Part No.[1]	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	G[2][3][4]	H	J	K_A	L FIX	L EXP	M	N	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAFL08A035S	**35 mm**	22208	**127.0** 5.00	**60.5** 2.38	**93.7** 3.69	**89.9** 3.54	**117.6** 4.63	**N/A** N/A	**22.4** 0.88	**12** ½	**25.4** 1.00	**72.9** 2.87	**74.9** 2.95	**44.5** 1.75	**57.2** 2.25	**3.0** 0.12	–	**69.9** 2.75	–	**4.5** 10
QAFL08A107S	1 7/16 in.																			
QAFL08A108S	1 ½ in.																			
QAFL09A040S	**40 mm**	22209	**139.7** 5.50	**66.8** 2.63	**118.4** 4.66	**98.8** 3.89	**136.7** 5.38	**N/A** N/A	**22.4** 0.88	**12** ½	**25.4** 1.00	**79.5** 3.13	**81.5** 3.21	**47.8** 1.88	**63.5** 2.50	**6.6** 0.26	–	**73.2** 2.88	–	**5.0** 11
QAFL09A111S	1 11/16 in.																			
QAFL09A112S	1 ¾ in.																			
QAFL09A045S	**45 mm**																			
QAFL10A115S QAAFL10A115S	1 15/16 in.	22210	**146.1** 5.75	**73.2** 2.88	**120.7** 4.75	**103.4** 4.07	**131.8** 5.19	N/A	**23.1** 0.91	**12** ½	**25.4** 1.00	**80.8** 3.18	**82.8** 3.26	**47.5** 1.87	**62.5** 2.46	**7.9** 0.31	**15.2** 0.60	**72.9** 2.87	**95.3** 3.75	**5.0** 11
QAFL10A200S QAAFL10A200S	2 in.																			
QAFL10A050S QAAFL10A050S	**50 mm**																			
QAFL11A203S QAAFL11A203S	2 3/16 in.	22211	**162.1** 6.38	**82.6** 3.25	**131.8** 5.19	**114.3** 4.50	**149.4** 5.88	N/A	**19.1** 0.75	**16** 5/8	**28.7** 1.13	**83.3** 3.28	**85.3** 3.36	**50.8** 2.00	**66.8** 2.63	**3.8** 0.15	**18.3** 0.72	**79.5** 3.13	**101.6** 4.00	**6.4** 14
QAFL11A204S QAAFL11A204S	2 ¼ in.																			
QAFL11A055S QAAFL11A055S	**55 mm**																			
QAFL13A060S QAAFL13A060S	**60 mm**	22213	**171.5** 6.75	**96.8** 3.81	**146.1** 5.75	**121.2** 4.77	**157.2** 6.19	N/A	**25.4** 1.00	**16** 5/8	**31.5** 1.24	**89.2** 3.51	**91.2** 3.59	**54.6** 2.15	**72.6** 2.86	**3.0** 0.12	**20.1** 0.79	**86.1** 3.39	**109.2** 4.30	**7.7** 17
QAFL13A207S QAAFL13A207S	2 7/16 in.																			
QAFL13A208S QAAFL13A208S	2 ½ in.																			
QAFL13A065S QAAFL13A065S	**65 mm**																			

[1] Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).
[2] Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[3] Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
[4] Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.

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08-19-13 DRAFT



QA Single-Collar Unit **QAA Double-Collar Unit**

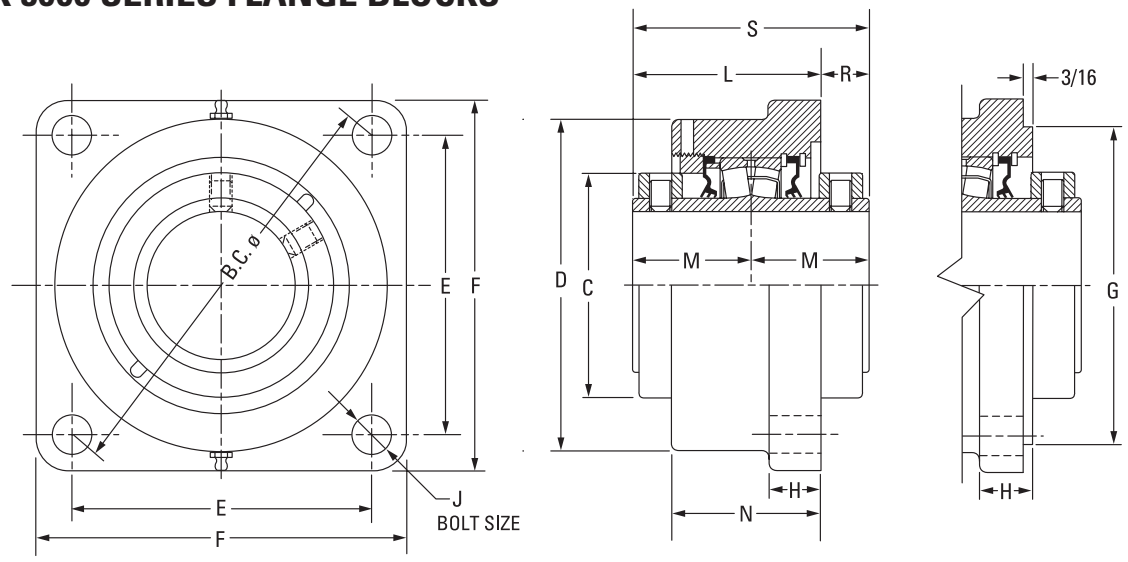
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Bearing Part No.[1]	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	G[2][3][4]	H	J	K_A	L FIX	L EXP	M	N	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAFL15A211S QAAFL15A211S	2 11/16 in.	22215	**200.2** 7.88	**109.0** 4.29	**168.4** 6.63	**141.2** 5.56	**182.6** 7.19	N/A	**26.9** 1.06	**20** 3/4	**31.8** 1.25	**95.8** 3.77	**97.8** 3.85	**60.2** 2.37	**74.4** 2.93	**3.8** 0.15	**24.6** 0.97	**91.9** 3.62	**120.4** 4.74	**10.4** 23
QAFL15A212S QAAFL15A212S	2 3/4 in.																			
QAFL15A070S QAAFL15A070S	**70 mm**																			
QAFL15A215S QAAFL15A215S	2 15/16 in.																			
QAFL15A300S QAAFL15A300S	3 in.																			
QAFL15A075S QAAFL15A075S	**75 mm**																			
QAFL18A303S QAAFL18A303S	3 3/16 in.	22218	**241.3** 9.50	**130.3** 5.13	**193.8** 7.63	**170.7** 6.72	**212.9** 8.38	**187.33** 7.375	**32.5** 1.28	**20** 3/4	**36.6** 1.44	**106.4** 4.19	**108.5** 4.27	**65.8** 2.59	**86.4** 3.40	**4.1** 0.16	**25.1** 0.99	**102.4** 4.03	**131.6** 5.18	**15.9** 35
QAFL18A304S QAAFL18A304S	3 1/4 in.																			
QAFL18A080S QAAFL18A080S	**80 mm**																			
QAFL18A085S QAAFL18A085S	**85 mm**																			
QAFL18A307S QAAFL18A307S	3 7/16 in.																			
QAFL18A308S QAAFL18A308S	3 1/2 in.																			
QAFL18A090S QAAFL18A090S	**90 mm**																			
QAFL20A315S QAAFL20A315S	3 15/16 in.	22220	**273.1** 10.75	**152.4** 6.00	**229.6** 9.04	**193.0** 7.60	**241.3** 9.50	**215.90** 8.500	**38.1** 1.50	**24** 1	**41.4** 1.63	**132.3** 5.21	**134.4** 5.29	**75.4** 2.97	**104.6** 4.12	**15.7** 0.62	**18.0** 0.71	**116.6** 4.59	**150.4** 5.92	**24.9** 55
QAFL20A400S QAAFL20A400S	4 in.																			
QAFL20A100S QAAFL20A100S	**100 mm**																			

[1] Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).
[2] Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[3] Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
[4] Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.

08-19-13 DRAFT

QAAFX 5000 SERIES FLANGE BLOCKS

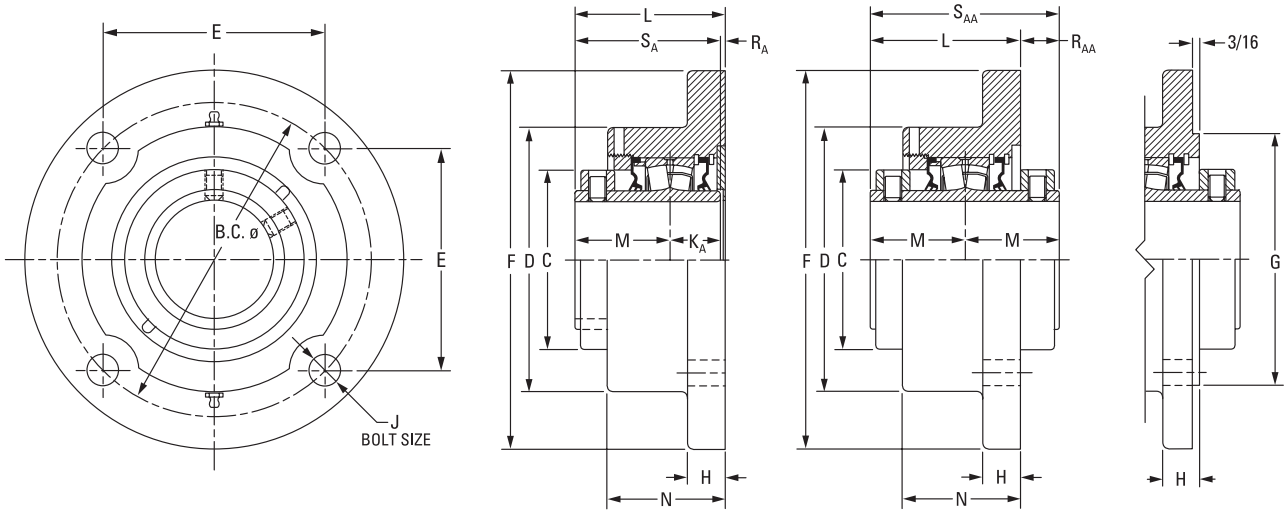


Bearing Part No.	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	G [1][2][3]	H	J	L FIX	L EXP	M	N	R	S	Wt.
	mm in.		mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg lbs.
QAAFX10A115S	1 15/16 in.	22210	146.1 5.75	73.2 2.88	120.7 4.75	103.1 4.06	134.9 5.31	111.13 4.375	22.4 0.88	12 1/2	80.8 3.18	82.8 3.26	47.5 1.87	65.0 2.56	15.2 0.60	95.3 3.75	5.4 12
QAAFX10A200S	2 in.																
QAAFX10A050S	50 mm																
QAAFX11A203S	2 3/16 in.	22211	161.5 6.36	82.6 3.25	130.3 5.13	114.3 4.50	149.4 5.88	127.00 5.000	25.4 1.00	16 5/8	83.1 3.27	85.1 3.35	50.5 1.99	66.8 2.63	18.5 0.73	101.6 4.00	6.8 15
QAAFX11A204S	2 1/4 in.																
QAAFX11A055S	55 mm																
QAAFX13A060S	60 mm	22213	180.8 7.12	96.8 3.81	146.1 5.75	127.8 5.03	157.2 6.19	138.13 5.438	25.4 1.00	16 5/8	89.2 3.51	91.2 3.59	54.6 2.15	72.4 2.85	19.6 0.77	109.2 4.30	8.6 19
QAAFX13A207S	2 7/16 in.																
QAAFX13A208S	2 1/2 in.																
QAAFX13A065S	65 mm																
QAAFX15A211S	2 11/16 in.	22215	215.9 8.50	109.0 4.29	168.9 6.65	152.7 6.01	189.0 7.44	160.35 6.313	26.9 1.06	20 3/4	96.0 3.78	98.0 3.86	60.2 2.37	76.2 3.00	24.4 0.96	120.4 4.74	12.7 28
QAAFX15A212S	2 3/4 in.																
QAAFX15A070S	70 mm																
QAAFX15A215S	2 15/16 in.																
QAAFX15A300S	3 in.																
QAAFX15A075S	75 mm																
QAAFX18A303S	3 3/16 in.	22218	241.3 9.50	130.3 5.13	193.8 7.63	170.7 6.72	212.9 8.38	187.33 7.375	33.3 1.31	20 3/4	107.2 4.22	109.2 4.30	65.8 2.59	84.1 3.31	24.6 0.97	131.6 5.18	19.1 42
QAAFX18A304S	3 1/4 in.																
QAAFX18A080S	80 mm																
QAAFX18A085S	85 mm																
QAAFX18A307S	3 7/16 in.																
QAAFX18A308S	3 1/2 in.																
QAAFX18A090S	90 mm																
QAAFX20A315S	3 15/16 in.	22220	298.5 11.75	152.4 6.00	215.9 8.50	211.1 8.31	268.2 10.56	225.43 8.875	38.1 1.50	24 7/8	126.0 4.96	128.0 5.04	75.4 2.97	103.1 4.06	24.6 0.97	150.4 5.92	29.9 66
QAAFX20A400S	4 in.																
QAAFX20A100S	100 mm																
QAAFX22A110S	110 mm	22222	327.2 12.88[4]	160.0 6.30	256.5 10.10	163.6 6.44[4]	384.3 15.13	263.53 10.375	31.8 1.25	24 7/8	143.8 5.66	145.8 5.74	94.0 3.70	106.9 4.21	15.0 0.59	158.8 6.25	46.3 102
QAAFX22A407S[4]	4 7/16 in.																
QAAFX22A408S[4]	4 1/2 in.																
QAAFX22A115S[4]	115 mm																
QAAFX26A125S[4]	125 mm	22226	355.6 14.00[4]	175.0 6.89	284.2 11.19	177.8 7.00[4]	419.1 16.50	284.18 11.188	38.1 1.50	24 1	174.8 6.88	176.8 6.96	94.5 3.72	135.1 5.32	14.2 0.56	189.0 7.44	52.2 115
QAAFX26A415S[4]	4 15/16 in.																
QAAFX26A500S[4]	5 in.																
QAAFX26A130S[4]	130 mm																

[1]Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[2]Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
[3]Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.
[4]Six-bolt round housing.

08-19-13 DRAFT

QAFY AND QAAFY ROUND FLANGE BLOCKS



QA Single-Collar Unit **QAA Double-Collar Unit**

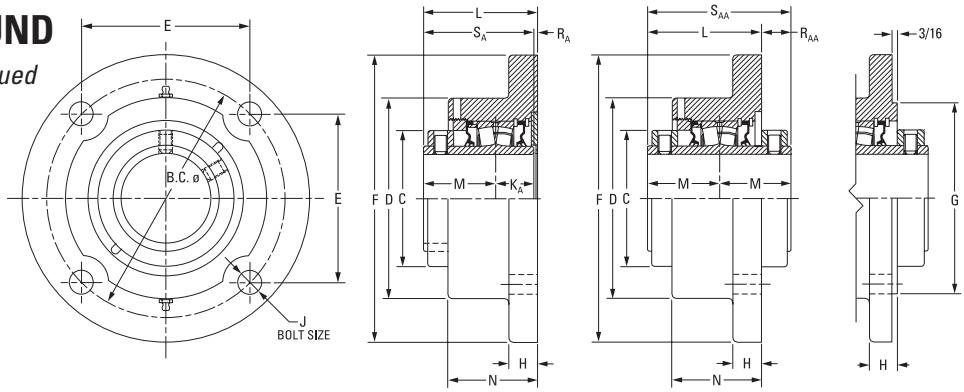
Bearing Part No.[1]	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	G[2][3][4]	H	J	K_A	L FIX	L EXP	M	N	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAFY08A035S[6]	**35 mm**	22208	**127.0** 5.00	**60.5** 2.38	**108.0** 4.25	**89.9** 3.54	**158.8** 6.25	**90.50** 3.563	**19.1** 0.75	**12** ½	**25.4** 1.00	**73.2** 2.88	**75.2** 2.96	**44.5** 1.75	**57.4** 2.26	**3.3** 0.13	–	**69.9** 2.75	–	**4.5** 10
QAFY08A107S[6]	1 7/16 in.																			
QAFY08A108S[6]	1 ½ in.																			
QAFY09A040S	**40 mm**	22209	**139.7** 5.50	**66.8** 2.63	**104.9** 4.13	**98.8** 3.89	**171.5** 6.75	**103.20** 4.063	**20.6** 0.81	**12** ½	**25.4** 1.00	**76.2** 3.00	**78.2** 3.08	**47.8** 1.88	**60.5** 2.38	**3.0** 0.12	–	**73.2** 2.88	–	**5.0** 11
QAFY09A111S	1 11/16 in.																			
QAFY09A112S	1 ¾ in.																			
QAFY09A045S	**45 mm**																			
QAFY10A115S QAAFY10A115S	1 15/16 in.	22210	**146.1** 5.75	**73.2** 2.88	**115.3** 4.54	**103.4** 4.07	**177.8** 7.00	**111.13** 4.375	**19.1** 0.75	**12** ½	**25.4** 1.00	**75.9** 2.99	**78.0** 3.07	**47.5** 1.87	**57.2** 2.25	**3.0** 0.12	**20.1** 0.79	**72.9** 2.87	**95.3** 3.75	**5.4** 12
QAFY10A200S QAAFY10A200S	2 in.																			
QAFY10A050S QAAFY10A050S	**50 mm**																			
QAFY11A203S QAAFY11A203S	2 3/16 in.	22211	**162.1** 6.38	**82.6** 3.25	**130.3** 5.13	**114.3** 4.50	**196.9** 7.75	**127.00** 5.000	**19.1** 0.75	**16** 5/8	**28.7** 1.13	**82.3** 3.24	**84.3** 3.32	**50.8** 2.00	**62.0** 2.44	**3.0** 0.12	**19.3** 0.76	**79.5** 3.13	**101.6** 4.00	**6.8** 15
QAFY11A204S QAAFY11A204S	2 ¼ in.																			
QAFY11A055S QAAFY11A055S	**55 mm**																			
QAFY13A060S QAAFY13A060S	**60 mm**	22213	**171.5** 6.75	**96.8** 3.81	**146.1** 5.75	**121.2** 4.77	**206.5** 8.13	**138.13** 5.438	**23.9** 0.94	**16** 5/8	**31.5** 1.24	**91.2** 3.59	**93.2** 3.67	**54.6** 2.15	**72.4** 2.85	**5.1** 0.20	**20.6** 0.81	**86.1** 3.39	**109.2** 4.30	**8.6** 19
QAFY13A207S QAAFY13A207S	2 7/16 in.																			
QAFY13A208S QAAFY13A208S	2 ½ in.																			
QAFY13A065S QAAFY13A065S	**65 mm**																			

[1] Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).
[2] Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[3] Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
[4] Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.
[5] Six-bolt housing.
[6] Three-bolt housing.

Continued on next page.

08-19-13 DRAFT

QAFY AND QAAFY ROUND FLANGE BLOCKS – *continued*



QA Single-Collar Unit **QAA Double-Collar Unit**

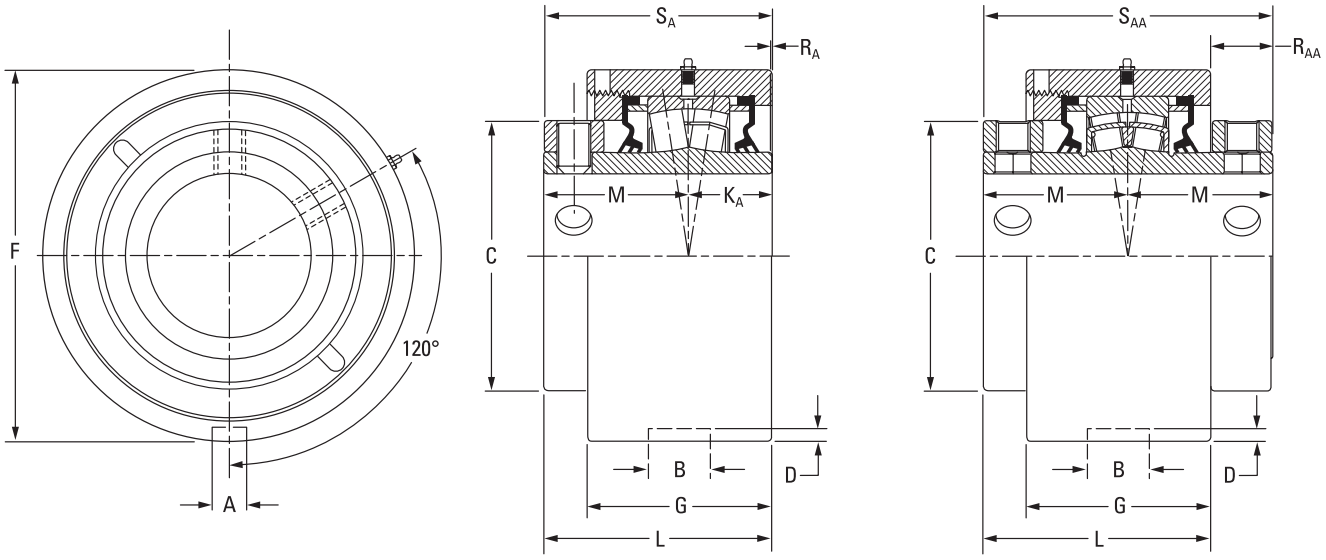
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Bearing Part No.[1]	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	G[2][3][4]	H	J	K_A	L FIX	L EXP	M	N	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAFY15A211S QAAFY15A211S	2 11/16 in.	22215	**200.2** 7.88	**109.0** 4.29	**168.4** 6.63	**141.5** 5.57	**241.3** 9.50	**160.35** 6.313	**23.9** 0.94	**20** 3/4	**31.8** 1.25	**98.3** 3.87	**100.3** 3.95	**60.2** 2.37	**74.4** 2.93	**6.4** 0.25	**21.8** 0.86	**91.9** 3.62	**120.4** 4.74	**12.7** 28
QAFY15A212S QAAFY15A212S	2 3/4 in.																			
QAFY15A070S QAAFY15A070S	**70 mm**																			
QAFY15A215S QAAFY15A215S	2 15/16 in.																			
QAFY15A300S QAAFY15A300S	3 in.																			
QAFY15A075S QAAFY15A075S	**75 mm**																			
QAFY18A303S QAAFY18A303S	3 3/16 in.	22218	**241.3** 9.50	**130.3** 5.13	**193.8** 7.63	**170.7** 6.72	**282.7** 11.13	N/A	**28.7** 1.13	**24** 7/8	**36.6** 1.44	**108.7** 4.28	**110.7** 4.36	**65.8** 2.59	**85.3** 3.36	**6.4** 0.25	**22.9** 0.90	**102.4** 4.03	**131.6** 5.18	**19.1** 42
QAFY18A304S QAAFY18A304S	3 1/4 in.																			
QAFY18A080S QAAFY18A080S	**80 mm**																			
QAFY18A085S QAAFY18A085S	**85 mm**																			
QAFY18A307S QAAFY18A307S	3 7/16 in.																			
QAFY18A308S QAAFY18A308S	3 1/2 in.																			
QAFY18A090S QAAFY18A090S	**90 mm**																			
QAFY20A315S QAAFY20A315S	3 15/16 in.	22220	**273.1** 10.75	**152.4** 6.00	**212.9** 8.38	**193.0** 7.60	**320.8** 12.63	N/A	**28.7** 1.13	**24** 1	**41.4** 1.63	**123.7** 4.87	**125.7** 4.95	**75.4** 2.97	**96.8** 3.81	**6.9** 0.27	**26.7** 1.05	**116.6** 4.59	**150.4** 5.92	**29.9** 66
QAFY20A400S QAAFY20A400S	4 in.																			
QAFY20A100S QAAFY20A100S	**100 mm**																			
QAAFY22A110S[5]	**110 mm**	22222	**327.2** 12.88[5]	**160.0** 6.30	**254.0** 10.00	**163.6** 6.44[5]	**384.3** 15.13	N/A	**31.8** 1.25	**24** 1[5]	–	**129.0** 5.08	**131.1** 5.16	**79.5** 3.13	**100.3** 3.95	–	**30.0** 1.18	–	**158.8** 6.25	**46.3** 102
QAAFY22A407S[5]	4 7/16 in.																			
QAAFY22A408S[5]	4 1/2 in.																			
QAAFY22A115S[5]	**115 mm**																			
QAAFY26A125S[5]	**125 mm**	22226	**355.6** 14.00[5]	**175.0** 6.89	**284.2** 11.19	**177.8** 7.00[5]	**419.1** 16.50	N/A	**38.1** 1.50	**27** 1 1/8[5]	–	**169.9** 6.69	**172.0** 6.77	**94.5** 3.72	**139.7** 5.50	–	**19.1** 0.75	–	**189.0** 7.44	**52.2** 115
QAAFY26A415S[5]	4 15/16 in.																			
QAAFY26A500S[5]	5 in.																			
QAAFY26A130S[5]	**130 mm**																			

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).
[2]Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[3]Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
[4]Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.
[5]Six-bolt housing.
[6]Three-bolt housing.

08-19-13 DRAFT

QAMC AND QAAMC CARTRIDGE BLOCKS



QA Single-Collar Unit

QAA Double-Collar Unit

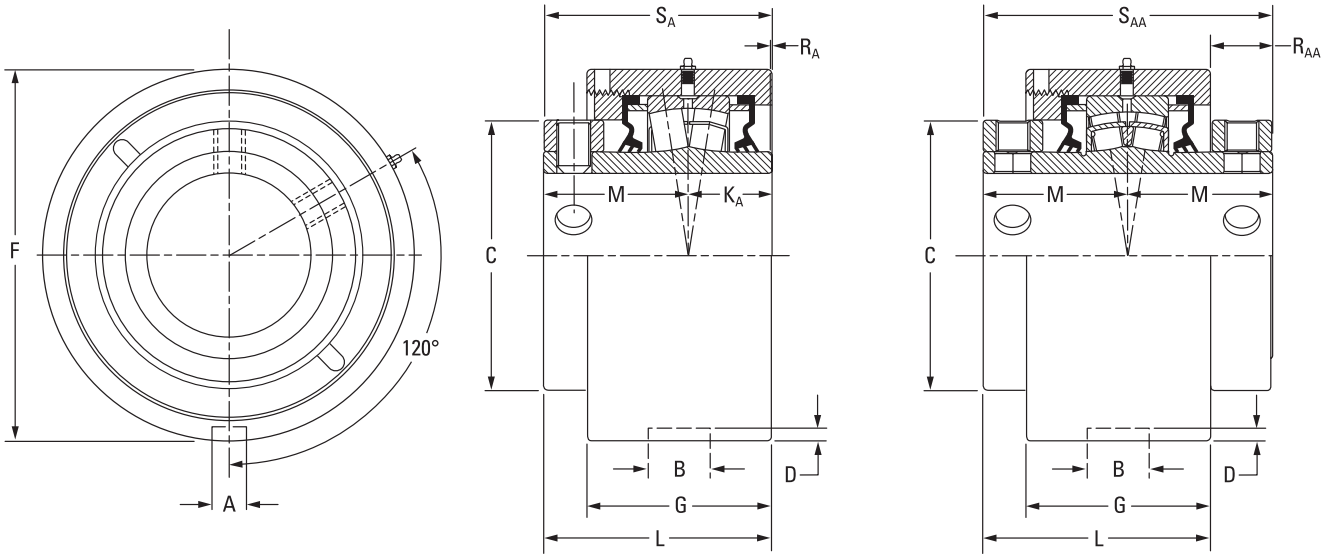
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D	F	G	K_A	L FIX	L EXP	M	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAMC10A115S QAAMC10A115S	1 15/16 in.	22210	**13.5** 0.53	**23.1** 0.91	**73.2** 2.88	**4.8** 0.19	**104.78** **(+0/-0.05)** 4.125 (+0/-0.002)	**62.2** 2.45	**25.4** 1.00	**79.2** 3.12	**81.3** 3.20	**47.5** 1.87	**6.1** 0.24	**16.8** 0.66	**72.9** 2.87	**95.3** 3.75	**3.6** 8
QAMC10A200S QAAMC10A200S	2 in.																
QAMC10A050S QAAMC10A050S	**50 mm**																
QAMC11A203S QAAMC11A203S	2 3/16 in.	22211	**13.5** 0.53	**23.1** 0.91	**82.6** 3.25	**4.8** 0.19	**115.09** **(+0/-0.05)** 4.531 (+0/-0.002)	**65.5** 2.58	**28.7** 1.13	**83.8** 3.30	**85.9** 3.38	**50.8** 2.00	**4.1** 0.16	**18.0** 0.71	**79.5** 3.13	**101.6** 4.00	**4.5** 10
QAMC11A204S QAAMC11A204S	2 1/4 in.																
QAMC11A055S QAAMC11A055S	**55 mm**																
QAMC13A060S QAAMC13A060S	**60 mm**	22213	**13.5** 0.53	**23.1** 0.91	**96.8** 3.81	**3.6** 0.14	**127.00** **(+0/-0.05)** 5.000 (+0/-0.002)	**69.3** 2.73	**31.5** 1.24	**85.9** 3.38	**87.9** 3.46	**54.6** 2.15	**0.0** 0.00	**14.0** 0.55	**86.1** 3.39	**109.2** 4.30	**5.4** 12
QAMC13A207S QAAMC13A207S	2 7/16 in.																
QAMC13A208S QAAMC13A208S	2 1/2 in.																
QAMC13A065S QAAMC13A065S	**65 mm**																
QAMC15A211S QAAMC15A211S	2 11/16 in.	22215	**15.0** 0.59	**26.2** 1.03	**109.0** 4.29	**6.4** 0.25	**149.225** **(+0/-0.05)** 5.875 (+0/-0.002)	**79.8** 3.14	**31.8** 1.25	**100.6** 3.96	**102.6** 4.04	**60.2** 2.37	**8.1** 0.32	**19.8** 0.78	**91.9** 3.62	**120.4** 4.74	**8.2** 18
QAMC15A212S QAAMC15A212S	2 3/4 in.																
QAMC15A070S QAAMC15A070S	**70 mm**																
QAMC15A215S QAAMC15A215S	2 15/16 in.																
QAMC15A300S QAAMC15A300S	3 in.																
QAMC15A075S QAAMC15A075S	**75 mm**																

[1] Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

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08-19-13 DRAFT

QAMC AND QAAMC CARTRIDGE BLOCKS – *continued*



QA Single-Collar Unit **QAA Double-Collar Unit**

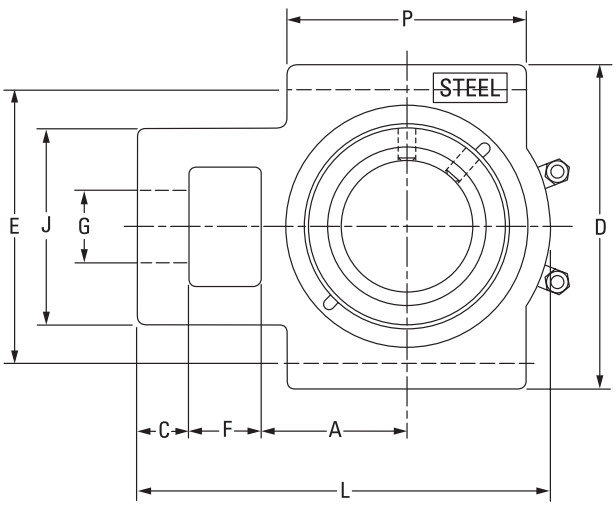
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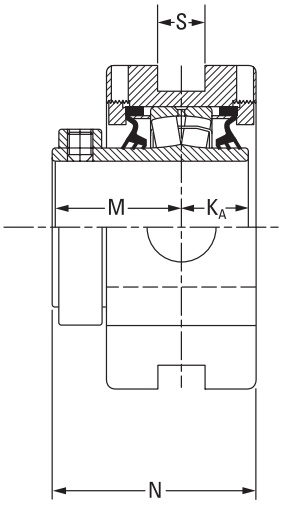
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	B	C	D	F	G	K_A	L FIX	L EXP	M	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAMC18A303S QAAMC18A303S	3 3/16 in.	22218	**15.0** 0.59	**26.9** 1.06	**130.3** 5.13	**5.8** 0.23	**171.45 (+0/-0.05)** 6.750 (+0/-0.002)	**87.6** 3.45	**36.6** 1.44	**110.2** 4.34	**112.3** 4.42	**65.8** 2.59	**7.4** 0.29	**21.3** 0.84	**102.4** 4.03	**131.6** 5.18	**11.8** 26
QAMC18A304S QAAMC18A304S	3 1/4 in.																
QAMC18A080S QAAMC18A080S	**80 mm**																
QAMC18A085S QAAMC18A085S	**85 mm**																
QAMC18A307S QAAMC18A307S	3 7/16 in.																
QAMC18A308S QAAMC18A308S	3 1/2 in.																
QAMC18A090S QAAMC18A090S	**90 mm**																
QAMC20A315S QAAMC20A315S	3 15/16 in.	22220	**19.8** 0.78	**32.5** 1.28	**152.4** 6.00	**7.9** 0.31	**206.375 (+0/-0.05)** 8.125 (+0/-0.002)	**105.2** 4.14	**41.4** 1.63	**128.3** 5.05	**130.3** 5.13	**75.4** 2.97	**11.4** 0.45	**22.6** 0.89	**116.6** 4.59	**150.9** 5.94	**14.5** 32
QAMC20A400S QAAMC20A400S	4 in.																
QAMC20A100S QAAMC20A100S	**100 mm**																
QAAMC22A110S	**110 mm**	22222	**19.8** 0.78	**38.1** 1.50	**160.0** 6.30	**7.9** 0.31	**222.25 (+0/-0.08)** 8.75 (+0/-0.003)	**108.5** 4.27	–	**133.6** 5.26	**135.6** 5.34	**79.5** 3.13	–	**25.1** 0.99	–	**158.8** 6.25	**18.1** 40
QAAMC22A407S	4 7/16 in.																
QAAMC22A408S	4 1/2 in.																
QAAMC22A115	**115 mm**																
QAAMC26A125S	**125 mm**	22226	**19.8** 0.78	**38.1** 1.50	**175.0** 6.89	**7.9** 0.31	**265.13 (+0/-0.08)** 10.438 (+0/-0.003)	**141.7** 5.58	–	**165.4** 6.51	**167.4** 6.59	**94.5** 3.72	–	**23.6** 0.93	–	**189.0** 7.44	**18.1** 40
QAAMC26A415S	4 15/16 in.																
QAAMC26A500S	5 in.																
QAAMC26A130S	**130 mm**																

[1]Bearing part numbers use QA to designate single-collar units (use S_A and R_A dimensions) and QAA to designate double-collar units (use S_{AA} and R_{AA} dimensions).

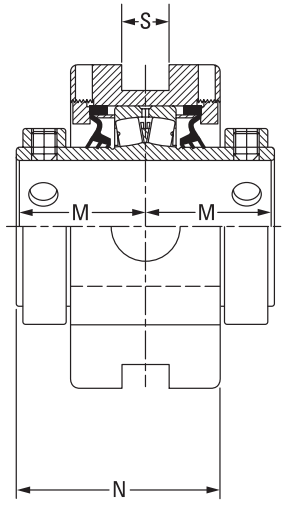
08-19-13 DRAFT

QATU AND QAATU TAKE-UP BLOCKS





QA Single-Collar Unit



QAA Double-Collar Unit

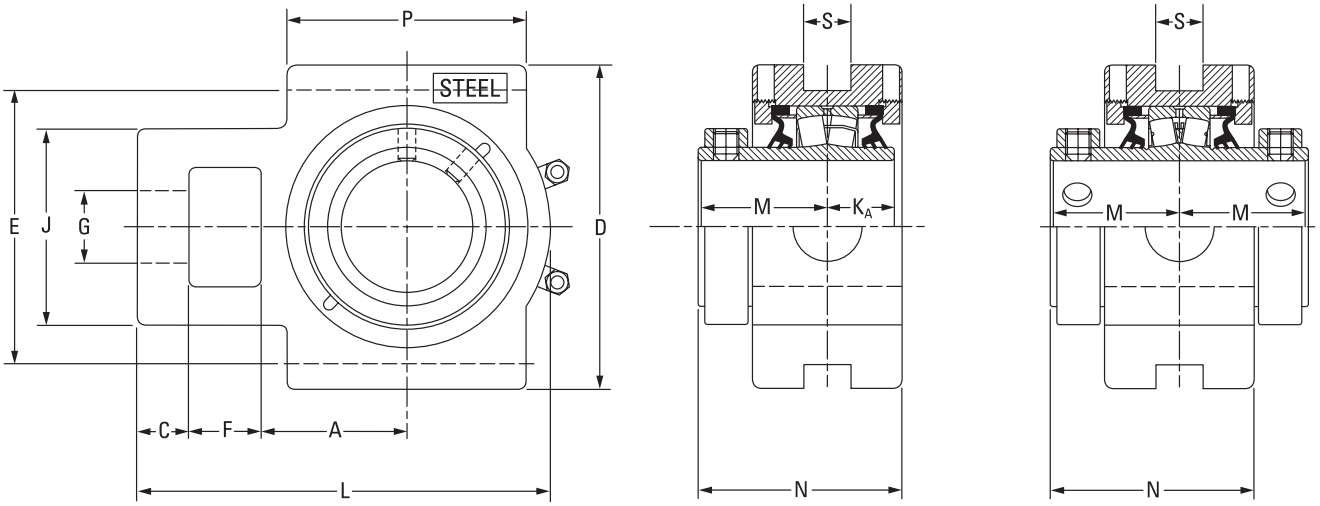
Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	C	D	E	F	G	J	K_A	L	M	N	P	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QATU10A115S QAATU10A115S	1 15/16 in.	22210	**54.1** 2.13	**19.1** 0.75	**120.7** 4.75	**101.6** 4.00	**26.9** 1.06	**26.9** 1.06	**73.2** 2.88	**25.4** 1.00	**153.4** 6.04	**47.5** 1.87	**75.7** 2.98	**88.9** 3.50	**17.5** 0.69	**7.7** 17
QATU10A200S QAATU10A200S	2 in.															
QATU10A050S QAATU10A050S	**50 mm**															
QATU11A203S QAATU11A203S	2 3/16 in.	22211	**60.5** 2.38	**19.1** 0.75	**133.4** 5.25	**114.3** 4.50	**28.7** 1.13	**30.2** 1.19	**88.9** 3.50	**28.7** 1.13	**167.9** 6.61	**50.8** 2.00	**81.8** 3.22	**95.3** 3.75	**20.6** 0.81	**9.5** 21
QATU11A204S QAATU11A204S	2 1/4 in.															
QATU11A055S QAATU11A055S	**55 mm**															
QATU13A060S QAATU13A060S	**60 mm**	22213	**69.9** 2.75	**22.4** 0.88	**149.4** 5.88	**130.3** 5.13	**33.3** 1.31	**33.3** 1.31	**95.3** 3.75	**31.5** 1.24	**193.8** 7.63	**54.6** 2.15	**91.2** 3.59	**120.7** 4.75	**26.9** 1.06	**12.2** 27
QATU13A207S QAATU13A207S	2 7/16 in.															
QATU13A208S QAATU13A208S	2 1/2 in.															
QATU13A065S QAATU13A065S	**65 mm**															
QATU15A211S QAATU15A211S	2 11/16 in.	22215	**76.2** 3.00	**25.4** 1.00	**171.5** 6.75	**150.9** 5.94	**39.6** 1.56	**39.6** 1.56	**108.0** 4.25	**31.8** 1.25	**219.7** 8.65	**60.2** 2.37	**97.0** 3.82	**120.7** 4.75	**46.0** 1.81	**15.9** 35
QATU15A212S QAATU15A212S	2 3/4 in.															
QATU15A070S QAATU15A070S	**70 mm**															
QATU15A215S QAATU15A215S	2 15/16 in.															
QATU15A300S QAATU15A300S	3 in.															
QATU15A075S QAATU15A075S	**75 mm**															

[1]Bearing part numbers use QA to designate single-collar units and QAA to designate double-collar units.
NOTE: Please refer to page C-169 for take-up frames.

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08-19-13 DRAFT

QATU AND QAATU TAKE-UP BLOCKS – *continued*



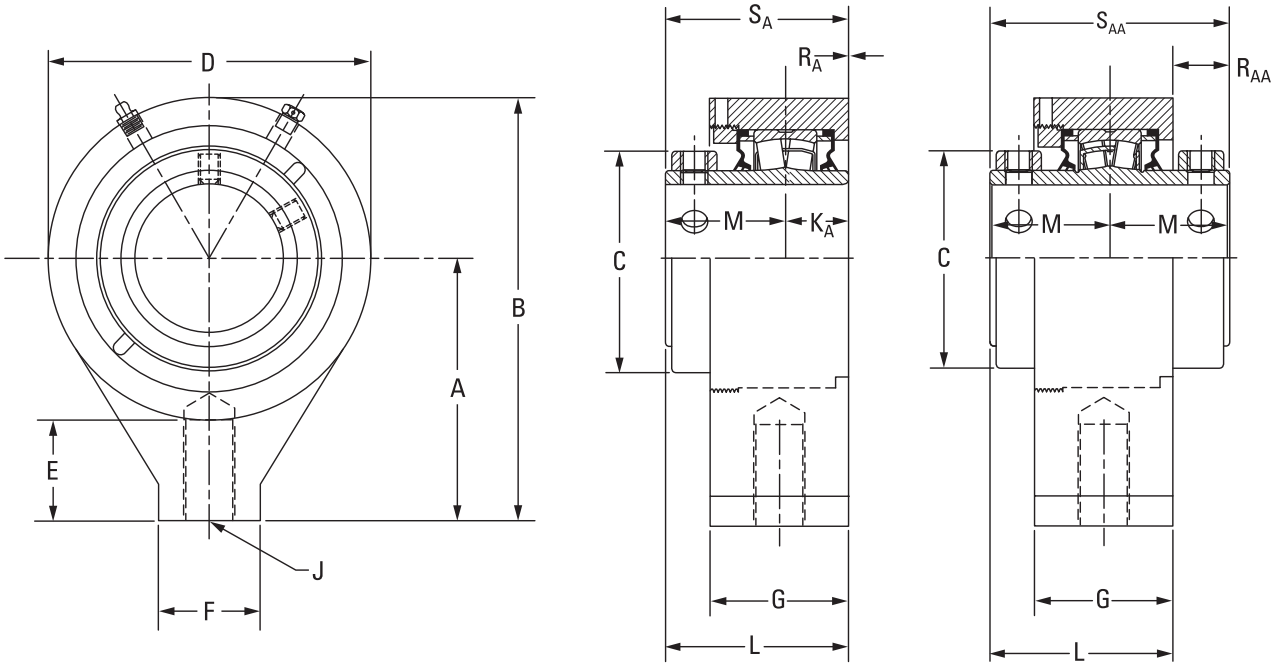
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Bearing Part No.[1]	Shaft Dia.	Bearing No.	A	C	D	E	F	G	J	K_A	L	M	N	P	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QATU18A303S QAATU18A303S	3 3/16 in.	22218	**92.2** 3.63	**25.4** 1.00	**193.8** 7.63	**173.0** 6.81	**46.0** 1.81	**47.8** 1.88	**124.0** 4.88	**36.6** 1.44	**257.0** 10.12	**65.8** 2.59	**107.2** 4.22	**158.8** 6.25	**46.0** 1.81	**20.0** 44
QATU18A304S QAATU18A304S	3 1/4 in.															
QATU18A080S QAATU18A080S	**80 mm**															
QATU18A085S QAATU18A085S	**85 mm**															
QATU18A307S QAATU18A307S	3 7/16 in.															
QATU18A308S QAATU18A308S	3 1/2 in.															
QATU18A090S QAATU18A090S	**90 mm**															
QATU20A315S QAATU20A315S	3 15/16 in.	22220	**104.9** 4.13	**28.7** 1.13	**239.8** 9.44	**219.2** 8.63	**54.1** 2.13	**52.3** 2.06	**143.0** 5.63	**41.4** 1.63	**296.9** 11.69	**75.4** 2.97	**121.7** 4.79	**177.8** 7.00	**52.3** 2.06	**26.3** 58
QATU20A400S QAATU20A400S	4 in.															
QATU20A100S QAATU20A100S	**100 mm**															
QAATU22A110S	**110 mm**	22222	**128.5** 5.06	**38.1** 1.50	**263.7** 10.38	**241.3** 9.50	**54.1** 2.13	**54.1** 2.13	**162.1** 6.38	–	**341.4** 13.44	**79.5** 3.13	**143.8** 5.66	**199.9** 7.87	**52.3** 2.06	**36.4** 80
QAATU22A407S	4 7/16 in.															
QAATU22A408S	4 1/2 in.															
QAATU22A115S	**115 mm**															
QAATU26A125S	**125 mm**	22226	**134.9** 5.31	**63.5** 2.50	**285.8** 11.25	**260.4** 10.25	**63.5** 2.50	**60.5** 2.38	**177.8** 7.00	–	**396.7** 15.62	**94.5** 3.72	**150.9** 5.94	**228.6** 9.00	**52.3** 2.06	**60.8** 134
QAATU26A415S	4 15/16 in.															
QAATU26A500S	5 in.															
QAATU26A130S	**130 mm**															

[1]Bearing part numbers use QA to designate single-collar units and QAA to designate double-collar units.
NOTE: Please refer to page C-169 for take-up frames.

08-19-13 DRAFT

QAMH AND QAAMH HANGER BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D	E	F	G	J	K_A	L	M	R_A	R_{AA}	S_A	S_{AA}	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QAMH15A211S QAAMH15A211S	2 11/16 in.	22215	**131.8** 5.19	**212.9** 8.38	**109.0** 4.29	**162.1** 6.38	**50.8** 2.00	**50.8** 2.00	**69.9** 2.75	1 - 8UNC	**31.8** 1.25	**91.9** 3.62	**60.2** 2.37	**0.0** 0.00	**28.4** 1.12	**91.9** 3.62	**120.7** 4.75	**10.0** 22
QAMH15A212S QAAMH15A212S	2 3/4 in.																	
QAMH15A070S QAAMH15A070S	**70 mm**																	
QAMH15A215S QAAMH15A215S	2 15/16 in.																	
QAMH15A300S QAAMH15A300S	3 in.																	
QAMH15A075S QAAMH15A075S	**75 mm**																	
QAMH18A303S QAAMH18A303S	3 3/16 in.	22218	**160.3** 6.31	**260.4** 10.25	**130.3** 5.13	**200.2** 7.88	**63.5** 2.50	**76.2** 3.00	**76.2** 3.00	1 1/4 - 7UNC	**36.6** 1.44	**99.3** 3.91	**65.8** 2.59	**3.0** 0.12	**32.3** 1.27	**102.4** 4.03	**131.6** 5.18	**16.3** 36
QAMH18A304S QAAMH18A304S	3 1/4 in.																	
QAMH18A080S QAAMH18A080S	**80 mm**																	
QAMH18A085S QAAMH18A085S	**85 mm**																	
QAMH18A307S QAAMH18A307S	3 7/16 in.																	
QAMH18A308S QAAMH18A308S	3 1/2 in.																	
QAMH18A090S QAAMH18A090S	**90 mm**																	

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EC SERIES

The reduced eccentric offset of our EC series locking collar results in a secure shaft lock that is designed not to release from a properly prepared shaft. EC series housed units also are suitable for reversing applications.



Fig. C-45. EC series eccentric lock.

YOU HAVE CHOICES

For the EC series, you can select from many seal configurations and housing styles, which are shown on page C-130.

HOUSINGS

- Two-bolt pillow blocks.
- Four-bolt pillow blocks.
- Flange blocks.
- Piloted flange cartridges.
- Take-up blocks.
- Cartridge blocks.
- Hanger blocks.

SEALS

- Labyrinth: DuPont Teflon (T).
- Triple-lip: nitrile rubber (M), urethane (O) and DuPont Viton (N).
- Double-lip: nitrile rubber (B) and DuPont Viton (C).
- Steel and urethane closed-end covers (CS).
- Steel and urethane open-end covers (CJ) with:
  - DuPont Teflon (T).
  - Triple-lip seal (DR).
  - V-ring seal (VR).
- Piloted flange cartridge backing plates (HSY) with:
  - Triple-lip seal (DR).
- Flange block backing plates (UFP).
  - V-ring (VR).

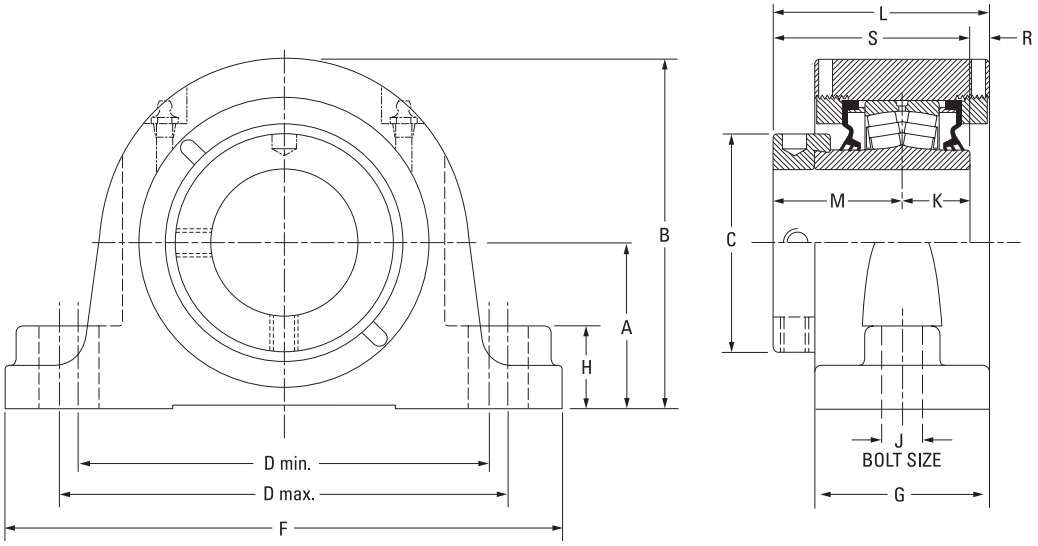
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EC SERIES

		Primary Seals						Secondary Seals and Covers					
								Open-End Cover			Closed-End Cover	HSY Flange Cartridge Backing Plate	UFP Backing Plate
	Housing Type	M	N	O	B	C	T	DR	VR	T		DR	
V-Lock (Timken Exclusive Double Taper Lock)	Pillow Block	●	●	●	●	●	●	●	●	●	●		
	Flange Block	●	●	●	●	●	●	●	●	●	●		
	Piloted Flange Cartridge	●	●	●	●	●	●	●	●	●	●		
	Take-Up Block	●	●	●	●	●	●	●	●	●	●		
	Cartridge Block	●	●	●	●	●	●	●	●	●	●		
CL Series (Set Screw Lock)	Pillow Block	●	●	●	●	●	●	●	●	●	●		
	Flange Block	●	●	●	●	●	●	●	●	●	●		●
	Piloted Flange Cartridge	●	●	●	●	●	●	●	●	●	●	●	
	Take-Up Block	●	●	●	●	●	●	●	●	●	●		
	Cartridge Block	●	●	●	●	●	●	●	●	●	●		
	Hangar Block	●	●	●	●	●	●	●	●	●	●		
EC Series (Eccentric Lock)	Pillow Block	●	●	●	●	●	●	●	●	●	●		
	Flange Block	●	●	●	●	●	●	●	●	●	●		●
	Piloted Flange Cartridge	●	●	●	●	●	●	●	●	●	●	●	
	Take-Up Block	●	●	●	●	●	●	●	●	●	●		
	Cartridge Block	●	●	●	●	●	●	●	●	●	●		
	Hangar Block	●	●	●	●	●	●	●	●	●	●		
TA Series (Tapered Adapter Lock)	Pillow Block	●	●	●	●	●	●	●	●	●	●		
	Flange Block	●	●	●	●	●	●	●	●	●	●		
	Piloted Flange Cartridge	●	●	●	●	●	●	●	●	●	●		
	Cartridge Block	●	●	●	●	●	●	●	●	●	●		
DV Series (Tapered Adapter Lock)	Pillow Block	●	●	●	●	●	●	●	●	●	●		
	Flange Block	●	●	●	●	●	●	●	●	●	●		
	Piloted Flange Cartridge	●	●	●	●	●	●	●	●	●	●		

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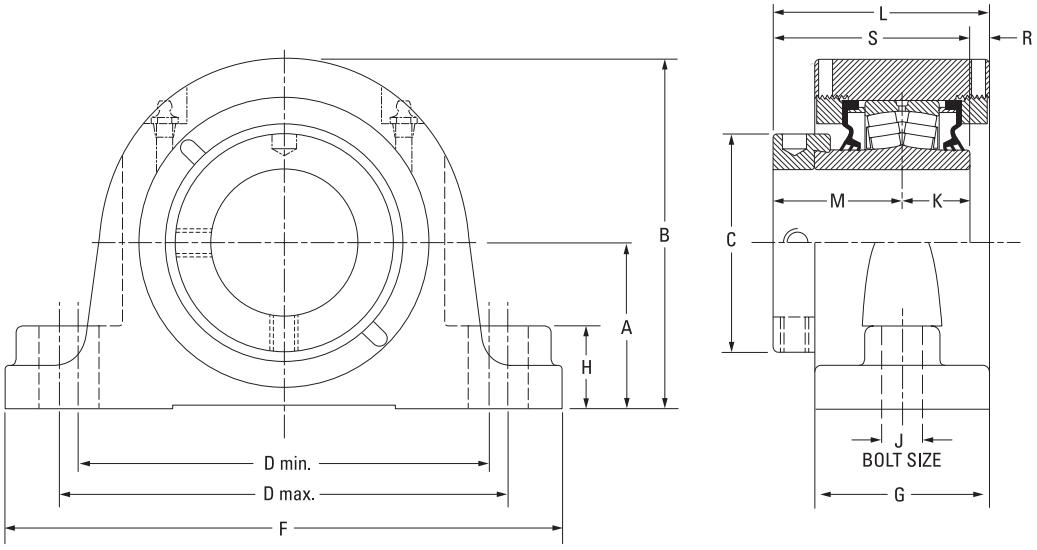
QMP TWO-BOLT PILLOW BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	K	L	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMP08J035S	**35 mm**	22208	**47.8** 1.88	**94.7** 3.73	**60.5** 2.38	**119.1** 4.69	**152.4** 6.00	**174.8** 6.88	**57.2** 2.25	**25.4** 1.00	**12** ½	**25.4** 1.00	**73.2** 2.88	**44.5** 1.75	**3.3** 0.13	**69.9** 2.75	**4.1** 9
QMP08J107S	1 7/16 in.																
QMP08J108S	1 ½ in.	22208	**54.1** 2.13	**101.1** 3.98	**60.5** 2.38	**119.1** 4.69	**165.1** 6.50	**200.2** 7.88	**57.2** 2.25	**25.4** 1.00	**12** ½	**25.4** 1.00	**73.2** 2.88	**44.5** 1.75	**3.3** 0.13	**69.9** 2.75	**4.1** 9
QMP09J111S	1 11/16 in.	22209	**54.1** 2.13	**104.9** 4.13	**66.5** 2.62	**144.8** 5.70	**165.1** 6.50	**200.2** 7.88	**60.2** 2.37	**31.8** 1.25	**12** ½	**25.4** 1.00	**77.7** 3.06	**47.8** 1.88	**4.8** 0.19	**73.2** 2.88	**4.5** 10
QMP09J040S	**40 mm**	22209	**57.2** 2.25	**108.0** 4.25	**66.5** 2.62	**158.8** 6.25	**180.8** 7.12	**225.6** 8.88	**62.0** 2.44	**31.8** 1.25	**16** 5/8	**25.4** 1.00	**78.7** 3.10	**47.8** 1.88	**5.8** 0.23	**73.2** 2.88	**4.5** 10
QMP09J112S	1 3/4 in.																
QMP09J045S	**45 mm**																
QMP10J115S	1 15/16 in.	22210	**57.2** 2.25	**122.2** 4.81	**71.4** 2.81	**152.4** 6.00	**181.1** 7.13	**225.6** 8.88	**62.0** 2.44	**31.8** 1.25	**16** 5/8	**25.4** 1.00	**79.0** 3.11	**47.5** 1.87	**6.1** 0.24	**72.9** 2.87	**5.9** 13
QMP10J200S	2 in.																
QMP10J050S	**50 mm**																
QMP11J203S	2 3/16 in.	22211	**63.5** 2.50	**133.4** 5.25	**75.9** 2.99	**165.1** 6.50	**200.2** 7.88	**244.6** 9.63	**66.8** 2.63	**31.8** 1.25	**16** 5/8	**28.7** 1.13	**84.1** 3.31	**50.8** 2.00	**4.8** 0.19	**79.5** 3.13	**7.7** 17
QMP11J204S	2 1/4 in.																
QMP11J055S	**55 mm**																
QMP13J060S	**60 mm**	22213	**69.9** 2.75	**147.3** 5.80	**91.9** 3.62	**174.8** 6.88	**219.2** 8.63	**260.4** 10.25	**73.7** 2.90	**35.1** 1.38	**16** 5/8	**31.5** 1.24	**91.2** 3.59	**54.1** 2.13	**5.3** 0.21	**85.6** 3.37	**10.0** 22
QMP13J207S	2 7/16 in.																
QMP13J208S	2 ½ in.																
QMP13J065S	**65 mm**																
QMP15J211S	2 11/16 in.	22215	**79.5** 3.13	**164.3** 6.47	**101.9** 4.01	**200.2** 7.88	**244.6** 9.63	**295.4** 11.63	**76.2** 3.00	**35.1** 1.38	**20** 3/4	**31.8** 1.25	**98.3** 3.87	**60.2** 2.37	**6.4** 0.25	**91.9** 3.62	**12.7** 28
QMP15J212S	2 3/4 in.																
QMP15J070S	**70 mm**																
QMP15J215S	2 15/16 in.																
QMP15J300S	3 in.																
QMP15J075S	**75 mm**																
QMP18J303S	3 3/16 in.	22218	**95.3** 3.75	**195.3** 7.69	**120.9** 4.76	**238.3** 9.38	**285.8** 11.25	**342.9** 13.50	**86.6** 3.41	**47.8** 1.88	**24** 7/8	**36.6** 1.44	**109.2** 4.30	**65.8** 2.59	**7.1** 0.28	**102.4** 4.03	**20.4** 45
QMP18J304S	3 1/4 in.																
QMP18J080S	**80 mm**																
QMP18J085S	**85 mm**																
QMP18J307S	3 7/16 in.																
QMP18J308S	3 ½ in.																
QMP18J090S	**90 mm**																
QMP20J311S	3 11/16 in.	22220	**104.9** 4.13	**209.8** 8.26	**152.4** 6.00	**255.0** 10.04	**320.0** 12.60	**362.0** 14.25	**94.7** 3.73	**50.8** 2.00	**24** 1	**41.4** 1.63	**122.9** 4.84	**75.2** 2.96	**6.1** 0.24	**116.6** 4.59	**26.8** 59
QMP20J312S	3 3/4 in.																
QMP20J315S	3 15/16 in.																
QMP20J400S	4 in.																
QMP20J100S	**100 mm**																

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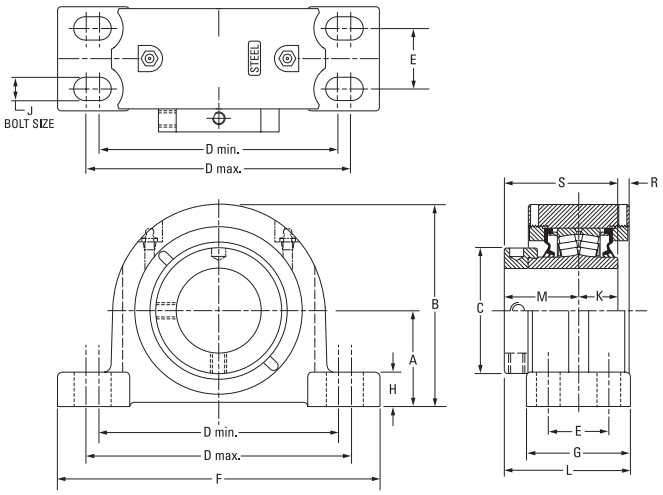
QMPL TWO-BOLT PILLOW BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	K	L	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMPL08J035S	**35 mm**	22208	**47.8** 1.88	**94.7** 3.73	**60.5** 2.38	**119.1** 4.69	**152.4** 6.00	**174.8** 6.88	**57.2** 2.25	**25.4** 1.00	**12** ½	**25.4** 1.00	**73.2** 2.88	**44.5** 1.75	**3.3** 0.13	**69.9** 2.75	**4.1** 9
QMPL08J107S	1 7/16 in.																
QMPL08J108S	1 ½ in.																
QMPL09J040S	**40 mm**	22209	**54.1** 2.13	**104.9** 4.13	**66.5** 2.62	**133.4** 5.25	**146.1** 5.75	**181.1** 7.13	**60.2** 2.37	**31.8** 1.25	**12** ½	**25.4** 1.00	**77.7** 3.06	**47.8** 1.88	**4.8** 0.19	**73.2** 2.88	**4.5** 10
QMPL09J111S	1 11/16 in.																
QMPL09J112S	1 ¾ in.																
QMPL09J045S	**45 mm**																
QMPL10J115S	1 15/16 in.	22210	**57.2** 2.25	**122.2** 4.81	**71.4** 2.81	**150.6** 5.93	**161.5** 6.36	**212.9** 8.38	**62.0** 2.44	**31.8** 1.25	**16** 5/8	**25.4** 1.00	**79.0** 3.11	**47.5** 1.87	**6.1** 0.24	**72.9** 2.87	**5.9** 13
QMPL10J200S	2 in.																
QMPL10J050S	**50 mm**																
QMPL11J203S	2 3/16 in.	22211	**63.5** 2.50	**133.4** 5.25	**75.9** 2.99	**165.1** 6.50	**179.3** 7.06	**225.6** 8.88	**65.5** 2.58	**31.8** 1.25	**16** 5/8	**28.4** 1.12	**83.3** 3.28	**50.8** 2.00	**4.3** 0.17	**79.2** 3.12	**7.7** 17
QMPL11J204S	2 ¼ in.																
QMPL11J055S	**55 mm**																
QMPL13J060S	**60 mm**	22213	**69.9** 2.75	**147.3** 5.80	**91.9** 3.62	**173.0** 6.81	**189.0** 7.44	**235.0** 9.25	**73.7** 2.90	**35.1** 1.38	**16** 5/8	**31.5** 1.24	**90.9** 3.58	**54.1** 2.13	**5.3** 0.21	**85.6** 3.37	**10.0** 22
QMPL13J207S	2 7/16 in.																
QMPL13J208S	2 ½ in.																
QMPL13J065S	**65 mm**																
QMPL15J211S	2 11/16 in.	22215	**82.6** 3.25	**167.4** 6.59	**101.9** 4.01	**195.6** 7.70	**213.4** 8.40	**265.2** 10.44	**76.2** 3.00	**35.1** 1.38	**20** ¾	**31.8** 1.25	**98.3** 3.87	**60.2** 2.37	**6.4** 0.25	**91.9** 3.62	**12.7** 28
QMPL15J212S	2 ¾ in.																
QMPL15J070S	**70 mm**																
QMPL15J215S	2 15/16 in.																
QMPL15J300S	3 in.																
QMPL15J075S	**75 mm**																
QMPL18J303S	3 3/16 in.	22218	**95.3** 3.75	**195.3** 7.69	**120.9** 4.76	**235.0** 9.25	**273.1** 10.75	**330.2** 13.00	**86.6** 3.41	**47.8** 1.88	**24** 7/8	**36.6** 1.44	**109.2** 4.30	**65.8** 2.59	**7.1** 0.28	**102.4** 4.03	**20.4** 45
QMPL18J304S	3 ¼ in.																
QMPL18J080S	**80 mm**																
QMPL18J085S	**85 mm**																
QMPL18J307S	3 7/16 in.																
QMPL18J308S	3 ½ in.																
QMPL18J090S	**90 mm**																
QMPL20J311S	3 11/16 in.	22220	**108.0** 4.25	**212.9** 8.38	**152.4** 6.00	**255.0** 10.04	**320.0** 12.60	**362.0** 14.25	**94.7** 3.73	**53.8** 2.12	**24** 1	**41.4** 1.63	**122.9** 4.84	**75.2** 2.96	**6.1** 0.24	**116.6** 4.59	**26.8** 59
QMPL20J312S	3 ¾ in.																
QMPL20J315S	3 15/16 in.																
QMPL20J400S	4 in.																
QMPL20J100S	**100 mm**																

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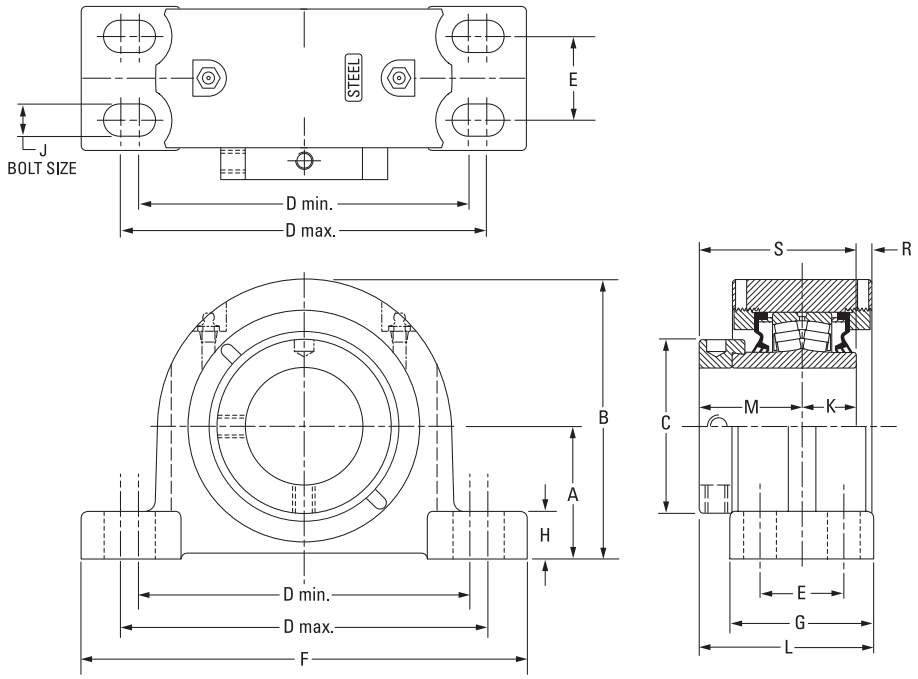
QMPF FOUR-BOLT PILLOW BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	K	L	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in..	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMPF13J060S	**60 mm**	22213	**69.9** 2.75	**147.3** 5.80	**91.9** 3.62	**174.8** 6.88	**193.8** 7.63	**44.5** 1.75	**235.0** 9.25	**76.2** 3.00	**24.9** 0.98	**16** 5/8	**31.5** 1.24	**92.2** 3.63	**54.1** 2.13	**5.3** 0.21	**85.6** 3.37	**9.1** 20
QMPF13J207S	2 7/16 in.																	
QMPF13J208S	2 1/2 in.																	
QMPF13J065S	**65 mm**																	
QMPF15J211S	2 11/16 in.	22215	**82.6** 3.25	**167.6** 6.60	**101.9** 4.01	**193.0** 7.60	**231.1** 9.10	**47.8** 1.88	**265.2** 10.44	**79.5** 3.13	**32.8** 1.29	**16** 5/8	**31.8** 1.25	**99.8** 3.93	**60.2** 2.37	**6.1** 0.24	**91.9** 3.62	**12.2** 27
QMPF15J212S	2 3/4 in.																	
QMPF15J070S	**70 mm**																	
QMPF15J215S	2 15/16 in.																	
QMPF15J300S	3 in.																	
QMPF15J075S	**75 mm**																	
QMPF18J303S	3 3/16 in.	22218	**95.3** 3.75	**195.3** 7.69	**120.9** 4.76	**225.6** 8.88	**276.4** 10.88	**50.8** 2.00	**312.4** 12.30	**95.3** 3.75	**39.6** 1.56	**20** 3/4	**36.6** 1.44	**113.3** 4.46	**65.8** 2.59	**8.1** 0.32	**102.4** 4.03	**22.2** 49
QMPF18J304S	3 1/4 in.																	
QMPF18J080S	**80 mm**																	
QMPF18J085S	**85 mm**																	
QMPF18J307S	3 7/16 in.																	
QMPF18J308S	3 1/2 in.																	
QMPF18J090S	**90 mm**																	
QMPF20J311S	3 11/16 in.	22220	**108.0** 4.25	**223.0** 8.78	**152.4** 6.00	**276.4** 10.88	**339.9** 13.38	**57.2** 2.25	**378.0** 14.88	**109.5** 4.31	**35.6** 1.40	**20** 3/4	**41.4** 1.63	**130.3** 5.13	**75.2** 2.96	**9.1** 0.36	**116.6** 4.59	**30.4** 67
QMPF20J312S	3 3/4 in.																	
QMPF20J315S	3 15/16 in.																	
QMPF20J400S	4 in.																	
QMPF20J100S	**100 mm**																	
QMPF22J110S	**110 mm**	22222	**120.7** 4.75	**233.4** 9.19	**160.0** 6.30	**301.8** 11.88	**368.3** 14.50	**63.5** 2.50	**409.7** 16.13	**120.7** 4.75	**40.1** 1.58	**20** 3/4	**46.5** 1.83	**154.4** 6.08	**94.0** 3.70	**4.3** 0.17	**140.5** 5.53	**37.2** 82
QMPF22J407S	4 7/16 in.																	
QMPF22J408S	4 1/2 in.																	
QMPF22J115S	**115 mm**																	
QMPF26J125S	**125 mm**	22226	**139.7** 5.50	**279.7** 11.01	**175.0** 6.89	**349.3** 13.75	**403.4** 15.88	**69.9** 2.75	**444.5** 17.5	**128.0** 5.04	**39.1** 1.54	**24** 7/8	**58.7** 2.31	**158.8** 6.25	**94.7** 3.73	**-0.8** -0.03	**153.4** 6.04	**60.8** 134
QMPF26J415S	4 15/16 in.																	
QMPF26J500S	5 in.																	
QMPF26J130S	**130 mm**																	
QMPF30J507S	5 7/16 in.	23230	**169.9** 6.69	**330.2** 13.00	**205.0** 8.07	**441.5** 17.38	**485.9** 19.13	**95.3** 3.75	**558.8** 22.00	**171.5** 6.75	**76.2** 3.00	**24** 1	**75.9** 2.99	**201.7** 7.94	**116.1** 4.57	**6.6** 0.26	**192.0** 7.56	**113.4** 250
QMPF30J508S	5 1/2 in.																	
QMPF30J140S	**140 mm**																	
QMPF30J515S	5 15/16 in.																	
QMPF30J600S	6 in.																	
QMPF30J150S	**150 mm**																	
QMPF34J607S	6 7/16 in.	23234	**190.5** 7.50	**390.7** 15.38	**235.0** 9.25	**530.4** 20.88	**600.2** 23.63	**117.5** 4.625	**660.4** 26.00	**190.5** 7.50	**63.5** 2.50	**24** 1	**85.1** 3.35	**224.3** 8.83	**129.0** 5.08	**5.6** 0.22	**214.1** 8.43	**170.1** 375
QMPF34J608S	6 1/2 in.																	
QMPF34J170S	**170 mm**																	
QMPF34J615S	6 15/16 in.																	
QMPF34J700S	7 in.																	
QMPF34J180S	**180 mm**																	

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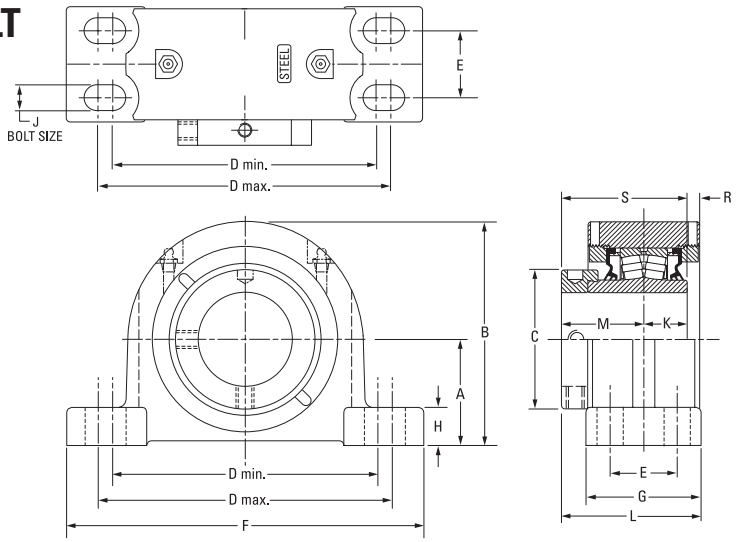
QMPR FOUR-BOLT PILLOW BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	K	L	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMPR13J060S	**60 mm**	22213	**69.9** 2.75	**147.3** 5.80	**91.9** 3.62	**181.1** 7.13	**222.3** 8.75	**47.8** 1.88	**260.4** 10.25	**82.6** 3.25	**24.9** 0.98	**16** 5/8	**31.5** 1.24	**95.5** 3.76	**54.1** 2.13	**5.3** 0.21	**85.6** 3.37	**9.1** 20
QMPR13J207S	2 7/16 in.																	
QMPR13J208S	2 1/2 in.																	
QMPR13J065S	**65 mm**																	
QMPR15J211S	2 11/16 in.	22215	**79.5** 3.13	**164.3** 6.47	**101.9** 4.01	**203.2** 8.00	**243.8** 9.60	**54.1** 2.13	**275.1** 10.83	**85.9** 3.38	**29.5** 1.16	**16** 5/8	**31.8** 1.25	**103.1** 4.06	**60.2** 2.37	**6.1** 0.24	**91.9** 3.62	**12.2** 27
QMPR15J212S	2 3/4 in.																	
QMPR15J070S	**70 mm**																	
QMPR15J215S	2 15/16 in.																	
QMPR15J300S	3 in.																	
QMPR15J075S	**75 mm**																	
QMPR18J303S	3 3/16 in.	22218	**95.3** 3.75	**195.3** 7.69	**120.9** 4.76	**235.0** 9.25	**285.8** 11.25	**60.5** 2.38	**346.2** 13.63	**95.3** 3.75	**39.6** 1.56	**20** 3/4	**36.6** 1.44	**113.3** 4.46	**65.8** 2.59	**8.1** 0.32	**102.4** 4.03	**22.2** 49
QMPR18J304S	3 1/4 in.																	
QMPR18J080S	**80 mm**																	
QMPR18J085S	**85 mm**																	
QMPR18J307S	3 7/16 in.																	
QMPR18J308S	3 1/2 in.																	
QMPR18J090S	**90 mm**																	

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QMPH/QMPG FOUR-BOLT PILLOW BLOCKS



QMPH SAF STYLE FOUR-BOLT PILLOW BLOCK DIMENSIONS

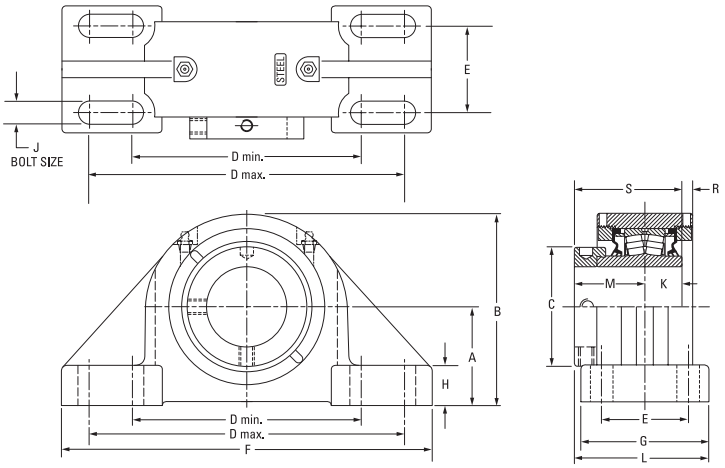
Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	K	L	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMPH26J125S	**125 mm**	22226	**152.4** 6.00	**284** 11.18	**175** 6.89	**406.4** 16.00	**435.1** 17.13	**85.9** 3.38	**500.4** 19.70	**128** 5.04	**51.8** 2.04	**24** 1	**58.7** 2.31	**158.5** 6.24	**94.5** 3.72	**-0.7** -0.028	**153.4** 6.04	**60.8** 134
QMPH26J415S	4 15/16 in.																	
QMPH26J500S	5 in.																	
QMPH26J130S	**130 mm**																	
QMPH30J507S	5 7/16 in.	23230	**169.9** 6.688	**330.7** 13.02	**205.0** 8.07	**441.5** 17.38	**485.9** 19.13	**95.3** 3.75	**558.8** 22.00	**171.5** 6.75	**76.2** 3.00	**24** 1	**75.9** 2.99	**199.1** 7.84	**116.1** 4.57	**5.1** 0.20	**192.0** 7.56	**113.4** 250
QMPH30J508S	5 1/2 in.																	
QMPH30J140S	**140 mm**																	
QMPH30J515S	5 15/16 in.	23230	**179.4** 7.063	**339.9** 13.38	**205.0** 8.07	**492.3** 19.38	**549.4** 21.63	**108.0** 4.25	**628.7** 24.75	**171.5** 6.75	**85.9** 3.38	**24** 1	**75.9** 2.99	**201.7** 7.94	**116.1** 4.57	**6.6** 0.26	**192.0** 7.56	**113.4** 250
QMPH30J600S	6 in.																	
QMPH30J150S	**150 mm**																	
QMPH34J607S	6 7/16 in.	23234	**190.5** 7.50	**390.7** 15.38	**235.0** 9.25	**530.4** 20.88	**600.2** 23.63	**117.5** 4.625	**711.2** 28.00	**190.5** 7.50	**63.5** 2.50	**24** 1	**85.1** 3.35	**224.3** 8.83	**129.0** 5.08	**5.6** 0.22	**214.1** 8.43	**170.1** 375
QMPH34J608S	6 1/2 in.																	
QMPH34J170S	**170 mm**																	
QMPH34J615S	6 15/16 in.	23234	**200.0** 7.875	**400.1** 15.75	**235.0** 9.25	**549.4** 21.63	**619.3** 24.38	**114.3** 4.50	**711.2** 28.00	**190.5** 7.50	**73.2** 2.88	**30** 1 1/4	**85.1** 3.35	**224.3** 8.83	**129.0** 5.08	**5.6** 0.22	**214.1** 8.43	**170.1** 375
QMPH34J700S	7 in.																	
QMPH34J180S	**180 mm**																	

QMPG SN STYLE FOUR-BOLT PILLOW BLOCK DIMENSIONS

Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	K	L	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMPG26J125S	**125 mm**	22226	**150.0** 5.906	**281.4** 11.08	**175.0** 6.89	**384.3** 15.13	**447.8** 17.63	**80.0** 3.15	**500.1** 19.69	**128** 5.04	**49.3** 1.94	**24** 1	**58.7** 2.31	**158.5** 6.24	**94.5** 3.72	**-6.9** -0.27	**153.4** 6.04	**60.8** 134
QMPG26J415S	4 15/16 in.																	
QMPG26J500S	5 in.																	
QMPG26J130S	**130 mm**																	
QMPG30J507S	5 7/16 in.	23230	**170.0** 6.693	**332.2** 13.08	**205.0** 8.07	**438.2** 17.25	**482.6** 19.00	**89.9** 3.54	**547.6** 21.65	**171.5** 6.75	**76.2** 3.00	**24** 1	**75.9** 2.99	**198.6** 7.82	**116.1** 4.57	**9.7** 0.38	**192.0** 7.56	**113.4** 250
QMPG30J508S	5 1/2 in.																	
QMPG30J140S	**140 mm**																	
QMPG30J515S	5 15/16 in.																	
QMPG30J600S	6 in.																	
QMPG30J150S	**150 mm**																	
QMPG34J607S	6 7/16 in.	23234	**190.5** 7.50	**390.7** 15.38	**235.0** 9.25	**530.4** 20.88	**600.2** 23.63	**117.5** 4.625	**711.2** 28.00	**190.5** 7.50	**63.5** 2.50	**24** 1	**85.1** 3.35	**224.3** 8.83	**129.0** 5.08	**5.6** 0.22	**214.1** 8.43	**170.1** 375
QMPG34J608S	6 1/2 in.																	
QMPG34J170S	**170 mm**																	
QMPG34J615S	6 15/16 in.	23234	**200.0** 7.875	**400.1** 15.75	**235.0** 9.25	**549.4** 21.63	**619.3** 24.38	**114.3** 4.50	**711.2** 28.00	**190.5** 7.50	**73.2** 2.88	**30** 1 1/4	**85.1** 3.35	**224.3** 8.83	**129.0** 5.08	**5.6** 0.22	**214.1** 8.43	**170.1** 375
QMPG34J700S	7 in.																	
QMPG34J180S	**180 mm**																	

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QMPX 5000 SERIES FOUR-BOLT PILLOW BLOCKS

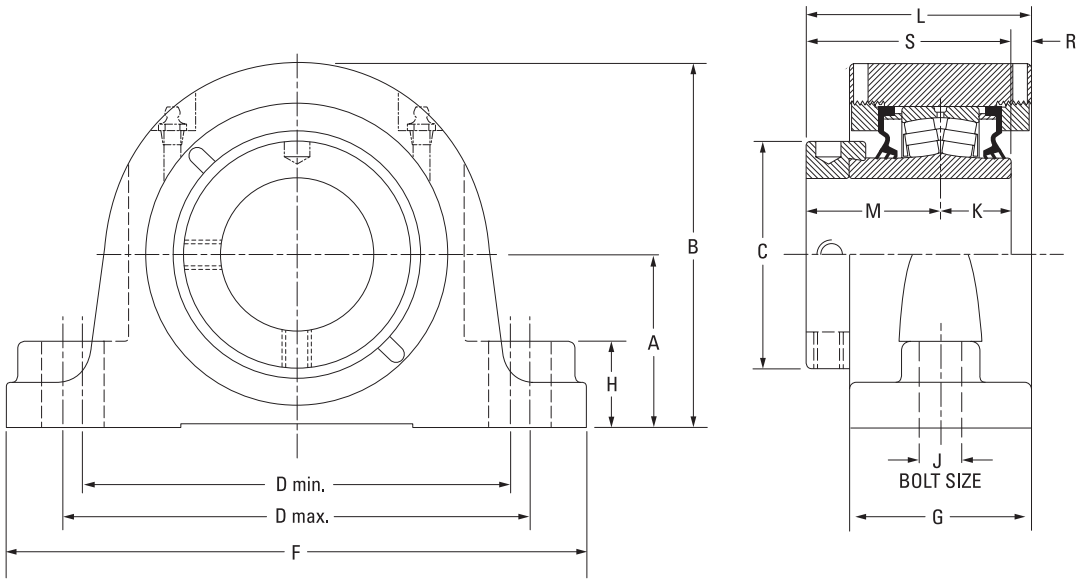


Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	K	L	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMPX13J060S	**60 mm**	22213	**76.2** 3.00	**153.7** 6.05	**91.9** 3.62	**176.3** 6.94	**242.8** 9.56	**66.8** 2.63	**285.8** 11.25	**98.6** 3.88	**31.0** 1.22	**16** 5/8	**31.5** 1.24	**103.4** 4.07	**54.1** 2.13	**5.3** 0.21	**85.6** 3.37	**10.4** 23
QMPX13J207S	2 7/16 in.																	
QMPX13J208S	2 1/2 in.																	
QMPX13J065S	**65 mm**																	
QMPX15J211S	2 11/16 in.	22215	**88.9** 3.50	**173.5** 6.83	**101.9** 4.01	**230.1** 9.06	**265.2** 10.44	**68.9** 2.75	**330.2** 13.00	**108.0** 4.25	**39.1** 1.54	**20** 3/4	**31.8** 1.25	**114.3** 4.50	**60.2** 2.37	**7.1** 0.28	**91.9** 3.62	**12.7** 28
QMPX15J212S	2 3/4 in.																	
QMPX15J070S	**70 mm**																	
QMPX15J215S	2 15/16 in.																	
QMPX15J300S	3 in.																	
QMPX15J075S	**75 mm**																	
QMPX18J303S	3 3/16 in.	22218	**101.6** 4.00	**201.2** 7.92	**120.9** 4.76	**274.6** 10.81	**309.6** 12.19	**76.2** 3.00	**381.0** 15.00	**120.7** 4.75	**38.1** 1.50	**20** 3/4	**36.6** 1.44	**126.0** 4.96	**65.8** 2.59	**8.1** 0.32	**102.4** 4.03	**22.2** 49
QMPX18J304S	3 1/4 in.																	
QMPX18J080S	**80 mm**																	
QMPX18J085S	**85 mm**																	
QMPX18J307S	3 7/16 in.																	
QMPX18J308S	3 1/2 in.																	
QMPX18J090S	**90 mm**																	
QMPX20J311S	3 11/16 in.	22220	**127.0** 5.00	**239.8** 9.44	**152.4** 6.00	**317.5** 12.50	**355.6** 14.00	**88.9** 3.50	**425.5** 16.75	**139.7** 5.50	**41.4** 1.63	**24** 7/8	**41.4** 1.63	**145.3** 5.72	**75.2** 2.96	**8.6** 0.34	**116.6** 4.59	**30.4** 67
QMPX20J312S	3 3/4 in.																	
QMPX20J315S	3 15/16 in.																	
QMPX20J400S	4 in.																	
QMPX20J100S	**100 mm**																	
QMPX22J110S	**110 mm**	22222	**146.1** 5.75	**273.8** 10.78	**160.0** 6.30	**354.1** 13.94	**395.2** 15.56	**101.6** 4.00	**469.9** 18.50	**158.8** 6.25	**45.7** 1.80	**24** 1	**46.5** 1.83	**171.2** 6.74	**94.0** 3.70	**2.3** 0.09	**140.5** 5.53	**37.2** 82
QMPX22J407S	4 7/16 in.																	
QMPX22J408S	4 1/2 in.																	
QMPX22J115S	**115 mm**																	
QMPX26J125S	**125 mm**	22226	**155.6** 6.125	**283.2** 11.15	**175.0** 6.89	**387.4** 15.25	**425.5** 16.75	**108.0** 4.25	**514.4** 20.25	**171.5** 6.75	**50.8** 2.00	**24** 1 1/8	**58.7** 2.31	**180.3** 7.10	**94.5** 3.72	**-1.5** -0.06	**153.4** 6.04	**60.8** 134
QMPX26J415S	4 15/16 in.																	
QMPX26J500S	5 in.																	
QMPX26J130S	**130 mm**																	
QMPX30J507S	5 7/16 in.	23230	**169.9** 6.688	**330.2** 13.00	**205.0** 8.07	**439.9** 17.32	**485.8** 19.125	**93.5** 3.68	**558.8** 22.00	**171.5** 6.75	**76.2** 3.00	**24** 1 1/8	**75.9** 2.99	**201.7** 7.94	**116.1** 4.57	**6.6** 0.26	**192.0** 7.56	**113.4** 250
QMPX30J508S	5 1/2 in.																	
QMPX30J140S	**140 mm**																	
QMPX30J515S[1]	5 15/16 in.	23230	**179.4** 7.063	**339.9** 13.38	**205.0** 8.07	**489.0** 19.25	**552.5** 21.75	**106.4** 4.188	**625.7** 24.75	**171.5** 6.75	**85.6** 3.37	**24** 1 1/8	**75.9** 2.99	**196.9** 7.75	**116.1** 4.57	**4.8** 0.19	**192.0** 7.56	**113.4** 250
QMPX30J600S[1]	6 in.																	
QMPX30J150S[1]	**150 mm**																	
QMPX34J607S[1]	6 7/16 in.	23234	**200.0** 7.875	**400.1** 15.75	**235.0** 9.25	**549.4** 21.63	**619.3** 24.38	**112.8** 4.44	**711.2** 28.00	**190.5** 7.50	**73.2** 2.88	**30** 1 1/4	**80.1** 3.35	**224.3** 8.83	**129.0** 5.08	**5.6** 0.22	**214.1** 8.43	**179.2** 395
QMPX34J608S[1]	6 1/2 in.																	
QMPX34J170S[1]	**170 mm**																	
QMPX34J615S[1]	6 15/16 in.																	
QMPX34J700S[1]	7 in.																	
QMPX34J180S[1]	**180 mm**																	

[1]No gussets on outside housing.

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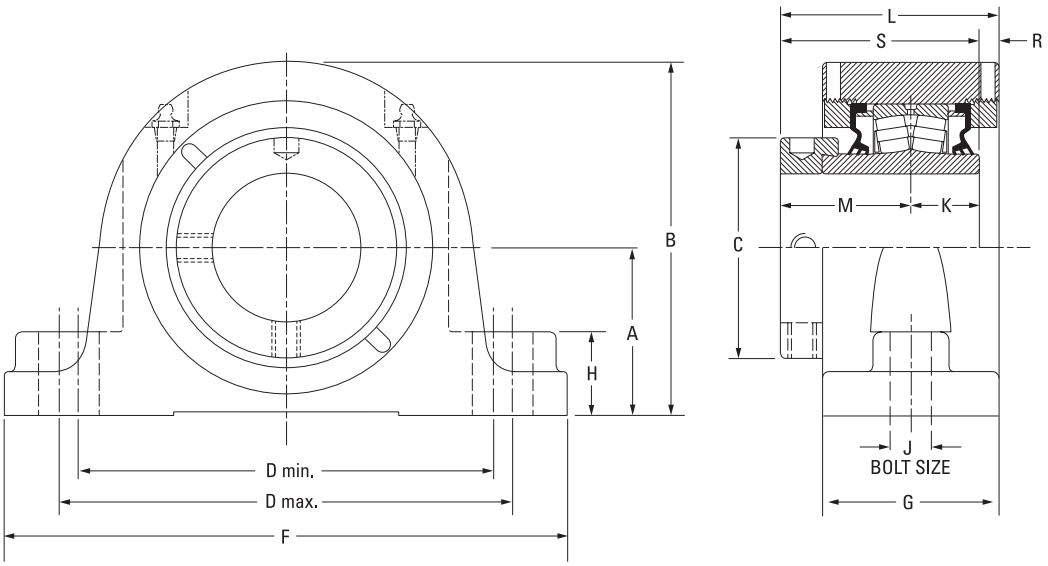
QMPXT 5000 SERIES TWO-BOLT PILLOW BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	K	L	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMPXT13J060S	**60 mm**	22213	**76.2** 3.00	**153.7** 6.05	**91.9** 3.62	**194.6** 7.66	**223.0** 8.78	**285.8** 11.25	**73.7** 2.90	**35.1** 1.38	**20** 3/4	**31.5** 1.24	**91.4** 3.60	**54.1** 2.13	**5.3** 0.21	**85.6** 3.37	**10.0** 22
QMPXT13J207S	2 7/16 in.																
QMPXT13J208S	2 1/2 in.																
QMPXT13J065S	**65 mm**																
QMPXT15J211S	2 11/16 in.	22215	**88.9** 3.50	**173.7** 6.84	**101.9** 4.01	**230.1** 9.06	**265.2** 10.44	**330.2** 13.00	**75.7** 2.98	**35.1** 1.38	**24** 7/8	**31.8** 1.25	**98.0** 3.86	**60.2** 2.37	**6.1** 0.24	**91.9** 3.62	**12.7** 28
QMPXT15J212S	2 3/4 in.																
QMPXT15J070S	**70 mm**																
QMPXT15J215S	2 15/16 in.																
QMPXT15J300S	3 in.																
QMPXT15J075S	**75 mm**																

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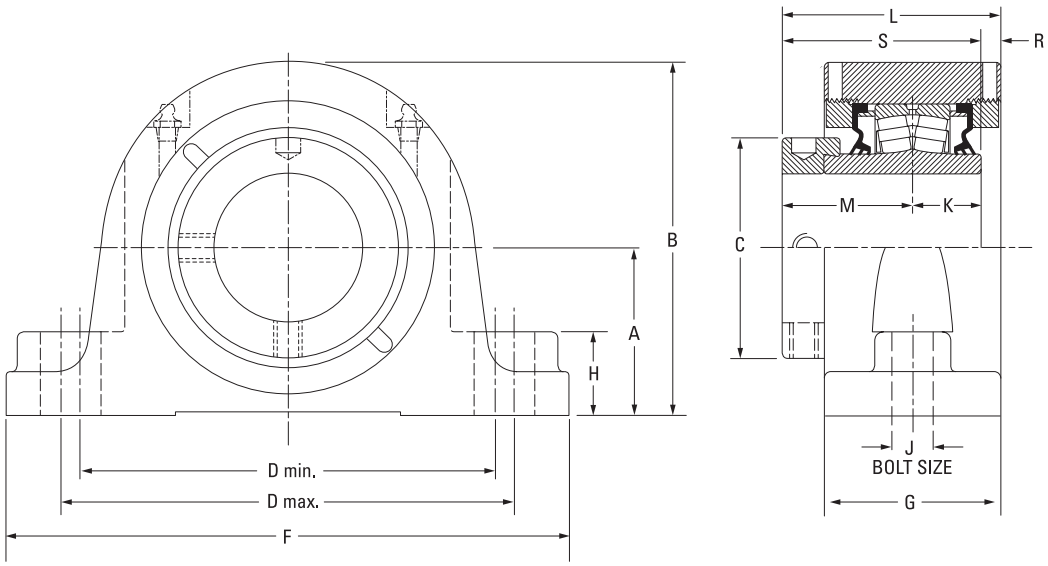
QMSN SN-STYLE TWO-BOLT PILLOW BLOCKS – PURE METRIC DESIGN



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	K	L	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMSN08J035S	**35 mm**	22208	**60** 2.36	**111** 4.37	**60.5** 2.38	**159** 6.26	**175** 6.89	**205** 8.07	**62** 2.44	**35** 1.38	**12** ½	**25** 1.00	**75** 2.95	**44** 1.75	**5** 0.20	**70** 2.75	**10.5** 23
QMSN08J107S	1 7/16 in.																
QMSN08J108S	1 ½ in.																
QMSN09J040S	**40 mm**	22209	**60** 2.36	**111** 4.37	**67** 2.64	**159** 6.26	**175** 6.89	**205** 8.07	**62** 2.44	**35** 1.38	**12** ½	**25** 0.98	**79** 3.11	**48** 1.89	**6** 0.24	**73** 2.87	**10.5** 23
QMSN09J111S	1 11/16 in.																
QMSN09J112S	1 ¾ in.																
QMSN09J045S	**45 mm**																
QMSN10J115S	1 15/16 in.	22210	**70** 2.76	**136** 5.35	**70** 2.76	**183** 7.20	**216** 8.50	**254** 10.00	**68** 2.68	**25** 0.98	**16** 5/8	**25** 0.98	**82** 3.23	**48** 1.89	**9** 0.35	**73** 2.87	**12.7** 28
QMSN10J200S	2 in.																
QMSN10J050S	**50 mm**																
QMSN11J203S	2 3/16 in.	22211	**70** 2.76	**141** 5.55	**76** 2.99	**183** 7.20	**216** 8.50	**254** 10.00	**68** 2.68	**25** 0.98	**16** 5/8	**29** 1.14	**85** 3.35	**51** 2.01	**6** 0.24	**80** 3.15	**13.2** 29
QMSN11J204S	2 ¼ in.																
QMSN11J055S	**55 mm**																
QMSN13J060S	**60 mm**	22213	**80** 3.15	**157** 6.18	**92** 3.62	**196** 7.72	**235** 9.25	**275** 10.83	**74** 2.91	**35** 1.38	**16** 5/8	**31** 1.22	**91** 3.58	**55** 2.17	**5** 0.20	**86** 3.39	**15.9** 35
QMSN13J207S	2 7/16 in.																
QMSN13J208S	2 ½ in.																
QMSN13J065S	**65 mm**																
QMSN15J211S	2 11/16 in.	22215	**95** 3.74	**183** 7.20	**102** 4.02	**241** 9.49	**279** 10.98	**316** 12.44	**76** 2.99	**34** 1.34	**20** ¾	**32** 1.26	**98** 3.86	**60** 2.36	**6** 0.24	**92** 3.62	**20.9** 46
QMSN15J212S	2 ¾ in.																
QMSN15J070S	**70 mm**																
QMSN15J215S	2 15/16 in.																
QMSN15J300S	3 in.																
QMSN15J075S	**75 mm**																
QMSN18J303S	3 3/16 in.	22218	**100** 3.94	**200** 7.87	**121** 4.76	**279** 10.98	**292** 11.50	**345** 13.58	**86** 3.39	**39** 1.54	**20** ¾	**37** 1.46	**109** 4.29	**66** 2.60	**7** 0.28	**103** 4.06	**25.5** 56
QMSN18J304S	3 ¼ in.																
QMSN18J080S	**80 mm**																

Continued on next page.

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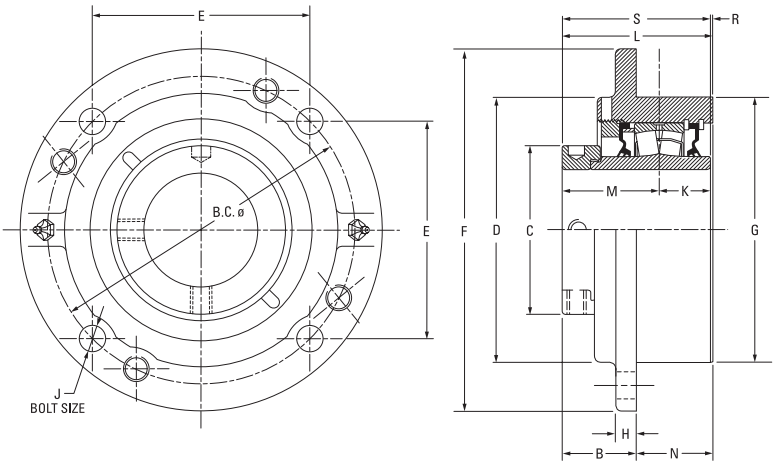


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Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	K	L	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMSN18J085S	**85 mm**	22218	**112** 4.41	**212** 8.35	**121** 4.76	**279** 10.98	**292** 11.50	**345** 13.58	**86** 3.39	**39** 1.54	**20** 3/4	**37** 1.46	**109** 4.29	**66** 2.60	**7** 0.28	**103** 4.06	**25.5** 56
QMSN18J307S	3 7/16 in.	22218	**112** 4.41	**212** 8.35	**121** 4.76	**290** 11.42	**327** 12.87	**380** 14.96	**86** 3.39	**39** 1.54	**24** 7/8	**37** 1.46	**109** 4.29	**66** 2.60	**7** 0.28	**103** 4.06	**25.5** 56
QMSN18J308S	3 1/2 in.																
QMSN18J090S	**90 mm**																
QMSN20J311S	3 11/16 in.	22220	**125** 4.92	**241** 9.49	**152** 5.98	**319** 12.56	**366** 14.41	**410** 16.14	**101** 3.98	**50** 1.97	**24** 7/8	**41** 1.61	**126** 4.96	**75** 2.95	**9** 0.35	**116** 4.57	**35.9** 79
QMSN20J312S	3 3/4 in.																
QMSN20J315S	3 15/16 in.																
QMSN20J400S	4 in.																
QMSN20J100S	**100 mm**																
QMSN22J110S	**110 mm**	22222	**140** 5.51	**255** 10.04	**160** 6.30	**332** 13.07	**365** 14.37	**410** 16.14	**105** 4.13	**39** 1.54	**24** 7/8	**47** 1.85	**147** 5.79	**94** 3.70	**6** 0.24	**141** 5.55	**35.9** 79
QMSN22J407S	4 7/16 in.	22222	**150** 5.91	**265** 10.43	**160** 6.30	**367** 14.45	**400** 15.75	**445** 17.52	**105** 4.13	**49** 1.93	**24** 7/8	**47** 1.85	**147** 5.79	**94** 3.70	**6** 0.24	**141** 5.55	**35.5** 78
QMSN22J408S	4 1/2 in.																
QMSN22J115S	**115 mm**																
QMSN26J125S	**125 mm**	22226	**150** 5.91	**282** 11.10	**175** 6.89	**402** 15.83	**435** 17.13	**500** 19.69	**113** 4.45	**49** 1.93	**30** 1 1/4	**58** 2.28	**151** 5.94	**95** 3.74	**2** 0.08	**153** 6.02	**40.0** 88
QMSN26J415S	4 15/16 in.																
QMSN26J500S	5 in.																
QMSN26J130S	**130 mm**																

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QMC PILOTED FLANGE CARTRIDGES

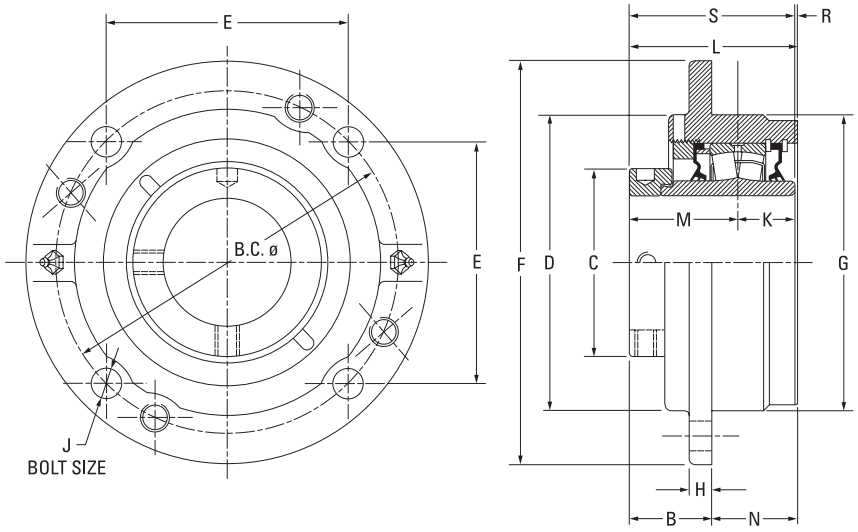


Bearing Part No.	Shaft Dia.	Bearing No.	B FIX	B EXP	B.C.	C	D	E	F	G[1]	H	J	K	L FIX	L EXP	M	N	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMC08J035S	**35 mm**	22208	**49.8** 1.96	**51.8** 2.04	**111.3** 4.38	**60.5** 2.38	**92.2** 3.63	**78.5** 3.09	**133.4** 5.25	**92.1** 3.625	**12.7** 0.50	**10** 7/16	**25.4** 1.00	**73.7** 2.90	**75.7** 2.98	**44.5** 1.75	**23.9** 0.94	**3.81** 0.15	**69.9** 2.75	**3.6** 8
QMC08J107S	1 7/16 in.																			
QMC08J108S	1 1/2 in.																			
QMC09J040S	**40 mm**	22209	**54.6** 2.15	**56.6** 2.23	**130.3** 5.13	**66.8** 2.63	**111.3** 4.38	**91.9** 3.62	**155.7** 6.13	**108.0** 4.250	**12.7** 0.50	**10** 7/16	**25.4** 1.00	**77.0** 3.03	**79.0** 3.11	**47.5** 1.87	**22.4** 0.88	**3.81** 0.15	**72.9** 2.87	**4.1** 9
QMC09J111S	1 11/16 in.																			
QMC09J112S	1 3/4 in.																			
QMC09J045S	**45 mm**																			
QMC10J115S	1 15/16 in.	22210	**50.4** 1.99	**52.6** 2.07	**136.7** 5.38	**70.1** 2.76	**113.5** 4.47	**96.5** 3.80	**162.1** 6.38	**114.3** 4.500	**16.0** 0.63	**10** 7/16	**25.4** 1.00	**77.5** 3.05	**79.5** 3.13	**47.5** 1.87	**26.9** 1.06	**4.6** 0.18	**72.9** 2.87	**4.5** 10
QMC10J200S	2 in.																			
QMC10J050S	**50 mm**																			
QMC11J203S	2 3/16 in.	22211	**54.4** 2.14	**56.4** 2.22	**152.4** 6.00	**75.9** 2.99	**127.0** 5.00	**107.7** 4.24	**185.4** 7.30	**127.0** 5.000	**14.7** 0.58	**12** 1/2	**28.7** 1.13	**83.1** 3.27	**85.1** 3.35	**50.5** 1.99	**28.7** 1.13	**3.6** 0.14	**79.2** 3.12	**5.9** 13
QMC11J204S	2 1/4 in.																			
QMC11J055S	**55 mm**																			
QMC13J060S	**60 mm**	22213	**59.4** 2.34	**61.5** 2.42	**165.1** 6.50	**91.9** 3.62	**139.7** 5.50	**116.8** 4.60	**193.8** 7.63	**139.7** 5.500	**17.5** 0.69	**12** 1/2	**31.5** 1.24	**87.9** 3.46	**91.2** 3.59	**54.1** 2.13	**28.7** 1.13	**2.3** 0.09	**85.6** 3.37	**7.3** 16
QMC13J207S	2 7/16 in.																			
QMC13J208S	2 1/2 in.																			
QMC13J065S	**65 mm**																			
QMC15J211S	2 11/16 in.	22215	**62.5** 2.46	**64.5** 2.54	**190.5** 7.50	**101.9** 4.01	**162.1** 6.38	**134.6** 5.30	**222.3** 8.75	**161.9** 6.375	**20.6** 0.81	**16** 5/8	**31.8** 1.25	**94.5** 3.72	**96.5** 3.80	**60.2** 2.37	**31.8** 1.25	**2.3** 0.09	**91.9** 3.62	**10.0** 22
QMC15J212S	2 3/4 in.																			
QMC15J070S	**70 mm**																			
QMC15J215S	2 15/16 in.																			
QMC15J300S	3 in.																			
QMC15J075S	**75 mm**																			
QMC18J303S	3 3/16 in.	22218	**73.2** 2.88	**75.2** 2.96	**219.2** 8.63	**120.9** 4.76	**187.5** 7.38	**154.9** 6.10	**262.6** 10.34	**187.3** 7.375	**25.4** 1.00	**20** 3/4	**36.6** 1.44	**106.4** 4.19	**108.5** 4.27	**65.8** 2.59	**33.3** 1.31	**4.1** 0.16	**102.4** 4.03	**14.5** 32
QMC18J304S	3 1/4 in.																			
QMC18J080S	**80 mm**																			
QMC18J085S	**85 mm**																			
QMC18J307S	3 7/16 in.																			
QMC18J308S	3 1/2 in.																			
QMC18J090S	**90 mm**																			
QMC20J311S	3 11/16 in.	22220	**72.1** 2.84	**74.2** 2.92	**238.3** 9.38	**152.4** 6.00	**206.5** 8.13	**168.4** 6.63	**276.4** 10.88	**206.4** 8.125	**25.4** 1.00	**20** 3/4	**41.4** 1.63	**126.0** 4.96	**128.0** 5.04	**75.2** 2.96	**54.1** 2.13	**9.4** 0.37	**115.8** 4.56	**19.5** 43
QMC20J312S	3 3/4 in.																			
QMC20J315S	3 15/16 in.																			
QMC20J400S	4 in.																			
QMC20J100S	**100 mm**																			
QMC22J110S[2]	**110 mm**	22222	**92.5** 3.64	**94.5** 3.72	**298.5** 11.75[2]	**160.0** 6.30	**254.0** 10.00	**149.4** 5.88[2]	**342.9** 13.50	**260.4** 10.250	**25.4** 1.00	**20** 3/4[2]	**46.5** 1.83	**140.7** 5.54	**142.7** 5.62	**94.0** 3.70	**48.3** 1.90	**0.3** 0.01	**140.5** 5.53	**32.7** 72
QMC22J407S[2]	4 7/16 in.																			
QMC22J408S[2]	4 1/2 in.																			
QMC22J115S[2]	**115 mm**																			

[1] Pilot tolerance: +0/-0.051 mm (+0/-0.002 in.).
[2] Six-bolt housing.

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QMCW PILOTED FLANGE CARTRIDGES



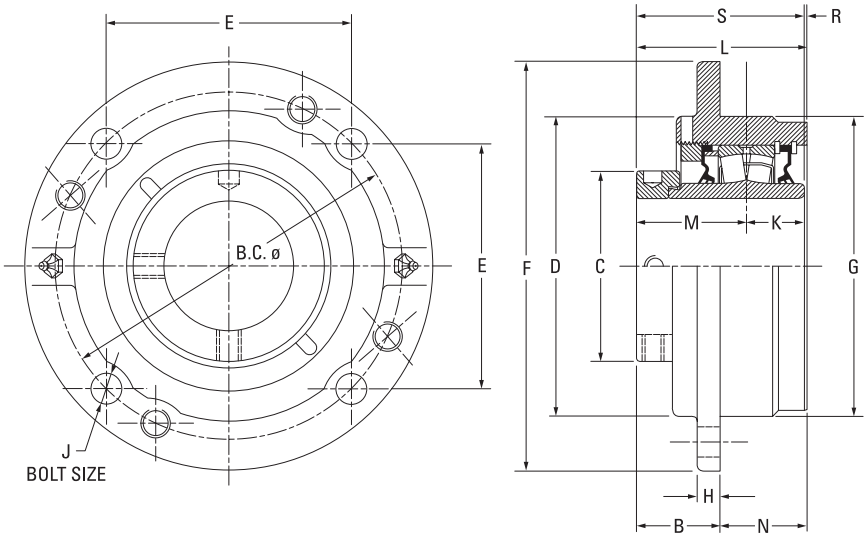
Bearing Part No.	Shaft Dia.	Bearing No.	B FIX	B EXP	B.C.	C	D	E	F	G[1]	H	J	K	L FIX	L EXP	M	N	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMCW08J035S	**35 mm**	22208	**38.6** 1.53	**40.9** 1.61	**111.3** 4.38	**59.9** 2.36	**92.2** 3.63	**78.5** 3.09	**133.4** 5.25	**92.1** 3.625	**12.7** 0.50	**10** 7/16	**25.4** 1.00	**73.7** 2.90	**75.7** 2.98	**44.5** 1.75	**35.1** 1.38	**3.8** 0.15	**69.9** 2.75	**3.6** 8
QMCW08J107S	1 7/16 in.																			
QMCW08J108S	1 1/2 in.																			
QMCW09J040S	**40 mm**	22209	**38.9** 1.53	**40.1** 1.58	**130.3** 5.13	**66.8** 2.63	**111.3** 4.38	**91.9** 3.62	**155.7** 6.13	**108.0** 4.250	**10.2** 0.40	**10** 7/16	**25.1** 0.99	**77.0** 3.03	**78.2** 3.08	**47.8** 1.88	**38.1** 1.50	**4.1** 0.16	**72.9** 2.87	**4.1** 9
QMCW09J111S	1 11/16 in.																			
QMCW09J112S	1 3/4 in.																			
QMCW09J045S	**45 mm**																			
QMCW10J115S	1 15/16 in.	22210	**39.1** 1.54	**41.1** 1.62	**136.7** 5.38	**70.1** 2.76	**113.5** 4.47	**96.5** 3.80	**162.1** 6.38	**114.3** 4.500	**9.7** 0.38	**10** 7/16	**24.9** 0.98	**77.2** 3.04	**79.2** 3.12	**48.0** 1.89	**38.1** 1.50	**4.3** 0.17	**72.9** 2.87	**4.5** 10
QMCW10J200S	2 in.																			
QMCW10J050S	**50 mm**																			
QMCW11J203S	2 3/16 in.	22211	**45.7** 1.80	**47.8** 1.88	**152.4** 6.00	**75.9** 2.99	**127.0** 5.00	**107.7** 4.24	**181.1** 7.13	**127.0** 5.000	**14.2** 0.56	**12** 1/2	**28.7** 1.13	**86.9** 3.42	**88.9** 3.50	**50.5** 1.99	**41.4** 1.63	**7.62** 0.30	**79.2** 3.12	**5.9** 13
QMCW11J204S	2 1/4 in.																			
QMCW11J055S	**55 mm**																			
QMCW13J060S	**60 mm**	22213	**47.5** 1.87	**49.5** 1.95	**165.1** 6.50	**91.9** 3.62	**139.7** 5.50	**116.8** 4.60	**193.8** 7.63	**139.7** 5.500	**12.7** 0.50	**12** 1/2	**31.5** 1.24	**90.2** 3.55	**92.2** 3.63	**54.1** 2.13	**42.9** 1.69	**4.31** 0.17	**85.6** 3.37	**7.3** 16
QMCW13J207S	2 7/16 in.																			
QMCW13J208S	2 1/2 in.																			
QMCW13J065S	**65 mm**																			
QMCW15J211S	2 11/16 in.	22215	**46.0** 1.81	**48.0** 1.89	**190.5** 7.50	**101.9** 4.01	**162.1** 6.38	**134.6** 5.30	**222.3** 8.75	**161.9** 6.375	**12.7** 0.50	**16** 5/8	**31.8** 1.25	**93.5** 3.68	**95.5** 3.76	**60.2** 2.37	**47.8** 1.88	**1.5** 0.06	**91.9** 3.62	**10.0** 22
QMCW15J212S	2 3/4 in.																			
QMCW15J070S	**70 mm**																			
QMCW15J215S	2 15/16 in.																			
QMCW15J300S	3 in.																			
QMCW15J075S	**75 mm**																			
QMCW18J303S	3 3/16 in.	22218	**62.5** 2.46	**64.5** 2.54	**219.2** 8.63	**120.9** 4.76	**187.5** 7.38	**154.9** 6.10	**260.4** 10.25	**187.3** 7.375	**22.4** 0.88	**20** 3/4	**36.6** 1.44	**110.2** 4.34	**112.3** 4.42	**65.8** 2.59	**47.8** 1.88	**7.9** 0.31	**102.4** 4.03	**14.5** 32
QMCW18J304S	3 1/4 in.																			
QMCW18J080S	**80 mm**																			
QMCW18J085S	**85 mm**																			
QMCW18J307S	3 7/16 in.																			
QMCW18J308S	3 1/2 in.																			
QMCW18J090S	**90 mm**																			

[1] Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[2] Six-bolt housing.

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QMCW PILOTED FLANGE CARTRIDGES – *continued*



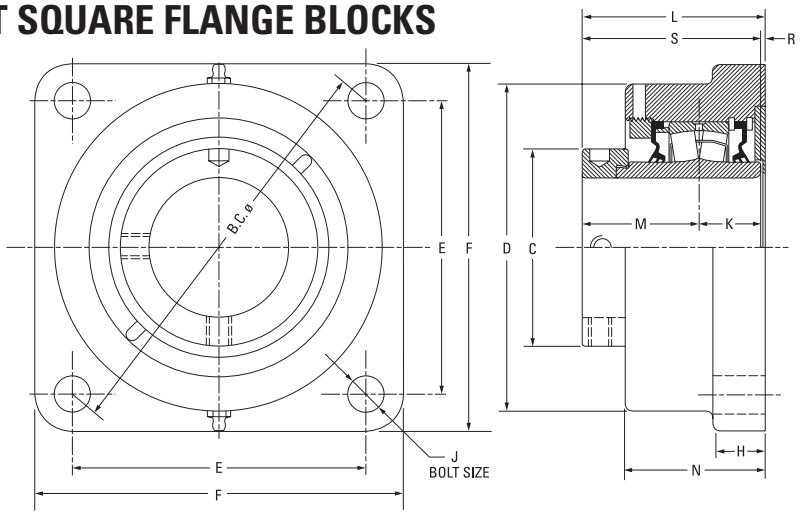
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Bearing Part No.	Shaft Dia.	Bearing No.	B FIX	B EXP	B.C.	C	D	E	F	G[1]	H	J	K	L FIX	L EXP	M	N	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMCW20J311S	3 11/16 in.	22220	**63.5** 2.50	**65.5** 2.58	**238.3** 9.38	**152.4** 6.00	**206.5** 8.13	**168.4** 6.63	**276.4** 10.88	**206.4** 8.125	**25.4** 1.00	**20** 3/4	**41.4** 1.63	**120.7** 4.75	**122.7** 4.83	**75.2** 2.96	**57.2** 2.25	**4.1** 0.16	**116.6** 4.59	**19.5** 43
QMCW20J312S	3 3/4 in.																			
QMCW20J315S	3 15/16 in.																			
QMCW20J400S	4 in.																			
QMCW20J100S	**100 mm**																			
QMCW22J110S[2]	**110 mm**	22222	**76.5** 3.01	**78.5** 3.09	**298.5** 11.75[2]	**160.0** 6.30	**254.0** 10.00	**149.4** 5.88[2]	**342.9** 13.50	**260.4** 10.250	**25.4** 1.00	**20** 3/4[2]	**46.5** 1.83	**144.8** 5.70	**146.8** 5.78	**94.0** 3.70	**68.3** 2.69	**4.3** 0.17	**140.5** 5.53	**32.7** 72
QMCW22J407S[2]	4 7/16 in.																			
QMCW22J408S[2]	4 1/2 in.																			
QMCW22J115S[2]	**115 mm**																			
QMCW26J125S[2]	**125 mm**	22226	**73.7** 2.90	**75.7** 2.98	**323.9** 12.75[2]	**175.0** 6.89	**266.7** 10.50	**162.1** 6.38[2]	**374.7** 14.75	**279.4** 11.000	**26.2** 1.03	**24** 7/8[2]	**58.7** 2.31	**151.4** 5.96	**153.4** 6.04	**94.7** 3.73	**77.9** 3.065	**-1.8** -0.07	**153.4** 6.04	**46.3** 102
QMCW26J415S[2]	4 15/16 in.																			
QMCW26J500S[2]	5 in.																			
QMCW26J130S[2]	**130 mm**																			
QMCW30J507S[2]	5 7/16 in.	23230	**82.8** 3.26	**84.8** 3.34	**368.3** 14.50[2]	**205.0** 8.07	**304.8** 12.00	**184.2** 7.25[2]	**431.8** 17.00	**330.2** 13.000	**26.2** 1.03	**24** 7/8[2]	**75.9** 2.99	**204.2** 8.04	**206.2** 8.12	**116.1** 4.57	**121.4** 4.78	**12.2** 0.48	**192.0** 7.56	**102.5** 226
QMCW30J508S[2]	5 1/2 in.																			
QMCW30J140S[2]	**140 mm**																			
QMCW30J515S[2]	5 15/16 in.	23230	**82.8** 3.26	**84.8** 3.34	**419.1** 16.50[2]	**205.0** 8.07	**304.8** 12.00	**209.6** 8.25[2]	**482.6** 19.00	**355.6** 14.000	**26.2** 1.03	**24** 7/8[2]	**75.9** 2.99	**211.3** 8.32	**213.4** 8.40	**116.1** 4.57	**128.5** 5.06	**19.3** 0.76	**192.0** 7.56	**101.6** 224
QMCW30J600S[2]	6 in.																			
QMCW30J150S[2]	**150 mm**																			
QMCW34J607S[2]	6 7/16 in.	23234	**85.9** 3.38	**87.9** 3.46	**431.8** 17.00	**235.0** 9.25	**355.6** 14.00	**215.9** 8.50	**482.6** 19.00	**381.0** 15.000	**28.7** 1.13	**24** 1[2]	**85.1** 3.35	**216.2** 8.51	**218.2** 8.59	**129.0** 5.08	**130.3** 5.13	**2.0** 0.08	**214.1** 8.43	**152.4** 336
QMCW34J608S[2]	6 1/2 in.																			
QMCW34J170S[2]	**170 mm**																			
QMCW34J615S[2]	6 15/16 in.																			
QMCW34J700S[2]	7 in.																			
QMCW34J180S[2]	**180 mm**																			

[1]Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[2]Six-bolt housing.

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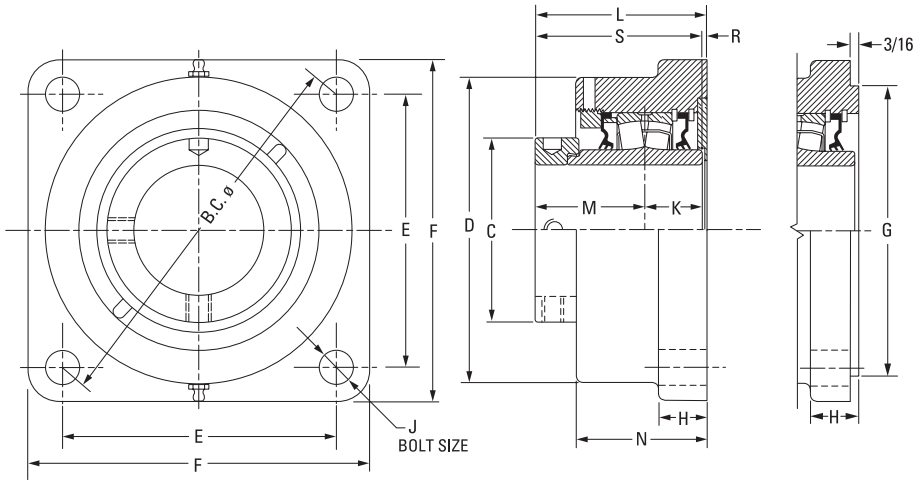
QMF FOUR-BOLT SQUARE FLANGE BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	H	J	K	L FIX	L EXP	M	N	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**lbs.** kg
QMF08J035S	**35 mm**	22208	**127.7** 4.95	**60.5** 2.38	**93.7** 3.69	**88.9** 3.50	**117.6** 4.63	**22.4** 0.88	**12** ½	**25.4** 1.00	**72.9** 2.87	**74.9** 2.95	**44.5** 1.75	**57.2** 2.25	**3.0** 0.12	**69.9** 2.75	**4.5** 10
QMF08J107S	1 7/16 in.																
QMF08J108S	1 ½ in.	22208	**148.3** 5.84	**60.5** 2.38	**108.0** 4.25	**104.9** 4.13	**136.7** 5.38	**22.4** 0.88	**12** ½	**25.4** 1.00	**73.7** 2.90	**75.7** 2.98	**44.5** 1.75	**59.4** 2.34	**3.8** 0.15	**69.9** 2.75	**4.5** 10
QMF09J111S	1 11/16 in.	22209	**148.3** 5.84	**66.8** 2.63	**118.4** 4.66	**104.9** 4.13	**136.7** 5.38	**22.4** 0.88	**12** ½	**25.4** 1.00	**79.5** 3.13	**81.5** 3.21	**47.8** 1.88	**63.5** 2.50	**6.4** 0.25	**73.2** 2.88	**5.0** 11
QMF09J040S	**40 mm**																
QMF09J112S	1 ¾ in.	22209	**157.2** 6.19	**66.8** 2.63	**118.4** 4.66	**111.3** 4.38	**143.0** 5.63	**22.4** 0.88	**12** ½	**25.4** 1.00	**79.5** 3.13	**81.5** 3.21	**47.8** 1.88	**63.5** 2.50	**6.4** 0.25	**72.9** 2.87	**5.0** 11
QMF09J045S	**45 mm**																
QMF10J115S	1 15/16 in.	22210	**157.2** 6.19	**70.1** 2.76	**120.7** 4.75	**111.3** 4.38	**139.7** 5.50	**22.4** 0.88	**12** ½	**24.4** 0.98	**80.8** 3.18	**82.8** 3.26	**48.0** 1.89	**65.0** 2.56	**7.9** 0.31	**72.9** 2.87	**5.0** 11
QMF10J200S	2 in.																
QMF10J050S	**50 mm**																
QMF11J203S	2 3/16 in.	22211	**175.0** 6.89	**75.9** 2.99	**130.3** 5.13	**124.0** 4.88	**157.2** 6.19	**25.4** 1.00	**16** 5/8	**28.7** 1.13	**82.8** 3.26	**84.8** 3.34	**50.5** 1.99	**66.8** 2.63	**3.3** 0.13	**79.2** 3.12	**6.4** 14
QMF11J204S	2 ¼ in.																
QMF11J055S	**55 mm**																
QMF13J060S	**60 mm**	22213	**193.0** 7.60	**91.9** 3.62	**146.1** 5.75	**136.7** 5.38	**168.4** 6.63	**25.4** 1.00	**16** 5/8	**31.5** 1.24	**88.6** 3.49	**90.7** 3.57	**54.1** 2.13	**72.4** 2.85	**3.0** 0.12	**85.6** 3.37	**7.7** 17
QMF13J207S	2 7/16 in.																
QMF13J208S	2 ½ in.																
QMF13J065S	**65 mm**																
QMF15J211S	2 11/16 in.	22215	**215.6** 8.49	**101.9** 4.01	**168.9** 6.65	**152.4** 6.00	**189.0** 7.44	**26.9** 1.06	**20** ¾	**31.8** 1.25	**96.0** 3.78	**98.0** 3.86	**60.2** 2.37	**76.2** 3.00	**4.1** 0.16	**91.9** 3.62	**10.4** 23
QMF15J212S	2 ¾ in.																
QMF15J070S	**70 mm**																
QMF15J215S	2 15/16 in.																
QMF15J300S	3 in.																
QMF15J075S	**75 mm**																
QMF18J303S	3 3/16 in.	22218	**251.7** 9.91	**120.9** 4.76	**193.8** 7.63	**177.8** 7.00	**219.2** 8.63	**33.3** 1.31	**20** ¾	**36.6** 1.44	**107.2** 4.22	**109.2** 4.30	**66.8** 2.59	**84.1** 3.31	**4.8** 0.19	**102.4** 4.03	**15.9** 35
QMF18J304S	3 ¼ in.																
QMF18J080S	**80 mm**																
QMF18J085S	**85 mm**																
QMF18J307S	3 7/16 in.																
QMF18J308S	3 ½ in.																
QMF18J090S	**90 mm**																
QMF20J311S	3 11/16 in.	22220	**278.4** 10.96	**152.4** 6.00	**224.0** 8.82	**196.9** 7.75	**253.2** 9.97	**38.1** 1.50	**24** 7/8	**41.4** 1.63	**126.2** 4.97	**128.3** 5.05	**75.2** 2.96	**103.1** 4.06	**9.4** 0.37	**116.6** 4.59	**24.9** 55
QMF20J312S	3 ¾ in.																
QMF20J315S	3 15/16 in.																
QMF20J400S	4 in.																
QMF20J100S	**100 mm**																
QMF22J110S	**110 mm**	22222	**314.5** 12.38	**160.0** 6.30	**256.8** 10.11	**222.3** 8.75	**276.4** 10.88	**38.1** 1.50	**24** 7/8	**46.5** 1.83	**150.1** 5.91	**152.1** 5.99	**94.0** 3.70	**106.9** 4.21	**9.7** 0.38	**140.5** 5.53	**28.6** 63
QMF22J407S	4 7/16 in.																
QMF22J408S	4 ½ in.																
QMF22J115S	**115 mm**																

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QMFL FOUR-BOLT SQUARE FLANGE BLOCKS

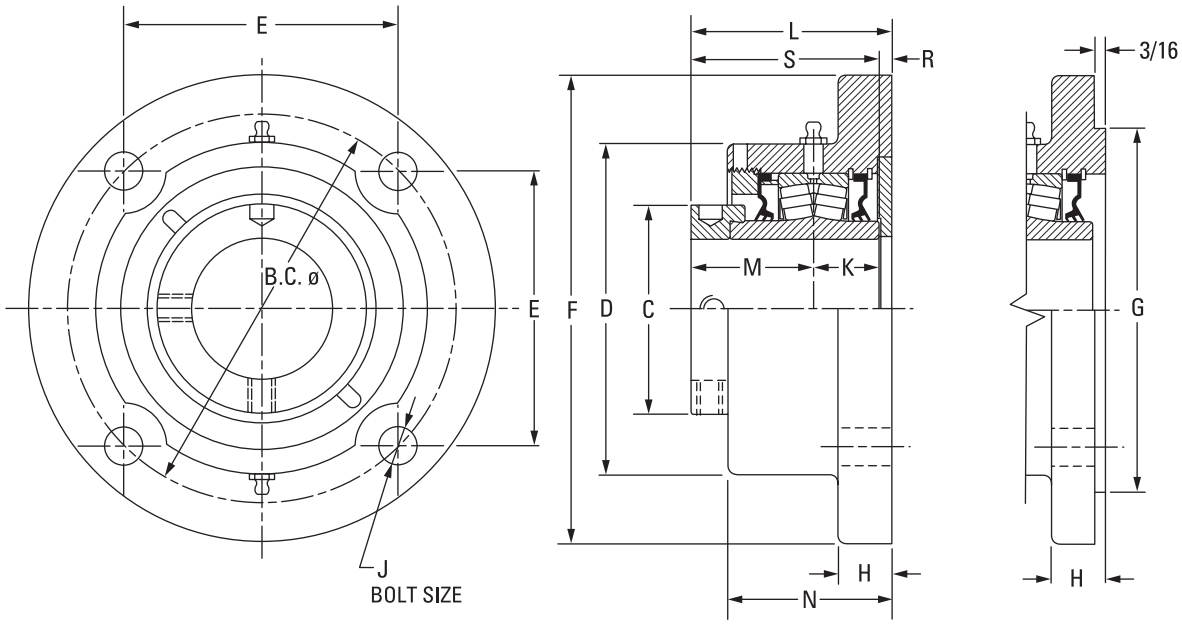


Bearing Part No.	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	G[1][2][3]	H	J	K	L FIX	L EXP	M	N	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMFL08J035S	**35 mm**	22208	**127.0** 5.00	**60.5** 2.38	**93.7** 3.69	**89.9** 3.54	**117.6** 4.63	N/A	**22.4** 0.88	**12** ½	**25.4** 1.00	**72.9** 2.87	**74.9** 2.95	**44.5** 1.75	**57.2** 2.25	**3.0** 0.12	**69.9** 2.75	**4.5** 10
QMFL08J107S	1 7/16 in.																	
QMFL08J108S	1 ½ in.																	
QMFL09J111S	1 11/16 in.	22209	**139.7** 5.50	**66.8** 2.63	**118.4** 4.66	**98.8** 3.89	**136.7** 5.38	N/A	**22.4** 0.88	**12** ½	**25.1** 0.99	**79.5** 3.13	**81.5** 3.21	**47.8** 1.88	**63.5** 2.50	**6.6** 0.26	**72.9** 2.87	**5.0** 11
QMFL09J040S	**40 mm**																	
QMFL09J112S	1 ¾ in.																	
QMFL09J045S	**45 mm**																	
QMFL10J115S	1 15/16 in.	22210	**146.1** 5.75	**70.1** 2.76	**115.3** 4.54	**103.4** 4.07	**131.8** 5.19	N/A	**23.1** 0.91	**12** ½	**24.9** 0.98	**80.8** 3.18	**82.8** 3.26	**48.0** 1.89	**62.5** 2.46	**7.9** 0.31	**72.9** 2.87	**5.0** 11
QMFL10J200S	2 in.																	
QMFL10J050S	**50 mm**																	
QMFL11J203S	2 3/16 in.	22211	**162.1** 6.38	**76.0** 2.99	**130.3** 5.13	**114.3** 4.50	**149.4** 5.88	N/A	**19.1** 0.75	**16** 5/8	**28.7** 1.13	**83.3** 3.28	**85.3** 3.36	**50.5** 1.99	**66.8** 2.63	**3.8** 0.15	**79.2** 3.12	**6.4** 14
QMFL11J204S	2 ¼ in.																	
QMFL11J055S	**55 mm**																	
QMFL13J060S	**60 mm**	22213	**171.5** 6.75	**91.9** 3.62	**146.1** 5.75	**121.2** 4.77	**157.2** 6.19	N/A	**25.4** 1.00	**16** 5/8	**31.5** 1.24	**88.9** 3.50	**90.7** 3.57	**54.1** 2.13	**72.6** 2.86	**3.0** 0.12	**85.6** 3.37	**7.7** 17
QMFL13J207S	2 7/16 in.																	
QMFL13J208S	2 ½ in.																	
QMFL13J065S	**65 mm**																	
QMFL15J211S	2 11/16 in.	22215	**200.2** 7.88	**101.9** 4.01	**168.4** 6.63	**141.2** 5.56	**182.6** 7.19	N/A	**26.9** 1.06	**20** ¾	**31.8** 1.25	**95.8** 3.77	**97.8** 3.85	**60.2** 2.37	**74.4** 2.93	**3.8** 0.15	**91.9** 3.62	**10.4** 23
QMFL15J212S	2 ¾ in.																	
QMFL15J070S	**70 mm**																	
QMFL15J215S	2 15/16 in.																	
QMFL15J300S	3 in.																	
QMFL15J075S	**75 mm**																	
QMFL18J303S	3 3/16 in.	22218	**241.3** 9.50	**120.9** 4.76	**193.8** 7.63	**170.7** 6.72	**212.9** 8.38	**187.33** 7.375	**32.5** 1.28	**20** ¾	**36.6** 1.44	**106.4** 4.19	**108.5** 4.27	**65.8** 2.59	**86.4** 3.40	**4.1** 0.16	**102.4** 4.03	**15.9** 35
QMFL18J304S	3 ¼ in.																	
QMFL18J080S	**80 mm**																	
QMFL18J085S	**85 mm**																	
QMFL18J307S	3 7/16 in.																	
QMFL18J308S	3 ½ in.																	
QMFL18J090S	**90 mm**																	
QMFL20J311S	3 11/16 in.	22220	**273.1** 10.75	**152.4** 6.00	**229.6** 9.04	**193.0** 7.60	**241.3** 9.50	**215.90** 8.500	**38.1** 1.50	**24** 1	**41.4** 1.63	**132.3** 5.21	**134.4** 5.29	**75.2** 2.96	**104.6** 4.12	**15.7** 0.62	**116.6** 4.59	**24.9** 55
QMFL20J312S	3 ¾ in.																	
QMFL20J315S	3 15/16 in.																	
QMFL20J400S	4 in.																	
QMFL20J100S	**100 mm**																	

[1]Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[2]Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
[3]Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.

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QMFY ROUND FLANGE BLOCKS



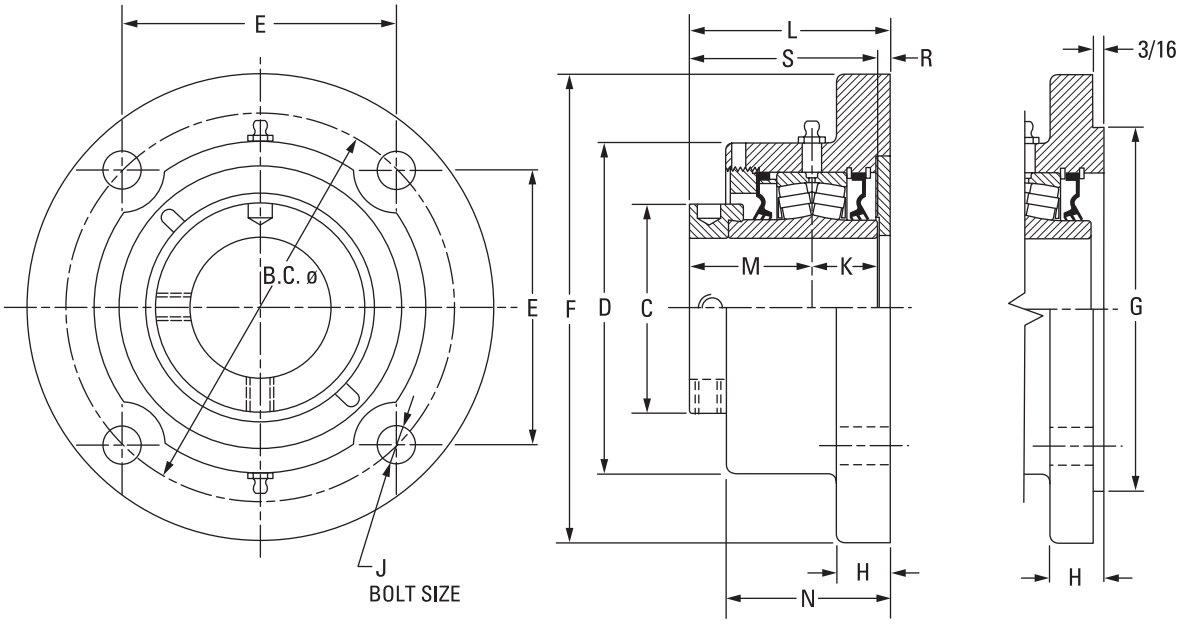
Bearing Part No.	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	G[1][2][3]	H	J	K	L FIX	L EXP	M	N	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMFY08J035S[4]	**35 mm**	22208	**127.0** 5.00[4]	**60.5** 2.38	**108.0** 4.25	**88.9** 3.54[4]	**158.8** 6.25	**90.50** 3.563	**19.1** 0.75	**12** ½[4]	**25.4** 1.00	**73.2** 2.88	**75.2** 2.96	**44.5** 1.75	**57.4** 2.26	**3.3** 0.13	**69.9** 2.75	**4.5** 10
QMFY08J107S[4]	1 7⁄16 in.																	
QMFY08J108S[4]	1 ½ in.																	
QMFY09J040S	**40 mm**	22209	**139.7** 5.50	**66.8** 2.63	**104.9** 4.13	**98.8** 3.89	**171.5** 6.75	**103.20** 4.063	**20.6** 0.81	**12** ½	**25.1** 0.99	**76.2** 3.00	**78.2** 3.08	**47.8** 1.88	**60.5** 2.38	**3.0** 0.12	**72.9** 2.87	**5.0** 11
QMFY09J111S	1 11⁄16 in.																	
QMFY09J112S	1 ¾ in.																	
QMFY09J045S	**45 mm**																	
QMFY10J115S	1 15⁄16 in.	22210	**146.1** 5.75	**70.1** 2.76	**115.3** 4.54	**103.4** 4.07	**177.8** 7.00	**111.13** 4.375	**19.1** 0.75	**12** ½	**24.9** 0.98	**75.9** 2.99	**78.0** 3.07	**48.0** 1.89	**58.4** 2.30	**3.0** 0.12	**72.9** 2.87	**5.4** 12
QMFY10J200S	2 in.																	
QMFY10J050S	**50 mm**																	
QMFY11J203S	2 3⁄16 in.	22211	**162.1** 6.38	**75.9** 2.99	**130.3** 5.13	**114.3** 4.50	**196.9** 7.75	**127.00** 5.000	**19.1** 0.75	**16** 5⁄8	**28.7** 1.13	**82.3** 3.24	**84.3** 3.32	**75.9** 2.99	**62.0** 2.44	**3.0** 0.12	**79.2** 3.12	**6.8** 15
QMFY11J204S	2 ¼ in.																	
QMFY11J055S	**55 mm**																	
QMFY13J060S	**60 mm**	22213	**171.5** 6.75	**91.9** 3.62	**146.1** 5.75	**121.2** 4.77	**206.5** 8.13	**138.13** 5.438	**23.9** 0.94	**16** 5⁄8	**31.5** 1.24	**88.1** 3.47	**90.4** 3.56	**54.1** 2.13	**72.4** 2.85	**2.3** 0.09	**85.6** 3.37	**8.6** 19
QMFY13J207S	2 7⁄16 in.																	
QMFY13J208S	2 ½ in.																	
QMFY13J065S	**65 mm**																	
QMFY15J211S	2 11⁄16 in.	22215	**199.9** 7.87	**101.9** 4.01	**168.4** 6.63	**141.2** 5.56	**241.3** 9.50	**160.35** 6.313	**23.9** 0.94	**20** ¾	**31.8** 1.25	**98.6** 3.88	**100.6** 3.96	**60.2** 2.37	**76.2** 3.00	**6.4** 0.25	**91.9** 3.62	**12.7** 28
QMFY15J212S	2 ¾ in.																	
QMFY15J070S	**70 mm**																	
QMFY15J215S	2 15⁄16 in.																	
QMFY15J300S	3 in.																	
QMFY15J075S	**75 mm**																	

[1]Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[2]Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
[3]Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.
[4]Three-bolt housing.
[5]Six-bolt housing.
NOTE: Housings also are available with a 3⁄16 in. machined pilot. Please contact your Timken engineer for more information.

Continued on next page.

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QMFY ROUND FLANGE BLOCKS – *continued*



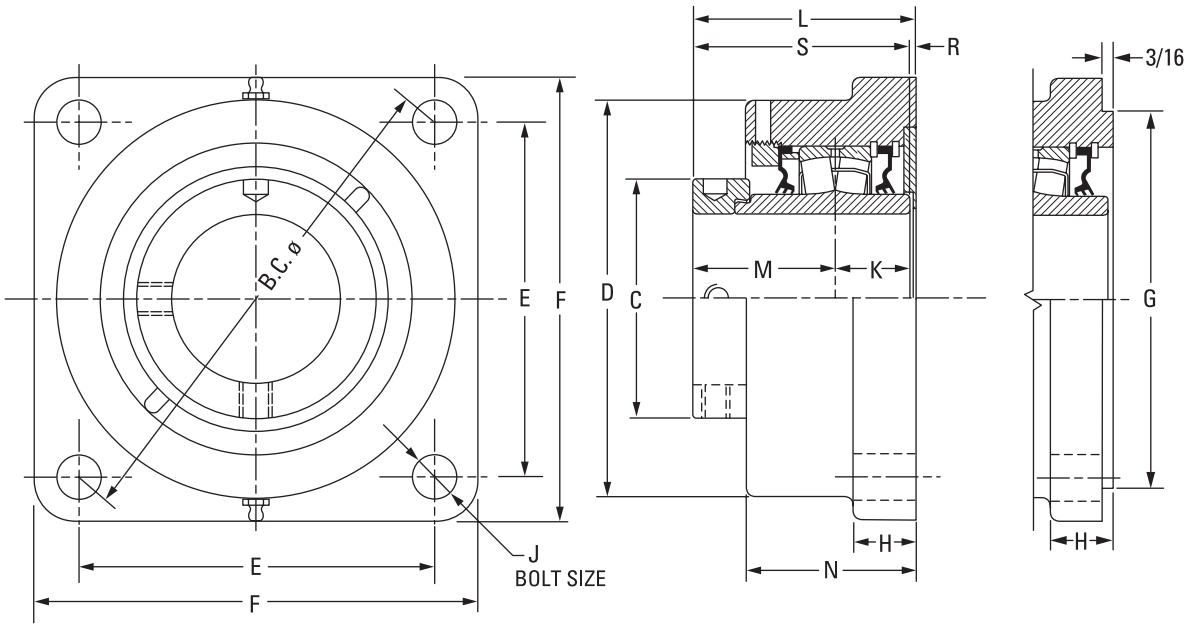
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Bearing Part No.	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	G[1][2][3]	H	J	K	L FIX	L EXP	M	N	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMFY18J303S	3 3/16 in.	22218	**241.3** 9.50	**120.9** 4.76	**193.8** 7.63	**170.7** 6.72	**282.7** 11.13	N/A	**28.7** 1.13	**24** 7/8	**36.6** 1.44	**108.7** 4.28	**110.7** 4.36	**65.8** 2.59	**85.3** 3.36	**6.4** 0.25	**102.4** 4.03	**19.1** 42
QMFY18J304S	3 1/4 in.																	
QMFY18J080S	**80 mm**																	
QMFY18J085S	**85 mm**																	
QMFY18J307S	3 7/16 in.																	
QMFY18J308S	3 1/2 in.																	
QMFY18J090S	**90 mm**																	
QMFY20J311S	3 11/16 in.	22220	**273.1** 10.75	**152.4** 6.00	**212.9** 8.38	**193.0** 7.60	**320.8** 12.63	N/A	**28.7** 1.13	**24** 1	**41.4** 1.63	**123.7** 4.87	**125.7** 4.95	**75.2** 2.96	**96.8** 3.81	**6.9** 0.27	**116.6** 4.59	**29.9** 66
QMFY20J312S	3 3/4 in.																	
QMFY20J315S	3 15/16 in.																	
QMFY20J400S	4 in.																	
QMFY20J100S	**100 mm**																	
QMFY22J110S[5]	**110 mm**	22222	**327.2** 12.88[5]	**160.0** 6.30	**254.0** 10.00	**163.6** 6.44[5]	**384.3** 15.13	N/A	**31.8** 1.25	**24** 1[5]	**46.5** 1.83	**143.5** 5.65	**145.5** 5.73	**94.0** 3.70	**100.3** 3.95	**3.0** 0.12	**140.5** 5.53	**46.3** 102
QMFY22J407S[5]	4 7/16 in.																	
QMFY22J408S[5]	4 1/2 in.																	
QMFY22J115S[5]	**115 mm**																	
QMFY26J125S[5]	**125 mm**	22226	**355.6** 14.00[5]	**175.0** 6.89	**284.2** 11.19	**177.8** 7.00[5]	**419.1** 16.50	N/A	**38.1** 1.50	**24** 1 1/8[5]	**58.7** 2.31	**170.2** 6.70	**172.2** 6.78	**94.7** 3.73	**138.4** 5.45	**16.8** 0.66	**153.4** 6.04	**52.2** 115
QMFY26J415S[5]	4 15/16 in.																	
QMFY26J500S[5]	5 in.																	
QMFY26J130S[5]	**130 mm**																	

[1]Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[2]Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
[3]Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.
[4]Three-bolt housing.
[5]Six-bolt housing.
NOTE: Housings also are available with a 3/16 in. machined pilot. Please contact your Timken engineer for more information.

08-19-13 DRAFT

QMFX 5000 SERIES SQUARE FLANGE BLOCKS



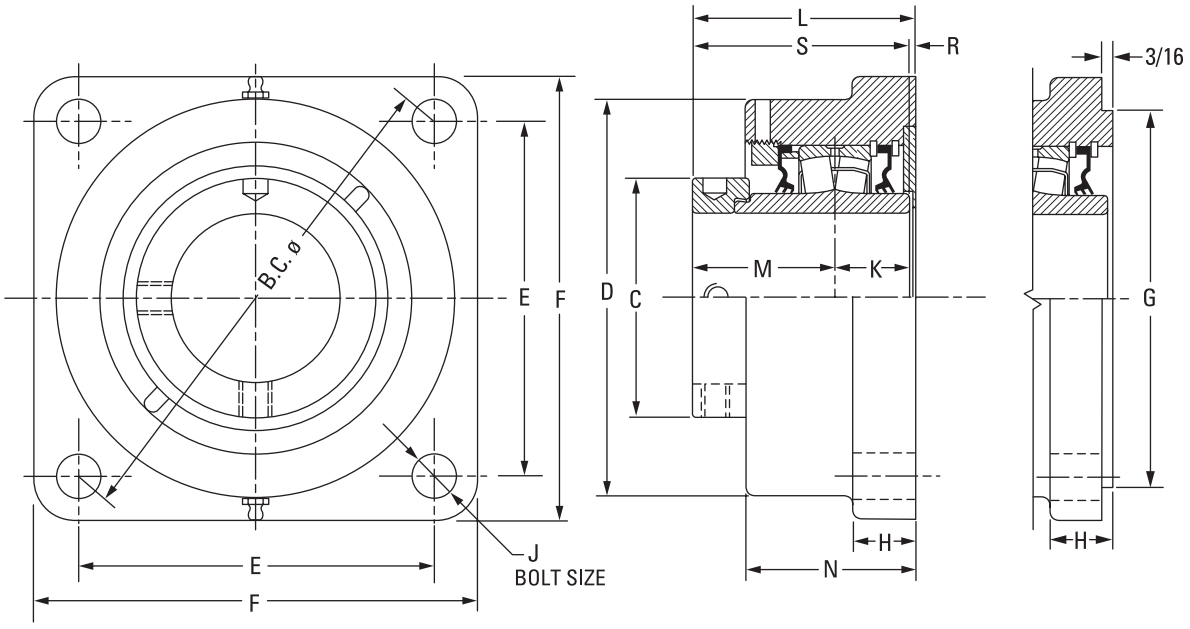
Bearing Part No.	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	G[1][2][3]	H	J	K	L FIX	L EXP	M	N	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMFX08J035S	**35 mm**	22208	**133.6** 5.26	**59.9** 2.36	**93.7** 3.69	**94.5** 3.72	**117.6** 4.63	**90.50** 3.563	**22.1** 0.88	**12** ½	**25.4** 1.00	**72.9** 2.87	**74.9** 2.95	**44.5** 1.75	**57.2** 2.25	**3.0** 0.12	**69.9** 2.75	**4.5** 10
QMFX08J107S	1 7⁄16 in.																	
QMFX08J108S	1 ½ in.	22208	**139.7** 5.50	**59.9** 2.36	**108.0** 4.25	**98.8** 3.89	**130.3** 5.13	**103.20** 4.063	**22.1** 0.88	**12** ½	**25.4** 1.00	**73.7** 2.90	**75.7** 2.98	**44.5** 1.75	**59.4** 2.34	**3.81** 0.15	**69.9** 2.75	**4.5** 10
QMFX09J040S	**40 mm**	22209	**139.7** 5.50	**66.8** 2.63	**108.0** 4.25	**98.8** 3.89	**130.3** 5.13	**103.20** 4.063	**22.1** 0.88	**12** ½	**25.1** 0.99	**79.5** 3.13	**81.5** 3.21	**47.8** 1.88	**63.5** 2.50	**6.4** 0.25	**72.9** 2.87	**5.0** 11
QMFX09J111S	1 11⁄16 in.																	
QMFX09J112S	1 ¾ in.																	
QMFX09J045S	**45 mm**																	
QMFX10J115S	1 15⁄16 in.	22210	**146.1** 5.75	**70.1** 2.76	**120.7** 4.75	**103.1** 4.06	**134.9** 5.31	**111.13** 4.375	**22.1** 0.88	**12** ½	**24.9** 0.98	**80.8** 3.18	**82.8** 3.26	**48.0** 1.89	**65.0** 2.56	**7.9** 0.31	**72.9** 2.87	**5.0** 11
QMFX10J200S	2 in.																	
QMFX10J050S	**50 mm**																	
QMFX11J203S	2 3⁄16 in.	22211	**161.5** 6.36	**75.9** 2.99	**130.3** 5.13	**114.3** 4.50	**149.4** 5.88	**127.00** 5.000	**25.4** 1.00	**16** 5⁄8	**28.7** 1.13	**83.1** 3.27	**85.1** 3.35	**50.5** 1.99	**66.8** 2.63	**3.3** 0.13	**79.2** 3.12	**5.0** 11
QMFX11J204S	2 ¼ in.																	
QMFX11J055S	**55 mm**																	
QMFX13J060S	**60 mm**	22213	**180.8** 7.12	**91.9** 3.62	**146.1** 5.75	**127.8** 5.03	**157.2** 6.19	**138.13** 5.438	**25.4** 1.00	**16** 5⁄8	**31.5** 1.24	**89.2** 3.51	**91.2** 3.59	**54.1** 2.13	**72.4** 2.85	**3.0** 0.12	**85.6** 3.37	**6.4** 14
QMFX13J207S	2 7⁄16 in.																	
QMFX13J208S	2 ½ in.																	
QMFX13J065S	**65 mm**																	
QMFX15J211S	2 11⁄16 in.	22215	**215.9** 8.50	**102.1** 4.02	**168.9** 6.65	**152.7** 6.01	**189.0** 7.44	**160.35** 6.313	**26.9** 1.06	**20** ¾	**31.8** 1.25	**96.0** 3.78	**98.0** 3.86	**60.2** 2.37	**76.2** 3.00	**4.1** 0.16	**91.9** 3.62	**7.7** 17
QMFX15J212S	2 ¾ in.																	
QMFX15J070S	**70 mm**																	
QMFX15J215S	2 15⁄16 in.																	
QMFX15J300S	3 in.																	
QMFX15J075S	**75 mm**																	

[1] Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[2] Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
[3] Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.
[4] Six-bolt round housing.

Continued on next page.

08-19-13 DRAFT

QMFX 5000 SERIES SQUARE FLANGE BLOCKS – *continued*



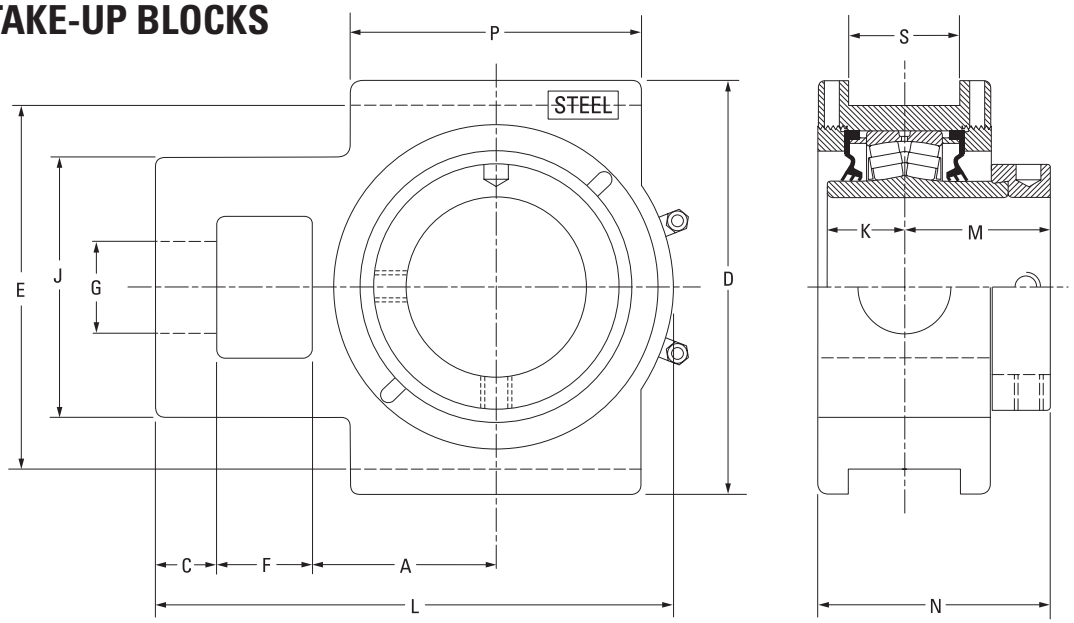
Continued from previous page.

Bearing Part No.	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	G[1][2][3]	H	J	K	L FIX	L EXP	M	N	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMFX18J303S	3 3/16 in.	22218	**241.3** 9.50	**120.9** 4.76	**193.8** 7.63	**170.7** 6.72	**212.9** 8.38	**187.33** 7.375	**33.3** 1.31	**20** 3/4	**36.6** 1.44	**107.2** 4.22	**109.2** 4.30	**65.8** 2.59	**84.1** 3.31	**4.8** 0.19	**102.4** 4.03	**10.4** 23
QMFX18J304S	3 1/4 in.																	
QMFX18J080S	**80 mm**																	
QMFX18J085S	**85 mm**																	
QMFX18J307S	3 7/16 in.																	
QMFX18J308S	3 1/2 in.																	
QMFX18J090S	**90 mm**																	
QMFX20J311S	3 11/16 in.	22220	**298.5** 11.75	**152.4** 6.00	**215.9** 8.50	**211.1** 8.31	**268.2** 10.56	**225.43** 8.875	**38.1** 1.50	**24** 7/8	**41.4** 1.63	**126.0** 4.96	**128.0** 5.04	**75.2** 2.96	**103.1** 4.06	**9.4** 0.37	**116.8** 4.60	**15.9** 35
QMFX20J312S	3 3/4 in.																	
QMFX20J315S	3 15/16 in.																	
QMFX20J400S	4 in.																	
QMFX20J100S	**100 mm**																	
QMFX22J110S[4]	**110 mm**	22222	**327.2** 12.88[1]	**160.0** 6.30	**256.5** 10.10	**163.6** 6.44[1]	**384.3** 15.13	**263.53** 10.375	**31.8** 1.25	**24** 1[1]	**46.5** 1.83	**143.8** 5.66	**145.8** 5.74	**94.0** 3.70	**106.9** 4.21	**3.3** 0.13	**140.5** 5.53	**46.3** 102
QMFX22J407S[4]	4 7/16 in.																	
QMFX22J408S[4]	4 1/2 in.																	
QMFX22J115S[4]	**115 mm**																	
QMFX26J125S[4]	**125 mm**	22226	**355.6** 14.00[1]	**175.0** 6.89	**284.2** 11.19	**177.8** 7.00[1]	**419.1** 16.50	**284.18** 11.188	**38.1** 1.50	**24** 1 1/8[1]	**58.7** 2.31	**172.2** 6.78	**174.2** 6.86	**94.7** 3.73	**135.1** 5.32	**17.3** 0.68	**153.4** 6.04	**52.2** 115
QMFX26J415S[4]	4 15/16 in.																	
QMFX26J500S[4]	5 in.																	
QMFX26J130S[4]	**130 mm**																	

[1]Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[2]Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
[3]Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.
[4]Six-bolt round housing.

08-19-13 DRAFT

QMTU TAKE-UP BLOCKS

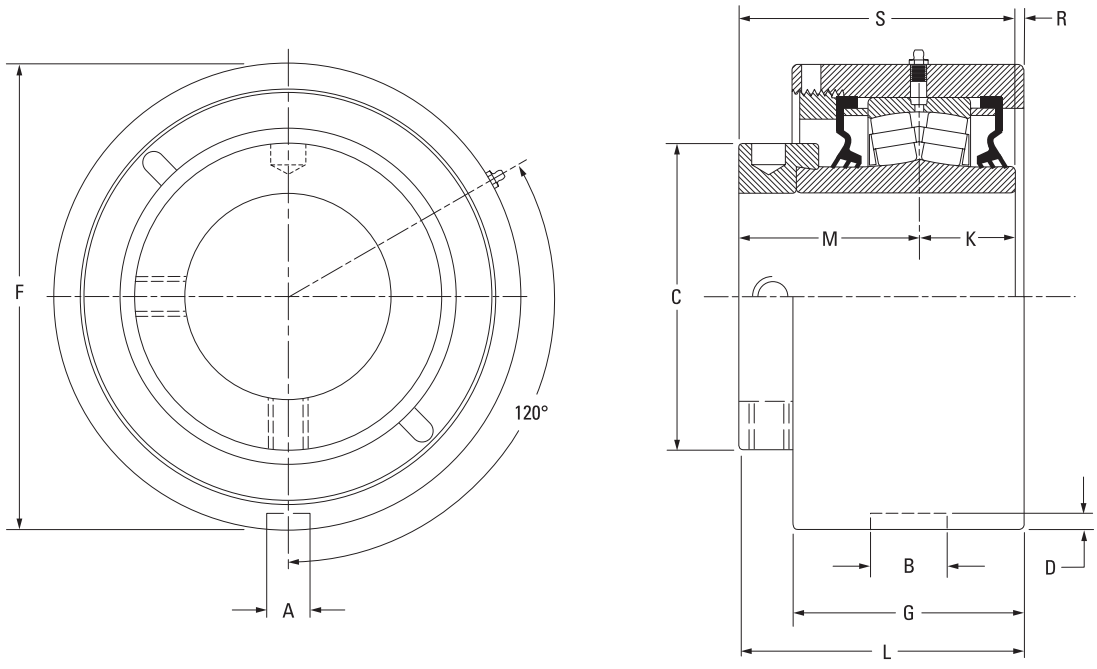


Bearing Part No.	Shaft Dia.	Bearing No.	A	C	D	E	F	G	J	K	L	M	N	P	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMTU10J115S	1 15/16 in.	22210	**54.1** 2.13	**19.1** 0.75	**120.7** 4.75	**101.6** 4.00	**26.9** 1.06	**26.9** 1.06	**73.2** 2.88	**24.9** 0.98	**153.4** 6.04	**48.0** 1.89	**76.7** 3.02	**88.9** 3.50	**17.5** 0.69	**7.7** 17
QMTU10J200S	2 in.															
QMTU10J050S	**50 mm**															
QMTU11J203S	2 3/16 in.	22211	**60.5** 2.38	**19.1** 0.75	**133.4** 5.25	**114.3** 4.50	**30.2** 1.19	**30.2** 1.19	**88.9** 3.50	**28.7** 1.13	**167.9** 6.61	**50.5** 1.99	**82.8** 3.26	**95.3** 3.75	**20.6** 0.81	**9.5** 21
QMTU11J204S	2 1/4 in.															
QMTU11J055S	**55 mm**															
QMTU13J060S	**60 mm**	22213	**69.9** 2.75	**22.4** 0.88	**149.4** 5.88	**130.3** 5.13	**33.3** 1.31	**33.3** 1.31	**95.3** 3.75	**31.5** 1.24	**193.8** 7.63	**54.1** 2.13	**90.7** 3.57	**120.7** 4.75	**26.9** 1.06	**12.2** 27
QMTU13J207S	2 7/16 in.															
QMTU13J208S	2 1/2 in.															
QMTU13J065S	**65 mm**															
QMTU15J211S	2 11/16 in.	22215	**76.2** 3.00	**25.4** 1.00	**171.5** 6.75	**150.9** 5.94	**39.6** 1.56	**39.6** 1.56	**108.0** 4.25	**31.8** 1.25	**219.7** 8.65	**60.2** 2.37	**97.0** 3.82	**120.7** 4.75	**46.0** 1.81	**15.9** 35
QMTU15J212S	2 3/4 in.															
QMTU15J070S	**70 mm**															
QMTU15J215S	2 15/16 in.															
QMTU15J300S	3 in.															
QMTU15J075S	**75 mm**															
QMTU18J303S	3 3/16 in.	22218	**92.2** 3.63	**25.4** 1.00	**193.8** 7.63	**173.0** 6.81	**46.0** 1.81	**47.8** 1.88	**124.0** 4.88	**36.6** 1.44	**257.0** 10.12	**65.8** 2.59	**106.4** 4.19	**158.8** 6.25	**46.0** 1.81	**20.0** 44
QMTU18J304S	3 1/4 in.															
QMTU18J080S	**80 mm**															
QMTU18J085S	**85 mm**															
QMTU18J307S	3 7/16 in.															
QMTU18J308S	3 1/2 in.															
QMTU18J090S	**90 mm**															
QMTU20J311S	3 11/16 in.	22220	**104.9** 4.13	**28.7** 1.13	**239.8** 9.44	**219.2** 8.63	**54.1** 2.13	**52.3** 2.06	**143.0** 5.63	**41.4** 1.63	**296.9** 11.69	**75.4** 2.97	**120.4** 4.74	**177.8** 7.00	**52.3** 2.06	**26.3** 58
QMTU20J312S	3 3/4 in.															
QMTU20J315S	3 15/16 in.															
QMTU20J400S	4 in.															
QMTU20J100S	**100 mm**															
QMTU22J110S	**110 mm**	22222	**128.5** 5.06	**38.1** 1.50	**263.7** 10.38	**241.3** 9.50	**54.1** 2.13	**54.1** 2.13	**162.1** 6.38	**46.5** 1.83	**341.4** 13.44	**94.0** 3.70	**143.8** 5.66	**199.9** 7.87	**52.3** 2.06	**36.4** 80
QMTU22J407S	4 7/16 in.															
QMTU22J408S	4 1/2 in.															
QMTU22J115S	**115 mm**															
QMTU26J125S	**125 mm**	22226	**134.9** 5.31	**63.5** 2.50	**285.8** 11.25	**260.4** 10.25	**63.5** 2.50	**60.5** 2.38	**177.8** 7.00	**58.7** 2.31	**396.7** 15.62	**94.7** 3.73	**151.1** 5.95	**228.6** 9.00	**52.3** 2.06	**60.8** 134
QMTU26J415S	4 15/16 in.															
QMTU26J500S	5 in.															
QMTU26J130S	**130 mm**															

NOTE: Please refer to page C-169 for take-up frames.

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QMMC CARTRIDGE BLOCKS

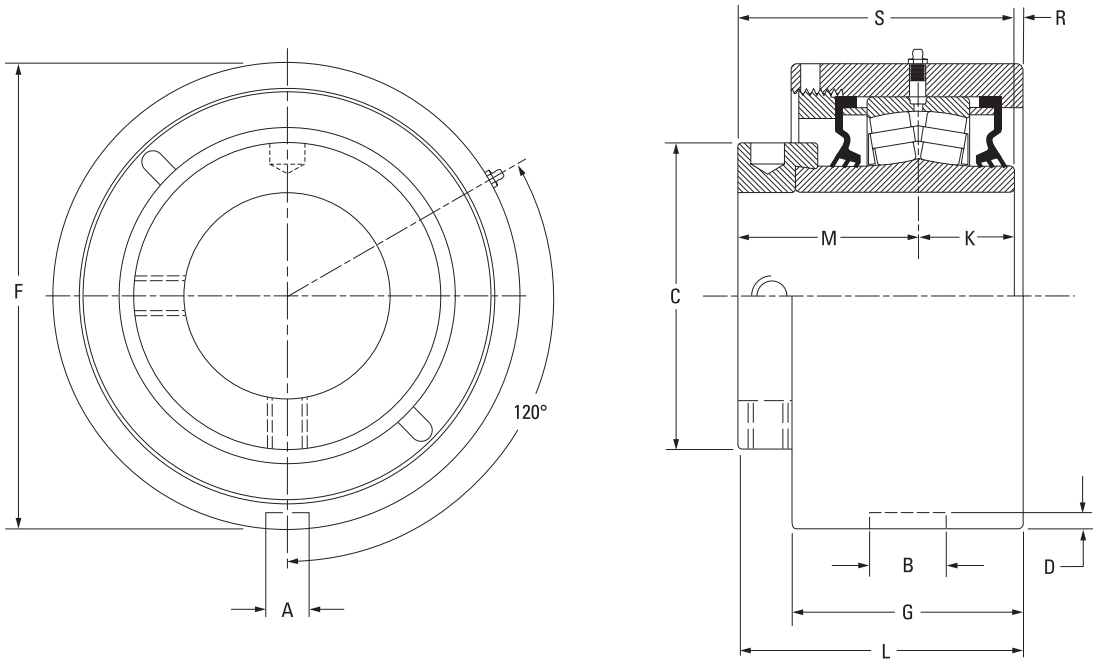


Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D	F	G	K	L FIX	L EXP	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMMC10J115S	1 15/16 in.	22210	**13.5** 0.53	**23.1** 0.91	**70.1** 2.76	**4.8** 0.19	**104.78 (+0/-0.05)** 4.125 (+0/-0.002)	**62.2** 2.45	**24.9** 0.98	**79.2** 3.12	**81.3** 3.20	**48.0** 1.89	**6.1** 0.24	**72.9** 2.87	**3.6** 8
QMMC10J200S	2 in.														
QMMC10J050S	**50 mm**														
QMMC11J203S	2 3/16 in.	22211	**13.5** 0.53	**23.1** 0.91	**75.9** 2.99	**4.8** 0.19	**115.09 (+0/-0.05)** 4.531 (+0/-0.002)	**65.5** 2.58	**28.7** 1.13	**83.6** 3.29	**85.6** 3.37	**50.5** 1.99	**4.1** 0.16	**79.2** 3.12	**4.5** 10
QMMC11J204S	2 1/4 in.														
QMMC11J055S	**55 mm**														
QMMC13J060S[1]	**60 mm**	22213	**13.5** 0.53	**23.1** 0.91	**91.9** 3.62	**4.8** 0.19	**127.00 (+0/-0.05)** 5.000 (+0/-0.002)	**69.3** 2.73	**31.5** 1.24	**85.6** 3.37	**87.6** 3.45	**54.1** 2.13	**0.0** 0.00	**85.6** 3.37	**5.4** 12
QMMC13J207S[1]	2 7/16 in.														
QMMC13J208S[1]	2 1/2 in.														
QMMC13J065S[1]	**65 mm**														
QMMC15J211S	2 11/16 in.	22215	**15.0** 0.59	**26.2** 1.03	**101.9** 4.01	**6.4** 0.25	**149.225 (+0/-0.05)** 5.875 (+0/-0.002)	**79.8** 3.14	**31.8** 1.25	**100.1** 3.94	**102.1** 4.02	**60.2** 2.37	**8.1** 0.32	**91.9** 3.62	**8.2** 18
QMMC15J212S	2 3/4 in.														
QMMC15J070S	**70 mm**														
QMMC15J215S	2 15/16 in.														
QMMC15J300S	3 in.														
QMMC15J075S	**75 mm**														
QMMC18J303S	3 3/16 in.	22218	**15.0** 0.59	**26.9** 1.06	**120.9** 4.76	**5.8** 0.23	**171.45 (+0/-0.05)** 6.750 (+0/-0.002)	**87.6** 3.45	**36.6** 1.44	**109.7** 4.32	**111.8** 4.40	**65.0** 2.56	**7.4** 0.29	**102.4** 4.03	**11.8** 26
QMMC18J304S	3 1/4 in.														
QMMC18J080S	**80 mm**														
QMMC18J085S	**85 mm**														
QMMC18J307S	3 7/16 in.														
QMMC18J308S	3 1/2 in.														
QMMC18J090S	**90 mm**														
QMMC20J311S	3 11/16 in.	22220	**19.8** 0.78	**32.5** 1.28	**152.4** 6.00	**7.9** 0.31	**206.375 (+0/-0.05)** 8.125 (+0/-0.002)	**105.2** 4.14	**41.4** 1.63	**128.0** 5.039	**130.0** 5.12	**75.2** 2.96	**11.4** 0.45	**116.6** 4.59	**14.5** 32
QMMC20J312S	3 3/4 in.														
QMMC20J315S	3 15/16 in.														
QMMC20J400S	4 in.														
QMMC20J100S	**100 mm**														

[1]The grub screw is located in the external housing nut to secure to the housing.

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08-19-13 DRAFT



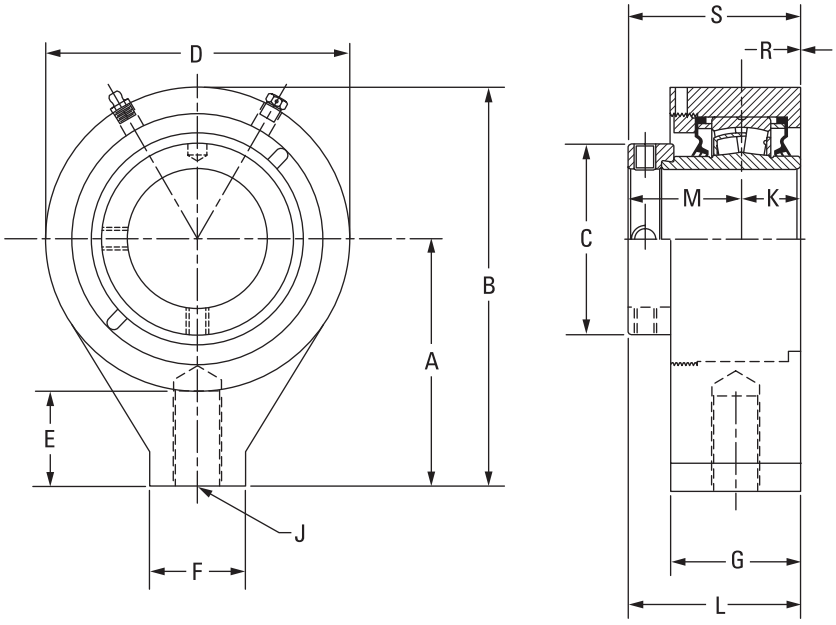
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Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D	F	G	K	L FIX	L EXP	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMMC22J110S	**110 mm**	22222	**19.8** 0.78	**38.1** 1.50	**160.0** 6.30	**7.9** 0.31	**222.25 (+0/-0.08)** 8.75 (+0/-0.003)	**108.5** 4.27	**46.5** 1.83	**148.0** 5.83	**150.1** 5.91	**94.0** 3.70	**7.6** 0.30	**140.5** 5.53	**18.1** 40
QMMC22J407S	4 7/16 in.														
QMMC22J408S	4 1/2 in.														
QMMC22J115S	**115 mm**														
QMMC26J125S	**125 mm**	22226	**19.8** 0.78	**38.1** 1.50	**175.0** 6.89	**7.9** 0.31	**265.13 (+0/-0.08)** 10.438 (+0/-0.003)	**141.7** 5.58	**58.7** 2.31	**165.4** 6.51	**167.4** 6.59	**94.7** 3.73	**11.9** 0.47	**153.4** 6.04	**31.8** 70
QMMC26J415S	4 15/16 in.														
QMMC26J500S	5 in.														
QMMC26J130S	**130 mm**														
QMMC30J507S	5 7/16 in.	23230	**19.8** 0.78	**38.1** 1.50	**205.0** 8.07	**5.6** 0.22	**292.10 (+0/-0.08)** 11.500 (+0/-0.003)	**154.4** 6.08	**75.9** 2.99	**188.2** 7.41	**190.2** 7.49	**116.1** 4.57	**-3.8** -0.15	**192.0** 7.56	**88.0** 194
QMMC30J508S	5 1/2 in.														
QMMC30J140S	**140 mm**														
QMMC30J515S	5 15/16 in.	23230	**19.8** 0.78	**38.1** 1.50	**205.0** 8.07	**5.6** 0.22	**311.15 (+0/-0.08)** 12.250 (+0/-0.003)	**154.4** 6.08	**75.9** 2.99	**188.2** 7.41	**190.2** 7.49	**116.1** 4.57	**-3.8** -0.15	**192.0** 7.56	**87.1** 192
QMMC30J600S	6 in.														
QMMC30J150S	**150 mm**														
QMMC34J607S	6 7/16 in.	23234	**19.8** 0.78	**38.1** 1.50	**235.0** 9.25	**5.6** 0.22	**344.50 (+0/-0.08)** 13.563 (+0/-0.003)	**181.1** 7.13	**85.1** 3.35	**219.5** 8.64	**221.5** 8.72	**129.0** 5.08	**5.33** 0.21	**214.1** 8.43	**155.6** 343
QMMC34J608S	6 1/2 in.														
QMMC34J170S	**170 mm**														
QMMC34J615S	6 15/16 in.														
QMMC34J700S	7 in.														
QMMC34J180S	**180 mm**														

(1)The grub screw is located in the external housing nut to secure to the housing.

08-19-13 DRAFT

QMMH HANGER BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D	E	F	G	J	K	L	M	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMMH15J211S	2 11/16 in.	22215	**131.8** 5.19	**212.9** 8.38	**101.9** 4.01	**162.1** 6.38	**50.8** 2.00	**50.8** 2.00	**69.9** 2.75	1 -8UNC	**31.8** 1.25	**91.9** 3.62	**60.2** 2.37	**0.0** 0.00	**91.9** 3.62	**10.0** 22
QMMH15J212S	2 3/4 in.															
QMMH15J070S	**70 mm**															
QMMH15J215S	2 15/16 in.															
QMMH15J300S	3 in.															
QMMH15J075S	**75 mm**															
QMMH18J303S	3 3/16 in.	22218	**160.3** 6.31	**260.4** 10.25	**120.9** 4.76	**200.2** 7.88	**63.5** 2.50	**76.2** 3.00	**76.2** 3.00	1 1/4 -7UNC	**36.6** 1.44	**99.3** 3.91	**65.8** 2.59	**3.0** 0.12	**102.4** 4.03	**16.3** 36
QMMH18J304S	3 1/4 in.															
QMMH18J080S	**80 mm**															
QMMH18J085S	**85 mm**															
QMMH18J307S	3 7/16 in.															
QMMH18J308S	3 1/2 in.															
QMMH18J090S	**90 mm**															

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TA/DV SERIES

The TA and DV series feature a 2300-series tapered adapter sleeve for increased shaft contact. This design offers the best shaft concentricity and highest capacity all the while having the ability to accommodate undersized shafting.

TA Series

TA series housed unit bearings are a direct drop-in replacement for SAF/SN split-cap housing dimensions.

DV Series

DV series housed units are a drop-in replacement for common American set screw mounted units.



Fig. C-46. TA/DV series taper adapter insert.

YOU HAVE CHOICES

For the TA and DV series, you can select from many seal options and housing styles, which are shown on page C-154.

HOUSINGS

- Two-bolt pillow blocks.
- Four-bolt pillow blocks.
- Flange blocks.
- Piloted flange cartridges.
- Cartridge blocks.

SEALS

- Labyrinth: DuPont Teflon (T).
- Triple-lip: nitrile rubber (M), urethane (O) and DuPont Viton (N).
- Double-lip: nitrile rubber (B) and DuPont Viton (C).
- Steel and urethane closed-end covers (CS).
- Steel and urethane open-end covers (CK) with:
  - DuPont Teflon (T).
  - Triple-lip seal (DR).
  - V-ring seal (VR).

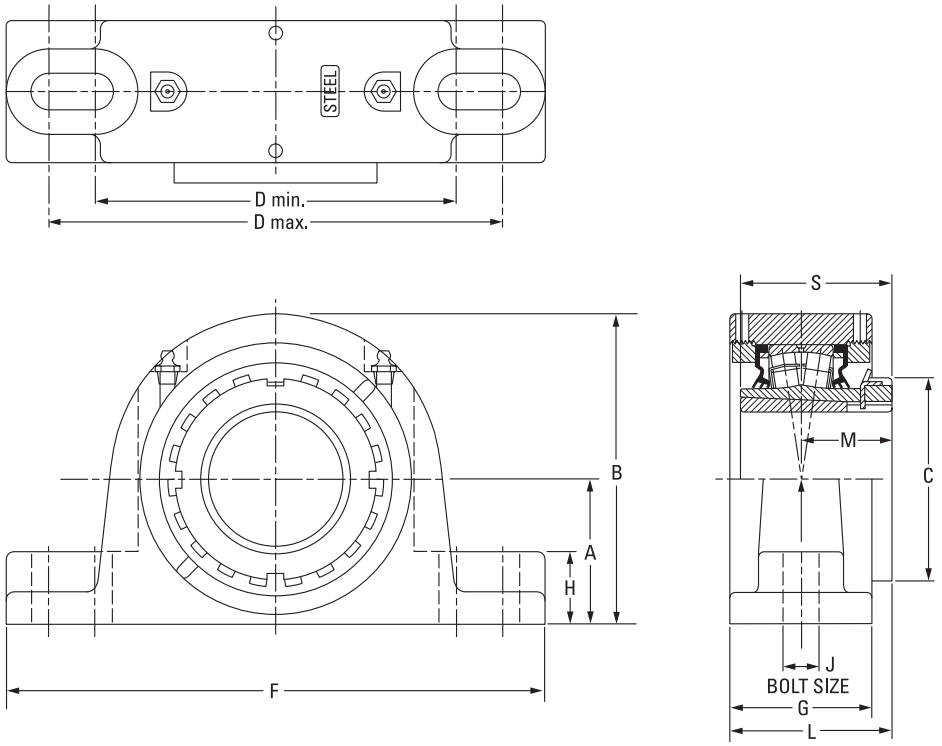
08-19-13 DRAFT

TA/DV SERIES

		Primary Seals						Secondary Seals and Covers					
								Open-End Cover			Closed-End Cover	HSY Flange Cartridge Backing Plate	UFP Backing Plate
	Housing Type	M	N	O	B	C	T	DR	VR	T		DR	
V-Lock (Timken Exclusive Double Taper Lock)	Pillow Block	•	•	•	•	•	•	•	•	•	•		
	Flange Block	•	•	•	•	•	•	•	•	•	•		
	Piloted Flange Cartridge	•	•	•	•	•	•	•	•	•	•		
	Take-Up Block	•	•	•	•	•	•	•	•	•	•		
	Cartridge Block	•	•	•	•	•	•	•	•	•	•		
CL Series (Set Screw Lock)	Pillow Block	•	•	•	•	•	•	•	•	•	•		
	Flange Block	•	•	•	•	•	•	•	•	•	•		•
	Piloted Flange Cartridge	•	•	•	•	•	•	•	•	•	•	•	
	Take-Up Block	•	•	•	•	•	•	•	•	•	•		
	Cartridge Block	•	•	•	•	•	•	•	•	•	•		
	Hangar Block	•	•	•	•	•	•	•	•	•	•		
EC Series (Eccentric Lock)	Pillow Block	•	•	•	•	•	•	•	•	•	•		
	Flange Block	•	•	•	•	•	•	•	•	•	•		•
	Piloted Flange Cartridge	•	•	•	•	•	•	•	•	•	•	•	
	Take-Up Block	•	•	•	•	•	•	•	•	•	•		
	Cartridge Block	•	•	•	•	•	•	•	•	•	•		
	Hangar Block	•	•	•	•	•	•	•	•	•	•		
TA Series (Tapered Adapter Lock)	Pillow Block	•	•	•	•	•	•	•	•	•	•		
	Flange Block	•	•	•	•	•	•	•	•	•	•		
	Piloted Flange Cartridge	•	•	•	•	•	•	•	•	•	•		
	Cartridge Block	•	•	•	•	•	•	•	•	•	•		
DV Series (Tapered Adapter Lock)	Pillow Block	•	•	•	•	•	•	•	•	•	•		
	Flange Block	•	•	•	•	•	•	•	•	•	•		
	Piloted Flange Cartridge	•	•	•	•	•	•	•	•	•	•		

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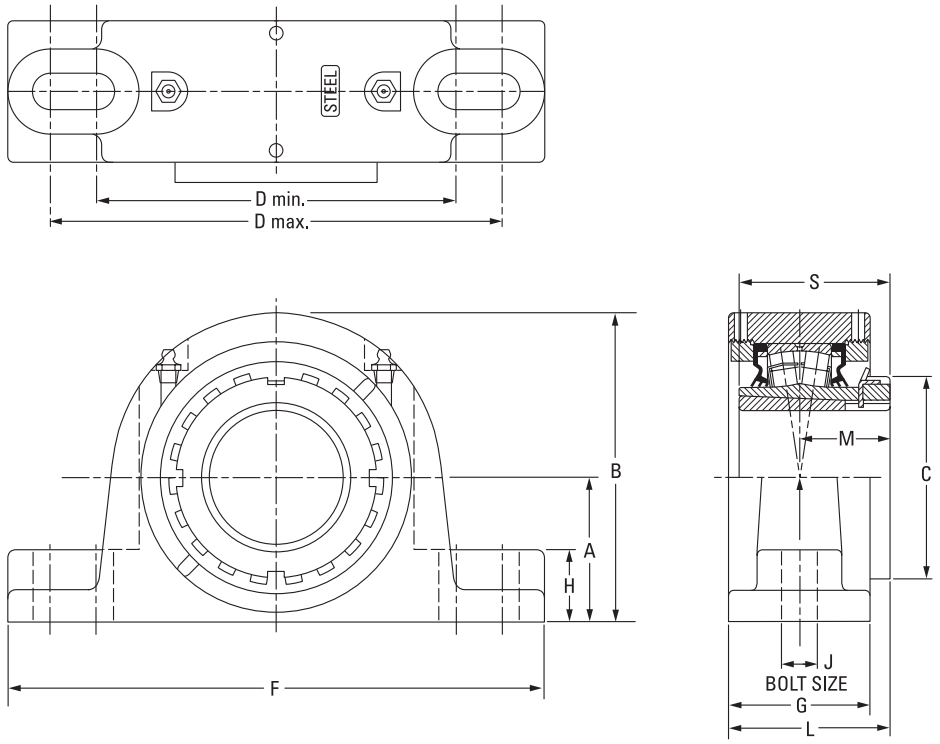
DVP TWO-BOLT PILLOW BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	L	M	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
DVP09K107S	1 7/16 in.	22209	**47.8** 1.88	**98.6** 3.88	**65.0** 2.56	**119.1** 4.69	**152.4** 6.00	**174.8** 6.88	**53.3** 2.10	**25.4** 1.00	**12** ½	**57.4** 2.26	**30.7** 1.21	**50.3** 1.98	**4.5** 10
DVP09K108S	1 ½ in.	22209	**54.1** 2.13	**104.9** 4.13	**65.0** 2.56	**119.1** 4.69	**165.1** 6.50	**200.2** 7.88	**53.3** 2.10	**25.4** 1.00	**12** ½	**57.4** 2.26	**30.7** 1.21	**50.3** 1.98	**4.5** 10
DVP09K040S	**40 mm**														
DVP10K111S	1 11/16 in.	22210	**54.1** 2.13	**114.3** 4.50	**70.1** 2.76	**144.8** 5.70	**165.1** 6.50	**200.2** 7.88	**54.9** 2.16	**31.8** 1.25	**12** ½	**61.0** 2.40	**33.5** 1.32	**55.1** 2.17	**5.0** 11
DVP10K112S	1 ¾ in.	22210	**57.2** 2.25	**117.3** 4.62	**70.1** 2.76	**158.8** 6.25	**180.8** 7.12	**225.6** 8.88	**54.9** 2.16	**31.8** 1.25	**16** 5/8	**61.0** 2.40	**33.5** 1.32	**55.1** 2.17	**5.0** 11
DVP10K045S	**45 mm**														
DVP11K115S	1 15/16 in.	22211	**57.2** 2.25	**123.4** 4.86	**74.9** 2.95	**152.4** 6.00	**181.1** 7.13	**225.6** 8.88	**61.7** 2.43	**31.8** 1.25	**16** 5/8	**66.5** 2.62	**35.6** 1.40	**58.9** 2.32	**5.9** 13
DVP11K200S	2 in.														
DVP11K050S	**50 mm**														
DVP13K203S	2 3/16 in.	22213	**63.5** 2.50	**138.9** 5.47	**85.1** 3.35	**165.1** 6.50	**200.0** 7.87	**244.6** 9.63	**70.6** 2.78	**32.8** 1.29	**16** 5/8	**74.9** 2.95	**39.6** 1.56	**65.0** 2.56	**9.1** 20
DVP13K204S	2 1/4 in.														
DVP13K060S	**60 mm**														
DVP15K207S	2 7/16 in.	22215	**69.9** 2.75	**149.9** 5.90	**98.0** 3.86	**174.8** 6.88	**219.2** 8.63	**260.4** 10.25	**68.6** 2.70	**35.1** 1.38	**16** 5/8	**78.2** 3.08	**43.9** 1.73	**73.4** 2.89	**11.3** 25
DVP15K208S	2 ½ in.														
DVP15K065S	**65 mm**														
DVP17K215S	2 15/16 in.	22217	**82.6** 3.25	**173.2** 6.82	**110.0** 4.33	**200.2** 7.88	**244.3** 9.62	**295.4** 11.63	**76.2** 3.00	**35.1** 1.38	**20** ¾	**88.1** 3.47	**49.8** 1.96	**82.0** 3.23	**14.5** 32
DVP17K300S	3 in.														
DVP17K075S	**75 mm**														
DVP20K307S	3 7/16 in.	22220	**95.3** 3.75	**202.7** 7.98	**130.0** 5.12	**238.3** 9.38	**285.8** 11.25	**342.9** 13.50	**85.9** 3.38	**47.8** 1.88	**24** 7/8	**101.3** 3.99	**58.4** 2.30	**97.0** 3.82	**25.9** 57
DVP20K308S	3 ½ in.														
DVP20K090S	**90 mm**														
DVP22K315S	3 15/16 in.	22222	**108.0** 4.25	**223.5** 8.80	**145.0** 5.71	**255.5** 10.06	**317.5** 12.50	**362.0** 14.25	**100.6** 3.96	**38.1** 1.50	**24** 1	**113.3** 4.46	**63.0** 2.48	**104.9** 4.13	**30.4** 67
DVP22K400S	4 in.														
DVP22K100S	**100 mm**														

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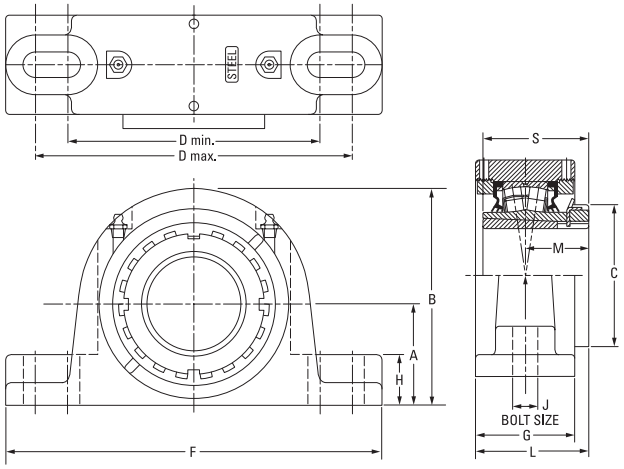
TAPA SAF-STYLE TWO-BOLT PILLOW BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	L	M	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
TAPA09K107S	1 7/16 in.	22209	**57.2** 2.25	**108.0** 4.25	**65.0** 2.56	**158.8** 6.25	**177.8** 7.00	**209.6** 8.25	**53.3** 2.10	**29.0** 1.14	**12** ½	**57.4** 2.26	**30.7** 1.21	**50.3** 1.98	**4.5** 10
TAPA09K108S	1 ½ in.														
TAPA09K040S	**40 mm**														
TAPA10K111S	1 11/16 in.	22210	**63.5** 2.50	**123.7** 4.87	**70.1** 2.76	**165.1** 6.50	**177.8** 7.00	**209.6** 8.25	**54.9** 2.16	**31.8** 1.25	**12** ½	**61.0** 2.40	**33.5** 1.32	**55.1** 2.17	**5.9** 13
TAPA10K112S	1 ¾ in.														
TAPA10K045S	**45 mm**														
TAPA11K115S	1 15/16 in.	22211	**69.9** 2.75	**135.4** 5.33	**74.9** 2.95	**165.1** 6.50	**221.0** 8.70	**251.0** 9.88	**60.5** 2.38	**31.8** 1.25	**16** ⅝	**65.8** 2.59	**35.6** 1.40	**58.9** 2.32	**7.7** 17
TAPA11K200S	2 in.														
TAPA11K050S	**50 mm**														
TAPA13K203S	2 3/16 in.	22213	**76.2** 3.00	**151.1** 5.95	**85.1** 3.35	**182.9** 7.20	**233.7** 9.20	**261.9** 10.31	**68.6** 2.70	**31.2** 1.23	**16** ⅝	**73.9** 2.91	**39.6** 1.56	**65.0** 2.56	**10.4** 23
TAPA13K204S	2 ¼ in.														
TAPA13K060S	**60 mm**														
TAPA15K207S	2 7/16 in.	22215	**82.6** 3.25	**163.3** 6.43	**98.0** 3.86	**200.2** 7.88	**244.6** 9.63	**276.4** 10.88	**68.6** 2.70	**31.8** 1.25	**16** ⅝	**78.2** 3.08	**43.9** 1.73	**72.9** 2.87	**12.2** 27
TAPA15K208S	2 ½ in.														
TAPA15K065S	**65 mm**														
TAPA17K215S	2 15/16 in.	22217	**95.3** 3.75	**185.9** 7.32	**110.0** 4.33	**241.3** 9.50	**279.4** 11.00	**320.8** 12.63	**76.2** 3.00	**33.8** 1.33	**20** ¾	**88.1** 3.47	**49.8** 1.96	**82.0** 3.23	**15.0** 33
TAPA17K300S	3 in.														
TAPA17K075S	**75 mm**														
TAPA20K307S	3 7/16 in.	22220	**114.3** 4.50	**219.2** 8.63	**130.0** 5.12	**276.4** 10.88	**327.2** 12.88	**368.3** 14.50	**86.9** 3.42	**41.4** 1.63	**24** ⅞	**102.4** 4.03	**58.4** 2.30	**97.0** 3.82	**29.5** 65
TAPA20K308S	3 ½ in.														
TAPA20K090S	**90 mm**														
TAPA22K315S	3 15/16 in.	22222	**125.5** 4.94	**240.5** 9.47	**145.0** 5.71	**317.5** 12.50	**368.3** 14.50	**406.4** 16.00	**100.6** 3.96	**50.8** 2.00	**24** ⅞	**113.5** 4.47	**63.0** 2.48	**104.9** 4.13	**38.1** 84
TAPA22K400S	4 in.														
TAPA22K100S	**100 mm**														
TAPA26K407S	4 7/16 in.	22226	**152.4** 6.00	**284.0** 11.18	**165.1** 6.50	**362.0** 14.25	**400.1** 15.75	**444.5** 17.50	**128.0** 5.04	**51.8** 2.04	**24** 1	**135.9** 5.35	**71.9** 2.83	**120.9** 4.76	**61.7** 136
TAPA26K408S	4 ½ in.														
TAPA26K115S	**115 mm**														
TAPA28K415S	4 15/16 in.	22228	**152.4** 6.00	**290.8** 11.45	**180.1** 7.09	**384.3** 15.13	**447.8** 17.63	**499.9** 19.68	**85.6** 3.37	**51.8** 2.04	**30** 1 ¼	**120.4** 4.74	**77.5** 3.05	**131.1** 5.16	**61.8** 136
TAPA28K500S	5 in.														
TAPA28K125S	**125 mm**														

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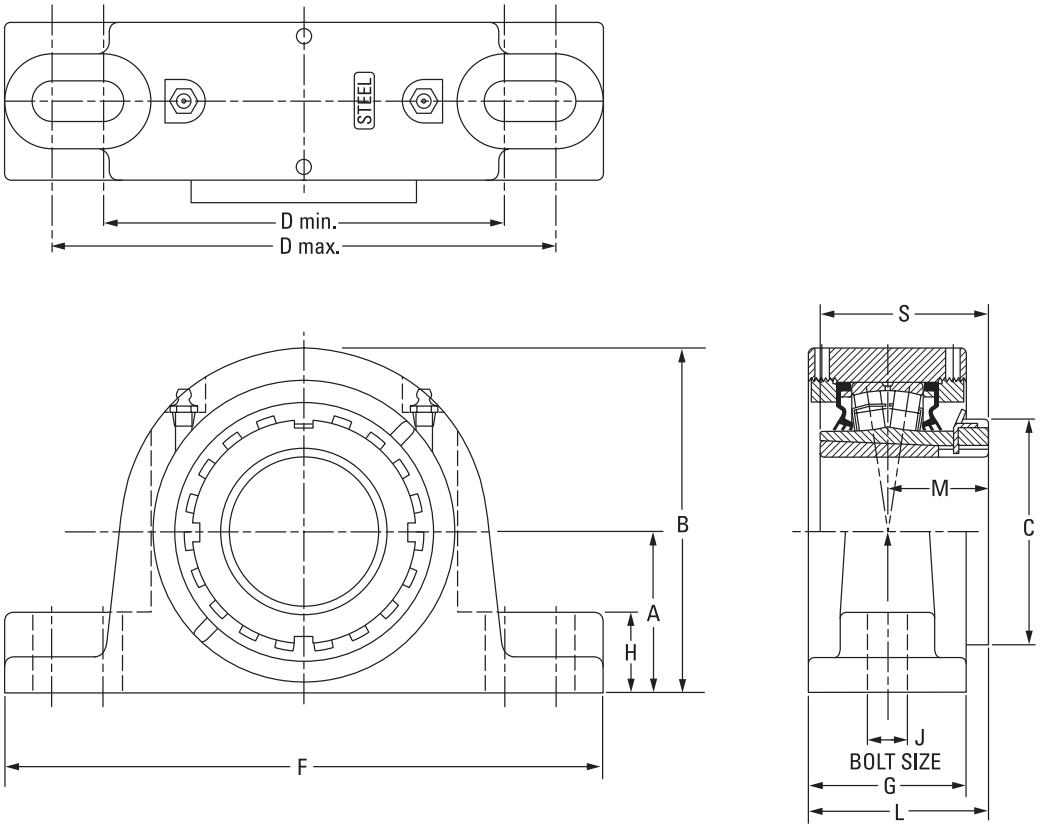
TAPN SN-STYLE TWO-BOLT PILLOW BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	L	M	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
TAPN09K107S	1 7/16 in.	22209	**60.0** 2.362	**108.0** 4.25	**65.0** 2.56	**158.8** 6.25	**177.8** 7.00	**209.6** 8.25	**53.3** 2.10	**29.0** 1.14	**12** ½	**57.4** 2.26	**30.7** 1.21	**50.3** 1.98	**4.5** 10
TAPN09K108S	1 ½ in.														
TAPN09K040S	**40 mm**														
TAPN10K111S	1 11/16 in.	22210	**60.0** 2.362	**120.1** 4.73	**70.1** 2.76	**165.1** 6.50	**177.8** 7.00	**209.6** 8.25	**54.9** 2.16	**28.2** 1.11	**12** ½	**61.0** 2.40	**33.5** 1.32	**55.1** 2.17	**5.9** 13
TAPN10K112S	1 ¾ in.														
TAPN10K045S	**45 mm**														
TAPN11K115S	1 15/16 in.	22211	**69.9** 2.75	**135.4** 5.33	**74.9** 2.95	**165.1** 6.50	**221.0** 8.70	**251.0** 9.88	**60.5** 2.38	**31.8** 1.25	**16** 5/8	**65.8** 2.59	**35.6** 1.40	**58.9** 2.32	**7.7** 17
TAPN11K200S	2 in.														
TAPN11K050S	**50 mm**														
TAPN12K055S	**55 mm**	22212	**70.0** 2.756	**140.5** 5.53	**79.8** 3.14	**177.8** 7.00	**219.2** 8.63	**254.0** 10.00	**60.5** 2.38	**31.8** 1.25	**16** 5/8	**67.6** 2.66	**37.6** 1.48	**62.0** 2.44	**9.1** 20
TAPN13K203S	2 3/16 in.	22213	**80.0** 3.15	**154.9** 6.10	**85.1** 3.35	**182.9** 7.20	**233.7** 9.20	**261.9** 10.31	**68.6** 2.70	**35.1** 1.38	**16** 5/8	**73.9** 2.91	**39.6** 1.56	**65.0** 2.56	**10.4** 23
TAPN13K204S	2 ¼ in.														
TAPN13K060S	**60 mm**														
TAPN15K207S	2 7/16 in.	22215	**80.0** 3.15	**160.8** 6.33	**98.0** 3.86	**200.2** 7.88	**244.6** 9.63	**276.4** 10.88	**68.6** 2.70	**29.2** 1.15	**16** 5/8	**78.2** 3.08	**43.9** 1.73	**72.9** 2.87	**12.2** 27
TAPN15K208S	2 ½ in.														
TAPN15K065S	**65 mm**														
TAPN16K211S	2 11/16 in.	22216	**95.0** 3.74	**180.3** 7.10	**104.6** 4.12	**235.0** 9.25	**266.7** 10.50	**315.0** 12.40	**72.6** 2.86	**31.8** 1.25	**20** ¾	**83.8** 3.30	**47.5** 1.87	**78.0** 3.07	**13.6** 30
TAPN16K212S	2 ¾ in.														
TAPN16K070S	**70 mm**														
TAPN17K215S	2 15/16 in.	22217	**95.3** 3.75	**185.9** 7.32	**110.0** 4.33	**241.3** 9.50	**279.4** 11.00	**320.8** 12.63	**76.2** 3.00	**33.8** 1.33	**20** ¾	**88.1** 3.47	**49.8** 1.96	**82.0** 3.23	**15.0** 33
TAPN17K300S	3 in.														
TAPN17K075S	**75 mm**														
TAPN18K080S	**80 mm**	22218	**100.0** 3.937	**195.3** 7.69	**119.6** 4.71	**285.8** 11.25	**295.4** 11.63	**346.2** 13.63	**79.8** 3.14	**38.9** 1.53	**20** ¾	**91.7** 3.61	**52.1** 2.05	**86.1** 3.39	**22.2** 49
TAPN18K303S	3 3/16 in.														
TAPN18K304S	3 ¼ in.														
TAPN19K085S	**85 mm**	22219	**112.0** 4.409	**212.3** 8.36	**124.7** 4.91	**285.8** 11.25	**295.4** 11.63	**346.2** 13.63	**82.8** 3.26	**38.9** 1.53	**20** ¾	**96.0** 3.78	**54.6** 2.15	**89.9** 3.54	**23.1** 51
TAPN20K307S	3 7/16 in.	22220	**112.0** 4.409	**216.9** 8.54	**130.0** 5.12	**276.4** 10.88	**327.2** 12.88	**368.3** 14.50	**86.9** 3.42	**38.9** 1.53	**24** 7/8	**102.4** 4.03	**58.4** 2.30	**97.0** 3.82	**29.5** 65
TAPN20K308S	3 ½ in.														
TAPN20K090S	**90 mm**														
TAPN22K315S	3 15/16 in.	22222	**125.0** 4.921	**240.5** 9.47	**145.0** 5.71	**317.5** 12.50	**368.3** 14.50	**406.4** 16.00	**100.6** 3.96	**50.8** 2.00	**24** 7/8	**113.5** 4.47	**63.0** 2.48	**104.9** 4.13	**38.1** 84
TAPN22K400S	4 in.														
TAPN22K100S	**100 mm**														
TAPN24K403S	4 3/16 in.	22224	**140.0** 5.512	**262.9** 10.35	**154.4** 6.08	**344.4** 13.56	**355.6** 14.00	**409.7** 16.13	**97.8** 3.85	**50.8** 2.00	**24** 7/8	**116.1** 4.57	**67.1** 2.64	**112.0** **4.41**	**49.9** 110
TAPN24K404S	4 ¼ in.														
TAPN24K110S	**110 mm**														
TAPN26K407S	4 7/16 in.	22226	**150.0** 5.906	**281.7** 11.09	**165.1** 6.50	**367.3** 14.46	**400.1** 15.75	**444.5** 17.50	**128.0** 5.04	**49.3** 1.94	**24** 1	**135.9** 5.35	**71.9** 2.83	**120.9** 4.76	**61.7** 136
TAPN26K408S	4 ½ in.														
TAPN26K115S	**115 mm**														
TAPN28K415S	4 15/16 in.	22228	**150.0** 5.906	**288.5** 11.36	**180.1** 7.09	**384.3** 15.13	**447.8** 17.63	**499.9** 19.68	**85.6** 3.37	**49.3** 1.94	**30** 1 ¼	**120.4** 4.74	**77.5** 3.05	**131.1** 5.16	**61.8** 136
TAPN28K500S	5 in.														
TAPN28K125S	**125 mm**														

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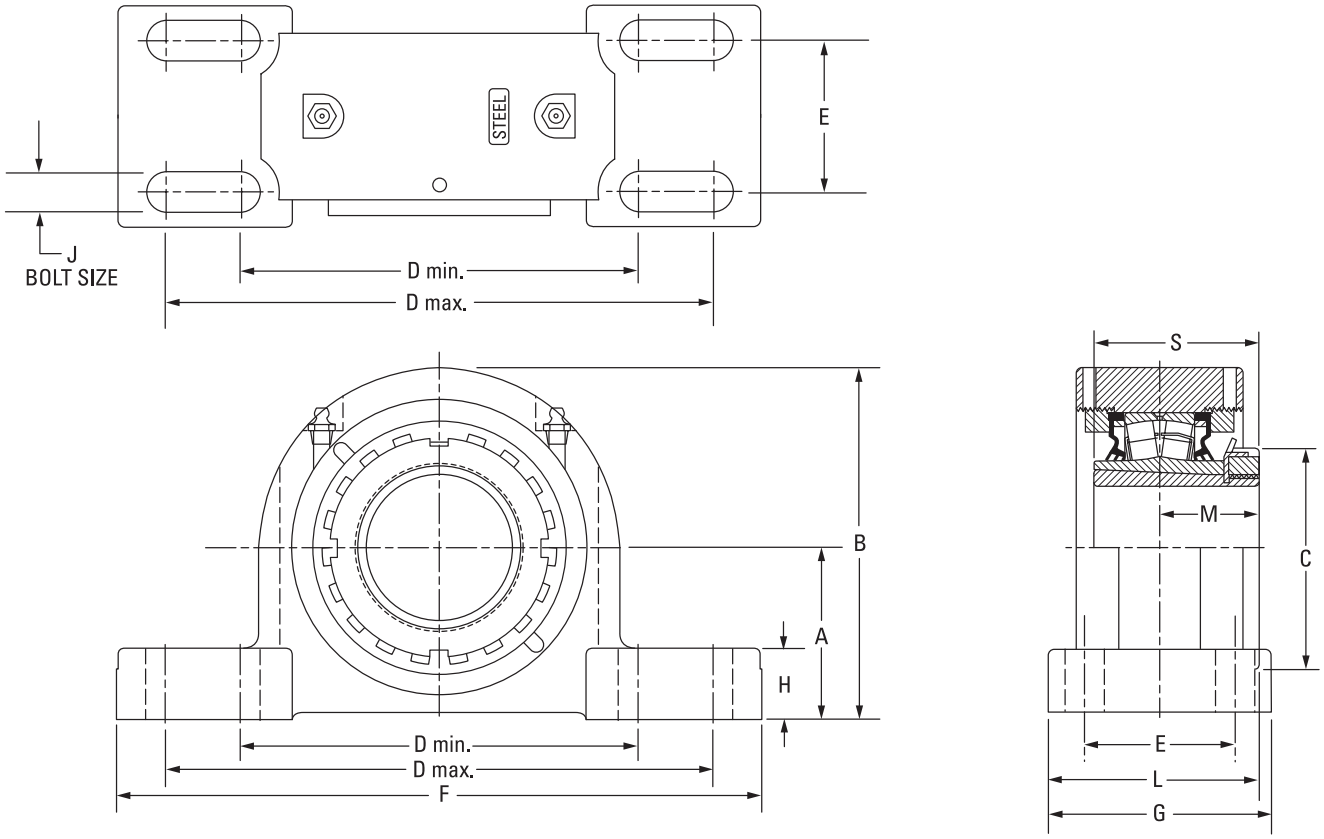
TAPKT 9000 SERIES TWO-BOLT PILLOW BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	F	G	H	J	L	M	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
TAPKT13K203S	2 3/16 in.	22213	**76.2** 3.00	**153.7** 6.05	**85.1** 3.35	**194.6** 7.66	**223.0** 8.78	**285.8** 11.25	**73.7** 2.90	**35.1** 1.38	**20** 3/4	**76.5** 3.01	**36.6** 1.56	**65.0** 2.56	**10.0** 22
TAPKT13K204S	2 1/4 in.														
TAPKT13K060S	**60 mm**														
TAPKT15K207S	2 7/16 in.	22215	**88.9** 3.50	**173.7** 6.84	**98.0** 3.86	**230.1** 9.06	**265.2** 10.44	**330.2** 13.00	**75.7** 2.98	**35.1** 1.38	**24** 7/8	**81.8** 3.22	**43.9** 1.73	**72.9** 2.87	**12.7** 28
TAPKT15K208S	2 1/2 in.														
TAPKT15K065S	**65 mm**														

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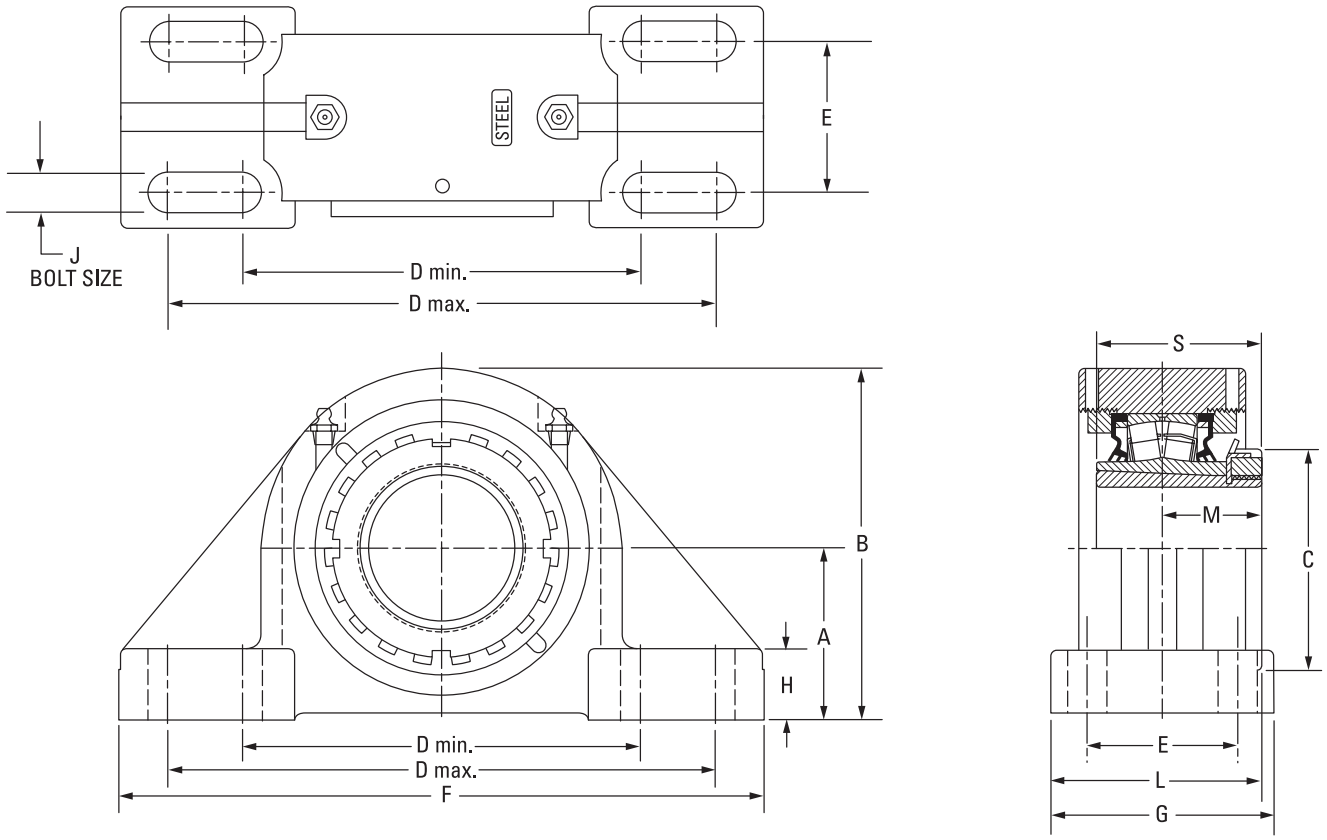
DVPF FOUR-BOLT PILLOW BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	L	M	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
DVPF17K215S	2 15/16 in.	22217	**82.6** 3.25	**172.5** 6.79	**110.0** 4.33	**193.0** 7.60	**231.1** 9.10	**47.8** 1.88	**265.2** 10.44	**79.5** 3.13	**32.8** 1.29	**16** 5/8	**86.6** 3.41	**49.8** 1.96	**82.0** 3.23	**23.1** 51
DVPF17K300S	3 in.															
DVPF17K075S	**75 mm**															
DVPF20K307S	3 7/16 in.	22220	**95.3** 3.75	**200.2** 7.88	**130.0** 5.12	**225.6** 8.88	**276.4** 10.88	**50.8** 2.00	**312.4** 12.30	**95.3** 3.75	**39.6** 1.56	**20** 3/4	**101.3** 3.99	**58.4** 2.30	**97.0** 3.82	**31.8** 70
DVPF20K308S	3 1/2 in.															
DVPF20K090S	**90 mm**															
DVPF22K315S	3 15/16 in.	22222	**108.0** 4.25	**223.0** 8.78	**145.0** 5.71	**276.4** 10.88	**339.9** 13.38	**57.2** 2.25	**378.0** 14.88	**109.5** 4.31	**35.6** 1.40	**20** 3/4	**110.7** 4.36	**63.0** 2.48	**104.9** 4.13	**38.6** 85
DVPF22K400S	4 in.															
DVPF22K100S	**100 mm**															
DVPF26K407S	4 7/16 in.	22226	**120.7** 4.75	**250.7** 9.87	**165.1** 6.50	**302.3** 11.90	**368.3** 14.50	**63.5** 2.50	**409.7** 16.13	**120.7** 4.75	**40.1** 1.58	**20** 3/4	**123.7** 4.87	**71.9** 2.83	**120.1** 4.73	**62.1** 137
DVPF26K408S	4 1/2 in.															
DVPF26K115S	**115 mm**															

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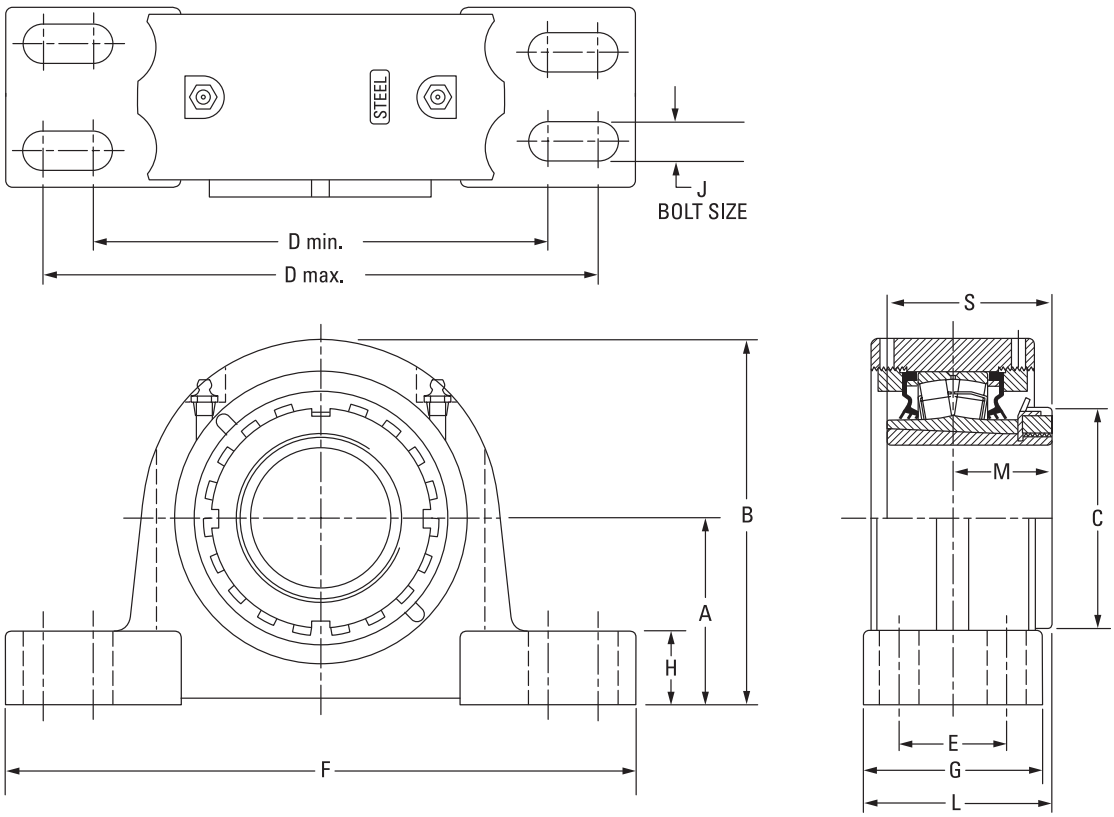
TAPK 9000 SERIES FOUR-BOLT PILLOW BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	L	M	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
TAPK15K207S	2 7/16 in.	22215	**88.9** 3.50	**173.5** 6.83	**98.0** 3.86	**230.1** 9.06	**265.2** 10.44	**69.9** 2.75	**330.2** 13.00	**108.0** 4.25	**39.1** 1.54	**20** 3/4	**98.0** 3.86	**43.9** 1.73	**72.9** 2.87	**13.2** 29
TAPK15K208S	2 1/2 in.															
TAPK15K065S	**65 mm**															
TAPK17K215S	2 15/16 in.	22217	**101.6** 4.00	**201.2** 7.92	**110.0** 4.33	**274.6** 10.81	**309.6** 12.19	**76.2** 3.00	**381.0** 15.00	**120.7** 4.75	**38.1** 1.50	**20** 3/4	**110.2** 4.34	**49.8** 1.96	**82.0** 3.23	**16.8** 37
TAPK17K300S	3 in.															
TAPK17K075S	**75 mm**															
TAPK20K307S	3 7/16 in.	22220	**127.0** 5.00	**239.8** 9.44	**130.0** 5.12	**317.5** 12.50	**355.6** 14.00	**88.9** 3.50	**425.5** 16.75	**139.7** 5.50	**41.4** 1.63	**24** 7/8	**128.3** 5.05	**58.4** 2.30	**97.0** 3.82	**31.8** 70
TAPK20K308S	3 1/2 in.															
TAPK20K090S	**90 mm**															
TAPK22K315S	3 15/16 in.	22222	**146.1** 5.75	**273.8** 10.78	**145.0** 5.71	**354.1** 13.94	**395.2** 15.56	**101.6** 4.00	**469.9** 18.50	**158.8** 6.25	**45.7** 1.80	**24** 1	**138.2** 5.44	**63.0** 2.48	**104.9** 4.13	**39.5** 87
TAPK22K400S	4 in.															
TAPK22K100S	**100 mm**															
TAPK26K407S	4 7/16 in.	22226	**155.6** 6.125	**283.2** 11.15	**165.1** 6.50	**387.4** 15.25	**425.5** 16.75	**108.0** 4.25	**514.4** 20.25	**171.5** 6.75	**50.8** 2.00	**24** 1 1/8	**157.5** 6.20	**71.9** 2.83	**120.9** 4.76	**61.7** 136
TAPK26K408S	4 1/2 in.															
TAPK26K115S	**115 mm**															

08-19-13 DRAFT

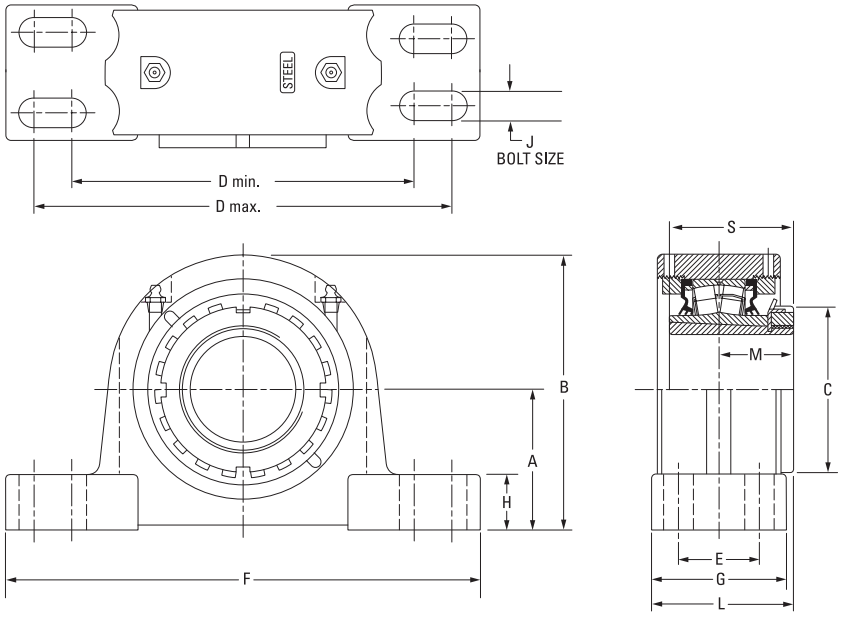
TAPH SAF-STYLE FOUR-BOLT PILLOW BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	L	M	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
TAPH11K115S	1 15/16 in.	22211	**69.9** 2.75	**134.9** 5.31	**74.9** 2.95	**182.4** 7.18	**217.4** 8.56	**39.9** 1.57	**251.0** 9.88	**68.6** 2.70	**31.8** 1.25	**16** 5/8	**69.9** 2.75	**35.6** 1.40	**58.9** 2.32	**8.6** 19
TAPH11K200S	2 in.															
TAPH11K050S	**50 mm**															
TAPH13K203S	2 3/16 in.	22213	**76.2** 3.00	**151.1** 5.95	**85.1** 3.35	**182.4** 7.18	**217.4** 8.56	**50.8** 2.00	**261.9** 10.31	**82.6** 3.25	**31.2** 1.23	**12** 1/2	**81.0** 3.19	**39.6** 1.56	**65.0** 2.56	**11.3** 25
TAPH13K204S	2 1/4 in.															
TAPH13K060S	**60 mm**															
TAPH15K207S	2 7/16 in.	22215	**82.6** 3.25	**162.1** 6.38	**98.0** 3.86	**201.7** 7.94	**246.1** 9.69	**47.8** 1.88	**276.4** 10.88	**79.5** 3.13	**32.8** 1.29	**12** 1/2	**83.6** 3.29	**43.9** 1.73	**72.9** 2.87	**13.2** 29
TAPH15K208S	2 1/2 in.															
TAPH15K065S	**65 mm**															
TAPH17K215S	2 15/16 in.	22217	**95.3** 3.75	**182.9** 7.20	**110.0** 4.33	**239.8** 9.44	**287.3** 11.31	**54.1** 2.13	**320.8** 12.63	**92.2** 3.63	**32.0** 1.26	**16** 5/8	**96.0** 3.78	**49.8** 1.96	**82.0** 3.23	**16.8** 37
TAPH17K300S	3 in.															
TAPH17K075S	**75 mm**															
TAPH20K307S	3 7/16 in.	22220	**114.3** 4.50	**216.9** 8.54	**130.0** 5.12	**276.4** 10.88	**339.9** 13.38	**60.5** 2.38	**381** 15.00	**109.5** 4.31	**41.9** 1.65	**20** 3/4	**113.3** 4.46	**58.4** 2.30	**97.0** 3.82	**31.8** 70
TAPH20K308S	3 1/2 in.															
TAPH20K090S	**90 mm**															
TAPH22K315S	3 15/16 in.	22222	**125.5** 4.94	**238.3** 9.38	**145.0** 5.71	**301.8** 11.88	**368.3** 14.50	**69.9** 2.75	**406.4** 16.00	**120.7** 4.75	**45.0** 1.77	**20** 3/4	**123.4** 4.86	**63.0** 2.48	**104.9** 4.13	**39.5** 87
TAPH22K400S	4 in.															
TAPH22K100S	**100 mm**															
TAPH26K407S	4 7/16 in.	22226	**152.4** 6.00	**284.0** 11.18	**165.1** 6.50	**362.0** 14.25	**400.1** 15.75	**82.6** 3.25	**444.5** 17.50	**128.0** 5.04	**51.8** 2.04	**24** 3/4	**135.9** 5.35	**71.9** 2.83	**120.9** 4.76	**61.7** 136
TAPH26K408S	4 1/2 in.															
TAPH26K115S	**115 mm**															
TAPH28K415S	4 15/16 in.	22228	**152.4** 6.00	**290.8** 11.45	**180.1** 7.09	**406.4** 16.00	**435.1** 17.13	**85.9** 3.38	**500.4** 19.70	**128.0** 5.04	**51.8** 2.04	**24** 1	**141.5** 5.57	**77.5** 3.05	**131.1** 5.16	**61.8** 136
TAPH28K500S	5 in.															
TAPH28K125S	**125 mm**															

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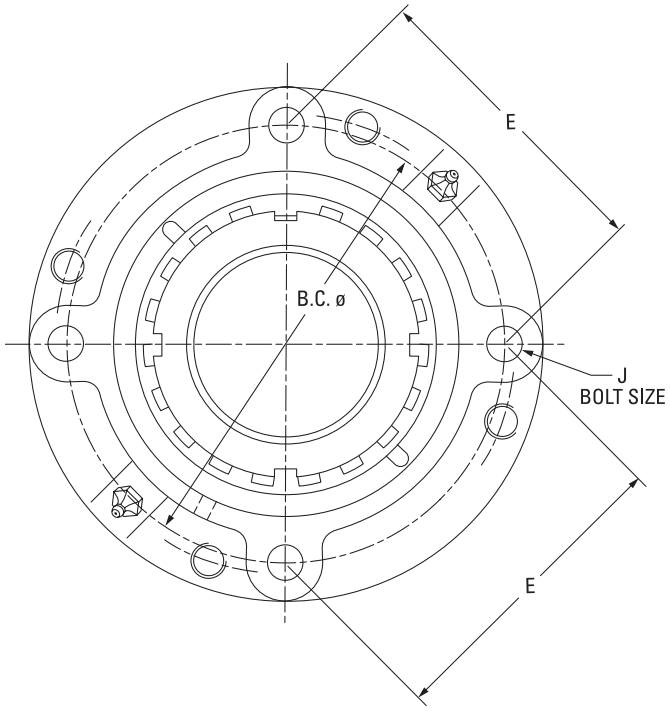
TAPG SN-STYLE FOUR-BOLT PILLOW BLOCKS

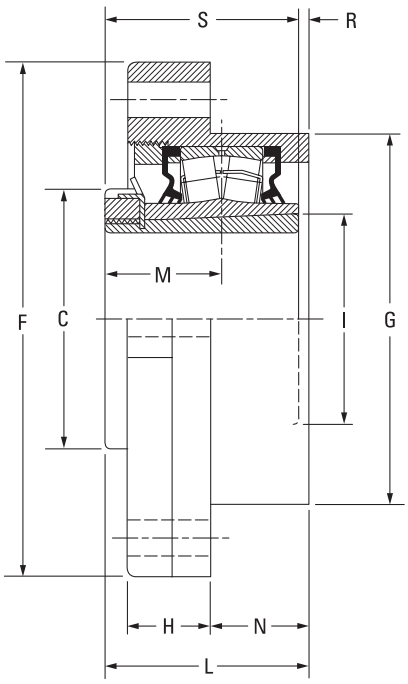


Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D min.	D max.	E	F	G	H	J	L	M	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
TAPG11K115S	1 15/16 in.	22211	**69.9** 2.75	**134.9** 5.31	**74.9** 2.95	**182.4** 7.18	**217.4** 8.56	**39.9** 1.57	**251.0** 9.88	**68.6** 2.70	**31.8** 1.25	**16** 5/8	**69.9** 2.75	**35.6** 1.40	**58.9** 2.32	**8.6** 19
TAPG11K200S	2 in.															
TAPG11K050S	**50 mm**															
TAPG12K055S	**55 mm**	22212	**70.0** 2.756	**140.5** 5.53	**79.8** 3.14	**177.8** 7.00	**219.2** 8.63	**35.1** 1.38	**254.0** 10.00	**69.9** 2.75	**31.8** 1.25	**12** 1/2	**72.6** 2.86	**37.6** 1.48	**62.0** 2.44	**9.9** 22
TAPG13K203S	2 3/16 in.	22213	**80.0** 3.15	**154.9** 6.10	**85.1** 3.35	**182.4** 7.18	**217.4** 8.56	**48.0** 1.89	**261.9** 10.31	**82.6** 3.25	**35.1** 1.38	**16** 5/8	**81.0** 3.19	**39.6** 1.56	**65.0** 2.56	**11.3** 25
TAPG13K204S	2 1/4 in.															
TAPG13K060S	**60 mm**															
TAPG15K207S	2 7/16 in.	22215	**80.0** 3.15	**162.1** 6.38	**98.0** 3.86	**201.7** 7.94	**246.1** 9.69	**39.6** 1.56	**276.4** 10.88	**79.5** 3.13	**30.2** 1.19	**16** 5/8	**83.8** 3.30	**43.9** 1.73	**72.9** 2.87	**13.2** 29
TAPG15K208S	2 1/2 in.															
TAPG15K065S	**65 mm**															
TAPG16K211S	2 11/16 in.	22216	**95.0** 3.74	**180.3** 7.10	**104.6** 4.12	**235.0** 9.25	**266.7** 10.50	**50.0** 1.97	**315.0** 12.40	**89.9** 3.54	**31.8** 1.25	**16** 5/8	**92.5** 3.64	**47.5** 1.87	**78.0** 3.07	**14.9** 33
TAPG16K212S	2 3/4 in.															
TAPG16K070S	**70 mm**															
TAPG17K215S	2 15/16 in.	22217	**95.0** 3.74	**182.9** 7.20	**110.0** 4.33	**239.8** 9.44	**287.3** 11.31	**52.3** 2.06	**320.8** 12.63	**92.2** 3.63	**31.8** 1.25	**20** 3/4	**96.0** 3.78	**49.8** 1.96	**82.0** 3.23	**16.8** 37
TAPG17K300S	3 in.															
TAPG17K075S	**75 mm**															
TAPG18K080S	**80 mm**	22218	**100.0** 3.937	**195.3** 7.69	**119.6** 4.71	**282.7** 11.13	**298.5** 11.75	**50.0** 1.97	**344.9** 13.58	**100.1** 3.94	**39.6** 1.56	**16** 5/8	**102.1** 4.02	**52.1** 2.05	**86.1** 3.39	**24.5** 54
TAPG18K303S	3 3/16 in.															
TAPG18K304S	3 1/4 in.															
TAPG19K085S	**85 mm**	22219	**112.0** 4.409	**212.3** 8.36	**124.7** 4.91	**282.7** 11.13	**298.5** 11.75	**50.0** 1.97	**344.9** 13.58	**100.1** 3.94	**39.6** 1.56	**16** 5/8	**104.6** 4.12	**54.6** 2.15	**89.9** 3.54	**25.4** 56
TAPG20K307S	3 7/16 in.	22220	**112.0** 4.409	**214.6** 8.45	**130.0** 5.12	**276.4** 10.88	**339.9** 13.38	**60.5** 2.38	**381.0** 15.00	**109.5** 4.31	**39.6** 1.56	**20** 3/4	**113.3** 4.46	**58.4** 2.30	**97.0** 3.82	**31.8** 70
TAPG20K308S	3 1/2 in.															
TAPG20K090S	**90 mm**															
TAPG22K315S	3 15/16 in.	22222	**112.0** 4.921	**238.3** 9.38	**145.0** 5.71	**301.8** 11.88	**368.3** 14.50	**69.9** 2.75	**406.4** 16.00	**120.7** 4.75	**44.5** 1.75	**20** 3/4	**123.4** 4.86	**63.0** 2.48	**104.9** 4.13	**39.5** 87
TAPG22K400S	4 in.															
TAPG22K100S	**100 mm**															
TAPG24K403S	4 3/16 in.	22224	**140.0** 5.512	**262.9** 10.35	**154.4** 6.08	**342.9** 13.50	**355.6** 14.00	**70.1** 2.76	**410.0** 16.14	**120.7** 4.75	**50.8** 2.00	**16** 5/8	**127.5** 5.02	**67.1** 2.64	**112.0** 4.41	**49.9** 110
TAPG24K404S	4 1/4 in.															
TAPG24K110S	**110 mm**															
TAPG26K407S	4 7/16 in.	22226	**150.0** 5.906	**281.7** 11.09	**165.1** 6.50	**367.28** 14.46	**400.1** 15.75	**81.0** 3.19	**444.5** 17.50	**128.0** 5.04	**49.3** 1.94	**24** 1	**135.9** 5.35	**71.88** 2.83	**120.9** 4.76	**61.7** 136
TAPG26K408S	4 1/2 in.															
TAPG26K115S	**115 mm**															
TAPG28K415S	4 15/16 in.	22228	**150.0** 5.906	**288.4** 11.36	**180.1** 7.09	**384.3** 15.13	**447.8** 17.63	**80.0** 3.15	**500.4** 19.70	**128.0** 5.04	**49.3** 1.94	**24** 1	**141.5** 5.57	**77.5** 3.05	**131.1** 5.16	**61.8** 136
TAPG28K500S	5 in.															
TAPG28K125S	**125 mm**															

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DVC PILOTED FLANGE CARTRIDGES



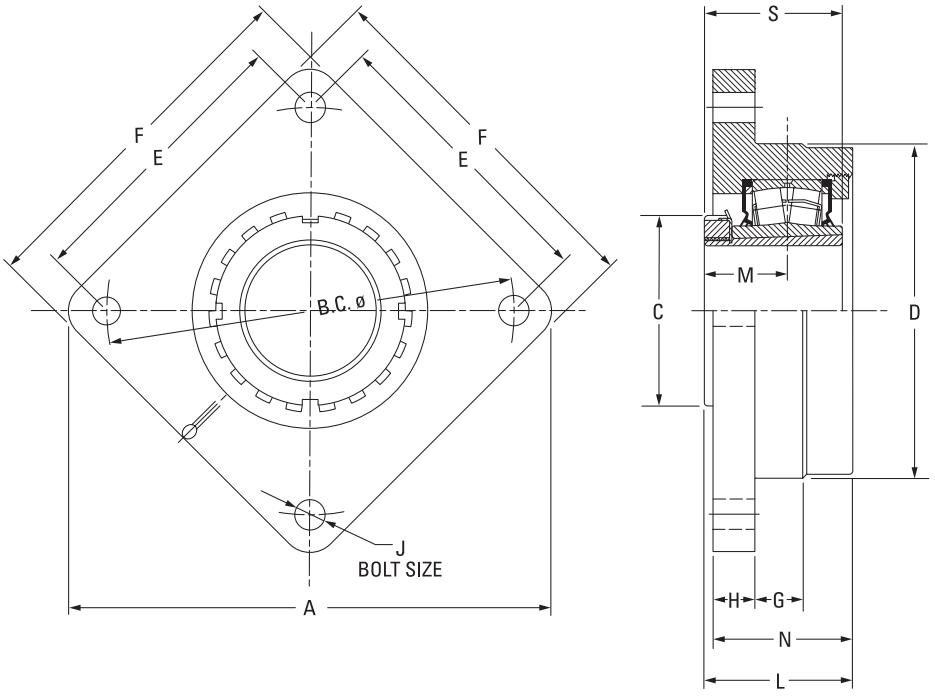


Bearing Part No.	Shaft Dia.	Bearing No.	B.C.	C	E	F	G[1]	H	I	J	L	M	N	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
DVC09K107S	1 7/16 in.	22209	**111.3** 4.38	**65.0** 2.56	**78.5** 3.09	**133.4** 5.25	**92.1** 3.625	**26.7** 1.05	**48.3** 1.90	**10** 7/16	**55.4** 2.18	**30.7** 1.21	**23.9** 0.94	**5.1** 0.20	**50.3** 1.98	**4.1** 9
DVC09K108S	1 1/2 in.															
DVC09K040S	**40 mm**															
DVC10K111S	1 11/16 in.	22210	**130.3** 5.13	**70.1** 2.76	**91.9** 3.62	**155.7** 6.13	**107.95** 4.250	**26.7** 1.05	**58.9** 2.32	**10** 7/16	**60.1** 2.37	**33.5** 1.32	**25.4** 1.00	**5.1** 0.20	**55.1** 2.17	**4.5** 10
DVC10K112S	1 3/4 in.															
DVC10K045S	**45 mm**															
DVC11K115S	1 15/16 in.	22211	**136.7** 5.38	**74.9** 2.95	**96.5** 3.80	**162.1** 6.38	**114.3** 4.500	**31.5** 1.24	**62.2** 2.45	**10** 7/16	**63.2** 2.49	**35.6** 1.40	**25.4** 1.00	**4.1** 0.16	**58.9** 2.32	**5.0** 11
DVC11K200S	2 in.															
DVC11K050S	**50 mm**															
DVC13K203S	2 3/16 in.	22213	**152.4** 6.00	**82.6** 3.35	**107.7** 4.24	**181.1** 7.13	**127.0** 5.000	**37.3** 1.47	**84.8** 3.34	**12** 1/2	**65.5** 2.58	**39.6** 1.56	**25.4** 1.00	**-2.8** -0.11	**65.0** 2.56	**7.3** 16
DVC13K204S	2 1/4 in.															
DVC13K060S	**60 mm**															
DVC15K207S	2 7/16 in.	22215	**165.1** 6.50	**98.0** 3.86	**116.8** 4.60	**193.8** 7.63	**139.7** 5.500	**32.3** 1.27	**79.0** 3.11	**12** 1/2	**69.9** 2.75	**43.9** 1.73	**31.8** 1.25	**3.6** 0.14	**72.9** 2.87	**8.2** 18
DVC15K208S	2 1/2 in.															
DVC15K065S	**65 mm**															
DVC17K215S	2 15/16 in.	22217	**190.5** 7.50	**110.0** 4.33	**134.6** 5.30	**222.3** 8.75	**161.9** 6.375	**32.5** 1.28	**90.2** 3.55	**16** 5/8	**79.8** 3.14	**49.8** 1.96	**35.1** 1.38	**2.3** 0.09	**82.0** 3.23	**11.3** 25
DVC17K300S	3 in.															
DVC17K075S	**75 mm**															
DVC20K307S	3 7/16 in.	22220	**219.2** 8.63	**130.0** 5.12	**154.9** 6.10	**260.4** 10.25	**187.3** 7.375	**41.1** 1.62	**106.2** 4.18	**20** 3/4	**91.9** 3.62	**58.4** 2.30	**35.1** 1.38	**5.1** 0.20	**97.0** 3.82	**16.8** 37
DVC20K308S	3 1/2 in.															
DVC20K090S	**90 mm**															
DVC22K315S	3 15/16 in.	22222	**238.3** 9.38	**145.0** 5.71	**168.4** 6.63	**276.4** 10.88	**206.4** 8.125	**48.0** 1.89	**116.8** 4.60	**20** 3/4	**100.1** 3.94	**63.0** 2.48	**38.1** 1.50	**4.6** 0.18	**104.9** 4.13	**26.3** 58
DVC22K400S	4 in.															
DVC22K100S	**100 mm**															
DVC26K407S[2]	4 7/16 in.	22226	**298.5** 11.75[2]	**165.1** 6.50	**149.4** 5.88[2]	**342.9** 13.50	**260.4** 10.250	**47.0** 1.85	**137.9** 5.43	**20** 3/4[2]	**116.8** 4.60	**71.9** 2.83	**48.3** 1.90	**4.1** 0.16	**120.9** 4.76	**34.5** 76
DVC26K408S[2]	4 1/2 in.															
DVC26K115S[2]	**115 mm**															

[1] Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[2] Six-bolt housing.

08-19-13 DRAFT

TAFC SQUARE PILOTED FLANGE CARTRIDGES

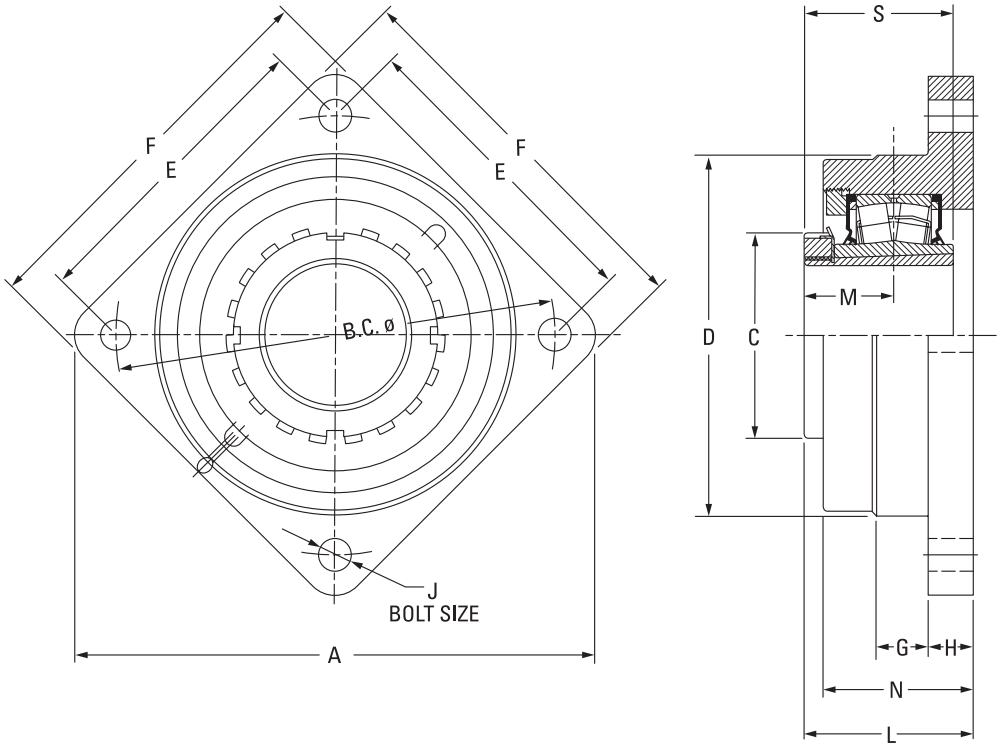


Bearing Part No.	Shaft Dia.	Bearing No.	A	B.C.	C	D[1]	E	F	G	H	J	L	M	N	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
TAFC15K207S	2 7/16 in.	22215	**255.0** 10.04	**215.1** 8.47	**98.0** 3.86	**169.9** 6.690	**152.4** 6.00	**192.0** 7.56	**25.4** 1.00	**23.9** 0.94	**16** 5/8	**79.5** 3.13	**43.9** 1.73	**64.8** 2.55	**72.9** 2.87	**11.3** 25
TAFC15K208S	2 1/2 in.															
TAFC15K065S	**65 mm**															
TAFC17K215S	2 15/16 in.	22217	**282.4** 11.12	**240.0** 9.45	**110.0** 4.33	**190.0** 7.480	**169.7** 6.68	**212.1** 8.35	**25.4** 1.00	**25.4** 1.00	**16** 5/8	**88.6** 3.49	**49.8** 1.96	**69.9** 2.75	**82.0** 3.23	**13.6** 30
TAFC17K300S	3 in.															
TAFC17K075S	**75 mm**															
TAFC20K307S	3 7/16 in.	22220	**330.2** 13.00	**279.9** 11.02	**130.0** 5.12	**230.1** 9.060	**197.9** 7.79	**247.9** 9.76	**31.8** 1.25	**28.7** 1.13	**20** 3/4	**105.7** 4.16	**58.4** 2.30	**94.2** 3.71	**97.0** 3.82	**18.1** 40
TAFC20K308S	3 1/2 in.															
TAFC20K090S	**90 mm**															
TAFC22K315S	3 15/16 in.	22222	**367.0** 14.45	**309.9** 12.20	**145.0** 5.71	**255.0** 10.039	**219.2** 8.63	**274.3** 10.80	**44.5** 1.75	**26.4** 1.04	**20** 3/4	**113.0** 4.45	**63.0** 2.48	**101.1** 3.98	**104.9** 4.13	**27.2** 60
TAFC22K400S	4 in.															
TAFC22K100S	**100 mm**															
TAFC26K407S	4 7/16 in.	22226	**411.5** 16.20	**355.1** 13.98	**165.1** 6.50	**290.0** 11.417	**251.0** 9.88	**298.5** 11.75	**41.9** 1.65	**32.0** 1.26	**24** 7/8	**130.6** 5.14	**71.9** 2.83	**114.3** 4.50	**120.9** 4.76	**42.6** 94
TAFC26K408S	4 1/2 in.															
TAFC26K115S	**115 mm**															

[1]Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).

08-19-13 DRAFT

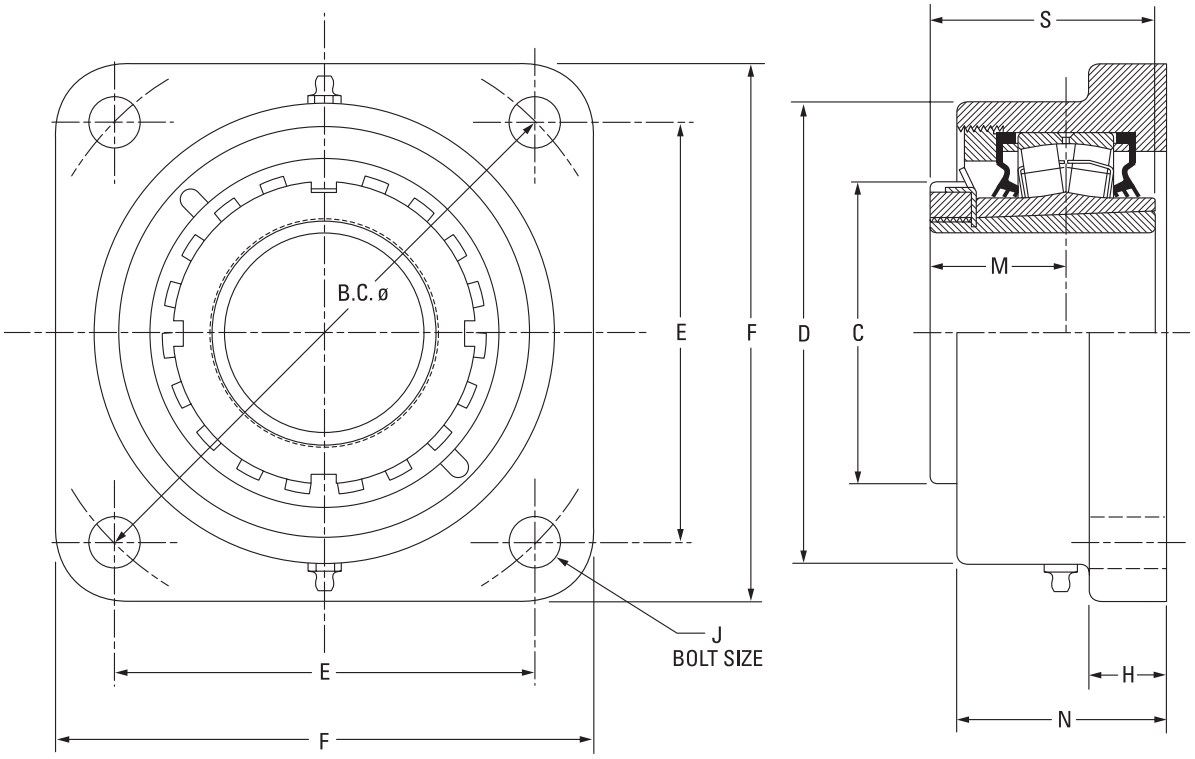
TAFB SQUARE FLANGE BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	A	B.C.	C	D	E	F	G	H	J	L	M	N	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
TAFB15K207S	2 7/16 in.	22215	**255.0** 10.04	**215.1** 8.47	**98.0** 3.86	**169.9** 6.69	**152.4** 6.00	**192.0** 7.56	**25.4** 1.00	**23.9** 0.94	**16** 5/8	**73.7** 2.90	**43.9** 1.73	**64.8** 2.55	**72.9** 2.87	**11.3** 25
TAFB15K208S	2 1/2 in.															
TAFB15K065S	**65 mm**															
TAFB17K215S	2 15/16 in.	22217	**282.4** 11.12	**240.0** 9.45	**110.0** 4.33	**190.0** 7.48	**169.7** 6.68	**212.1** 8.35	**25.4** 1.00	**25.4** 1.00	**16** 5/8	**88.6** 3.49	**49.8** 1.96	**69.9** 2.75	**82.0** 3.23	**13.6** 30
TAFB17K300S	3 in.															
TAFB17K075S	**75 mm**															
TAFB20K307S	3 7/16 in.	22220	**330.2** 13.00	**280.0** 11.02	**130.0** 5.12	**230.1** 9.06	**197.9** 7.79	**247.9** 9.76	**31.8** 1.25	**28.7** 1.13	**20** 3/4	**105.7** 4.16	**58.4** 2.30	**94.2** 3.71	**97.0** 3.82	**18.1** 40
TAFB20K308S	3 1/2 in.															
TAFB20K090S	**90 mm**															
TAFB22K315S	3 15/16 in.	22222	**367.0** 14.45	**309.9** 12.20	**145.0** 5.71	**255.0** 10.04	**219.2** 8.63	**279.4** 11.00	**44.5** 1.75	**26.4** 1.04	**20** 3/4	**113.0** 4.45	**63.0** 2.48	**101.1** 3.98	**104.9** 4.13	**27.2** 60
TAFB22K400S	4 in.															
TAFB22K100S	**100 mm**															
TAFB26K407S	4 7/16 in.	22226	**411.5** 16.20	**354.8** 13.97	**165.1** 6.50	**290.0** 11.42	**251.0** 9.88	**298.5** 11.75	**41.9** 1.65	**32.0** 1.26	**24** 7/8	**130.6** 5.14	**71.9** 2.83	**114.3** 4.50	**120.9** 4.76	**42.6** 94
TAFB26K408S	4 1/2 in.															
TAFB26K115S	**115 mm**															

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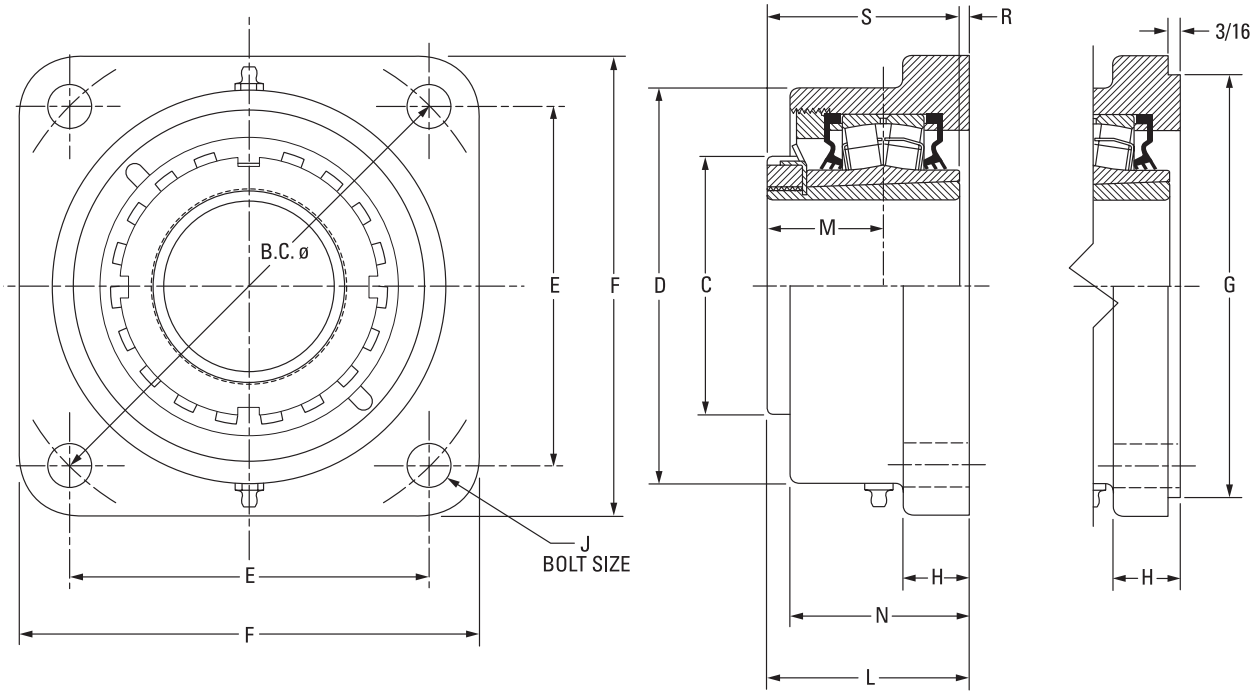
DVF SQUARE FLANGE BLOCKS



Bearing Part No.	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	H	J	M	N	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
DVF09K107S	1 7/16 in.	22209	**125.7** 4.95	**65.0** 2.56	**101.6** 4.00	**88.9** 3.50	**117.6** 4.63	**19.1** 0.75	**12** 1/2	**30.7** 1.21	**56.1** 2.21	**50.3** 1.98	**5.0** 11
DVF09K108S	1 1/2 in.	22209	**148.3** 5.84	**65.0** 2.56	**107.8** 4.25	**104.9** 4.13	**136.7** 5.38	**19.1** 0.75	**12** 1/2	**30.7** 1.21	**56.1** 2.21	**50.3** 1.98	**5.0** 11
DVF09K040S	**40 mm**												
DVF10K111S	1 11/16 in.	22210	**148.3** 5.84	**70.1** 2.76	**118.4** 4.66	**104.9** 4.13	**136.7** 5.38	**22.4** 0.88	**12** 1/2	**33.5** 1.32	**52.3** 2.06	**55.1** 2.17	**5.5** 12
DVF10K112S	1 3/4 in.	22210	**157.2** 6.19	**70.1** 2.76	**118.4** 4.66	**111.3** 4.38	**143.0** 5.63	**22.4** 0.88	**12** 1/2	**33.5** 1.32	**52.3** 2.06	**55.1** 2.17	**5.5** 12
DVF10K045S	**45 mm**												
DVF11K115S	1 15/16 in.	22211	**157.2** 6.19	**74.9** 2.95	**121.9** 4.80	**111.3** 4.38	**139.7** 5.50	**22.4** 0.88	**12** 1/2	**35.6** 1.40	**65.0** 2.56	**58.9** 2.32	**5.44** 12
DVF11K200S	2 in.												
DVF11K050S	**50 mm**												
DVF13K203S	2 3/16 in.	22213	**175.0** 6.89	**85.1** 3.35	**137.9** 5.43	**124.0** 4.88	**157.2** 6.19	**25.4** 1.00	**16** 5/8	**39.6** 1.56	**66.8** 2.63	**65.0** 2.56	**6.8** 15
DVF13K204S	2 1/4 in.												
DVF13K060S	**60 mm**												
DVF15K207S	2 7/16 in.	22215	**193.0** 7.60	**98.0** 3.86	**146.0** 5.75	**136.7** 5.38	**168.4** 6.63	**25.4** 1.00	**16** 5/8	**43.9** 1.73	**72.4** 2.85	**72.9** 2.87	**8.2** 18
DVF15K208S	2 1/2 in.												
DVF15K065S	**65 mm**												
DVF17K215S	2 15/16 in.	22217	**215.4** 8.48	**110.0** 4.33	**170.7** 6.72	**152.4** 6.00	**189.0** 7.44	**26.9** 1.06	**20** 3/4	**49.8** 1.96	**77.0** 3.03	**82.0** 3.23	**12.7** 28
DVF17K300S	3 in.												
DVF17K075S	**75 mm**												
DVF20K307S	3 7/16 in.	22220	**251.5** 9.90	**130.0** 5.12	**193.8** 7.63	**177.8** 7.00	**219.2** 8.63	**33.3** 1.31	**20** 3/4	**58.4** 2.30	**84.1** 3.31	**97.0** 3.82	**17.7** 39
DVF20K308S	3 1/2 in.												
DVF20K090S	**90 mm**												
DVF22K315S	3 15/16 in.	22222	**278.4** 10.96	**145.0** 5.71	**215.9** 8.50	**196.9** 7.75	**253.2** 9.97	**38.1** 1.50	**24** 7/8	**63.0** 2.48	**103.1** 4.06	**104.9** 4.13	**24.0** 53
DVF22K400S	4 in.												
DVF22K100S	**100 mm**												
DVF26K407S	4 7/16 in.	22226	**314.5** 12.38	**165.1** 6.50	**263.7** 10.38	**222.3** 8.75	**276.4** 10.88	**38.1** 1.50	**24** 7/8	**71.9** 2.83	**106.9** 4.21	**120.9** 4.76	**34.0** 75
DVF26K408S	4 1/2 in.												
DVF26K115S	**115 mm**												

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TAFK 9000 SERIES SQUARE FLANGE BLOCKS

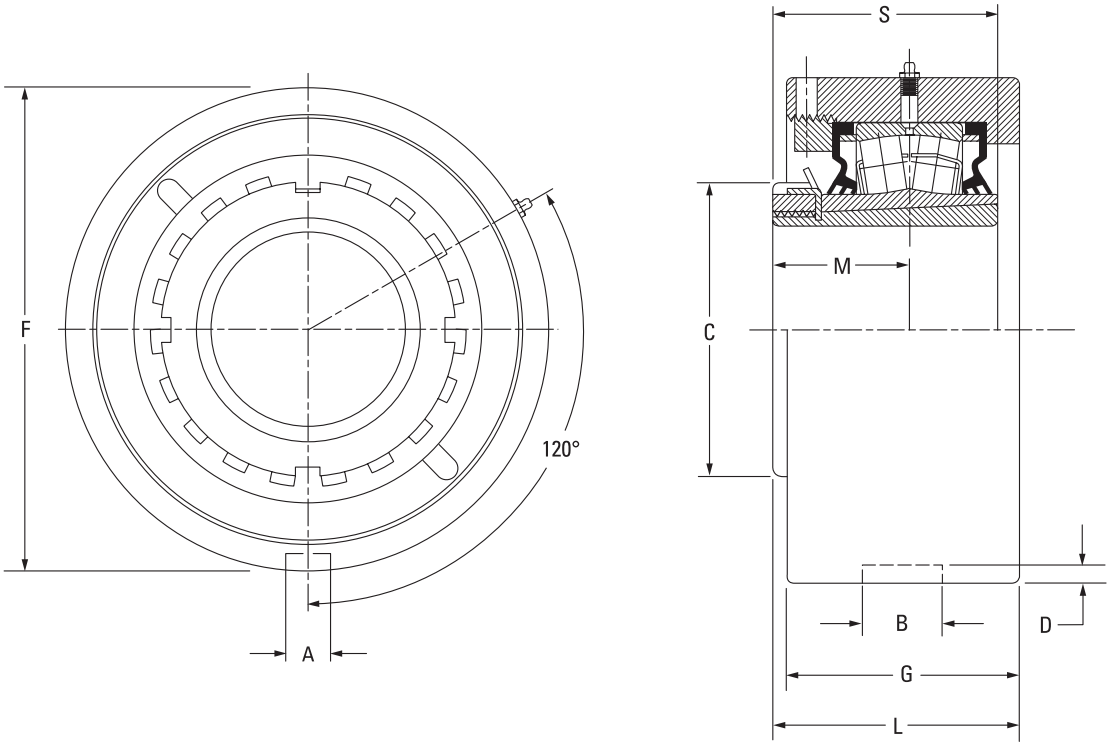


Bearing Part No.	Shaft Dia.	Bearing No.	B.C.	C	D	E	F	G[1][2][3]	H	J	L FIX	L EXP	M	N	R	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
TAFK11K115S	1 15⁄16 in.	22211	**161.5** 6.36	**74.9** 2.95	**130.3** 5.13	**114.3** 4.50	**149.4** 5.88	**127.00** 5.000	**25.4** 1.00	**16** 5⁄8	**71.6** 2.82	**72.9** 2.87	**35.6** 1.40	**66.8** 2.63	**12.7** 0.50	**58.9** 2.32	**5.0** 11
TAFK11K200S	2 in.																
TAFK11K050S	**50 mm**																
TAFK13K203S	2 3⁄16 in.	22213	**180.8** 7.12	**85.1** 3.35	**146.1** 5.75	**127.8** 5.03	**157.2** 6.19	**138.13** 5.438	**25.4** 1.00	**16** 5⁄8	**77.7** 3.06	**79.8** 3.14	**39.6** 1.56	**72.4** 2.85	**12.7** 0.50	**65.0** 2.56	**6.4** 14
TAFK13K204S	2 1⁄4 in.																
TAFK13K060S	**60 mm**																
TAFK15K207S	2 7⁄16 in.	22215	**215.9** 8.50	**98.0** 3.86	**168.9** 6.65	**152.7** 6.01	**189.0** 7.44	**160.35** 6.313	**26.9** 1.06	**20** 3⁄4	**84.8** 3.34	**86.9** 3.42	**43.9** 1.73	**76.2** 3.00	**11.9** 0.47	**72.9** 2.87	**7.7** 17
TAFK15K208S	2 1⁄2 in.																
TAFK15K065S	**65 mm**																
TAFK17K215S	2 15⁄16 in.	22217	**41.3** 9.50	**110.0** 4.33	**193.8** 7.63	**170.7** 6.72	**212.9** 8.38	**187.33** 7.375	**33.3** 1.31	**20** 3⁄4	**96.3** 3.79	**98.3** 3.87	**49.8** 1.96	**84.1** 3.31	**14.2** 0.56	**82.0** 3.23	**10.4** 23
TAFK17K300S	3 in.																
TAFK17K075S	**75 mm**																
TAFK20K307S	3 7⁄16 in.	22220	**298.5** 11.75	**130.0** 5.12	**215.9** 8.50	**211.1** 8.31	**268.2** 10.56	**225.43** 8.875	**38.1** 1.50	**24** 7⁄8	**114.6** 4.51	**116.6** 4.59	**58.4** 2.30	**103.1** 4.06	**17.5** 0.69	**97.0** 3.82	**15.9** 35
TAFK20K308S	3 1⁄2 in.																
TAFK20K090S	**90 mm**																
TAFK22K315S[4]	3 15⁄16 in.	22222	**327.2** 12.88[4]	**145.0** 5.71	**256.5** 10.10	**163.6** 6.44[4]	**384.3** 15.13	**263.53** 10.375	**38.1** 1.50	**24** 1[4]	**117.3** 4.62	**119.4** 4.70	**63.0** 2.48	**106.9** 4.21	**12.4** 0.49	**104.9** 4.13	**24.9** 55
TAFK22K400S[4]	4 in.																
TAFK22K100S[4]	**100 mm**																
TAFK26K407S[4]	4 7⁄16 in.	22226	**355.6** 14.00[4]	**165.1** 6.50	**284.2** 11.19	**177.8** 7.00[4]	**419.1** 16.50	**284.18** 11.188	**38.1** 1.50	**27** 1 1⁄8[4]	**147.3** 5.80	**149.4** 5.88	**71.9** 2.83	**135.1** 5.32	**26.4** 1.04	**120.9** 4.76	**49.0** 108
TAFK26K408S[4]	4 1⁄2 in.																
TAFK26K115S[4]	**115 mm**																

[1] Pilot tolerance: +0/-0.05 mm (+0/-0.002 in.).
[2] Add (p) to the end of the housing designation in the part number to order with pilot using G dimension.
[3] Piloted flange blocks will be quoted (price and delivery) upon request. For optional spigot on flange side, insert the letter P as seen in the following example: QMFP**J***S.
[4] Six-bolt housing.

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TAMC CARTRIDGE BLOCKS

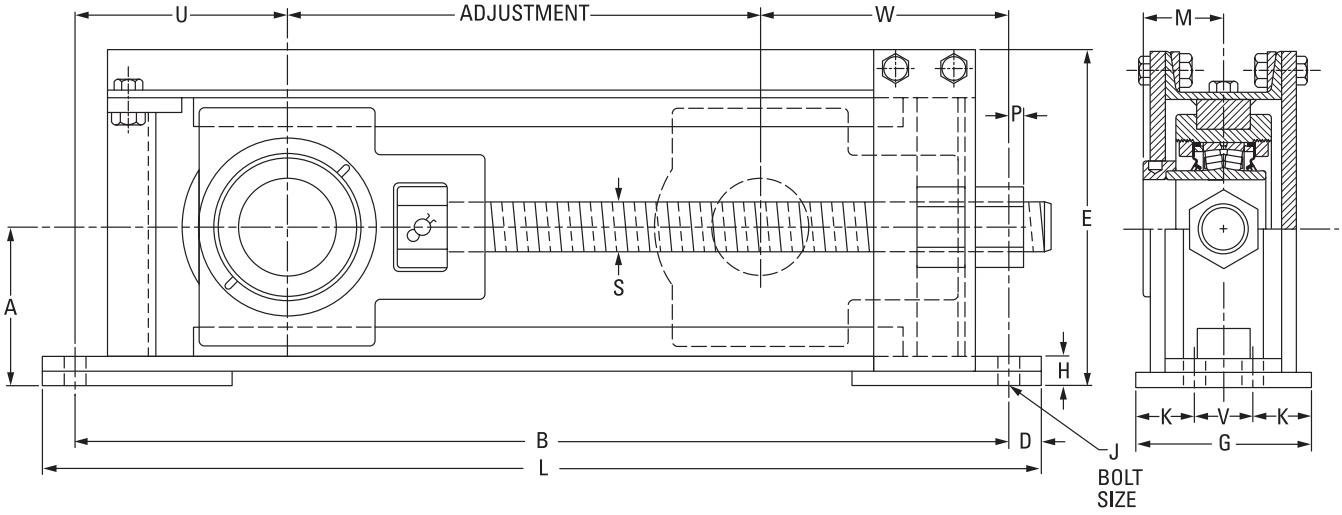


Bearing Part No.	Shaft Dia.	Bearing No.	A	B	C	D	F	G	L FIX	L EXP	M	S	Wt.
	mm in.		**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
TAMC11K115S	1 15/16 in.	22211	**13.5** 0.530	**23.0** 0.906	**74.9** 2.95	**4.8** 0.188	**115.09 (+0/-0.05)** 4.531 (+0/-0.002)	**55.4** 2.18	**63.2** 2.49	**64.5** 2.54	**35.6** 1.40	**58.9** 2.32	**4.5** 10
TAMC11K200S	2 in.												
TAMC11K050S	**50 mm**												
TAMC13K203S	2 3/16 in.	22213	**13.5** 0.530	**23.0** 0.906	**85.1** 3.35	**4.8** 0.188	**127.00 (+0/-0.05)** 5.000 (+0/-0.002)	**67.1** 2.64	**70.9** 2.79	**72.9** 2.87	**39.6** 1.56	**65.0** 2.56	**5.4** 12
TAMC13K204S	2 1/4 in.												
TAMC13K060S	**60 mm**												
TAMC15K207S	2 7/16 in.	22215	**15.1** 0.594	**26.2** 1.032	**98.0** 3.86	**6.4** 0.250	**149.23 (+0/-0.05)** 5.875 (+0/-0.002)	**70.6** 2.78	**78.2** 3.08	**80.3** 3.16	**43.9** 1.73	**72.9** 2.87	**8.2** 18
TAMC15K208S	2 1/2 in.												
TAMC15K065S	**65 mm**												
TAMC17K215S	2 15/16 in.	22217	**15.1** 0.594	**27.5** 1.083	**110.0** 4.33	**7.1** 0.281	**171.45 (+0/-0.05)** 6.750 (+0/-0.002)	**74.9** 2.95	**87.4** 3.44	**89.4** 3.52	**49.8** 1.96	**82.0** 3.23	**11.8** 26
TAMC17K300S	3 in.												
TAMC17K075S	**75 mm**												
TAMC20K307S	3 7/16 in.	22220	**19.8** 0.781	**32.5** 1.281	**130.0** 5.12	**8.0** 0.313	**206.38 (+0/-0.05)** 8.125 (+0/-0.002)	**85.6** 3.37	**101.3** 3.99	**103.4** 4.07	**58.4** 2.30	**97.0** 3.82	**14.5** 32
TAMC20K308S	3 1/2 in.												
TAMC20K090S	**90 mm**												
TAMC22K315S	3 15/16 in.	22222	**19.8** 0.781	**32.5** 1.281	**145.0** 5.71	**8.0** 0.313	**222.25 (+0/-0.08)** 8.750 (+0/-0.003)	**97.8** 3.85	**112.0** 4.41	**114.0** 4.49	**63.0** 2.48	**104.9** 4.13	**18.1** 40
TAMC22K400S	4 in.												
TAMC22K100S	**100 mm**												
TAMC26K407S	4 7/16 in.	22226	**19.8** 0.780	**38.1** 1.500	**165.1** 6.50	**8.0** 0.313	**265.10 (+0/-0.08)** 10.437 (+0/-0.003)	**104.4** 4.11	**124.2** 4.89	**126.2** 4.97	**71.9** 2.83	**120.9** 4.76	**23.6** 52
TAMC26K408S	4 1/2 in.												
TAMC26K115S	**115 mm**												

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TAKE-UP FRAMES[1]

QMTF TAKE-UP FRAMES

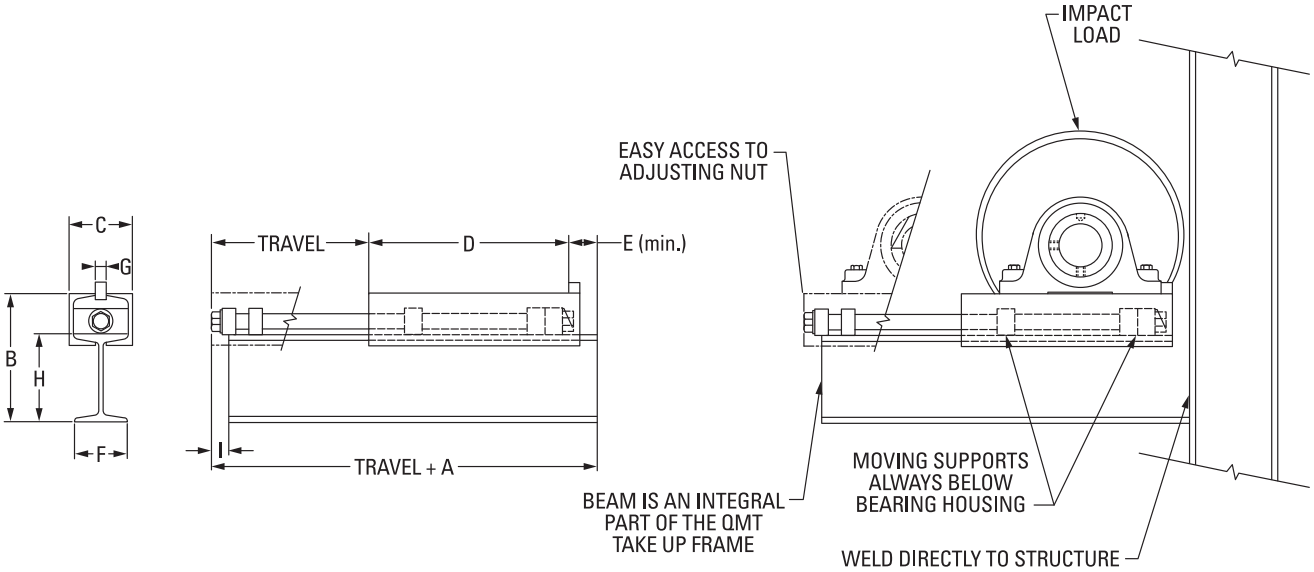


Frame Part No.	Travel Nom.	Travel Adj.	A	B	D	E	G	H	J	K	L	M	P	S	U	V	W	No. of Bolts Req.	Wt.
		mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.		**mm** in.	**mm** in.	**mm** in.		**kg** lbs.
QMTF12-115	12	**419.1** 16.50	**100.1** 3.94	**698.5** 27.50	**25.4** 1.00	**210.3** 8.28	**101.6** 4.00	**31.8** 1.25	**16** 5/8	–	**749.3** 29.50	**47.8** 1.88	**31.8** 1.25	1-5 ACME	**136.7** 5.38	–	**143.0** 5.63	2	**27.216** 60
QMTF12-203	12	**431.8** 17.00	**106.4** 4.19	**698.5** 27.50	**25.4** 1.00	**220.0** 8.66	**101.6** 4.00	**35.1** 1.38	**16** 5/8	–	**749.3** 29.50	**50.8** 2.00	**41.4** 1.63	1.125-5 ACME	**115.8** 4.56	–	**150.9** 5.94	2	**29.484** 65
QMTF12-207	12	**421.6** 16.60	**111.3** 4.38	**723.9** 28.50	**25.4** 1.00	**233.4** 9.19	**101.6** 4.00	**28.7** 1.13	**20** 3/4	–	**774.7** 30.50	**54.1** 2.13	**44.5** 1.75	1.25-5 ACME	**134.9** 5.31	–	**166.6** 6.56	2	**32.205** 71
QMTF12-215	12	**393.7** 15.50	**129.3** 5.09	**774.7** 30.50	**25.4** 1.00	**272.8** 10.74	**127.0** 5.00	**28.7** 1.13	**16** 5/8	**38.1** 1.50	**825.5** 32.50	**60.5** 2.38	**12.7** 0.50	1.5-4 ACME	**165.1** 6.50	**50.8** 2.00	**215.9** 8.50	4	**49.442** 109
QMTF12-307	12	**393.7** 15.50	**143.0** 5.63	**812.8** 32.00	**28.7** 1.13	**295.4** 11.63	**127.0** 5.00	**26.2** 1.03	**20** 3/4	**38.1** 1.50	**870.0** 34.25	**65.5** 2.58	**25.4** 1.00	1.75-4 ACME	**185.7** 7.31	**50.8** 2.00	**233.4** 9.19	4	**62.596** 138
QMTF12-315	12	**457.2** 18.00	**177.8** 7.00	**914.4** 36.00	**31.8** 1.25	**367.5** 14.47	**152.4** 6.00	**36.6** 1.44	**20** 3/4	**44.5** 1.75	**977.9** 38.50	**75.2** 2.96	**41.4** 1.63	2-4 ACME	**190.5** 7.50	**63.5** 2.50	**265.2** 10.44	4	**86.636** 191
QMTF18-207	18	**574.0** 22.60	**111.3** 4.38	**876.3** 34.50	**25.4** 1.00	**234.2** 9.22	**101.6** 4.00	**26.9** 1.06	**20** 3/4	–	**927.1** 36.50	**54.1** 2.13	**44.5** 1.75	1.25-5 ACME	**139.7** 5.50	–	**162.6** 6.40	2	**36.741** 81
QMTF18-215	18	**546.1** 21.50	**129.3** 5.09	**927.1** 36.50	**25.4** 1.00	**272.8** 10.74	**127.0** 5.00	**28.7** 1.13	**16** 5/8	**38.1** 1.50	**977.9** 38.50	**60.5** 2.38	**12.7** 0.50	1.5-4 ACME	**165.1** 6.50	**50.8** 2.00	**215.9** 8.50	4	**54.431** 120
QMTF18-307	18	**546.1** 21.50	**143.0** 5.63	**965.2** 38.00	**28.7** 1.13	**295.4** 11.63	**127.0** 5.00	**26.2** 1.03	**20** 3/4	**38.1** 1.50	**1022.4** 40.25	**65.5** 2.58	**25.4** 1.00	1.75-4 ACME	**185.7** 7.31	**50.8** 2.00	**233.4** 9.19	4	**70.760** 156
QMTF18-315	18	**609.6** 24.00	**177.8** 7.00	**1066.8** 42.00	**31.8** 1.25	**366.8** 14.44	**152.4** 6.00	**36.6** 1.44	**20** 3/4	**44.5** 1.75	**1130.3** 44.50	**75.2** 2.96	**41.4** 1.63	2-4 ACME	**190.5** 7.50	**63.5** 2.50	**265.2** 10.44	4	**101.150** 223
QMTF24-207	24	**726.4** 28.60	**111.3** 4.38	**1028.7** 40.50	**25.4** 1.00	**233.4** 9.19	**101.6** 4.00	**28.7** 1.13	**20** 3/4	–	**1079.5** 42.50	**54.1** 2.13	**44.5** 1.75	1.25-5 ACME	**115.8** 4.56	–	**166.6** 6.56	2	**41.277** 91
QMTF24-215	24	**698.5** 27.50	**129.3** 5.09	**1079.5** 42.50	**25.4** 1.00	**271.5** 10.69	**127.0** 5.00	**24.6** 0.97	**16** 5/8	**38.1** 1.50	**1130.3** 44.50	**60.5** 2.38	**12.7** 0.50	1.5-4 ACME	**165.1** 6.50	**50.8** 2.00	**215.9** 8.50	4	**63.957** 141
QMTF24-307	24	**698.5** 27.50	**143.0** 5.63	**1117.6** 44.00	**28.7** 1.13	**295.4** 11.63	**127.0** 5.00	**26.2** 1.03	**20** 3/4	**38.1** 1.50	**1174.8** 46.25	**65.5** 2.58	**25.4** 1.00	1.75-4 ACME	**185.7** 7.31	**50.8** 2.00	**233.4** 9.19	4	**81.193** 179
QMTF24-315	24	**762.0** 30.00	**177.8** 7.00	**1219.2** 48.00	**31.8** 1.25	**367.5** 14.47	**152.4** 6.00	**36.6** 1.44	**20** 3/4	**44.5** 1.75	**1282.7** 50.50	**75.2** 2.96	**41.4** 1.63	2-4 ACME	**190.5** 7.50	**63.5** 2.50	**265.2** 10.44	4	**112.940** 249

[1]Frame only. Bearing unit must be ordered separately. See pages C-98 (V-Lock), C-125 , C-120 (CL) and C-149 (EC) for information on take-up bearing units.
NOTE: All take-up frames come with Acme threaded rod.

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QMT PILLOW BLOCK TAKE-UP FRAMES[1]



Frame Part No.	Bearing Size	Travel	A	B	C	D	E	F	G	H	I	Wt.
			mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
QMT1 X 9	1 7/16 in. – 2 15/16 in.	9	**330.2** 13.0	**187.3** 7.375	**92.1** 3.625	**289.1** 11.38	**41.4** 1.63	**76.2** 3.00	**20** 3/4	**127.0** 5.0	**25.4** 1.0	**11.793** 26
QMT1 X 12	1 7/16 in. – 2 15/16 in.	12	**330.2** 13.0	**187.3** 7.375	**92.1** 3.625	**289.1** 11.38	**41.4** 1.63	**76.2** 3.00	**20** 3/4	**127.0** 5.0	**25.4** 1.0	**13.608** 30
QMT1 X 18	1 7/16 in. – 2 15/16 in.	18	**330.2** 13.0	**187.3** 7.375	**92.1** 3.625	**289.1** 11.38	**41.4** 1.63	**76.2** 3.00	**20** 3/4	**127.0** 5.0	**25.4** 1.0	**16.329** 36
QMT1 X 24	1 7/16 in. – 2 15/16 in.	24	**330.2** 13.0	**187.3** 7.375	**92.1** 3.625	**289.1** 11.38	**41.4** 1.63	**76.2** 3.00	**20** 3/4	**127.0** 5.0	**25.4** 1.0	**19.051** 42
QMT2 X 18	2 15/16 in. – 4 7/16 in.	18	**482.6** 19.0	**311.2** 12.25	**125.4** 4.938	**431.8** 17.00	**50.8** 2.00	**106.4** 4.19	**24** 1	**203.2** 8.0	**38.1** 1.5	**33.566** 74
QMT2 X 24	2 15/16 in. – 4 7/16 in.	24	**482.6** 19.0	**311.2** 12.25	**125.4** 4.938	**431.8** 17.00	**50.8** 2.00	**106.4** 4.19	**24** 1	**203.2** 8.0	**38.1** 1.5	**40.823** 90
QMT2 X 36	2 15/16 in. – 4 7/16 in.	36	**482.6** 19.0	**311.2** 12.25	**125.4** 4.938	**431.8** 17.00	**50.8** 2.00	**106.4** 4.19	**24** 1	**203.2** 8.0	**38.1** 1.5	**43.545** 96

[1]Frame only. Bearing unit must be ordered separately.
NOTE: All take-up frames come with Acme threaded rod.

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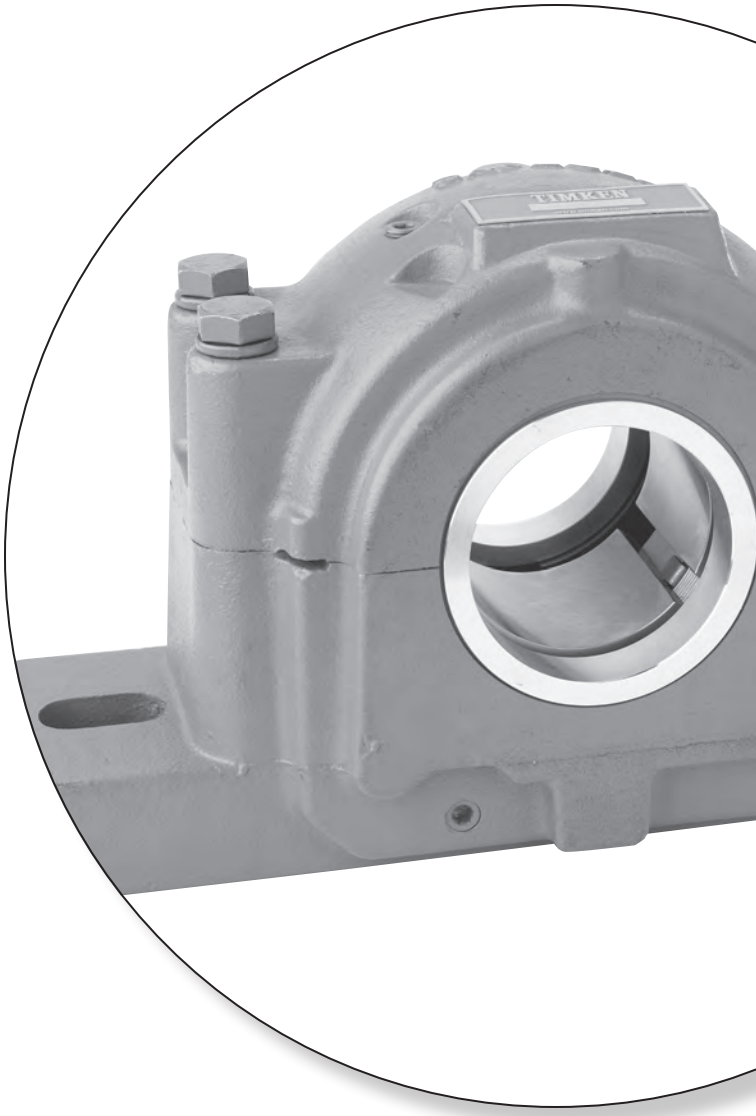
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D

TIMKEN® SAF SPLIT-BLOCK HOUSED UNITS

Timken's split-block spherical pillow blocks combine rugged cast-iron or cast-steel housings with high-capacity spherical roller bearings to meet the toughest demands of heavy industry. The convenient split-housing design simplifies assembly and service. Each pillow block contains an advanced-design spherical roller bearing with improved geometry and raceway finish for optimal load capacity and service life. Timken manufactures pillow blocks in two main styles: SAF and SDAF. The larger SDAF block is suggested for extremely heavy duty applications.

Updates are made periodically to this catalog. Visit www.timken.com for the most recent version of the Timken® Housed Unit Catalog.



TYPICAL INDUSTRIES AND APPLICATIONS

Common uses include processing and material handling equipment found in many industries, including power generation (coal), mining, aggregate, cement, metal mills, pulp, paper and other forestry operations, water treatment and food processing. Applications include conveyors, movable bridges/heavy structures, industrial fans and blowers.

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⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

Overheated bearings can ignite explosive atmospheres. Special care must be taken to properly select, install, maintain, and lubricate housed unit bearings that are used in or near atmospheres that may contain explosive levels of combustible gases or accumulations of dust such as from grain, coal, or other combustible materials. Consult your equipment designer or supplier for installation and maintenance instructions.

⚠ CAUTION

Failure to follow these cautions could create a risk of injury.

Do not use damaged housed units. The use of a damaged housed unit can result in equipment damage and/or injury.

CAUTION

Failure to follow these cautions may result in property damage.

If hammer and bar are used for installation or removal of a part, use a mild steel bar (e.g., 1010 or 1020 grade). Mild steel bars are less likely to cause release of high-speed fragments from the hammer, bar or the part being removed.

Warnings for this product line are in this catalog and posted on www.timken.com/en-us/products/warnings/Pages/TimkenHousedUnitWarnings.aspx.

NOTE

Do not use excessive force when mounting or dismounting the unit.

Follow all tolerance, fit and torque recommendations.

Always follow the Original Equipment Manufacturer's installation and maintenance guidelines.

Ensure proper alignment.

Never weld housed units.

Do not heat components with an open flame.

Do not operate at bearing temperatures above 121°C (250°F).

DISCLAIMER

This catalog is provided solely to give you analysis tools and data to assist you in your product selection. Product performance is affected by many factors beyond the control of Timken. Therefore, you must validate the suitability and feasibility of all product selections for your applications.

Timken products are sold subject to Timken terms and conditions of sale, which include our limited warranty and remedy. You can find these at http://www.timken.com/en-us/purchase/Pages/TermsandConditionsofSale.aspx.

Please consult with your Timken engineer for more information and assistance.

Every reasonable effort has been made to ensure the accuracy of the information in this writing, but no liability is accepted for errors, omissions or for any other reason.

Updates are made periodically to this catalog. Visit www.timken.com for the most recent version of the Timken® Housed Unit Catalog.

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ENGINEERING

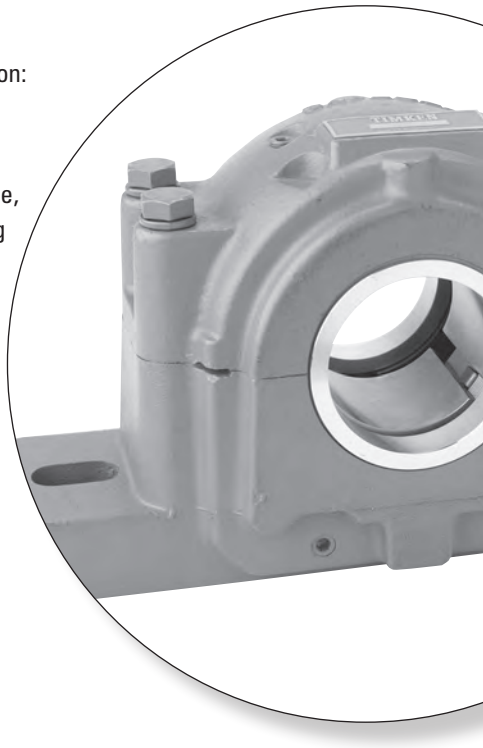
The following topics are covered within this engineering section:

- Spherical roller bearing design types.
- Shaft fitting practice and mounting recommendations.

This engineering section is not intended to be comprehensive, but does serve as a useful guide in spherical roller bearing and SAF pillow block housing selection.

To view the complete engineering catalog, please visit www.timken.com. To order the catalog, please contact your Timken engineer and request a copy of the Timken Engineering Manual, order number 10424.

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RADIAL SPHERICAL ROLLER BEARING TYPES AND CAGES

The principle styles of radial spherical roller bearings that Timken offers are:

- ≤280 mm bore: EJ, EM and EMB
- >280 mm bore: YM and YMB

Above suffixes correspond to different types of designs depending on a bearing size and geometry. Main differences are the cage type used in the assembly. Spherical roller bearings with an EJ cage suffix are fitted with a stamped-steel cage. YM/EM/YMB suffixes are used with brass cage designs.

The newly redesigned Timken® EJ, EM and EMB bearings offer higher load ratings, increased thermal speed ratings and reduced operating temperatures compared to the previous offering.

In addition to these improvements, cage designs vary between the different styles as noted below.

Style	Cage Design
EJ	Land-riding steel cage; one per row
EM/YM	Roller-riding one-piece brass cage
EMB/YMB	Land-riding one-piece brass cage

Most Timken® spherical roller bearings are available with a cylindrical bore as well as a tapered bore. Tapered bore bearing part numbers are designated with a K suffix.

METRIC SYSTEM TOLERANCES

Spherical roller bearings are manufactured to a number of specifications, with each having classes that define tolerances on dimensions such as bore, O.D., width and runout. Metric bearings have been manufactured to corresponding standard negative tolerances.

The following table summarizes the different specifications and classes for spherical roller bearings and other available Timken bearing lines. For the purposes of this catalog, ISO specifications are shown for spherical roller bearings.

Boundary dimension tolerances for spherical roller bearing usage are listed in the following tables. These tolerances are provided for use in selecting bearings for general applications, in conjunction with the bearing mounting and fitting practices offered in later sections.

TABLE D-1. BEARING SPECIFICATIONS AND CLASSES

System	Specification	Bearing Type	Standard Bearing Class		Precision Bearing Class			
Metric	ISO/DIN	All Bearing Types	P0	P6	P5	P4	P2	—
Imperial	ABMA	Spherical	RBEC 1	RBEC 3	RBEC 5	RBEC 7	RBEC 9	—

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Standard Timken radial spherical roller bearings maintain normal tolerances according to ISO 492. Tables D-2 and D-3 list the critical tolerances for these bearing types. Timken SAF housings are supplied with bearings that conform to ISO P0, or standard tolerances.

The term deviation is defined as the difference between a single ring dimension and the nominal dimension. For metric tolerances, the nominal dimension is at a +0 mm (0 in.) tolerance. The deviation is the tolerance range for the listed parameter. Variation is defined as the difference between the largest and smallest measurements of a given parameter for an individual ring.

TABLE D-2. SPHERICAL ROLLER BEARING TOLERANCES – INNER RING (METRIC)[1]

Bearing Bore		Bore Deviation[2] Δ_{dmp}			Width Variation V_{BS}			Radial Runout K_{ia}			Face Runout with Bore S_d	Axial Runout S_{ia}	Width Deviation Inner & Outer Rings[2] Δ_{Bs} and Δ_{Cs}	
Over	Incl.	P0	P6	P5	P0	P6	P5	P0	P6	P5	P5	P5	P0, P6	P5
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
2.5000 0.0984	**10.000** 0.3937	**-0.008** -0.0003	**-0.007** -0.0003	**-0.005** -0.0002	**0.015** 0.0006	**0.015** 0.0006	**0.005** 0.0002	**0.010** 0.0004	**0.006** 0.0002	**0.004** 0.0002	**0.007** 0.0003	**0.007** 0.0003	**-0.120** -0.0047	**-0.040** -0.0157
10.000 0.3937	**18.000** 0.7087	**-0.008** -0.0003	**-0.007** -0.0003	**-0.005** -0.0002	**0.020** 0.0008	**0.020** 0.0008	**0.005** 0.0002	**0.010** 0.0004	**0.007** 0.0003	**0.004** 0.0002	**0.007** 0.0003	**0.007** 0.0003	**-0.120** -0.0047	**-0.080** -0.0031
18.000 0.7087	**30.000** 1.1811	**-0.010** -0.0004	**-0.008** -0.0003	**-0.006** -0.0002	**0.020** 0.0008	**0.020** 0.0008	**0.005** 0.0002	**0.013** 0.0005	**0.008** 0.0003	**0.004** 0.0002	**0.008** 0.0003	**0.008** 0.0003	**-0.120** -0.0047	**-0.120** -0.0047
30.000 1.1811	**50.000** 1.9685	**-0.012** -0.0005	**-0.010** -0.0004	**-0.008** -0.0003	**0.020** 0.0008	**0.020** 0.0008	**0.005** 0.0002	**0.015** 0.0006	**0.010** 0.0004	**0.005** 0.0002	**0.008** 0.0003	**0.008** 0.0003	**-0.120** -0.0047	**-0.120** -0.0047
50.000 1.9685	**80.000** 3.1496	**-0.015** -0.0006	**-0.012** -0.0005	**-0.009** -0.0004	**0.025** 0.0010	**0.025** 0.0010	**0.006** 0.0002	**0.020** 0.0008	**0.010** 0.0004	**0.005** 0.0002	**0.008** 0.0003	**0.008** 0.0003	**-0.150** -0.0059	**-0.150** -0.0059
80.000 3.1496	**120.000** 4.7244	**-0.020** -0.0008	**-0.015** -0.0006	**-0.010** -0.0004	**0.025** 0.0010	**0.025** 0.0010	**0.007** 0.0003	**0.025** 0.0010	**0.013** 0.0005	**0.006** 0.0002	**0.009** 0.0004	**0.009** 0.0004	**-0.200** -0.0079	**-0.200** -0.0079
120.000 4.7244	**150.000** 5.9055	**-0.025** -0.0010	**-0.018** -0.0007	**-0.013** -0.0005	**0.030** 0.0012	**0.030** 0.0012	**0.008** 0.0003	**0.030** 0.0012	**0.018** 0.0007	**0.008** 0.0003	**0.010** 0.0004	**0.010** 0.0004	**-0.250** -0.0098	**-0.250** -0.0098
150.000 5.9055	**180.000** 7.0866	**-0.025** -0.0010	**-0.018** -0.0007	**-0.013** -0.0005	**0.030** 0.0012	**0.030** 0.0012	**0.008** 0.0003	**0.030** 0.0012	**0.018** 0.0007	**0.008** 0.0003	**0.010** 0.0004	**0.010** 0.0004	**-0.250** -0.0098	**-0.250** -0.0098
180.000 7.0866	**250.000** 9.8425	**-0.030** -0.0012	**-0.022** -0.0009	**-0.015** -0.0006	**0.030** 0.0012	**0.030** 0.0012	**0.010** 0.0004	**0.040** 0.0016	**0.020** 0.0008	**0.010** 0.0004	**0.011** 0.0004	**0.013** 0.0005	**-0.300** -0.0018	**-0.300** -0.0018
250.000 9.8425	**315.000** 12.4016	**-0.035** -0.0014	**-0.025** -0.0010	**-0.018** -0.0007	**0.035** 0.0014	**0.035** 0.0014	**0.013** 0.0005	**0.050** 0.0020	**0.025** 0.0010	**0.013** 0.0005	**0.013** 0.0005	**0.015** 0.0006	**-0.350** -0.0138	**-0.350** -0.0138
315.000 12.4016	**400.000** 15.7480	**-0.040** -0.0016	**-0.030** -0.0012	**-0.023** -0.0009	**0.040** 0.0016	**0.040** 0.0016	**0.015** 0.0006	**0.060** 0.0024	**0.030** 0.0012	**0.015** 0.0006	**0.015** 0.0006	**0.020** 0.0008	**-0.400** -0.0157	**-0.400** -0.0157
400.000 15.7480	**500.000** 19.6850	**-0.045** -0.0018	**-0.035** -0.0014	–	**0.050** 0.0020	**0.045** 0.0018	–	**0.065** 0.0026	**0.035** 0.0014	–	–	–	**-0.450** -0.0177	–
500.000 19.6850	**630.000** 24.8031	**-0.050** -0.0020	**-0.040** -0.0016	–	**0.060** 0.0024	**0.050** 0.0020	–	**0.070** 0.0028	**0.040** 0.0016	–	–	–	**-0.500** -0.0197	–
630.000 24.8031	**800.000** 31.4961	**-0.075** -0.0030	–	–	**0.070** 0.0028	–	–	**0.080** 0.0031	–	–	–	–	**-0.750** -0.0295	–

[1]Symbol definitions are found on pages 32-33 of the Timken Engineering Manual (order number 10424).
[2]Tolerance range is from +0 to value listed.
NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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TABLE D-3. SPHERICAL ROLLER BEARING TOLERANCES – OUTER RING (METRIC)[1]

Bearing O.D.		Outside Deviation[2] Δ_{Dmp}			Width Variation V_{CS}		Radial Runout K_{ea}			Axial Runout S_{ea}	Outside Diameter Runout With Face S_D
Over	Incl.	P0	P6	P5	P0	P6	P0	P6	P5	P5	P5
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
0.000 0.0000	**18.000** 0.7087	**-0.008** -0.0003	**-0.007** -0.0003	**-0.005** -0.0002	**0.015** 0.0006	**0.005** 0.0002	**0.015** 0.0006	**0.008** 0.0003	**0.005** 0.0002	**0.008** 0.0003	**0.008** 0.0003
18.000 0.7087	**30.000** 1.1811	**-0.009** -0.0004	**-0.008** -0.0003	**-0.006** -0.00024	**0.020** 0.0008	**0.005** 0.0002	**0.015** 0.0006	**0.009** 0.0004	**0.006** 0.00024	**0.008** 0.0003	**0.008** 0.0003
30.000 1.1811	**50.000** 1.9685	**-0.011** -0.0004	**-0.009** -0.0004	**-0.007** -0.0003	**0.020** 0.0008	**0.005** 0.0002	**0.020** 0.0008	**0.010** 0.0004	**0.007** 0.0003	**0.008** 0.0003	**0.008** 0.0003
50.000 1.9685	**80.000** 3.1496	**-0.013** -0.0005	**-0.011** -0.0004	**-0.009** -0.0004	**0.025** 0.0010	**0.006** 0.00024	**0.025** 0.0010	**0.013** 0.0005	**0.008** 0.0003	**0.010** 0.0004	**0.008** 0.0003
80.000 3.1496	**120.000** 4.7244	**-0.015** -0.0006	**-0.013** -0.0005	**-0.010** -0.0004	**0.025** 0.0010	**0.008** 0.0003	**0.035** 0.0014	**0.018** 0.0007	**0.010** 0.0004	**0.011** 0.0004	**0.009** 0.0004
120.000 4.7244	**150.000** 5.9055	**-0.018** -0.0007	**-0.015** -0.0006	**-0.011** -0.0004	**0.030** 0.0012	**0.008** 0.0003	**0.040** 0.0016	**0.020** 0.0008	**0.011** 0.0004	**0.013** 0.0005	**0.010** 0.0004
150.000 5.9055	**180.000** 7.0866	**-0.025** -0.0010	**-0.018** -0.0007	**-0.013** -0.0005	**0.030** 0.0012	**0.008** 0.0003	**0.045** 0.0018	**0.023** 0.0009	**0.013** 0.0005	**0.014** 0.0006	**0.010** 0.0004
180.000 7.0866	**250.000** 9.8425	**-0.030** -0.0012	**-0.020** -0.0008	**-0.015** -0.0006	**0.030** 0.0012	**0.010** 0.0004	**0.050** 0.0020	**0.025** 0.0010	**0.015** 0.0006	**0.015** 0.0006	**0.011** 0.0004
250.000 9.8425	**315.000** 12.4016	**-0.035** -0.0014	**-0.025** -0.0010	**-0.018** -0.0007	**0.035** 0.0014	**0.011** 0.0004	**0.060** 0.0024	**0.030** 0.0012	**0.018** 0.0007	**0.018** 0.0007	**0.013** 0.0005
315.000 12.4016	**400.000** 15.7480	**-0.040** -0.0016	**-0.028** -0.0011	**-0.020** -0.0008	**0.040** 0.0016	**0.013** 0.0005	**0.070** 0.0028	**0.035** 0.0014	**0.020** 0.0008	**0.020** 0.0008	**0.013** 0.0005
400.000 15.7480	**500.000** 19.6850	**-0.045** -0.0018	**-0.033** -0.0013	**-0.023** -0.0009	**0.045** 0.0018	**0.015** 0.0006	**0.080** 0.0031	**0.040** 0.0016	**0.023** 0.0009	**0.023** 0.0009	**0.015** 0.0006
500.000 19.6850	**630.000** 24.8031	**-0.050** -0.0020	**-0.038** -0.0015	**-0.028** -0.0011	**0.050** 0.0020	**0.018** 0.0007	**0.100** 0.0039	**0.050** 0.0020	**0.025** 0.0010	**0.025** 0.0010	**0.018** 0.0007
630.000 24.8031	**800.000** 31.4961	**-0.075** -0.0030	**-0.045** -0.0018	**-0.035** -0.0014	–	**0.020** 0.0008	**0.120** 0.0047	**0.060** 0.0024	**0.030** 0.0012	**0.030** 0.0012	**0.020** 0.0008
800.000 31.4961	**1000.000** 39.3701	**-0.100** -0.0040	**-0.060** -0.0024	–	–	–	**0.140** 0.0055	**0.075** 0.0030	–	–	–
1000.000 39.3701	**1250.000** 49.2126	**-0.125** -0.0050	–	–	–	–	**0.160** 0.0063	– –	–	–	–

[1]Symbol definitions are found on pages 32-33 of the Timken Engineering Manual (order number 10424).
[2]Tolerance range is from +0 to value listed.
NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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SPHERICAL ROLLER BEARING MOUNTING, FITTING, SETTING AND INSTALLATION

MOUNTING

Spherical roller bearings can be mounted individually, but most often are mounted in combination with another spherical roller bearing or a cylindrical roller bearing.

With spherical roller bearings, typically one bearing is fixed axially and the other is mounted with loose fits and axial space. This allows movement or float for environmental conditions such as uneven thermal growth between shaft and housing. In SAF housings, a stabilizing ring, sometimes called a locating ring, is provided. When this ring is installed in the assembly, it creates a fixed bearing. When it is removed, and the bearing is properly located in the housing, the bearing can float freely.

Fig. D-1 shows a fixed SAF housing with a stabilizing ring installed and a float bearing without the stabilizing ring.

FITTING PRACTICE

Tables D-6 through D-8 on pages D-15 through D-21 list the recommended fitting practice for spherical roller bearing inner rings on shafts. The tables assume:

- The bearing is of normal precision.
- The shaft is solid and made from steel.
- The bearing seats are ground or accurately turned to less than approximately 1.6 Ra finish.

The suggested fit symbols are in accordance with ISO 286. For help with recommended fitting practice, contact your Timken engineer.

As a general guideline, rotating inner rings should be applied with an interference fit. Loose fits may permit the inner rings to creep or turn, and wear the shaft and the backing shoulder. This wear may result in excessive bearing looseness and possible bearing and shaft damage. Additionally, abrasive metal particles resulting from creep or turning may enter into the bearing and cause damage and vibration.

The load conditions and bearing envelope dimensions should be used to select the suggested shaft fit from the tables.

Timken SAF housings are supplied with a predetermined loose fit practice for the bearing O.D. Contact your Timken engineer if you require the specific fit practice used for a given SAF housing.

⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

Overheated bearings can ignite explosive atmospheres. Special care must be taken to properly select, install, maintain, and lubricate housed unit bearings that are used in or near atmospheres that may contain explosive levels of combustible gases or accumulations of dust such as from grain, coal, or other combustible materials. Consult your equipment designer or supplier for installation and maintenance instructions.

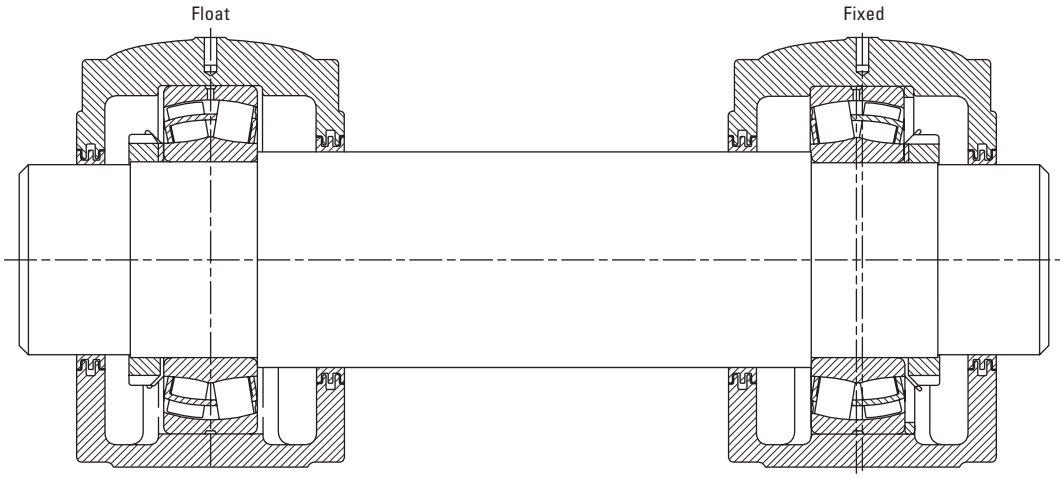


Fig. D-1. Spherical roller bearing direct mounting.

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TAPERED BORE DESIGNS

Typically, tapered bore bearings are selected to simplify shaft mounting and dismounting. Since the spherical roller bearing is not separable, mounting can be simplified by use of an adapter sleeve with a cylindrical bore and tapered O.D. A tapered bore roller bearing also can be mounted directly onto a tapered shaft.

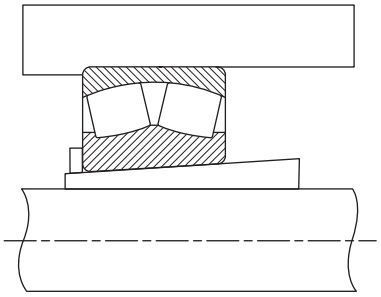


Fig. D-2. Spherical roller bearing mounted with an adapter sleeve.

Bearings with a tapered bore typically require a tighter fit on the shaft than bearings with a cylindrical bore. A locknut is typically used to drive the inner ring up a tapered shaft sleeve. The locknut position is then secured by use of a lockwasher or lockplate. Timken offers a wide range of accessories to ease the assembly of spherical roller bearings with a tapered bore (see page D-11). For approximating the clearance loss for axial drive-up, an 85 percent radial loss approximation can be used. That is, the radial clearance loss per axial drive-up can roughly be approximated as 71 µm/mm for a 1:12 tapered. Table D-5 on page D-10 provides a direct relation between suggested RIC (radial internal clearance) reduction due to installation and the corresponding axial displacement of the inner ring.

SETTING

To achieve appropriate operating clearance, attention must be paid to the effects that fitting practice and thermal gradients have within the bearing.

FITTING PRACTICE

- An interference fit between the inner ring and a solid steel shaft will reduce the radial clearance within the bearing by approximately 80 percent of the fit.
- Spherical roller bearings with a tapered bore require a slightly greater interference fit on the shaft than a cylindrical bore bearing.

NOTE

It is critical to select the RIC that allows for this reduction.

THERMAL GRADIENTS

- Thermal gradients within the bearing are primarily a function of the bearing rotational speed. As speed increases, thermal gradients increase, thermal growth occurs and the radial clearance is reduced.
- As a rule of thumb, radial clearance should be increased for speeds in excess of 70 percent of the speed rating.

For help selecting the correct radial internal clearance for your application, consult with your Timken engineer.

Radial internal clearance tolerances are listed in tables D-4 and D-5 for spherical roller bearings.

Spherical roller bearings are ordered with a specified standard or non-standard radial internal clearance value. The standard radial internal clearances are designated as C2, C0 (normal), C3, C4 or C5 and are in accordance with ISO 5753. C2 represents the minimum clearance and C5 represents the maximum clearance. Non-standardized values also are available by special request.

The clearance required for a given application depends on the desired operating precision, the rotational speed of the bearing, and the fitting practice used. SAF housings are supplied with a C3 clearance bearing, though other clearances may be ordered for specific applications, such as a C4 clearance for a paper machine dryer. Typically, larger clearance reduces the operating load zone of the bearing, increases the maximum roller load, and reduces the bearing's expected life. However, a spherical roller bearing that has been put into a preload condition can experience premature bearing damage caused by excessive heat generation and/or material fatigue. As a general guideline, spherical roller bearings should not operate in a preloaded condition.

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TABLE D-4. RADIAL INTERNAL CLEARANCE LIMITS – SPHERICAL ROLLER BEARINGS – CYLINDRICAL BORE

Bore (Nominal)		Cylindrical Bore						Typical Reduction of RIC Due to Installation		Typical RIC After Installation
			Normal CO		C4					
			Min.	Max.	Min.	Max.				
		C2		C3		C5				
Over	Incl.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.
20 0.9449	**30** 1.1811	**0.015** 0.0006	**0.025** 0.001	**0.04** 0.0016	**0.055** 0.0022	**0.075** 0.003	**0.095** 0.0037	**0.015** 0.0006	**0.02** 0.0008	**0.015** 0.0006
30 1.1811	**40** 1.5748	**0.015** 0.0006	**0.03** 0.0012	**0.045** 0.0018	**0.06** 0.0024	**0.08** 0.0031	**1** 0.0039	**0.02** 0.0008	**0.025** 0.001	**0.015** 0.0006
40 1.5748	**50** 1.9685	**0.02** 0.0008	**0.035** 0.0014	**0.055** 0.0022	**0.075** 0.003	**0.1** 0.0039	**0.125** 0.0049	**0.025** 0.001	**0.03** 0.0012	**0.02** 0.0008
50 1.9685	**65** 2.5591	**0.02** 0.0008	**0.04** 0.0016	**0.065** 0.0026	**0.09** 0.0035	**0.12** 0.0047	**0.15** 0.0059	**0.03** 0.0012	**0.038** 0.0015	**0.025** 0.001
65 2.5591	**80** 3.1496	**0.03** 0.0012	**0.05** 0.002	**0.08** 0.0031	**0.11** 0.0043	**0.145** 0.0057	**0.18** 0.0071	**0.038** 0.0015	**0.051** 0.002	**0.025** 0.001
80 3.1496	**100** 3.9370	**0.035** 0.0014	**0.06** 0.0024	**0.1** 0.0039	**0.135** 0.0053	**0.18** 0.0071	**0.225** 0.0089	**0.046** 0.0018	**0.064** 0.0025	**0.036** 0.0014
100 3.9370	**120** 4.7244	**0.04** 0.0016	**0.075** 0.003	**0.12** 0.0047	**0.16** 0.0063	**0.21** 0.0083	**0.26** 0.0102	**0.051** 0.002	**0.071** 0.0028	**0.051** 0.002
120 4.7244	**140** 5.5118	**0.05** 0.002	**0.095** 0.0037	**0.145** 0.0057	**0.19** 0.0075	**0.24** 0.0094	**0.3** 0.0118	**0.064** 0.0025	**0.089** 0.0035	**0.056** 0.0022
140 5.5118	**160** 6.2992	**0.06** 0.0024	**0.11** 0.0043	**0.17** 0.0067	**0.22** 0.0087	**0.28** 0.011	**0.35** 0.0138	**0.076** 0.003	**0.102** 0.004	**0.056** 0.0022
160 6.2992	**180** 7.0866	**0.065** 0.0026	**0.12** 0.0047	**0.18** 0.0071	**0.24** 0.0094	**0.31** 0.0122	**0.39** 0.0154	**0.076** 0.003	**0.114** 0.0045	**0.061** 0.0024
180 7.0866	**200** 7.8740	**0.07** 0.0028	**0.13** 0.0051	**0.2** 0.0079	**0.26** 0.0102	**0.34** 0.0134	**0.43** 0.0169	**0.089** 0.0035	**0.127** 0.005	**0.071** 0.0028
200 7.8740	**225** 8.8582	**0.08** 0.0031	**0.14** 0.0055	**0.22** 0.0087	**0.29** 0.0114	**0.38** 0.015	**0.47** 0.0185	**0.102** 0.004	**0.14** 0.0055	**0.076** 0.003
225 8.8582	**250** 9.8425	**0.09** 0.0035	**0.15** 0.0059	**0.24** 0.0094	**0.32** 0.0126	**0.42** 0.0165	**0.52** 0.0205	**0.114** 0.0045	**0.152** 0.006	**0.089** 0.0035
250 9.8425	**280** 11.0236	**0.1** 0.0039	**0.17** 0.0067	**0.26** 0.0102	**0.35** 0.0138	**0.46** 0.0181	**0.57** 0.0224	**0.114** 0.0045	**0.165** 0.0065	**0.102** 0.004
280 11.0236	**315** 12.4016	**0.11** 0.0043	**0.19** 0.0075	**0.28** 0.011	**0.37** 0.0146	**0.5** 0.0197	**0.63** 0.0248	**0.127** 0.005	**0.178** 0.007	**0.102** 0.004
315 12.4016	**355** 13.9764	**0.12** 0.0047	**0.2** 0.0079	**0.31** 0.0122	**0.41** 0.0161	**0.55** 0.0217	**0.69** 0.0272	**0.14** 0.0055	**0.19** 0.0075	**0.114** 0.0045
355 13.9764	**400** 15.7480	**0.13** 0.0051	**0.22** 0.0087	**0.34** 0.0134	**0.45** 0.0177	**0.6** 0.0236	**0.75** 0.0295	**0.152** 0.006	**0.203** 0.008	**0.127** 0.005
400 15.7480	**450** 17.7165	**0.14** 0.0055	**0.24** 0.0094	**0.37** 0.0146	**0.5** 0.0197	**0.66** 0.026	**0.82** 0.0323	**0.165** 0.0065	**0.216** 0.0085	**0.152** 0.006
450 17.7165	**500** 19.6850	**0.14** 0.0055	**0.26** 0.0102	**0.41** 0.0161	**0.55** 0.0217	**0.72** 0.0283	**0.9** 0.0354	**0.178** 0.007	**0.229** 0.009	**0.165** 0.0065
500 19.6850	**560** 22.0472	**0.15** 0.0059	**0.28** 0.011	**0.44** 0.0173	**0.6** 0.0236	**0.78** 0.0307	**1** 0.0394	**0.203** 0.008	**0.254** 0.01	**0.178** 0.007
560 22.0472	**630** 24.8031	**0.17** 0.0067	**0.31** 0.0122	**0.48** 0.0189	**0.65** 0.0256	**0.85** 0.0335	**1.1** 0.0433	**0.229** 0.009	**0.279** 0.011	**0.203** 0.008
630 24.8031	**710** 27.9528	**0.19** 0.0075	**0.35** 0.0138	**0.53** 0.0209	**0.7** 0.0276	**0.92** 0.0362	**1.19** 0.0469	**0.254** 0.01	**0.305** 0.012	**0.203** 0.008
710 27.9528	**800** 31.4961	**0.21** 0.0083	**0.39** 0.0154	**0.58** 0.0228	**0.77** 0.0303	**1.01** 0.0398	**1.3** 0.0512	**0.279** 0.011	**0.356** 0.014	**0.229** 0.009
800 31.4961	**900** 35.4331	**0.23** 0.0091	**0.43** 0.0169	**0.65** 0.0256	**0.86** 0.0339	**1.12** 0.0441	**1.44** 0.0567	**0.305** 0.012	**0.381** 0.015	**0.252** 0.01
900 35.4331	**1000** 39.3701	**0.26** 0.0102	**0.48** 0.0189	**0.71** 0.028	**0.93** 0.0366	**1.22** 0.048	**1.57** 0.0618	**0.356** 0.014	**0.432** 0.017	**0.279** 0.011

NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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TABLE D-5. RADIAL INTERNAL CLEARANCE LIMITS – SPHERICAL ROLLER BEARINGS – TAPERED BORE

Bore (Nominal)		Tapered Bore						Suggested Reduction of RIC Due to Installation		Axial Displacement of Inner Ring for RIC Reduction – Tapered Shaft[1][2]				Suggested RIC After Installation[1]
		Normal CO		C4						Taper 1:12		Taper 1:30		
		C2		C3		C5								
Over	Incl.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
20 0.9449	**30** 1.1811	**0.02** 0.0008	**0.03** 0.0012	**0.04** 0.0016	**0.055** 0.0022	**0.075** 0.003	**0.095** 0.0037	**0.015** 0.0006	**0.02** 0.0008	**0.23** 0.0091	**0.30** 0.0118	–	–	**0.015** 0.0006
30 1.1811	**40** 1.5748	**0.025** 0.001	**0.035** 0.0014	**0.05** 0.002	**0.065** 0.0026	**0.085** 0.0033	**0.105** 0.0041	**0.02** 0.0008	**0.025** 0.001	**0.30** 0.0118	**0.38** 0.0150	–	–	**0.015** 0.0006
40 1.5748	**50** 1.9685	**0.03** 0.0012	**0.045** 0.0018	**0.06** 0.0024	**0.08** 0.0031	**0.1** 0.0039	**0.13** 0.0051	**0.025** 0.001	**0.03** 0.0012	**0.38** 0.0150	**0.46** 0.0181	–	–	**0.02** 0.0008
50 1.9685	**65** 2.5591	**0.04** 0.0016	**0.055** 0.0022	**0.075** 0.003	**0.095** 0.0037	**0.12** 0.0047	**0.16** 0.0063	**0.03** 0.0012	**0.038** 0.0015	**0.46** 0.0181	**0.56** 0.0220	–	–	**0.025** 0.001
65 2.5591	**80** 3.1496	**0.05** 0.002	**0.07** 0.0028	**0.095** 0.0037	**0.12** 0.0047	**0.15** 0.0059	**0.2** 0.0079	**0.038** 0.0015	**0.051** 0.002	**0.56** 0.0220	**0.76** 0.0299	–	–	**0.025** 0.001
80 3.1496	**100** 3.9370	**0.055** 0.0022	**0.08** 0.003	**0.11** 0.0043	**0.14** 0.0055	**0.18** 0.0071	**0.23** 0.0091	**0.046** 0.0018	**0.064** 0.0025	**0.68** 0.0268	**0.97** 0.0382	–	–	**0.036** 0.0014
100 3.9370	**120** 4.7244	**0.065** 0.0026	**0.1** 0.0039	**0.135** 0.0053	**0.17** 0.0067	**0.22** 0.0087	**0.28** 0.011	**0.051** 0.002	**0.071** 0.0028	**0.76** 0.0299	**1.07** 0.0421	**1.90** 0.0748	**2.54** 0.1000	**0.051** 0.002
120 4.7244	**140** 5.5118	**0.08** 0.0031	**0.12** 0.0047	**0.16** 0.0063	**0.2** 0.0079	**0.26** 0.0102	**0.33** 0.013	**0.064** 0.0025	**0.089** 0.0035	**0.89** 0.0350	**1.27** 0.0500	**2.29** 0.0902	**3.05** 0.1201	**0.056** 0.0022
140 5.5118	**160** 6.2992	**0.09** 0.0035	**0.13** 0.0051	**0.18** 0.0071	**0.23** 0.0091	**0.3** 0.0118	**0.38** 0.015	**0.076** 0.003	**0.102** 0.004	**1.14** 0.0449	**1.52** 0.0598	**2.67** 0.1051	**3.43** 0.1350	**0.056** 0.0022
160 6.2992	**180** 7.0866	**0.1** 0.0039	**0.14** 0.0055	**0.2** 0.0079	**0.26** 0.0102	**0.34** 0.0134	**0.43** 0.0169	**0.076** 0.003	**0.114** 0.0045	**1.14** 0.0449	**1.65** 0.0650	**2.67** 0.1051	**4.06** 0.1598	**0.061** 0.0024
180 7.0866	**200** 7.8740	**0.11** 0.0043	**0.16** 0.0063	**0.22** 0.0087	**0.29** 0.0114	**0.37** 0.0146	**0.47** 0.0185	**0.089** 0.0035	**0.127** 0.005	**1.40** 0.0551	**1.90** 0.0748	**3.05** 0.1201	**4.45** 0.1752	**0.071** 0.0028
200 7.8740	**225** 8.8582	**0.12** 0.0047	**0.18** 0.0071	**0.25** 0.0098	**0.32** 0.0126	**0.41** 0.0161	**0.52** 0.0205	**0.102** 0.004	**0.14** 0.0055	**1.52** 0.0598	**2.03** 0.0799	**3.56** 0.1402	**4.83** 0.1902	**0.076** 0.003
225 8.8582	**250** 9.8425	**0.14** 0.0055	**0.2** 0.0079	**0.27** 0.0106	**0.35** 0.0138	**0.45** 0.0177	**0.57** 0.0224	**0.114** 0.0045	**0.152** 0.006	**1.78** 0.0701	**2.29** 0.0902	**4.06** 0.1598	**5.33** 0.2098	**0.089** 0.0035
250 9.8425	**280** 11.0236	**0.15** 0.0059	**0.22** 0.0087	**0.3** 0.0118	**0.39** 0.0154	**0.49** 0.0193	**0.62** 0.0244	**0.114** 0.0045	**0.165** 0.0065	**1.78** 0.0701	**2.54** 0.1000	**4.06** 0.1598	**5.84** 0.2299	**0.102** 0.004
280 11.0236	**315** 12.4016	**0.17** 0.0067	**0.24** 0.0094	**0.33** 0.013	**0.43** 0.0169	**0.54** 0.0213	**0.68** 0.0268	**0.127** 0.005	**0.178** 0.007	**1.90** 0.0748	**2.67** 0.1051	**4.45** 0.1752	**6.22** 0.2449	**0.102** 0.004
315 12.4016	**355** 13.9764	**0.19** 0.0075	**0.27** 0.0106	**0.36** 0.0142	**0.47** 0.0185	**0.59** 0.0232	**0.74** 0.0291	**0.14** 0.0055	**0.19** 0.0075	**2.03** 0.0799	**2.79** 0.1098	**4.83** 0.1902	**6.60** 0.2598	**0.114** 0.0045
355 13.9764	**400** 15.7480	**0.21** 0.0083	**0.3** 0.0118	**0.4** 0.0157	**0.52** 0.0205	**0.65** 0.0256	**0.82** 0.0323	**0.152** 0.006	**0.203** 0.008	**2.29** 0.0902	**3.05** 0.1201	**5.33** 0.2098	**7.11** 0.2799	**0.127** 0.005
400 15.7480	**450** 17.7165	**0.23** 0.0091	**0.33** 0.013	**0.44** 0.0173	**0.57** 0.0224	**0.72** 0.0283	**0.91** 0.0358	**0.165** 0.0065	**0.216** 0.0085	**2.54** 0.1000	**3.3** 0.1299	**5.84** 0.2299	**7.62** 0.3000	**0.152** 0.006
450 17.7165	**500** 19.6850	**0.26** 0.0102	**0.37** 0.0146	**0.49** 0.0193	**0.63** 0.0248	**0.79** 0.0311	**1** 0.0394	**0.178** 0.007	**0.229** 0.009	**2.67** 0.1051	**3.43** 0.1350	**6.22** 0.2449	**8.00** 0.3150	**0.165** 0.0065
500 19.6850	**560** 22.0472	**0.29** 0.0114	**0.41** 0.0161	**0.54** 0.0213	**0.68** 0.0268	**0.87** 0.0343	**1.1** 0.0433	**0.203** 0.008	**0.254** 0.01	**3.05** 0.1201	**3.81** 0.1500	**7.11** 0.2799	**8.89** 0.3500	**0.178** 0.007
560 22.0472	**630** 24.8031	**0.32** 0.0126	**0.46** 0.0181	**0.6** 0.0236	**0.76** 0.0299	**0.98** 0.0386	**1.23** 0.0484	**0.229** 0.009	**0.279** 0.011	**3.43** 0.1350	**4.19** 0.1650	**8.00** 0.3150	**9.78** 0.3850	**0.203** 0.008
630 24.8031	**710** 27.9528	**0.35** 0.0138	**0.51** 0.0201	**0.67** 0.0264	**0.85** 0.0335	**1.09** 0.0429	**1.36** 0.0535	**0.254** 0.01	**0.305** 0.012	**3.81** 0.1500	**4.57** 0.1799	**8.89** 0.3500	**10.67** 0.4201	**0.203** 0.008
710 27.9528	**800** 31.4961	**0.39** 0.0154	**0.57** 0.0224	**0.75** 0.0295	**0.96** 0.0378	**1.22** 0.048	**1.5** 0.0591	**0.279** 0.011	**0.356** 0.014	**4.19** 0.1650	**5.33** 0.2098	**9.78** 0.3850	**12.45** 0.4902	**0.229** 0.009
800 31.4961	**900** 35.4331	**0.44** 0.0173	**0.64** 0.0252	**0.84** 0.0331	**1.07** 0.0421	**1.37** 0.0539	**1.69** 0.0665	**0.305** 0.012	**0.381** 0.015	**4.57** 0.1799	**5.72** 0.2252	**10.67** 0.4201	**13.33** 0.5248	**0.252** 0.01
900 35.4331	**1000** 39.3701	**0.49** 0.0193	**0.71** 0.028	**0.93** 0.0366	**1.19** 0.0469	**1.52** 0.0598	**1.86** 0.0732	**0.356** 0.014	**0.432** 0.017	**5.33** 0.2100	**6.48** 0.2551	**12.45** 0.4902	**15.11** 0.5949	**0.279** 0.011

[1]This displacement is valid for assembly of tapered bore bearings and is measured starting from a line-to-line fit of the bearing bore to the tapered shaft.

[2]1:12 Taper used for 222, 223, 230, 231, 232, 233, 239 series. 1:30 Taper used for 240, 241, 242 series. For sleeve mounting, multiply axial displacement values by 1.1 for 1:12 Taper or by 1.05 for 1:30 Taper. For questions on tapered shaft data, consult your Timken engineer.

NOTE: Axial displacement values apply to solid steel shafts or hollow shafts with bore diameter less than half the shaft diameter. For shaft materials other than steel, or for thin-walled shafts, please consult your Timken engineer.

NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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EXAMPLE #1 –
Calculating RIC Reduction Using a Spherical Roller Bearing with Tapered Bore

Given bearing number 22328K C3 (140 mm bore with C3 clearance) is to be mounted on a tapered shaft. Using a set of feeler gages, RIC is measured at (see fig. D-3):

RIC = 0.178 mm (0.007 in.)

Suggested reduction of RIC due to installation = 0.064 mm – 0.089 mm (0.0025 in. – 0.0035 in.), found in table D-5 on page D-10.

Calculate the clearance after mounting (see fig. D-4):

0.178 mm – 0.076 mm = 0.102 mm *or*

(0.007 in. – 0.003 in. = 0.004 in.)

For this example, the value of 0.076 mm (0.003 in.) was obtained by taking the mid-range value of the upper and lower limits found in the tables on pages D-9 and D-10.

Therefore, the locknut should be tightened until RIC reaches 0.102 mm (0.004 in.).



Fig. D-3. Measure RIC before installation.



Fig. D-4. During mounting, the RIC should be checked at the unloaded roller.

It also should be noted that the value obtained by reading the suggested RIC after installation directly from the table is 0.056 mm (0.0022 in.). This differs from the value calculated in the example. The value taken directly from the table is provided as a minimum value. It is not suggested to use a calculated value that falls below this minimum.

EXAMPLE #2 –
Calculating RIC Reduction Using a Spherical Roller Bearing with Cylindrical Bore

Observations:

- Bearing 22230EM, nominal 150 mm (5.0955 in.) bore and 270 mm (10.6299 in.) O.D., standard class, operating at 1200 RPM.
- Float bearing position so the stationary O.D. should be free to move in SAF housing, with the stabilizing ring removed.
- With shaft/inner ring rotation and the moderate loading 0.09C, the bore should be tight fit.

We can use the nominal fit charts on page D-15 (shaft fit) to help guide our ISO fit selection.

Shaft Fit at 150 mm Bore: ISO p6

From the shaft fit chart at 150 mm nominal bore at p6 (page D-20), the shaft tolerance is nominal +0.043 to +0.068 mm (+0.0017 to +0.0027 in.). Therefore we have the following bore range:

max. shaft = 150.068 mm (5.0955 in.)

min. shaft = 150.043 mm (5.0945 in.)

This yields a shaft fit:

max. fit = max. shaft - min. bore
= 150.068 - 149.075
= 0.093 mm (0.0037 in.) tight

min. fit = min. shaft - max. bore
= 150.043 - 150.000
= 0.043 mm (0.0017 in.) tight

For the primary selection of RIC, the major parameters are the bearing speed and the fits. For our example, we know that the shaft fit is 0.043 mm (0.0017 in.) tight to 0.093 mm (0.0037 in.) tight.

We know the housing fit is loose. We also know that the bearing speed is 1200 RPM or 60 percent of the speed rating.

As a general rule of thumb, we increase the clearance for operating speeds that exceed 70 percent of the speed rating, due to concerns over internal heat generation and thermal growth. In this case, we are at 60 percent of the speed rating, so normal clearance, ISO CO or the SAF standard C3, can be selected.

Observing the RIC chart on page D-9, we find for 150 mm nominal bore at CO, the RIC will be 0.110 mm to 0.170 mm (0.0043 in. to 0.0067 in.). We also note that the minimum recommended RIC (installed) is 0.056 mm (0.0022 in.).

Also from page D-9, we note that we get an approximate reduction of RIC that is 80 percent of interference fit on a solid housing. Since we have a loose housing fit, there will be no RIC reduction from that fit.

Shaft fit RIC reductions and clearance:

For a 150 mm nominal bore at C3, the RIC will be 0.115 to 0.165 mm (0.0045 to 0.0065 in.). Recalculating shaft fit RIC reduction and clearance:

max. clearance = max. RIC - min. fit reduction
= 0.165 - 0.034 = 0.131 mm (0.0052 in.)

min. clearance = min. RIC - max. fit reduction
= 0.115 - 0.074 = 0.041 mm (0.0016 in.)

Since the minimum mounted clearance is less than the minimum suggested RIC of 0.056 mm (0.0022 in.), the C3 RIC clearance limit needs to be reevaluated.

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INSTALLATION

When using a tight fit inner ring, the method of assembly will depend on whether the bearing has a cylindrical or tapered bore.

CLEANLINESS

- Choose a clean environment, free from dust and moisture.
- The installer should make every effort to ensure cleanliness by use of protective screens and clean cloths.

PLAN THE WORK

- Know your plans in advance and have the necessary tools at hand. This reduces the amount of time for the job and decreases the chance for dirt to get into the bearing.

INSPECTION AND PREPARATION

- All component parts of the machine should be on hand and thoroughly cleaned before proceeding.
- Housings should be cleaned, including blowing out the oil holes.
- Do not use air hose on bearings.
- If blind holes are used, insert a magnetic rod to remove metal chips that might be lodged there during fabrication.
- Shaft shoulders and spacer rings contacting the bearing should be square with the shaft axis.
- The shaft fillet must be small enough to clear the radius of the bearing.
- On original installations, all component parts should be checked against the detail specification prints for dimensional accuracy. Shaft and housing should be carefully checked for size and form (roundness, etc.).

⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

⚠ CAUTION

Failure to follow these cautions could create a risk of injury.

Remove oil or rust inhibitor from parts before heating, to avoid fire and fumes.

SHAFT AND HOUSING FINISH

- Shaft surfaces on which the bearing will be mounted must be clean and free from nicks and burrs.
- For applications with stationary housing and rotating shaft, it is suggested that the bearing seat on the shaft be ground to 1.6 µm (65 µin.) Ra maximum.
- If it is impractical to use a ground finish, a machined finish of 3.2 µm (125 µin.) Ra is acceptable in many cases, but the amount of interference fit should be slightly increased.

INSTALLING CYLINDRICAL BORE BEARINGS

Heat expansion method

- Most applications require a tight interference fit on the shaft.
- Mounting is simplified by heating the bearing to expand it sufficiently to slide easily onto the shaft.
- Two methods of heating are commonly used:

1. Tank of heated oil.
   - Accomplished by heating the bearing in a tank of oil that has a high flash point (see fig. D-5).
   - The oil temperature should not be allowed to exceed 121° C (250° F). A temperature of 93° C (200° F) is sufficient for most applications.
   - The bearing should be heated for 20 or 30 minutes, or until it is expanded sufficiently to slide onto the shaft easily.
   - The oil bath is shown in fig. D-5. The bearing should not be in direct contact with the heat source.
   - The usual arrangement is to have a screen several inches from the bottom of the tank. Small support blocks separate the bearing from the screen.
   - It is important to keep the bearing away from any localized high-heat source that may raise its temperature excessively, resulting in ring hardness reduction.
   - Flame-type burners are commonly used. An automatic device for temperature control is desirable.
   - If safety regulations prevent the use of an open heated oil bath, a mixture of 15 percent soluble-oil water may be used. This mixture may be heated to a maximum of 93° C (200° F) without being flammable.

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2. Induction heating.
   - The induction heating process can be used for mounting bearings.
   - Induction heating is rapid. Care must be taken to prevent bearing temperature from exceeding 93° C (200° F).
   - Trial runs with the unit and bearing are usually necessary to obtain proper timing.
- Thermal crayons melted at predetermined temperatures or thermal gun can be used to check the bearing temperature.
- While the bearing is hot, it should be positioned squarely against the shoulder.
- Lockwashers and locknuts or clamping plates are then installed to hold the bearing against the shoulder of the shaft.
- As the bearing cools, the locknut or clamping plate should be tightened.
- For more information see the Timken Spherical Roller Bearing Catalog (order no. 10446), found on www.timken.com.

NOTE

Never use steam or hot water when cleaning the bearings because these methods can create rust or corrosion.

Never expose any surface of a bearing to the flame of a torch.

Do not heat bearing beyond 149° C (300° F).

Arbor press method

- An alternate method of mounting, generally used only on smaller size bearings, is to press the bearing onto the shaft or into the housing. This can be done by using an arbor press and a mounting tube as shown in fig. D-6.
- The tube should be made from soft steel with an inside diameter slightly larger than the shaft.
- The O.D. of the tube should not exceed the shaft backing diameter given in the Timken Spherical Roller Bearing Catalog (order no. 10446), found on www.timken.com.
- The tube should be faced square at both ends. It should be thoroughly clean inside and out, and long enough to clear the end of the shaft after the bearing is mounted.
- If the outer ring is being pressed into the housing, the O.D. of the mounting tube should be slightly smaller than the housing bore. The I.D. should not be less than the suggested housing backing diameter in the table of dimensions available in the Timken Spherical Roller Bearing Catalog (order no. 10446), found on www.timken.com.
- Coat the shaft with a light machine oil to reduce the force needed for a press fit.
- Carefully place the bearing on the shaft, making sure it is square with the shaft axis.
- Apply steady pressure from the arbor ram to drive the bearing firmly against the shoulder.

NOTE

Never attempt a press fit on a shaft by applying pressure to the outer ring or a press fit in a housing by applying pressure to the inner ring.

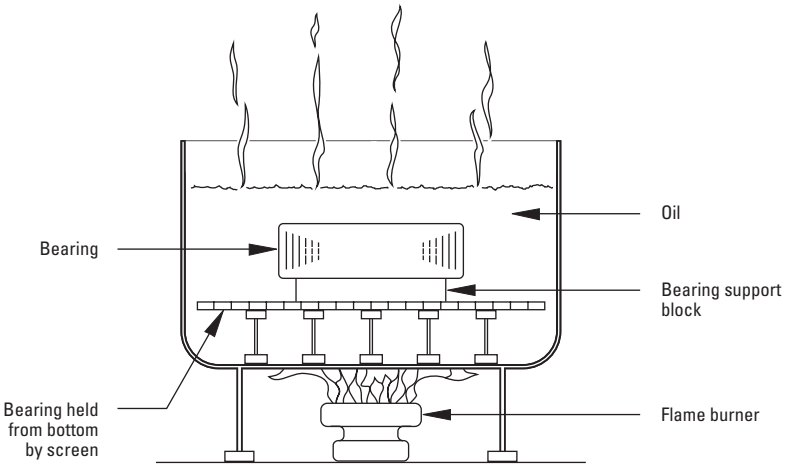


Fig. D-5. Heat expansion method.

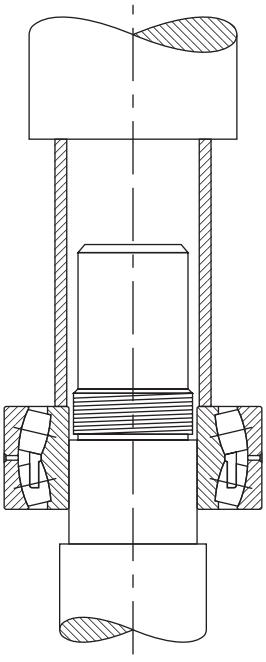


Fig. D-6. Arbor press method.

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Mounting tapered bore spherical roller bearings

- Use a feeler gage with the thinnest blade of 0.038 mm (0.0015 in.).
- Place the bearing in an upright position with the inner and outer ring faces parallel.
- Place thumbs on the inner ring bore and oscillate the inner ring the distance of two or three roller spacings.
- Position the individual roller assemblies so that a roller is at the top of the inner ring on both sides of the bearing.
- With the roller in the correct position, insert a thin blade of the feeler gage between the roller and the outer ring, as shown in fig. D-7.
- Move the feeler gage carefully along the top roller between the roller and outer ring raceway. Repeat this procedure using thicker feeler gage blades until one is found that will not go through.
- The blade thickness that preceded the no-go blade is a measure of RIC before installation.
- Start the mounting procedure by lubricating the tapered shaft with a light coat of machine oil.
- Slide the bearing onto the shaft as far as it will go by hand.
- As the locknut is tightened, the interference fit builds up, resulting in expansion of the inner ring.
- Periodically measure to keep track of the reduction in RIC.
- Continue the procedure until the proper amount of reduction is obtained. Do not exceed suggested amount of reduction.
- As a final check, make sure the remaining RIC equals or exceeds the minimum mounted clearance shown in table D-5 on page D-10.
- During mounting, the RIC should be checked at the unloaded roller. If this is at the bottom, make sure that the roller is raised to seat firmly at the inboard position of the inner ring.
- When the suggested amount of RIC reduction has been accomplished, the bearing is properly fitted.
- Complete the procedure by peening the lockwasher tang into the locknut slot or securing the lockplate.



Fig. D-7. Measure RIC before installation.

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SHAFT FITS FOR CYLINDRICAL BORE BEARINGS

This chart is a guideline for specifying shaft fits related to particular operating conditions. Please contact your Timken engineer for more information.

TABLE D-6. RADIAL SPHERICAL ROLLER BEARING SHAFT FITS

	Conditions	Examples	Shaft Dia.		Tolerance Symbol[1]	Remarks
			mm in.			
Stationary inner ring load	The inner ring not to be easily displaced on the shaft	Wheel on non-rotating shaft	All diameters		g6	
		Tension pulleys and rope sheaves			h6	
Rotating inner ring load or indeterminate load direction	Light and variable loads P ≤ 0.07C	Electrical apparatus, machine tools, pumps, ventilators, industrial trucks	over	incl.	k6	In very accurate applications, k5 and m5 are used instead of k6 and m6 respectively.
			18 0.7087	**100** 3.9370		
			100 3.9370	**200** 7.8740	m6	
	Normal and heavy loads P > 0.07C ≤ 0.25C	Applications in general, electrical motors, turbines, pumps, combustion engines, gear transmissions, woodworking machines	**18** 0.7087	**65** 2.5590	m5	
			65 2.5590	**100** 3.9370	m6	
			100 3.9370	**140** 5.5118	n6	
			140 5.5118	**280** 11.0236	p6	
			280 11.0236	**500** 19.6850	r6	
			500 19.6850	**and up**	r7	
	Very heavy loads and shock loads P > 0.25C	Journal boxes for locomotives and other heavy rail vehicles, traction motors	**18** 0.7087	**65** 2.5590	m6	Bearings with greater clearance than normal must be used.
			65 2.5590	**100** 3.9370	n6	
			100 3.9370	**140** 5.5118	p6	
			140 5.5118	**200** 7.8740	r6	
			200 7.8740	**500** 19.6850	r7	
BEARINGS WITH TAPERED BORE AND ADAPTER SLEEVE						
	All loads	Applications in general	All diameters			See tables for Reduction of RIC on pages D-9 and D-10.

[1]For solid steel shaft. See tables on pages D-16 through D-21 for tolerance value.
NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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These charts are guidelines for specifying shaft and housing fits related to particular operating conditions in table D-6 on page D-15.

FITTING PRACTICE TABLES

TABLE D-7. SPHERICAL ROLLER BEARINGS - SHAFT TOLERANCES (CLASSES g6, h5, h6, j5, j6, k5, k6, m5)

Bearing Bore			g6			h6			h5			j5		
Nominal (Max.)		Tolerance[1]	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit
Over	Incl.		Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.	
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
					0.025L			**0.016L**						**0.005L**
30.000	**50.000**	**-0.014**	**-0.009**	**-0.025**	**0.003T**	**0.000**	**-0.016**	**0.012T**	–	–	–	**+0.006**	**-0.005**	**0.018T**
1.1811	1.9685	-0.0006	-0.0004	-0.0010	0.0010L	0.0000	-0.0006	0.0006L				+0.0002	-0.0002	0.0002L
					0.0001T			0.0005T						0.0007T
					0.029L			**0.019L**						**0.007L**
50.000	**80.000**	**-0.015**	**-0.010**	**-0.029**	**0.005T**	**0.000**	**-0.019**	**0.015T**	–	–	–	**+0.006**	**-0.007**	**0.021T**
1.9685	3.1496	-0.0006	-0.0004	-0.0011	0.0011L	0.0000	-0.0007	0.0007L				+0.0002	-0.0003	0.0003L
					0.0002T			0.0006T						0.0008T
					0.034L			**0.022L**						**0.009L**
80.000	**120.000**	**-0.020**	**-0.012**	**-0.034**	**0.008T**	**0.000**	**-0.022**	**0.020T**	–	–	–	**+0.006**	**-0.009**	**0.026T**
3.1496	4.7244	-0.0008	-0.0005	-0.0013	0.0013L	0.0000	-0.0009	0.0009L				+0.0002	-0.0004	0.0004L
					0.0003T			0.0008T						0.0010T
					0.039L			**0.025L**						**0.011L**
120.000	**180.000**	**-0.025**	**-0.014**	**-0.039**	**0.011T**	**0.000**	**-0.025**	**0.025T**	–	–	–	**+0.007**	**-0.011**	**0.032T**
4.7244	7.0866	-0.0010	-0.0006	-0.0015	0.0015L	0.0000	-0.0010	0.0010L				+0.0003	-0.0004	0.0004L
					0.0004T			0.0010T						0.0013T
					0.044T			**0.029L**						**0.013L**
180.000	**200.000**	**-0.030**	**-0.015**	**-0.044**	**0.015T**	**0.000**	**-0.029**	**0.030T**	–	–	–	**+0.007**	**-0.013**	**0.037T**
7.0866	7.8740	-0.0012	-0.0006	-0.0017	0.0017L	0.0000	-0.0011	0.0011L				+0.0003	-0.0005	0.0005L
					0.0006T			0.0012T						0.0015T
					0.044T			**0.029L**						**0.013L**
200.000	**225.000**	**-0.030**	**-0.015**	**-0.044**	**0.015T**	**0.000**	**-0.029**	**0.030T**	–	–	–	**+0.007**	**-0.013**	**0.037T**
7.8740	8.8583	-0.0012	-0.0006	-0.0017	0.0017L	0.0000	-0.0011	0.0011L				+0.0003	-0.0005	0.0005L
					0.0006T			0.0012T						0.0015T
					0.044T			**0.029L**						**0.013L**
225.000	**250.000**	**-0.030**	**-0.015**	**-0.044**	**0.015T**	**0.000**	**-0.029**	**0.030T**	–	–	–	**+0.007**	**-0.013**	**0.037T**
8.8583	9.8425	-0.0012	-0.0006	-0.0017	0.0017L	0.0000	-0.0011	0.0011L				+0.0003	-0.0005	0.0005L
					0.0006T			0.0012T						0.0015T
					0.049L			**0.032L**						**0.016L**
250.000	**280.000**	**-0.035**	**-0.017**	**-0.049**	**0.018T**	**0.000**	**-0.032**	**0.035T**	–	–	–	**+0.007**	**-0.016**	**0.042T**
9.8425	11.0236	-0.0014	-0.0007	-0.0019	0.0019L	0.0000	-0.0013	0.0013L				+0.0003	-0.0006	0.0006L
					0.0007T			0.0014T						0.0017T
					0.049L			**0.032L**						**0.016L**
280.000	**315.000**	**-0.035**	**-0.017**	**-0.049**	**0.018T**	**0.000**	**-0.032**	**0.035T**	–	–	–	**+0.007**	**-0.016**	**0.042T**
11.0236	12.4016	-0.0014	-0.0007	-0.0019	0.0019L	0.0000	-0.0013	0.0013L				+0.0003	-0.0006	0.0006L
					0.0007T			0.0014T						0.0017T
					0.054L			**0.036L**						**0.018L**
315.000	**355.000**	**-0.040**	**-0.018**	**-0.054**	**0.022T**	**0.000**	**-0.036**	**0.040T**	–	–	–	**+0.007**	**-0.018**	**0.047T**
12.4016	13.9764	-0.0016	-0.0007	-0.0021	0.0021L	0.0000	-0.0014	0.0014L				+0.0003	-0.0007	0.0007L
					0.0009T			0.0016T						0.0019T

[1]Tolerance range is from +0 to value listed.
NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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These charts are guidelines for specifying shaft and housing fits related to particular operating conditions in table D-6 on page D-15.

j6			k5			k6			m5		
Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit
Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.	
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
		0.005L			**0.002T**			**0.002T**			**0.009T**
+0.011	**-0.005**	**0.023T**	**+0.013**	**+0.002**	**0.025T**	**+0.018**	**+0.002**	**0.030T**	**+0.020**	**+0.009**	**0.032T**
+0.0004	-0.0002	0.0002L	+0.0005	+0.0001	0.0001T	+0.0007	+0.0001	0.0001T	+0.0008	+0.0004	0.0004T
		0.00085T			0.0010T			0.0012T			0.00125T
		0.007L			**0.002T**			**0.002T**			**0.011T**
+0.012	**-0.007**	**0.027T**	**+0.015**	**+0.002**	**0.030T**	**+0.021**	**+0.002**	**0.036T**	**+0.024**	**+0.011**	**0.039T**
+0.0005	-0.0003	0.0003L	+0.0006	+0.0001	0.0001T	+0.0008	+0.0001	0.0001T	+0.0009	+0.0004	0.0004T
		0.0011T			0.0012T			0.0014T			0.0015T
		0.009L			**0.003T**			**0.003T**			**0.013T**
+0.013	**-0.009**	**0.033T**	**+0.018**	**+0.003**	**0.038T**	**+0.025**	**+0.003**	**0.045T**	**+0.028**	**+0.013**	**0.048T**
+0.0005	-0.0004	0.0004L	+0.0007	+0.0001	0.0001T	+0.0010	+0.0001	0.0001T	+0.0011	+0.0005	0.0005T
		0.0013T			0.0015T			0.0018T			0.0019T
		0.011L			**0.003T**			**0.003T**			**0.015T**
+0.014	**-0.011**	**0.039T**	**+0.021**	**+0.003**	**0.046T**	**+0.028**	**+0.003**	**0.053T**	**+0.033**	**+0.015**	**0.058T**
+0.0006	-0.0004	0.0004L	+0.0008	+0.0001	0.0001T	+0.0011	+0.0001	0.0001T	+0.0013	+0.0006	0.0006T
		0.0016T			0.0018T			0.0021T			0.0023T
		0.013L			**0.004T**						**0.017T**
+0.016	**-0.013**	**0.046T**	**+0.024**	**+0.004**	**0.054T**	–	–	–	**+0.037**	**+0.017**	**0.067T**
+0.0006	-0.0005	0.0005L	+0.0009	+0.0002	0.0002T				+0.0015	+0.0007	0.0007T
		0.0018T			0.0021T						0.0027T
		0.013L			**0.004T**						**0.017T**
+0.016	**-0.013**	**0.046T**	**+0.024**	**+0.004**	**0.054T**	–	–	–	**+0.037**	**+0.017**	**0.067T**
+0.0006	-0.0005	0.0005L	+0.0009	+0.0002	0.0002T				+0.0015	+0.0007	0.0007T
		0.0018T			0.0021T						0.0027T
		0.013L			**0.004T**						**0.017T**
+0.016	**-0.013**	**0.046T**	**+0.024**	**+0.004**	**0.054T**	–	–	–	**+0.037**	**+0.017**	**0.067T**
+0.0006	-0.0005	0.0005L	+0.0009	+0.0002	0.0002T				+0.0015	+0.0007	0.0007T
		0.0018T			0.0021T						0.0027T
		0.016L			**0.004T**						**0.020T**
+0.016	**-0.016**	**0.051T**	**+0.027**	**+0.004**	**0.062T**	–	–	–	**+0.043**	**+0.020**	**0.078T**
+0.0006	-0.0006	0.0006L	+0.0011	+0.0002	0.0002T				+0.0017	+0.0008	0.0008T
		0.0020T			0.0025T						0.0031T
		0.016L			**0.004T**						**0.020T**
+0.016	**-0.016**	**0.051T**	**+0.027**	**+0.004**	**0.062T**	–	–	–	**+0.043**	**+0.020**	**0.078T**
+0.0006	-0.0006	0.0006L	+0.0011	+0.0002	0.0002T				+0.0017	+0.0008	0.0008T
		0.0020T			0.0025T						0.0031T
		0.018L			**0.004T**						**0.021T**
+0.018	**-0.018**	**0.058T**	**+0.029**	**+0.046**	**0.069T**	–	–	–	**+0.046**	**+0.021**	**0.086T**
+0.0007	-0.0007	0.0007L	+0.0011	+0.0002	0.0002T				+0.0018	+0.0008	0.0008T
		0.0023T			0.0027T						0.0034T

[1]Tolerance range is from +0 to value listed.
NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

Continued on next page.

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These charts are guidelines for specifying shaft and housing fits related to particular operating conditions in table D-6 on page D-15.

TABLE D-7. SPHERICAL ROLLER BEARINGS - SHAFT TOLERANCES (CLASSES g6, h5, h6, j5, j6, k5, k6, m5) – *continued*

Bearing Bore			g6			h6			h5			j5		
Nominal (Max.)		Tolerance[1]	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit
Over	Incl.		Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.	
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
					0.054L			**0.036L**						**0.018L**
355.000	**400.000**	**-0.040**	**-0.018**	**-0.054**	**0.022T**	**0.000**	**-0.036**	**0.040T**	–	–	–	**+0.007**	**-0.018**	**0.047T**
13.9764	15.7480	-0.0016	-0.0007	-0.0021	0.0021L	0.0000	-0.0014	0.0014L				+0.0003	-0.0007	0.0007L
					0.0009T			0.0016T						0.0019T
					0.060L			**0.040L**						**0.020L**
400.000	**450.000**	**-0.045**	**-0.020**	**-0.060**	**0.025T**	**0.000**	**-0.040**	**0.045T**	–	–	–	**+0.007**	**-0.020**	**0.052T**
15.7480	17.7165	-0.0018	-0.0008	-0.0024	0.0024L	0.0000	-0.0016	0.0016L				+0.0003	-0.0008	0.0008L
					0.0010T			0.0018T						0.0021T
					0.060L			**0.040L**						**0.020L**
450.000	**500.000**	**-0.045**	**-0.020**	**-0.060**	**0.025T**	**0.000**	**-0.040**	**0.045T**	–	–	–	**+0.007**	**-0.020**	**0.052T**
17.7165	19.6850	-0.0018	-0.0008	-0.0024	0.0024L	0.0000	-0.0016	0.0016L				+0.0003	-0.0008	0.0008L
					0.0010T			0.0018T						0.0020T

[1]Tolerance range is from +0 to value listed.

NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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These charts are guidelines for specifying shaft and housing fits related to particular operating conditions in table D-6 on page D-15.

j6			k5			k6			m5		
Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit
Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.	
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
		0.018L			**0.004T**						**0.021T**
+0.018	**-0.018**	**0.058T**	**+0.029**	**+0.004**	**0.069T**	–	–	–	**+0.046**	**+0.021**	**0.086T**
+0.0007	-0.0007	0.0007L	+0.0011	+0.0002	0.0002T				+0.0018	+0.0008	0.0008T
		0.0023T			0.0027T						0.0034T
		0.020L			**0.005T**						**0.023T**
+0.020	**-0.020**	**0.065T**	**+0.032**	**+0.005**	**0.077T**	–	–	–	**+0.050**	**+0.023**	**0.095T**
+0.0008	-0.0008	0.0008L	+0.0013	+0.0002	0.0002T				+0.0020	+0.0009	0.0009T
		0.0026T			0.0031T						0.0037T
		0.020L			**0.005T**						**0.023T**
+0.020	**-0.020**	**0.065T**	**+0.032**	**+0.005**	**0.077T**	–	–	–	**+0.050**	**+0.023**	**0.095T**
+0.0008	-0.0008	0.0008L	+0.0013	+0.0002	0.0002T				+0.0020	+0.0009	0.0009T
		0.0026T			0.0031T						0.0037T

(1)Tolerance range is from +0 to value listed.
NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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These charts are guidelines for specifying shaft and housing fits related to particular operating conditions in table D-6 on page D-15.

TABLE D-8. SPHERICAL ROLLER BEARINGS - SHAFT TOLERANCES (CLASSES m6, n6, p6, r6, r7)

Bearing Bore			m6			n6			p6			r6			r7		
Nominal (Max.)		Tolerance[1]	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit
Over	Incl.		Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.	
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
					0.009T												
30.000	**50.000**	**-0.014**	**+0.025**	**+0.009**	**0.037T**	–	–	–	–	–	–	–	–	–	–	–	–
1.1811	1.9685	-0.0006	+0.0010	+0.0004	0.0004T												
					0.0145T												
					0.011T			**0.020T**									
50.000	**80.000**	**-0.015**	**+0.030**	**+0.011**	**0.045T**	**+0.039**	**+0.020**	**0.054T**	–	–	–	–	–	–	–	–	–
1.9685	3.1496	-0.0006	+0.0012	+0.0004	0.0004T	+0.0015	+0.0008	0.0008T									
					0.0018T			0.0021T									
					0.013T			**0.023T**			**0.037T**						
80.000	**120.000**	**-0.020**	**+0.035**	**+0.013**	**0.055T**	**+0.045**	**+0.023**	**0.065T**	**+0.059**	**+0.037**	**0.079T**	–	–	–	–	–	–
3.1496	4.7244	-0.0008	+0.0014	+0.0005	0.0005T	+0.0018	+0.0009	0.0009T	+0.0023	+0.0015	0.0015T						
					0.0022T			0.0026T			0.0031T						
					0.015T			**0.027T**			**0.043T**			**0.065T**			
120.000	**180.000**	**-0.025**	**+0.040**	**+0.015**	**0.065T**	**+0.052**	**+0.027**	**0.077T**	**+0.068**	**+0.043**	**0.093T**	**+0.090**	**+0.065**	**0.115T**	–	–	–
4.7244	7.0866	-0.0010	+0.0016	+0.0006	0.0006T	+0.0020	+0.0011	0.0011T	+0.0027	+0.0017	0.0017T	+0.0035	+0.0026	0.0026T			
					0.0026T			0.0030T			0.0037T			0.0045T			
					0.017T			**0.031L**			**0.050T**			**0.077T**			
180.000	**200.000**	**-0.030**	**+0.046**	**+0.017**	**0.076T**	**+0.060**	**+0.031**	**0.090T**	**+0.079**	**+0.050**	**0.109T**	**+0.106**	**+0.077**	**0.136T**	–	–	–
7.0866	7.8740	-0.0012	+0.0018	+0.0007	0.0007T	+0.0024	+0.0012	0.0012L	+0.0031	+0.0020	0.0020T	+0.0042	+0.0030	0.0030T			
					0.0030T			0.0036T			0.0043T			0.0054T			
					0.017T			**0.031L**			**0.050T**			**0.080T**			**0.080T**
200.000	**225.000**	**-0.030**	**+0.046**	**+0.017**	**0.076T**	**+0.060**	**+0.031**	**0.090T**	**+0.079**	**+0.050**	**0.109T**	**+0.109**	**+0.080**	**0.139T**	**+0.126**	**+0.080**	**0.156T**
7.8740	8.8583	-0.0012	+0.0018	+0.0007	0.0007T	+0.0024	+0.0012	0.0012L	+0.0031	+0.0020	0.0020T	+0.0043	+0.0031	0.0031T	+0.0050	+0.0031	0.0031T
					0.0030T			0.0036T			0.0043T			0.0055T			0.0062T
					0.017T			**0.031L**			**0.050T**			**0.084T**			**0.084T**
225.000	**250.000**	**-0.030**	**+0.046**	**+0.017**	**0.076T**	**+0.060**	**+0.031**	**0.090T**	**+0.079**	**+0.050**	**0.109T**	**+0.113**	**+0.084**	**0.143T**	**+0.130**	**+0.084**	**0.160T**
8.8583	9.8425	-0.0012	+0.0018	+0.0007	0.0007T	+0.0024	+0.0012	0.0012L	+0.0031	+0.0020	0.0020T	+0.0044	+0.0033	0.0033T	+0.0051	+0.0033	0.0033T
					0.0030T			0.0036T			0.0043T			0.0056T			0.0063T
					0.020T			**0.034T**			**0.056T**			**0.094T**			**0.094T**
250.000	**280.000**	**-0.035**	**+0.052**	**+0.020**	**0.087T**	**+0.066**	**+0.034**	**0.101T**	**+0.088**	**+0.056**	**0.123T**	**+0.126**	**+0.094**	**0.161T**	**+0.146**	**+0.094**	**0.181T**
9.8425	11.0236	-0.0014	+0.0020	+0.0008	0.0008T	+0.0026	+0.0013	0.0013T	+0.0035	+0.0022	0.0022T	+0.0050	+0.0037	0.0037T	+0.0057	+0.0037	0.0037T
					0.0034T			0.0040T			0.0049T			0.0064T			0.0071T
					0.020T			**0.034T**			**0.056T**			**0.098T**			**0.098T**
280.000	**315.000**	**-0.035**	**+0.052**	**+0.020**	**0.087T**	**+0.066**	**+0.034**	**0.101T**	**+0.088**	**+0.056**	**0.123T**	**+0.130**	**+0.098**	**0.165T**	**+0.150**	**+0.098**	**0.185T**
11.0236	12.4016	-0.0014	+0.0020	+0.0008	0.0008T	+0.0026	+0.0013	0.0013T	+0.0035	+0.0022	0.0022T	+0.0051	+0.0039	0.0039T	+0.0059	+0.0039	0.0039T
					0.0034T			0.0040T			0.0049T			0.0065T			0.0073T
					0.021T			**0.037T**			**0.062T**			**0.108T**			**0.108T**
315.000	**355.000**	**-0.040**	**+0.057**	**+0.021**	**0.097T**	**+0.073**	**+0.037**	**0.113T**	**+0.098**	**+0.062**	**0.138T**	**+0.144**	**+0.108**	**0.184T**	**+0.165**	**+0.108**	**0.205T**
12.4016	13.9764	-0.0016	+0.0022	+0.0008	0.0008T	+0.0029	+0.0015	0.0015T	+0.0039	+0.0024	0.0024T	+0.0057	+0.0043	0.0043T	+0.0065	+0.0043	0.0043T
					0.0038T			0.0045T			0.0055T			0.0073T			0.0081T

[1]Tolerance range is from +0 to value listed.

NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

Continued on next page.

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These charts are guidelines for specifying shaft and housing fits related to particular operating conditions in table D-6 on page D-15.

Continued from previous page.

Bearing Bore			m6			n6			p6			r6			r7		
Nominal (Max.)		Tolerance[1]	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit
Over	Incl.		Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.	
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
								0.037T			**0.062T**			**0.114T**			**0.114T**
355.000	**400.000**	**-0.040**	–	–	–	**+0.073**	**+0.037**	**0.113T**	**+0.098**	**+0.062**	**0.138T**	**+0.150**	**+0.114**	**0.190T**	**+0.171**	**+0.114**	**0.211T**
13.9764	15.7480	-0.0016				+0.0029	+0.0015	0.0015T	+0.0039	+0.0024	0.0024T	+0.0059	+0.0045	0.0045T	+0.0067	+0.0045	0.0045T
								0.0045T			0.0055T			0.0075T			0.0083T
								0.040T			**0.068T**			**0.126T**			**0.126T**
400.000	**450.000**	**-0.045**	–	–	–	**+0.080**	**+0.040**	**0.125T**	**+0.108**	**+0.068**	**0.153T**	**+0.166**	**+0.126**	**0.211T**	**+0.189**	**+0.126**	**0.234T**
15.7480	17.7165	-0.0018				+0.0031	+0.0016	0.0016T	+0.0043	+0.0027	0.0027T	+0.0065	+0.0050	0.0050T	+0.0074	+0.0050	0.0050T
								0.0049T			0.0061T			0.0083T			0.0092T
								0.040T			**0.068T**			**0.132T**			**0.132T**
450.000	**500.000**	**-0.045**	–	–	–	**+0.080**	**+0.040**	**0.125T**	**+0.108**	**+0.068**	**0.153T**	**+0.172**	**+0.132**	**0.217T**	**+0.195**	**+0.132**	**0.240T**
17.7165	19.6850	-0.0018				+0.0031	+0.0016	0.0016T	+0.0043	+0.0027	0.0027T	+0.0068	+0.0052	0.0052T	+0.0077	+0.0052	0.0052T
								0.0049T			0.0061T			0.0086T			0.0095T

[1]Tolerance range is from +0 to value listed.

NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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SAF LUBRICATION

To help maintain a bearing's antifriction characteristics, lubrication is needed to:

- Minimize rolling resistance caused by deformation of the rolling elements and raceway under load by separating the mating surfaces.
- Minimize sliding friction occurring between rolling elements, raceways and cage.
- Transfer heat (with oil lubrication).
- Protect from corrosion and, with grease lubrication, from contaminant ingress.

SAF Lubrication D-24
Grease Lubrications for Bearing/Housing Assemblies D-32
General-Purpose Industrial Grease D-32



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SAF LUBRICATION

The wide range of bearing types and operating conditions precludes any simple, all-inclusive statement or guideline allowing the selection of the proper lubricant. At the design level, the first consideration is whether oil or grease is best for the particular operation. The advantages of oil and grease are outlined in the table below. When heat must be carried away from the bearing, oil must be used. It is almost always preferred for very high-speed applications. Timken SAF housings are designed to allow lubrication via grease, oil bath, or oil circulation.

TABLE D-10. ADVANTAGES OF OIL AND GREASE

Oil	Grease
Carries heat away from the bearings	Simplifies seal design and acts as a sealant
Carries away moisture and particulate matter	Permits prelubrication of sealed or shielded bearings
Easily controlled lubrication	Generally requires less frequent lubrication

European REACH compliance

Timken-branded lubricants, greases and similar products sold in stand-alone containers or delivery systems are subject to the European REACH (**R**egistration, **E**valuation, **A**uthorization and Restriction of **CH**emicals) directive. For import into the European Union, Timken can sell and provide only those lubricants and greases that are registered with ECHA (**E**uropean **CH**emical **A**gency). For further information, please contact your Timken engineer.

OIL LUBRICATION

Oils used for bearing lubrication should be high-quality mineral oils or synthetic oils with similar properties. Selection of the proper type of oil depends on bearing speed, load, operating temperature and lubrication method. Some features and advantages of oil lubrication, in addition to the above are:

- Oil is a better lubricant for high speeds or high temperatures. It can be cooled to help reduce bearing temperature.
- It is easier to handle and control the amount of lubricant reaching the bearing. It is harder to retain in the bearing. Lubricant losses may be higher than with grease.
- Oil can be introduced to the bearing in many ways, such as drip-feed, wick-feed, pressurized circulating systems, oil bath or air-oil mist. Each is suited for certain types of applications.
- Oil is easier to keep clean for recirculating systems.

Oil may be introduced to the bearing housing in many ways. The most common systems are:

- **Oil bath.** The SAF housing is designed to provide a sump through which the rolling elements of the bearing will pass. Generally, the oil level should be no higher than the center point of the lowest rolling element. If speed is high, lower oil levels should be used to reduce churning. Gages or controlled elevation drains are used to achieve and maintain the proper oil level.
- **Circulating system.** This system has the advantages of:
  - An adequate supply of oil for both cooling and lubrication.
  - Metered control of the quantity of oil delivered to each bearing.
  - Removal of contaminants and moisture from the bearing by flushing action.
  - Suitability for multiple bearing installations.
  - Large reservoir, which reduces deterioration. Increased lubricant life provides economical efficiency.
  - Incorporation of oil-filtering devices.
  - Positive control to deliver the lubricant where needed.
  - A typical circulating oil system consists of an oil reservoir, pump, piping and filter. A heat exchange may be required.
- **Oil-mist lubrication.** Oil-mist lubrication systems are used in high-speed, continuous-operation applications. This system permits close control of the amount of lubricant reaching the bearings. The oil may be metered, atomized by compressed air and mixed with air, or it may be picked up from a reservoir using a venturi effect. In either case, the air is filtered and supplied under sufficient pressure to assure adequate lubrication of the bearings. Control of this type of lubrication system is accomplished by monitoring the operating temperatures of the bearings being lubricated. The continuous passage of the pressurized air and oil through the labyrinth seals used in the system prevents the entrance of contaminants from the atmosphere to the system.

  The successful operation of this type of system is based upon the following factors:
  - Proper location of the lubricant entry ports in relation to the bearings being lubricated.
  - Avoidance of excessive pressure drops across void spaces within the system.
  - Proper air pressure and oil quantity ratio to suit the particular application.
  - Adequate exhaust of the air-oil mist after lubrication has been accomplished.

  To ensure wetting of the bearings, and to prevent possible damage to the rolling elements and rings, it is imperative that the oil-mist system be turned on for several minutes before the equipment is started. The importance of wetting the bearing before starting cannot be overstated, and it also has particular significance for equipment that has been idled for extended periods of time.

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Lubricating oils are commercially available in many forms for automotive, industrial, aircraft and other uses. Oils are classified as either petroleum types (refined from crude oil) or synthetic types (produced by chemical synthesis).

PETROLEUM OILS

Petroleum oils are made from a petroleum hydrocarbon derived from crude oil, with additives to improve certain properties. Petroleum oils are used for nearly all oil-lubricated applications of bearings.

SYNTHETIC OILS

Synthetic oils cover a broad range of categories and include polyalphaolefins, silicones, polyglycols and various esters. In general, synthetic oils are less prone to oxidation and can operate at extreme hot or cold temperatures. Physical properties, such as pressure-viscosity coefficients, tend to vary between oil types; use caution when making oil selections.

The polyalphaolefins (PAO) have a hydrocarbon chemistry that parallels petroleum oil both in chemical structures and pressure-viscosity coefficients. Therefore, PAO oil is mostly used in the oil-lubricated applications of bearings when severe temperature environments (hot and cold) are encountered or when extended lubricant life is required.

The silicone, ester and polyglycol oils have an oxygen-based chemistry that is structurally quite different from petroleum oils and PAO oils. This difference has a profound effect on its physical properties where pressure-viscosity coefficients can be lower compared to mineral and PAO oils. This means that these types of synthetic oils may actually generate a smaller elastohydrodynamic (EHD) film thickness than a mineral or PAO oil of equal viscosity at operating temperature. Reductions in bearing fatigue life and increases in bearing wear could result from this reduction of lubricant film thickness.

WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

VISCOSITY

The selection of oil viscosity for any bearing application requires consideration of several factors: load, speed, bearing setting, type of oil and environmental factors. Since oil viscosity varies inversely with temperature, a viscosity value must always be stated with the temperature at which it was determined. High-viscosity oil is used for low-speed or high-ambient-temperature applications. Low-viscosity oil is used for high-speed or low-ambient-temperature applications.

There are several classifications of oils based on viscosity grades. The most familiar are the Society of Automotive Engineers (SAE) classifications for automotive engine and gear oils. The American Society for Testing and Materials (ASTM) and the International Organization for Standardization (ISO) have adopted standard viscosity grades for industrial fluids. Fig. D-8 shows the viscosity comparisons of ISO/ASTM with SAE classification systems at 40° C (104° F).

VISCOSITY CLASSIFICATION COMPARISON

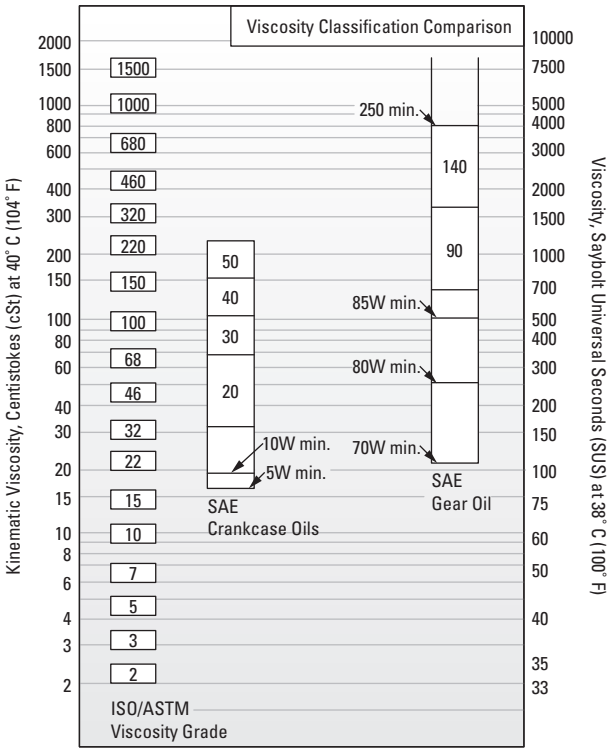


Fig. D-8. Comparison between ISO/ASTM grades (ISO 3448/ASTM D2442) and SAE grades (SAE J 300-80 for crankcase oils, SAE J 306-81 for axle and manual transmission oils).

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The ASTM/ISO viscosity grade system for industrial oils is depicted in fig. D-9 below.

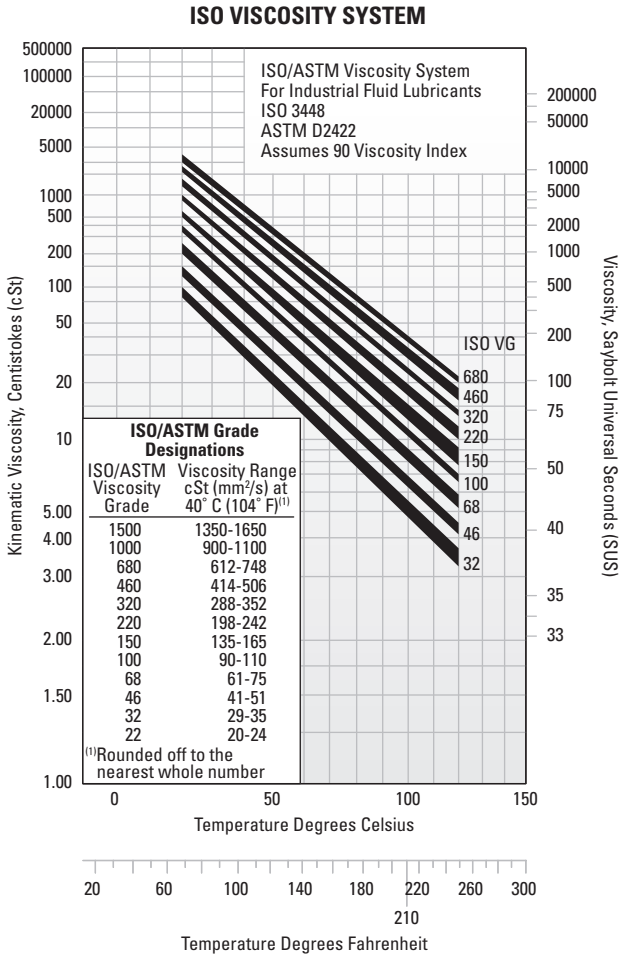


Fig. D-9. Viscosity grade system for industrial oils.

TYPICAL BEARING LUBRICATION OILS

In this section, the properties and characteristics of lubricants for typical roller bearing applications are listed. These general characteristics are derived from successful performance in applications across all industries.

General-purpose rust and oxidation inhibited oil

General-purpose rust and oxidation (R&O) inhibited oils are the most common type of industrial lubricant (see table D-11). They are used to lubricate Timken® bearings in all types of industrial applications where conditions requiring special considerations do not exist.

TABLE D-11. SUGGESTED GENERAL-PURPOSE R&O INHIBITED OIL PROPERTIES

	Properties
Base stock	Solvent-refined, high viscosity-index petroleum oil
Additives	Corrosion and oxidation inhibitors
Viscosity index	80 min.
Pour point	-10° C max. (14° F)
Viscosity grades	ISO/ASTM 32 through 220

Some low-speed and/or high-ambient-temperature applications require the higher viscosity grades. High-speed and/or low-temperature applications require the lower viscosity grades.

Industrial extreme-pressure (EP) gear oil

Extreme-pressure gear oils are used to lubricate Timken bearings in most types of heavily loaded industrial equipment (see table D-12). They should be capable of withstanding abnormal shock loads that are common in heavy-duty equipment.

TABLE D-12. SUGGESTED INDUSTRIAL EP GEAR OIL PROPERTIES

	Properties
Base stock	Solvent-refined, high viscosity-index petroleum oil
Additives	Corrosion and oxidation inhibitors Extreme-pressure (EP) additive(1) - 15.8 kg (35 lb.) min.
Viscosity index	80 min.
Pour point	-10° C max. (14° F)
Viscosity grades	ISO/ASTM 100, 150, 220, 320, 460

(1)ASTM D 2782

Industrial EP gear oils should be composed of a highly refined petroleum oil-based stock plus appropriate inhibitors and additives. They should not contain materials that are corrosive or abrasive to bearings. The inhibitors should provide long-term protection from oxidation and protect the bearing from corrosion in the presence of moisture. The oils should resist foaming in service and have good water-separation properties. An EP additive protects against scoring under boundary-lubrication conditions. The viscosity grades suggested represent a wide range. High-temperature and/or slow-speed applications generally require the higher viscosity grades. Low temperatures and/or high speeds require the use of lower viscosity grades.

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GREASE LUBRICATION

Grease lubrication is generally applicable to low-to-moderate speed applications that have operating temperatures within the limits of the grease. There is no universal antifriction bearing grease. Each grease has limiting properties and characteristics.

Greases consist of a base oil, a thickening agent and additives. Conventionally, bearing greases have consisted of petroleum base oils thickened to the desired consistency by some form of metallic soap. More recently synthetic base oils have been used with organic and inorganic thickeners. Table D-13 summarizes the composition of typical lubricating greases.

TABLE D-13. COMPOSITION OF GREASES

Base Oil	+	Thickening Agents	+	Additives	=	Lubricating Grease
Mineral oil Synthetic hydrocarbon Esters Perfluorinated oil Silicone		Soaps and complex soaps lithium, aluminum, barium, calcium Non-Soap (inorganic) microgel (clay), carbon black, silica-gel, PTFE Non-Soap (organic) Urea compounds		Rust inhibitors Dyes Tactifiers Metal deactivates Oxidation inhibitors Anti-wear EP		

Calcium- and aluminum-based greases have excellent water resistance and are used in industrial applications where water ingress is an issue. Lithium-based greases are multi-purpose and are used in industrial applications and wheel bearings.

Synthetic base oils such as esters, organic esters and silicones used with conventional thickeners and additives typically have higher maximum operating temperatures than petroleum-based greases. Synthetic greases can be designed to operate in temperatures from -73° C (-100° F) to 288° C (550° F).

In table D-14 are the general characteristics of common thickeners used with petroleum base oils.

Use of the thickeners in table D-14 with synthetic hydrocarbon or ester base oils increases the maximum operating temperature by approximately 10° C (50° F).

Using polyurea as a thickener for lubricating fluids is one of the most significant lubrication developments in more than 30 years. Polyurea grease performance is outstanding in a wide range of bearing applications.

CONSISTENCY

Greases may vary in consistency from semi-fluids that are hardly thicker than a viscous oil to solid grades almost as hard as a soft wood.

Consistency is measured by a penetrometer in which a standard weighted cone is dropped into the grease. The distance the cone penetrates (measured in tenths of a millimeter in a specific time) is the penetration number.

The National Lubricating Grease Institute (NLGI) classification of grease consistency is shown in table D-15 below:

TABLE D-14. GENERAL CHARACTERISTICS OF THICKENERS USED WITH PETROLEUM-BASED OILS

Thickener	Typical Dropping Point		Maximum Temperature		Typical Water Resistance
	°C	°F	°C	°F	
Lithium soap	**193**	380	**121**	250	Good
Lithium complex	**260+**	500+	**149**	300	Good
Aluminum complex	**249**	480	**149**	300	Excellent
Calcium sulfonate	**299**	570	**177**	350	Excellent
Polyurea	**260**	500	**149**	300	Good

TABLE D-15. NLGI CLASSIFICATIONS

NLGI Grease Grades	Penetration No.
0	355-385
1	310-340
2	265-295
3	220-250
4	175-205
5	130-160
6	85-115

Grease consistency is not fixed; it normally becomes softer when sheared or worked. In the laboratory, this working is accomplished by forcing a perforated plate up and down through a closed container of grease. This working does not compare with the violent shearing action that takes place in a bearing and does not necessarily correlate with actual performance.

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LOW TEMPERATURES

Starting torque in a grease-lubricated bearing at low temperatures can be critical. Some greases may function adequately as long as the bearing is operating, but resistance to initial movement may be excessive. In certain smaller machines, starting may be impossible when very cold. Under such operating circumstances, greases containing low-temperature characteristic oils are generally required.

If the operating temperature range is wide, synthetic greases offer advantages. Synthetic greases are available to provide very low starting and running torque at temperatures as low as -73° C (-100° F). In certain instances, these greases perform better in this respect than oil.

An important point concerning lubricating greases is that the starting torque is not necessarily a function of the consistency or the channel properties of the grease. Starting torque is more a function of the individual rheological properties of a particular grease and is best evaluated by application experience.

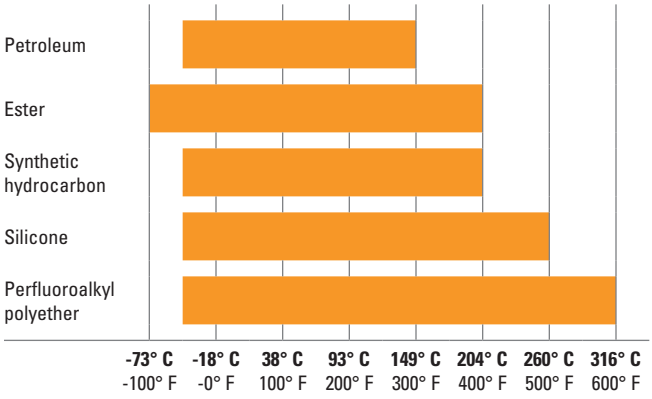
HIGH TEMPERATURES

The high temperature limit for lubricating greases is generally a function of the thermal and oxidation stability of the fluid and the effectiveness of the oxidation inhibitors. Grease temperature ranges are defined by both the dropping point of the grease thickener and composition of the base oil. Table D-16 shows the temperature ranges of various base oils used in grease formulations.

A rule of thumb, developed from years of testing grease-lubricated bearings, indicates that grease life is halved for every 10° C (50° F) increase in temperature. For example, if a particular grease provides 2000 hours of life at 90° C (194° F), by raising the temperature to 100° C (212° F), reduction in life to approximately 1000 hours would result. On the other hand, 4000 hours could be expected by lowering the temperature to 80° C (176° F).

Thermal stability, oxidation resistance and temperature limitations must be considered when selecting greases for high-temperature applications. In non-relubricatable applications, highly refined mineral oils or chemically stable synthetic fluids are required as the oil component of greases for operation at temperatures above 121° C (250° F).

TABLE D-16. TEMPERATURE RANGES FOR BASE OILS USED IN LUBRICATING GREASES



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CONTAMINATION

Abrasive Particles

When roller bearings operate in a clean environment, the primary cause of damage is the eventual fatigue of the surfaces where rolling contact occurs. However, when particle contamination enters the bearing system, it is likely to cause damage such as bruising, which can shorten bearing life.

When dirt from the environment or metallic wear debris from some component in the application are allowed to contaminate the lubricant, wear can become the predominant cause of bearing damage. If bearing wear becomes significant, changes will occur to critical bearing dimensions that could adversely affect machine operation.

Bearings operating in a contaminated lubricant exhibit a higher initial rate of wear than those running in an uncontaminated lubricant. With no further contaminant ingress, this wear rate quickly diminishes. The contamination particles are reduced in size as they pass through the bearing contact area during normal operation.

Water

Water and moisture can be particularly conducive to bearing damage. Lubricating greases may provide a measure of protection from this contamination. Certain greases, such as calcium and aluminum-complex, are highly water-resistant.

Sodium-soap greases are water-soluble and should not be used in applications involving water.

Either dissolved or suspended water in lubricating oils can exert a detrimental influence on bearing fatigue life. Water can cause bearing etching that also can reduce bearing fatigue life. The exact mechanism by which water lowers fatigue life is not fully understood. It has been suggested that water enters micro-cracks in the bearing rings that are caused by repeated stress cycles. This leads to corrosion and hydrogen embrittlement in the micro-cracks, reducing the time required for these cracks to propagate to an unacceptable-sized spall.

Water-based fluids, such as water glycol and invert emulsions, also have shown a reduction in bearing fatigue life. Although water from these sources is not the same as contamination, the results support the previous discussion concerning water-contaminated lubricants.

GREASE SELECTION

The successful use of bearing grease depends on the physical and chemical properties of the lubricant as well as application and environmental conditions. Because the choice of grease for a particular bearing under certain service conditions is often difficult to make, you should consult with your lubricant supplier or equipment maker for specific questions about lubrication requirements for your application. You also can contact your Timken engineer for general lubrication guidelines for any application.

Grease must be carefully selected with regard to its consistency at operating temperature. It should not exhibit thickening, separation of oil, acid formation or hardening to any marked degree. It should be smooth, non-fibrous and entirely free from chemically active ingredients. Its dropping point should be considerably higher than the operating temperature.

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Timken® application-specific lubricants were developed by leveraging our knowledge of tribology and antifriction bearings, and how these two elements affect overall system performance. Timken lubricants help bearings and related components operate effectively in demanding industrial operations. High-temperature, anti-wear and water-resistant additives offer superior protection in challenging environments. Table D-17 provides an overview of the Timken greases available for general applications. Contact your Timken engineer for a more detailed publication on Timken lubrication solutions.

TABLE D-17. GREASE LUBRICATION SELECTION GUIDE

ENVIRONMENT		APPLICATION
High Wear • Moderate Loads Moderate Speeds Moderate Temperatures	Timken Premium All-Purpose Industrial Grease	Agriculture • Bushings/Ball Joints Truck and Auto Wheel Bearings Heavy-Duty Industrial
Extreme Heat • Heavy Loads High Sliding Wear Dirty Environments Slow Speeds • Shock Loading	Timken Construction and Off-Highway Grease	Agriculture/Mining • Cement Plants Construction/Off Road • Rock Quarry Earth-Moving Equipment Fleet Equipment • Heavy Industry Pivot Pins/Splined Shafts
Wet and Corrosive Conditions Quiet Environments • Light Loads Moderate to High Speeds Moderate Temperatures Light Load Moderate Water	Timken Ball Bearing Pillow Block Grease	Lightly Loaded Pillow Blocks Idler Pulleys • Oven Conveyors Electric Motors • Fans • Pumps Alternators • Generators
Corrosive Media • Extreme Heat Heavy Loads • Wet Conditions Slow to Moderate Speeds	Timken Mill Grease	Aluminum Mills • Paper Mills Steel Mills • Offshore Rigs Power Generation
Incidental Food Contact Hot and Cold Temperatures Moderate to High Speeds Medium Loads	Timken Food Safe Grease	Food and Beverage Industries Pharmaceuticals
Extreme Low and High Temperatures Severe Loads Corrosive Media Slow to Moderate Speeds	Timken Synthetic Industrial Grease	Wind Energy Main Bearing Pulp and Paper Machines General Heavy Industry Marine Applications Centralized Grease Systems
Moderate Speeds Light to Moderate Loads Moderate Temperatures Moderate Water	Timken Multi-Use Lithium Grease	General Industrial Applications Pins and Bushings • Track Rollers Water Pumps Plain and Antifriction Bearings

This selection guide is not intended to replace the specifications by the equipment builder, who is responsible for its performance.

Many bearing applications require lubricants with special properties or lubricants formulated specifically for certain environments, such as:

- Friction oxidation (fretting corrosion).
- Chemical and solvent resistance.
- Food handling.

For assistance with these or other areas requiring special lubricants, consult your Timken engineer.

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GREASE USE GUIDELINES

It is important to use the proper amount of grease in the application. In typical industrial applications, the bearing cavity should be kept approximately one-third to one-half full. Less grease may result in the bearing being starved for lubrication. More grease may result in churning. Both conditions may result in excessive heat generation. As the grease temperature rises, viscosity decreases and the grease becomes thinner. This can reduce the lubricating effect and increase leakage of the grease from the bearing. It also may cause the grease components to separate, leading to a general breakdown of the lubricant properties. As the grease breaks down, bearing torque increases. In the case of excess grease resulting in churning, torque may also increase due to the resistance caused by the grease.

For best results, there should be ample space in the housing to allow room for excess grease to be thrown from the bearing. However, it is equally important that the grease be retained all around the bearing. If a large void exists between the bearings, grease closures should be used to prevent the grease from leaving the bearing area.

Only in low-speed applications may the housing be entirely filled with grease. This method of lubrication is a safeguard against the entry of foreign matter, where sealing provisions are inadequate for exclusion of contaminants or moisture.

During periods of non-operation, it is often wise to completely fill the housings with grease to protect the bearing surfaces. Prior to restarting operation, remove the excess grease and restore the proper level.

Applications utilizing grease lubrication should have a grease fitting and a vent at opposite ends of the housing near the top. A drain plug should be located near the bottom of the housing to allow the old grease to purge from the bearing.

Bearings should be relubricated at regular intervals to help prevent damage. Relubrication intervals are difficult to determine. If plant practice or experience with other applications is not available, consult your lubricant supplier.

Timken offers a range of lubricants to help bearings and related components operate effectively in demanding industrial operations. High-temperature, anti-wear and water-resistant additives offer greater protection in challenging environments. Timken also offers a line of single- and multi-point lubricators to simplify grease delivery.



Fig. D-10. Grease can easily be packed by hand.



Fig. D-11. Mechanical grease packer.

Grease application methods

Grease, in general, is easier to use than oil in industrial bearing applications. Most bearings that are initially packed with grease require periodic relubrication to operate efficiently.

Grease should be packed into the bearing so that it gets between the rolling elements.

Grease can be easily packed into small- and medium-size bearings by hand (fig. D-10). In shops where bearings are frequently regreased, a mechanical grease packer that forces grease through the bearing under pressure may be appropriate (fig. D-11). Regardless of the method, after packing the internal areas of the bearing, a small amount of grease also should be smeared on the outside of the rollers.

The two primary considerations that determine the relubrication cycle are operating temperature and sealing efficiency. High-operating-temperature applications generally require more frequent regreasing. The less efficient the seals, the greater the grease loss and the more frequently grease must be added.

Grease should be added any time the amount in the bearing falls below the desired amount. The grease should be replaced when its lubrication properties have been reduced through contamination, high temperature, water, oxidation or any other factors. For additional information on appropriate regreasing cycles, consult with the equipment manufacturer or your Timken engineer.

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GREASE LUBRICATIONS FOR BEARING/HOUSING ASSEMBLIES

Polyurea and lithium-based greases are normally preferred for general-purpose bearing lubrication and are advantageous in high moisture applications. Both greases have good water-resistant characteristics. For temperature ranges of standard greases, see table D-16.

Frictional torque is influenced by the quantity and the quality of lubricant present. Excessive quantities of grease cause churning. The adverse effects of churn are accelerated with increases in operating speed. The churn results in excessive temperatures, separation of the grease components, and breakdown in lubrication values. In normal-speed applications, the housings should be kept approximately one-third to one-half full. Only in low-speed applications may the housing be entirely filled with grease. This method of lubrication is a safeguard against the entry of foreign matter, where sealing provisions are inadequate for exclusion of contaminants or moisture.

GENERAL-PURPOSE INDUSTRIAL GREASE

Polyurea and and lithium-based greases are typical of greases that can be used to lubricate many Timken bearing applications in all types of standard equipment.

Special consideration should be given to applications where speed, load, temperature or environmental conditions are extreme.

Lithium greases, lithium complex greases, or calcium sulfonate thickened grease are suitable for most centralized, single-point, or manually lubricated product. They should be a smooth, homogeneous and uniform, premium-quality product composed of mineral or synthetic oil, a thickener and appropriate inhibitors (see table D-18).

TABLE D-18. SUGGESTED LITHIUM SOAP, LITHIUM COMPLEX AND CALCIUM SULFONATE GREASE PROPERTIES

Thickener type	Lithium Complex, or equivalent
Consistency	NLGI No.1 or No. 2
Additives	Anti-wear, corrosion and oxidation inhibitors
Base oil	Mineral oil or synthetic
Viscosity at 40° C	ISO VG 150-220
Viscosity index	80 min.
Pour point	-18° C (0° F) max.

They should not contain materials that are corrosive or abrasive to roller bearings. The grease should have excellent mechanical and chemical stability. The grease should contain inhibitors to provide long-term protection against oxidation in high-performance applications and protect the bearings from corrosion in the presence of moisture. The suggested base oil viscosity covers a fairly wide range. Lower viscosity products should be used in high-speed and/or lightly loaded applications to minimize heat generation and torque. Higher viscosity products should be used in moderate- to low-speed applications and under heavy loads to maximize lubricant film thickness. Speed ratings are listed for each size/class part number in the Spherical Roller Bearing Catalog (order no. 10446) on pages 59-88. When application speeds exceed 70 percent of grease speed rating, consider increasing RIC by one ISO clearance range (CNormal to C3). Table D-19 is provided as a reference for typical grease thickener compatibilities. Consult your lubricant supplier for further information for your specific requirement. For general industrial applications, consider a grease that is NLGI No. 1 or No. 2, with a ISO 150 to 220 viscosity grade.

NOTE

Mixing greases can result in improper bearing lubrication. Always follow the specific lubrication instructions of your equipment supplier.

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TABLE D-19. GREASE COMPATIBILITY CHART

= Best Choice = Compatible = Borderline = Incompatible	Al Complex	Ba Complex	Ca Stearate	Ca 12 Hydroxy	Ca Complex	Ca Sulfonate	Non-Soap Clay	Li Stearate	Li 12 Hydroxy	Li Complex	Polyurea	Polyurea S S
Aluminum Complex												
Timken Food Safe												
Barium Complex												
Calcium Stearate												
Calcium 12 Hydroxy												
Calcium Complex												
Calcium Sulfonate												
Timken Premium Mill Timken Heavy-Duty Moly												
Clay Non-Soap												
Lithium Stearate												
Lithium 12 Hydroxy												
Lithium Complex												
Polyurea Conventional												
Polyurea Shear Stable												
Timken Multi-Use												
Timken All -Purpose Timken Synthetic												
Timken Pillow Block												

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APPLICATION CONSIDERATIONS

For higher-speed applications (operating at 75 percent of the grease speed rating or more), a grease with a lighter base oil viscosity (ISO 100-150) can be considered. Conversely, for lower-speed applications, a grease with a heavier base oil viscosity (ISO 320-460) can be considered. For lower-speed applications operating at colder start-up temperatures (>-18° C [0° F]), consider a softer grease (NLGI grade 1) with an approved EP additive. The lighter grade will allow more grease flow into the bearing contact area and the EP additive will reduce wear during start-up. An ISO 460 base oil viscosity also can be considered.

When lower-speed applications operate at higher temperatures (>149° C [300° F]), consult a local Timken engineer.

GREASE FILL

For normal industrial applications, fill the bearing void to 100 percent full and the housing void to 40 – 60 percent full. For high-speed applications, fill the bearing void to 100 percent full and the housing void to 30 – 40 percent full. The free volume of the bearing can be estimated by first calculating the solid ring volume of the bearing. Then, weigh the bearing and divide the weight by the density of steel. This actual volume can then be subtracted from the solid ring volume. The resultant value is an estimate of the free volume of the bearing available for grease fill. When the grease volume is determined for the application, multiplying this value by the density of the grease will yield the approximate weight of the grease fill. After weighing the grease required, apply approximately 75 percent of the amount into the cage and roller assembly. The remaining amount of grease should then be applied to both inner and outer rings in equal amounts. The preservatives applied to bearing components are compatible with nearly all industrial greases and should not be wiped or cleaned prior to packing the bearing. If in doubt, contact a local Timken engineer.

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SPHERICAL ROLLER BEARINGS

Timken® spherical roller bearings feature all of the characteristics that have made Timken renowned – superior design, reliable performance and comprehensive technical support. Spherical roller bearings are designed to manage high radial loads and perform consistently, even when misalignment, marginal lubrication, contamination, extreme speeds and critical application stresses are present.

Nomenclature. D-36
Spherical Roller Bearing Product Data Tables D-37



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SPHERICAL ROLLER BEARINGS NOMENCLATURE

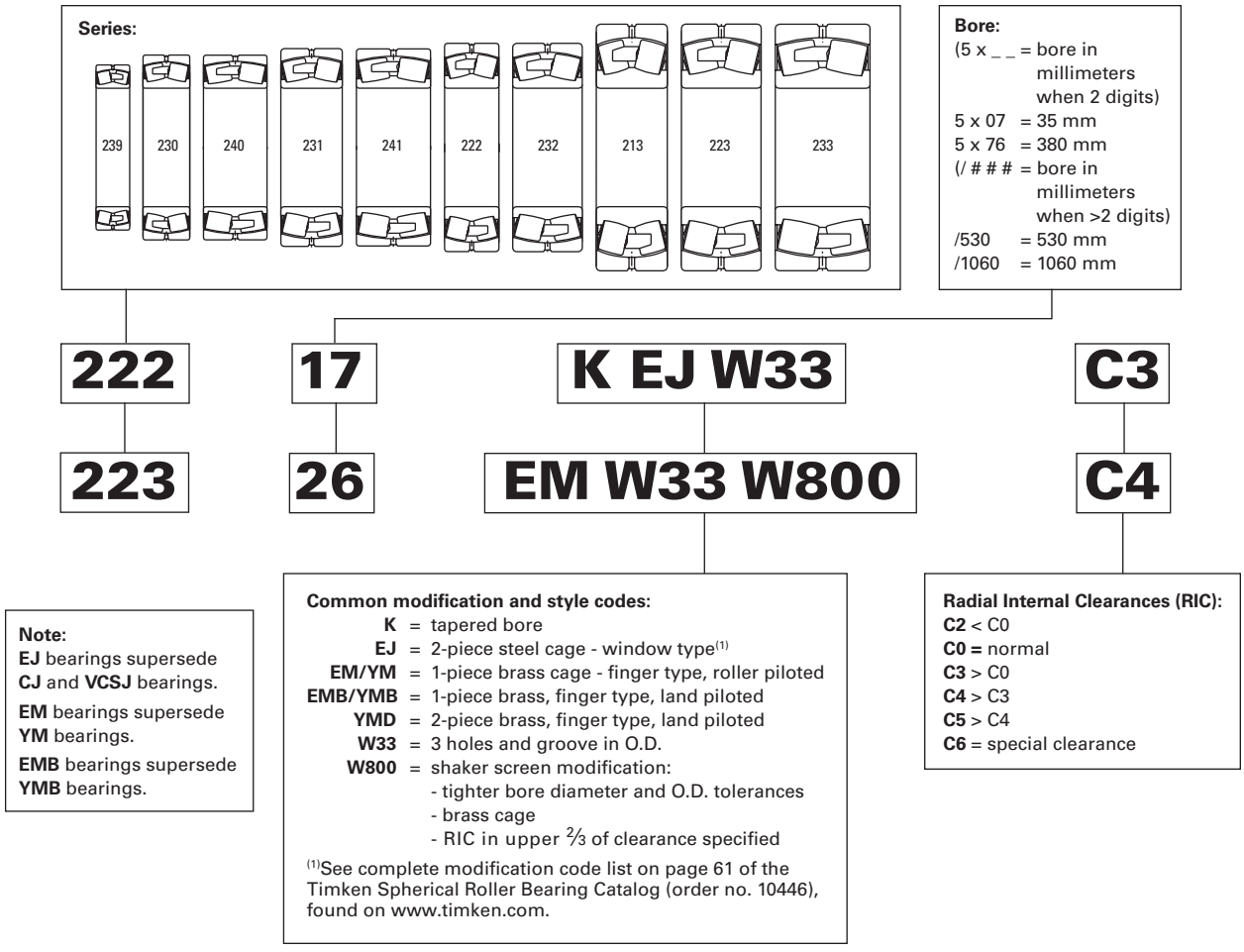


Fig. D-12. Timken® spherical roller bearing nomenclature.

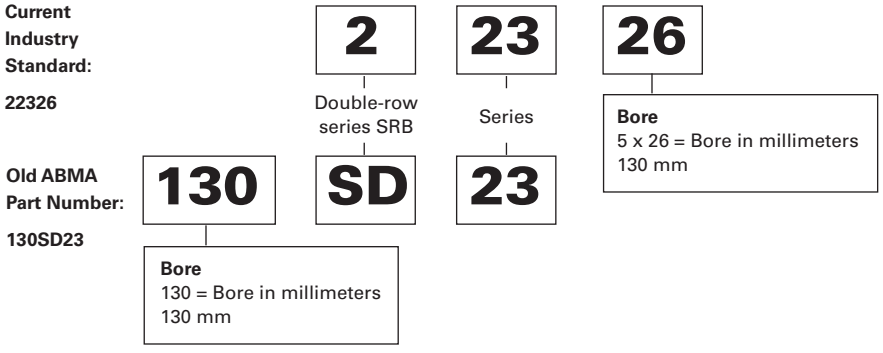
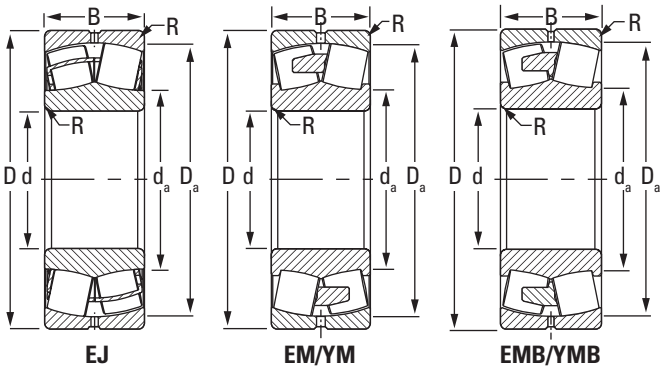


Fig. D-13. Equivalence between current ISO and old ABMA part numbering.

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222 SERIES (225, 222 SERIES SAF, SDAF)

- Bearings are available with a tapered bore for adapter-type mounting. To order, add the suffix K to bearing number (e.g., 23120K).
- Consult your Timken engineer and www.timken.com for up-to-date information about the availability of the bearings you have selected.



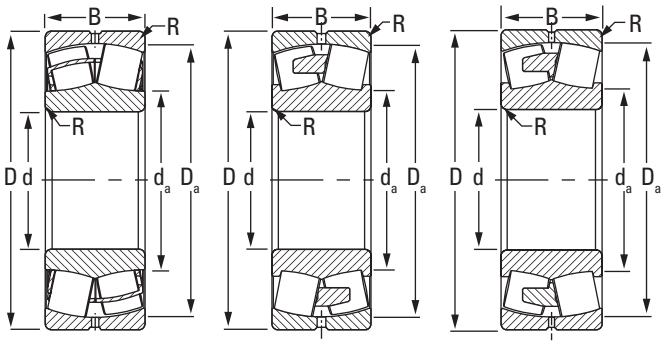
EJ EM/YM EMB/YMB

Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
											Dynamic		Static				
	Bore d	O.D. D	Width B	Dynamic C	Static Co		Fillet[1] (Max.) R	Backing Dia. Shaft d_a	Backing Dia. Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0	C_g	Oil	Grease	
	mm in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.		**mm** in.	**mm** in.	**mm** in.						RPM	RPM	**kg** lbs.
22209	**45** 1.7717	**85** 3.3465	**23** 0.9055	**104** 23500	**101** 22800	EJ / EM	**1** 0.04	**55** 2.2	**77** 3	0.26	2.64	3.93	2.58	0.046	6800	5500	**0.6** 1.3
22210	**50** 1.9685	**90** 3.5433	**23** 0.9055	**112** 25200	**112** 25100	EJ / EM	**1** 0.04	**59** 2.3	**82** 3.2	0.24	2.84	4.23	2.78	0.049	6200	5000	**0.6** 1.3
22211	**55** 2.1654	**100** 3.937	**25** 0.9843	**134** 30100	**134** 30100	EJ / EM	**1.5** 0.06	**66** 2.6	**91** 3.6	0.23	2.95	4.4	2.89	0.052	5800	4700	**0.9** 2.0
22212	**60** 2.3622	**110** 4.3307	**28** 1.1024	**163** 36600	**164** 36900	EJ / EM	**1.5** 0.06	**72** 2.8	**100** 4	0.24	2.84	4.23	2.78	0.055	5500	4400	**1.2** 2.6
22213	**65** 2.5591	**120** 4.7244	**31** 1.2205	**198** 44600	**204** 45900	EJ / EM	**1.5** 0.06	**78** 3.1	**109** 4.3	0.24	2.79	4.15	2.73	0.058	5100	4200	**1.6** 3.5
22214	**70** 2.7559	**125** 4.9213	**31** 1.2205	**205** 46000	**219** 49200	EJ / EM	**1.5** 0.06	**84** 3.3	**114** 4.5	0.23	2.9	4.32	2.84	0.063	4800	3900	**1.6** 3.5
22215	**75** 2.9528	**130** 5.1181	**31** 1.2205	**222** 49900	**240** 54100	EJ	**1.5** 0.06	**88** 3.5	**120** 4.7	0.22	3.14	4.67	3.07	0.062	4600	3700	**1.7** 3.7
22216	**80** 3.1496	**140** 5.5118	**33** 1.2992	**254** 57200	**278** 62500	EJ / EM	**2** 0.08	**95** 3.7	**129** 5.1	0.22	3.14	4.67	3.07	0.065	4300	3500	**2.2** 4.8
22216	**80** 3.1496	**140** 5.5118	**33** 1.2992	**245** 55100	**263** 59200	EJ / EM	**2** 0.08	**95** 3.7	**129** 5.1	0.22	3.14	4.67	3.07	0.065	4400	3600	**2.2** 4.8
22217	**85** 3.3465	**150** 5.9055	**36** 1.4173	**286** 64200	**302** 67900	EJ / EM	**2** 0.08	**101** 4	**139** 5.5	0.22	3.07	4.57	3	0.068	4200	3400	**2.7** 5.9
22218	**90** 3.5433	**160** 6.2992	**40** 1.5748	**355** 79700	**388** 87200	EJ / EM	**2** 0.08	**105** 4.2	**146** 5.8	0.23	2.9	4.31	2.83	0.07	4000	3300	**3.5** 7.7
22219	**95** 3.7402	**170** 6.6929	**43** 1.6929	**385** 86600	**441** 99000	EJ / EM	**2** 0.08	**114** 4.5	**155** 6.1	0.23	2.88	4.29	2.82	0.076	3900	3200	**4.2** 9.2
22220	**100** 3.937	**180** 7.0866	**46** 1.811	**435** 97700	**502** 113000	EJ / EM	**2** 0.08	**120** 4.7	**163** 6.4	0.24	2.85	4.24	2.78	0.079	3800	3100	**5.0** 11.0
22222	**110** 4.3307	**200** 7.874	**53** 2.0866	**555** 125000	**653** 147000	EJ / EM	**2** 0.08	**133** 5.2	**182** 7.2	0.25	2.73	4.06	2.67	0.084	3500	2900	**7.2** 15.8

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See Timken Engineering Manual (order no. 10424) for instructions on use.
[3]Geometry constant for Lubrication Life Factor a_{31} is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Where EJ and EM/EMB have different load ratings, the more conservative one was taken to use for both assemblies.
NOTE: Tolerance and shaft diameters are shown in the tables D-2 and D-3 on pages D-5 and D-6 as variances from nominal bearing bore.

Continued on next page.

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EJ EM/YM EMB/YMB

Continued from previous page.

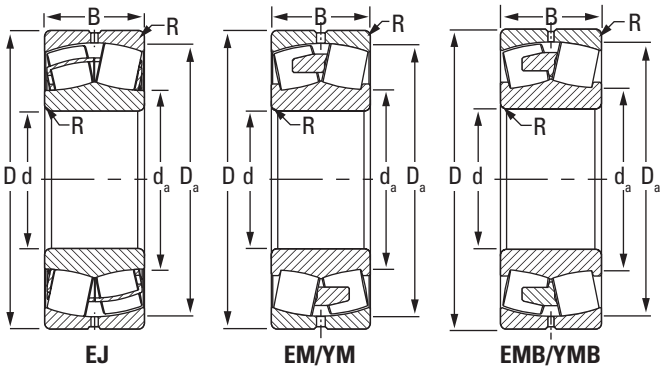
Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
							Fillet[1] (Max.)	Backing Dia.		Dynamic			Static				
	Bore d	O.D. D	Width B	Dynamic C	Static Co		R	Shaft d_a	Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0	C_g	Oil	Grease	
	mm in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.		**mm** in.	**mm** in.	**mm** in.						RPM	RPM	**kg** lbs.
22224	**120** 4.7244	**215** 8.4646	**58** 2.2835	**647** 145000	**772** 174000	EJ / EM	**2** 0.08	**143** 5.6	**196** 7.7	0.25	2.7	4.02	2.64	0.081	3200	2600	**9.0** 19.8
22226	**130** 5.1181	**230** 9.0551	**64** 2.5197	**757** 170000	**945** 212000	EJ / EM	**2.5** 0.1	**155** 6.1	**210** 8.3	0.26	2.62	3.9	2.56	0.079	2900	2400	**11.3** 24.9
22228	**140** 5.5118	**250** 9.8425	**68** 2.6772	**863** 194000	**1060** 237000	EJ / EM	**2.5** 0.1	**167** 6.6	**228** 9	0.25	2.67	3.98	2.61	0.082	2600	2200	**14.2** 31.2
22230	**150** 5.9055	**270** 10.6299	**73** 2.874	**1000** 225000	**1230** 276000	EJ / EM	**2.5** 0.1	**179** 7	**246** 9.7	0.25	2.69	4	2.63	0.087	2400	2000	**17.8** 39.2
22232	**160** 6.2992	**290** 11.4173	**80** 3.1496	**1170** 263000	**1450** 326000	EJ / EM	**2.5** 0.1	**192** 7.5	**264** 10.4	0.26	2.62	3.91	2.57	0.09	2200	1800	**23.0** 50.6
22234	**170** 6.6929	**310** 12.2047	**86** 3.3858	**1340** 301000	**1680** 379000	EJ / EM	**3** 0.12	**204** 8	**281** 11.1	0.26	2.61	3.89	2.55	0.094	2000	1700	**28.5** 62.7
22236	**180** 7.0866	**320** 12.5984	**86** 3.3858	**1340** 301000	**1700** 382000	EJ / EM	**3** 0.12	**215** 8.5	**292** 11.5	0.25	2.72	4.05	2.66	0.097	1900	1600	**29.1** 64.0
22238	**190** 7.4803	**340** 13.3858	**92** 3.622	**1550** 348000	**1960** 440000	EJ / EMB	**3** 0.12	**226** 8.9	**310** 12.2	0.25	2.67	3.98	2.62	0.1	1800	1500	**36.1** 79.4
22240	**200** 7.874	**360** 14.1732	**98** 3.8583	**1580** 356000	**2010** 452000	EJ / EMB	**3** 0.12	**236** 9.3	**323** 12.7	0.27	2.5	3.72	2.44	0.103	1700	1500	**43.6** 95.9
22244	**220** 8.6614	**400** 15.748	**108** 4.252	**1850** 415000	**2310** 520000	EJ / EMB	**3** 0.12	**261** 10.3	**359** 14.1	0.27	2.51	3.73	2.45	0.11	1500	1300	**59.4** 130.7

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See engineering section for instructions on use.
[3]Geometry constant for Lubrication Life Factor a_{31} is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Where EJ and EM/EMB have different load ratings, the more conservative one was taken to use for both assemblies.
NOTE: Tolerance and shaft diameters are shown in the tables D-2 and D-3 on pages D-5 and D-6 as variances from nominal bearing bore.

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223 SERIES (226, 223 SERIES SAF, SDAF)

- Bearings are available with a tapered bore for adapter-type mounting. To order, add the suffix K to bearing number (e.g., 23120K).
- Consult your Timken engineer and www.timken.com for up-to-date information about the availability of the bearings you have selected.



EJ EM/YM EMB/YMB

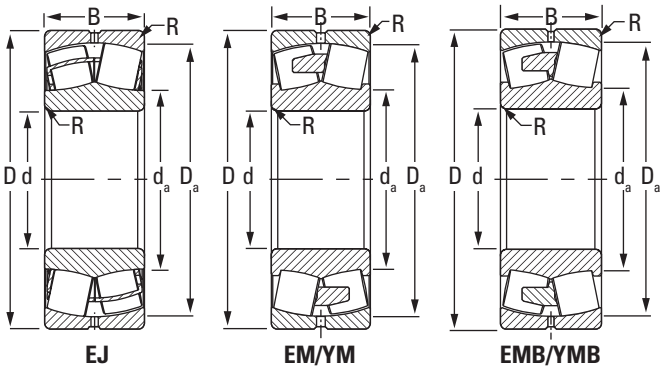
Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
											Dynamic		Static				
	Bore d	O.D. D	Width B	Dynamic C	Static Co		Fillet[1] (Max.) R	Backing Dia. Shaft d_a	Backing Dia. Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0		Oil	Grease	
	mm in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.		**mm** in.	**mm** in.	**mm** in.						RPM	RPM	**kg** lbs.
22315	**75** 2.9528	**160** 6.2992	**55** 2.1654	**450** 101000	**478** 107000	EJ / EM	**2** 0.08	**97** 3.8	**144** 5.7	0.33	2.04	3.04	2	0.071	3900	3300	**5.4** 11.9
22316	**80** 3.1496	**170** 6.6929	**58** 2.2835	**499** 112000	**534** 120000	EJ / EM	**2** 0.08	**103** 4.1	**153** 6	0.33	2.06	3.06	2.01	0.073	3700	3200	**6.4** 14.1
22317	**85** 3.3465	**180** 7.0866	**60** 2.3622	**569** 128000	**623** 140000	EJ / EM	**2.5** 0.1	**110** 4.3	**162** 6.4	0.32	2.11	3.14	2.06	0.076	3500	3000	**7.5** 16.5
22318	**90** 3.5433	**190** 7.4803	**64** 2.5197	**634** 143000	**703** 158000	EJ / EM	**2.5** 0.1	**116** 4.6	**171** 6.7	0.32	2.09	3.11	2.04	0.079	3300	2800	**8.8** 19.4
22319	**95** 3.7402	**200** 7.874	**67** 2.6378	**694** 156000	**774** 174000	EJ / EM	**2.5** 0.1	**122** 4.8	**180** 7.1	0.32	2.1	3.13	2.05	0.082	3000	2600	**10.2** 22.4
22320	**100** 3.937	**215** 8.4646	**73** 2.874	**779** 175000	**856** 193000	EJ / EM	**2.5** 0.1	**130** 5.1	**193** 7.6	0.33	2.06	3.07	2.02	0.072	2800	2400	**12.8** 28.2
22322	**110** 4.3307	**240** 9.4488	**80** 3.1496	**949** 213000	**1050** 236000	EJ / EM	**2.5** 0.1	**144** 5.7	**215** 8.5	0.32	2.08	3.1	2.04	0.076	2500	2100	**17.8** 39.2
22324	**120** 4.7244	**260** 10.2362	**86** 3.3858	**1080** 244000	**1210** 272000	EJ / EM	**2.5** 0.1	**157** 6.2	**234** 9.2	0.32	2.11	3.15	2.07	0.081	2100	1900	**22.0** 48.4
22326	**130** 5.1181	**280** 11.0236	**93** 3.6614	**1250** 281000	**1410** 318000	EJ / EM	**3** 0.12	**169** 6.7	**252** 9.9	0.32	2.11	3.14	2.06	0.085	1900	1700	**27.4** 60.3
22328	**140** 5.5118	**300** 11.811	**102** 4.0157	**1450** 326000	**1670** 375000	EJ / EM	**3** 0.12	**182** 7.1	**270** 10.6	0.33	2.06	3.06	2.01	0.089	1700	1500	**34.5** 75.9
22330	**150** 5.9055	**320** 12.5984	**108** 4.252	**1700** 382000	**2010** 452000	EJ / EMB	**3** 0.12	**194** 7.6	**288** 11.3	0.33	2.08	3.09	2.03	0.093	1600	1400	**43.0** 94.6
22332	**160** 6.2992	**340** 13.3858	**114** 4.4882	**1890** 424000	**2250** 507000	EJ / EMB	**3** 0.12	**207** 8.1	**306** 12	0.32	2.09	3.11	2.04	0.096	1500	1300	**51.0** 112.2
22334	**170** 6.6929	**360** 14.1732	**120** 4.7244	**2100** 471000	**2510** 565000	EJ / EMB	**3** 0.12	**219** 8.6	**325** 12.8	0.32	2.11	3.15	2.07	0.1	1300	1200	**59.9** 131.8
22336	**180** 7.0866	**380** 14.9606	**126** 4.9606	**2290** 514000	**2770** 623000	EJ / EMB	**3** 0.12	**232** 9.2	**343** 13.5	0.32	2.13	3.17	2.08	0.083	1200	1100	**70.0** 154.0
22338	**190** 7.4803	**400** 15.748	**132** 5.1969	**2490** 559000	**3010** 678000	EJ / EMB	**4** 0.16	**245** 9.6	**361** 14.2	0.32	2.12	3.15	2.07	0.086	1200	1000	**80.9** 178.0
22340	**200** 7.874	**420** 16.5354	**138** 5.4331	**2260** 507000	**2910** 655000	YMB	**4** 0.157	**247** 9.74	**369** 14.52	0.33	2.02	3.01	1.98	0.076	1100	970	**93.0** 204.6

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See engineering section for instructions on use.
[3]Geometry constant for Lubrication Life Factor a_{3l} is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Where EJ and EM/EMB have different load ratings, the more conservative one was taken to use for both assemblies.
NOTE: Tolerance and shaft diameters are shown in the tables D-2 and D-3 on pages D-5 and D-6 as variances from nominal bearing bore.

08-19-13 DRAFT

230 SERIES (230K SERIES SAF, SDAF)

- Bearings are available with a tapered bore for adapter-type mounting. To order, add the suffix K to bearing number (e.g., 23120K).
- Consult your Timken engineer and www.timken.com for up-to-date information about the availability of the bearings you have selected.



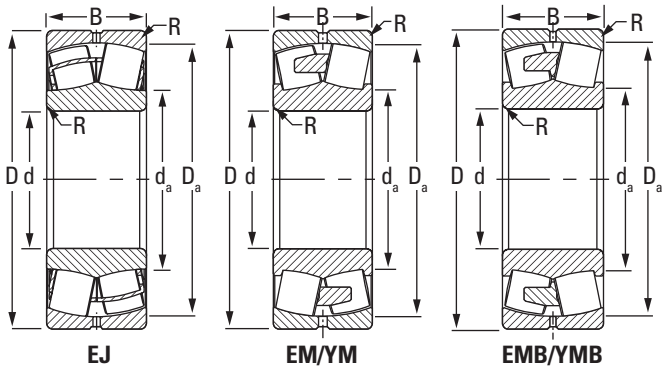
EJ EM/YM EMB/YMB

Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
							Fillet[1] (Max.)	Backing Dia.		Dynamic			Static				
	Bore d	O.D. D	Width B	Dynamic C	Static Co		R	Shaft d_a	Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0	C_g	Oil	Grease	
	mm in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.		**mm** in.	**mm** in.	**mm** in.						RPM	RPM	**kg** lbs.
23024	**120** 4.7244	**180** 7.0866	**46** 1.811	**408** 91700	**574** 129000	EJ	**2** 0.08	**134** 5.3	**167** 6.6	0.22	3.02	4.49	2.95	0.084	3300	2700	**4.0** 8.8
24024	**120** 4.7244	**180** 7.0866	**60** 2.3622	**523** 117000	**762** 171000	EJ	**2** 0.08	**132** 5.2	**167** 6.6	0.29	2.32	3.45	2.26	0.083	2700	2200	**5.2** 11.4
23026	**130** 5.1181	**200** 7.874	**52** 2.0472	**518** 116000	**723** 162000	EJ	**2** 0.08	**146** 5.8	**185** 7.3	0.23	2.94	4.37	2.87	0.089	3100	2500	**5.9** 13.0
23028	**140** 5.5118	**210** 8.2677	**53** 2.0866	**551** 124000	**802** 180000	EJ	**2** 0.08	**158** 6.2	**196** 7.7	0.22	3.1	4.61	3.03	0.085	2800	2300	**6.2** 13.6
23030	**150** 5.9055	**225** 8.8583	**56** 2.2047	**621** 140000	**911** 205000	EJ / EM	**2** 0.08	**169** 6.7	**210** 8.3	0.21	3.14	4.68	3.07	0.089	2600	2100	**7.7** 16.9
23032	**160** 6.2992	**240** 9.4488	**60** 2.3622	**705** 159000	**1040** 235000	EJ / EM	**2** 0.08	**180** 7.1	**224** 8.8	0.22	3.12	4.65	3.05	0.093	2400	2000	**9.4** 20.7
23034	**170** 6.6929	**260** 10.2362	**67** 2.6378	**858** 193000	**1250** 282000	EJ / EM	**2** 0.08	**192** 7.6	**242** 9.5	0.22	3.02	4.49	2.95	0.097	2200	1800	**12.8** 28.2
23036	**180** 7.0866	**280** 11.0236	**74** 2.9134	**1020** 229000	**1480** 332000	EJ / EM	**2** 0.08	**204** 8	**260** 10.2	0.23	2.91	4.34	2.85	0.093	2000	1700	**16.8** 37.0
23038	**190** 7.4803	**290** 11.4173	**75** 2.9528	**1060** 239000	**1580** 355000	EJ / EM	**2** 0.08	**214** 8.4	**270** 10.6	0.23	3	4.47	2.93	0.096	1900	1600	**17.8** 39.2
23040	**200** 7.874	**310** 12.2047	**82** 3.2283	**1230** 276000	**1760** 395000	EJ / EM	**2** 0.08	**225** 8.9	**289** 11.4	0.23	2.95	4.4	2.89	0.095	1800	1500	**22.6** 49.7
23044	**220** 8.6614	**340** 13.3858	**90** 3.5433	**1340** 300000	**1970** 443000	EJ / EM	**2.5** 0.1	**247** 9.7	**313** 12.3	0.24	2.77	4.13	2.71	0.105	1700	1400	**29.8** 65.6
23048	**240** 9.4488	**360** 14.1732	**92** 3.622	**1400** 315000	**2140** 480000	EJ / EM	**2.5** 0.1	**267** 10.5	**334** 13.1	0.23	2.91	4.34	2.85	0.111	1500	1300	**31.9** 70.2
23052	**260** 10.2362	**400** 15.748	**104** 4.0945	**1820** 409000	**2740** 617000	EJ / EMB	**3** 0.12	**291** 11.5	**369** 14.5	0.24	2.85	4.24	2.78	0.078	1300	1100	**47.6** 104.7
23056	**280** 11.024	**420** 16.535	**106** 4.173	**1660** 373000	**2790** 627000	YMB	**3** 0.12	**312** 12.3	**389** 15.3	0.23	2.92	4.35	2.86	0.088	1100	930	**51.0** 112.2

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See engineering section for instructions on use.
[3]Geometry constant for Lubrication Life Factor a_{31} is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Where EJ and EM/EMB have different load ratings, the more conservative one was taken to use for both assemblies.
NOTE: Tolerance and shaft diameters are shown in the tables D-2 and D-3 on pages D-5 and D-6 as variances from nominal bearing bore.

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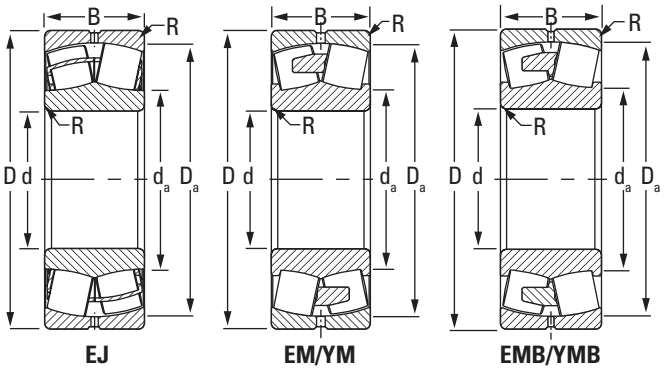
Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
											Dynamic		Static				
	Bore d	O.D. D	Width B	Dynamic C	Static Co		Fillet[1] (Max.) R	Backing Dia. Shaft d_a	Backing Dia. Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0	C_g	Oil	Grease	
	mm in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.		**mm** in.	**mm** in.	**mm** in.						RPM	RPM	**kg** lbs.
23060	**300** 11.811	**460** 18.11	**118** 4.646	**2120** 477000	**3540** 796000	YMB	**3** 0.12	**336** 13.2	**425** 16.8	0.24	2.87	4.27	2.8	0.093	980	830	**71.0** 156.2
23064	**320** 12.598	**480** 18.898	**121** 4.764	**2200** 494000	**3850** 867000	YMB	**3** 0.12	**357** 14.1	**444** 17.5	0.23	2.93	4.36	2.86	0.096	910	780	**77.4** 170.3
23068	**340** 13.386	**520** 20.472	**133** 5.236	**2640** 593000	**4620** 1040000	YMB	**4** 0.16	**384** 15.1	**481** 18.9	0.23	2.96	4.4	2.89	0.101	830	710	**102.7** 225.9
23072	**360** 14.173	**540** 21.26	**134** 5.276	**2590** 583000	**4600** 1030000	YMB	**4** 0.16	**403** 15.9	**499** 19.7	0.23	2.94	4.38	2.88	0.102	800	680	**108.3** 238.3
23076	**380** 14.961	**560** 22.047	**135** 5.315	**2800** 630000	**5090** 1140000	YMB	**4** 0.16	**422** 16.6	**520** 20.5	0.22	3.08	4.58	3.01	0.105	740	630	**114.2** 251.2
23080	**400** 15.748	**600** 23.622	**148** 5.827	**3310** 744000	**5950** 1340000	YMB	**4** 0.16	**447** 17.6	**555** 21.9	0.23	2.98	4.44	2.92	0.111	690	590	**148.7** 327.1
23084	**420** 16.535	**620** 24.409	**150** 5.906	**3450** 774000	**6360** 1430000	YMB	**4** 0.16	**467** 18.4	**576** 22.7	0.22	3.05	4.54	2.98	0.114	650	560	**156.0** 343.2
23088	**440** 17.323	**650** 25.591	**157** 6.181	**3750** 844000	**6970** 1570000	YMB	**5** 0.2	**489** 19.3	**603** 23.7	0.22	3.04	4.53	2.97	0.117	610	520	**180.0** 396.0
23092	**460** 18.11	**680** 26.772	**163** 6.417	**4060** 913000	**7570** 1700000	YMB	**5** 0.2	**512** 20.1	**631** 24.9	0.22	3.06	4.56	2.99	0.118	580	500	**205.0** 451.0
23096	**480** 18.898	**700** 27.559	**165** 6.496	**4170** 938000	**7980** 1790000	YMB	**5** 0.2	**532** 21	**651** 25.6	0.22	3.14	4.67	3.07	0.124	550	470	**215.0** 473.0
230/500	**500** 19.685	**720** 28.347	**167** 6.575	**4290** 965000	**8160** 1840000	YMB	**5** 0.2	**550** 21.7	**673** 26.5	0.21	3.26	4.85	3.18	0.126	530	460	**222.0** 488.4
230/530	**530** 20.866	**780** 30.709	**185** 7.284	**5150** 1160000	**9720** 2190000	YMB	**5** 0.2	**588** 23.2	**725** 28.6	0.21	3.14	4.68	3.07	0.132	480	420	**302.6** 665.7

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See engineering section for instructions on use.
[3]Geometry constant for Lubrication Life Factor a_{3l} is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Where EJ and EM/EMB have different load ratings, the more conservative one was taken to use for both assemblies.
NOTE: Tolerance and shaft diameters are shown in the tables D-2 and D-3 on pages D-5 and D-6 as variances from nominal bearing bore.

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231 SERIES (231, 231K SERIES SDAF)

- Bearings are available with a tapered bore for adapter-type mounting. To order, add the suffix K to bearing number (e.g., 23120K).
- Consult your Timken engineer and www.timken.com for up-to-date information about the availability of the bearings you have selected.



EJ EM/YM EMB/YMB

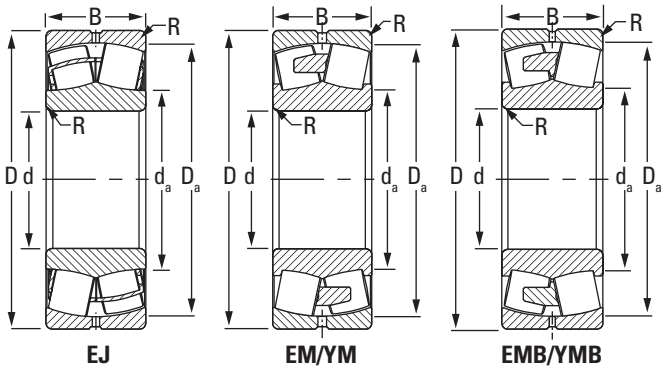
Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
							Fillet[1] (Max.)	Backing Dia.		Dynamic			Static				
	Bore d	O.D. D	Width B	Dynamic C	Static Co		R	Shaft d_a	Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0	C_g	Oil	Grease	
	mm in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.		**mm** in.	**mm** in.	**mm** in.						RPM	RPM	**kg** lbs.
23152	**260** 10.236	**440** 17.323	**144** 5.669	**2440** 549000	**3910** 879000	YMB	**3** 0.12	**302** 11.9	**400** 15.7	0.30	2.23	3.31	2.18	0.086	870	760	**90.0** 198.0
23156	**280** 11.024	**460** 18.11	**146** 5.748	**2530** 570000	**4140** 930000	YMB	**4** 0.16	**320** 12.6	**419** 16.5	0.30	2.26	3.36	2.21	0.09	800	710	**94.5** 207.9
23160	**300** 11.811	**500** 19.685	**160** 6.299	**3070** 691000	**5110** 1150000	YMB	**4** 0.16	**345** 13.6	**453** 17.8	0.30	2.25	3.35	2.20	0.093	710	630	**128.7** 283.1
23164	**320** 12.598	**540** 21.26	**176** 6.929	**3650** 819000	**5930** 1330000	YMB	**4** 0.16	**367** 14.4	**490** 19.3	0.31	2.14	3.19	2.10	0.099	650	580	**167.2** 367.8
23168	**340** 13.386	**580** 22.835	**190** 7.48	**4110** 924000	**6830** 1540000	YMB	**4** 0.16	**397** 15.6	**526** 20.7	0.30	2.22	3.30	2.17	0.103	590	530	**210.3** 462.7
23172	**360** 14.173	**600** 23.622	**192** 7.559	**4250** 956000	**7280** 1640000	YMB	**4** 0.16	**419** 16.5	**546** 21.5	0.29	2.29	3.42	2.24	0.106	560	500	**222.1** 488.6
23176	**380** 14.961	**620** 24.409	**194** 7.638	**4490** 1010000	**7580** 1700000	YMB	**4** 0.16	**431** 17	**566** 22.3	0.30	2.28	3.39	2.23	0.109	530	470	**232.6** 511.7
23180	**400** 15.748	**650** 25.591	**200** 7.874	**4770** 1070000	**8110** 1820000	YMB	**5** 0.2	**454** 17.9	**594** 23.4	0.29	2.32	3.46	2.27	0.11	500	450	**261.6** 575.5
23184	**420** 16.535	**700** 27.559	**224** 8.819	**5720** 1290000	**9640** 2170000	YMB	**5** 0.2	**480** 18.9	**636** 25.1	0.31	2.21	3.20	2.16	0.117	450	410	**350.8** 771.8
23188	**440** 17.323	**720** 28.347	**226** 8.898	**5970** 1340000	**10300** 2310000	YMB	**5** 0.2	**500** 19.7	**657** 25.9	0.30	2.26	3.37	2.21	0.117	430	390	**367.8** 809.2
23192	**460** 18.11	**760** 29.921	**240** 9.449	**6500** 1460000	**11100** 2500000	YMB	**6** 0.24	**524** 20.6	**692** 27.2	0.30	2.24	3.33	2.19	0.123	410	370	**436.9** 961.2
23196	**480** 18.898	**790** 31.102	**248** 9.764	**7110** 1600000	**12400** 2790000	YMB	**6** 0.24	**547** 21.5	**719** 28.3	0.30	2.26	3.36	2.21	0.124	380	340	**490.4** 1078.9

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See engineering section for instructions on use.
[3]Geometry constant for Lubrication Life Factor a_{31} is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Tolerance and shaft diameters are shown in the tables D-2 and D-3 on pages D-5 and D-6 as variances from nominal bearing bore.

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232 SERIES (232, 232K SERIES SDAF)

- Bearings are available with a tapered bore for adapter-type mounting. To order, add the suffix K to bearing number (e.g., 23120K).
- Consult your Timken engineer and www.timken.com for up-to-date information about the availability of the bearings you have selected.



EJ EM/YM EMB/YMB

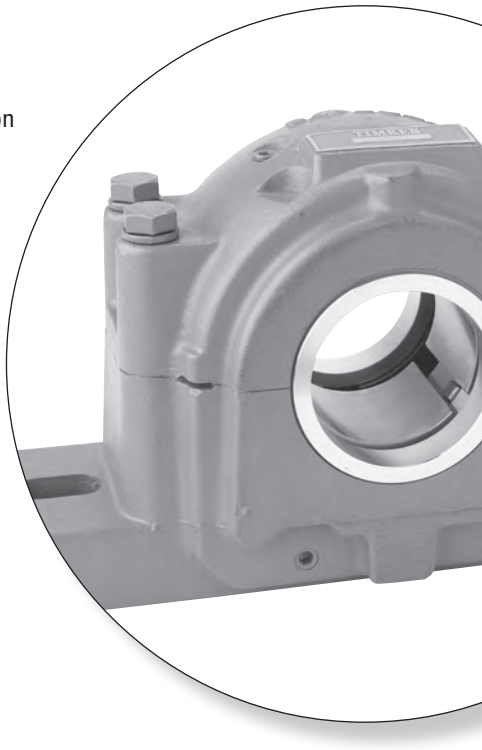
Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
							Fillet[1] (Max.)	Backing Dia.		Dynamic			Static				
	Bore d	O.D. D	Width B	Dynamic C	Static Co		R	Shaft d_a	Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0	C_g	Oil	Grease	
	mm in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.		**mm** in.	**mm** in.	**mm** in.						RPM	RPM	**kg** lbs.
23248	**240** 9.449	**440** 17.323	**160** 6.299	**2780** 625000	**4150** 932000	YMB	**3** 0.12	**281** 11.1	**394** 15.5	0.35	1.92	2.86	1.88	0.082	760	680	**108.1** 237.8
23252	**260** 10.236	**480** 18.898	**174** 6.85	**3210** 721000	**4830** 1090000	YMB	**4** 0.16	**308** 12.1	**430** 16.9	0.34	1.98	2.95	1.94	0.087	680	610	**140.1** 308.2
23256	**280** 11.024	**500** 19.685	**176** 6.929	**3360** 756000	**5240** 1180000	YMB	**4** 0.16	**329** 13	**450** 17.7	0.33	2.07	3.08	2.02	0.092	620	560	**149.7** 329.3
23260	**300** 11.811	**540** 21.26	**192** 7.559	**3840** 864000	**6150** 1380000	YMB	**4** 0.16	**353** 13.9	**482** 19	0.34	2.00	2.98	1.96	0.095	560	510	**194.5** 427.9
23264	**320** 12.598	**580** 22.835	**208** 8.189	**4350** 978000	**7060** 1590000	YMB	**4** 0.16	**379** 14.9	**516** 20.3	0.34	1.98	2.94	1.93	0.101	510	460	**245.1** 539.2
23268	**340** 13.386	**620** 24.409	**224** 8.819	**5160** 1160000	**8200** 1840000	YMB	**5** 0.2	**399** 15.7	**554** 21.8	0.35	1.91	2.84	1.86	0.103	460	420	**301.5** 663.3
23272	**360** 14.173	**650** 25.591	**232** 9.134	**5530** 1240000	**8790** 1980000	YMB	**5** 0.2	**420** 16.5	**583** 22.9	0.35	1.95	2.91	1.91	0.109	430	400	**338.6** 744.9
23276	**380** 14.961	**680** 26.772	**240** 9.449	**5970** 1340000	**9520** 2140000	YMB	**5** 0.2	**442** 17.4	**611** 24.1	0.34	1.98	2.95	1.94	0.11	410	370	**379.4** 834.7
23280	**400** 15.748	**720** 28.347	**256** 10.079	**6720** 1510000	**10800** 2430000	YMB	**5** 0.2	**466** 18.4	**646** 25.4	0.34	1.96	2.93	1.92	0.116	370	340	**457.5** 1006.5
23284	**420** 16.535	**760** 29.921	**272** 10.709	**7360** 1650000	**11800** 2660000	YMB	**6** 0.24	**490** 19.3	**681** 26.8	0.35	1.90	2.83	1.86	0.119	350	320	**525.0** 1155.0
23288	**440** 17.323	**790** 31.102	**280** 11.024	**8090** 1820000	**13200** 2970000	YMB	**6** 0.24	**512** 20.1	**710** 28	0.35	1.95	2.91	1.91	0.123	320	300	**602.0** 1324.4

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See engineering section for instructions on use.
[3]Geometry constant for Lubrication Life Factor a_{31} is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Tolerance and shaft diameters are shown in the tables D-2 and D-3 on pages D-5 and D-6 as variances from nominal bearing bore.

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SAF SPHERICAL ROLLER BEARING PILLOW BLOCKS



Spherical roller bearing pillow blocks combine rugged cast-iron or steel housings with high-capacity bearings to meet the toughest demands of industry. Each pillow block contains an advanced-design spherical roller bearing with improved geometry and raceway finish for maximized load capacity and service life. Integrated housing and bearing features enhance unit lubrication characteristics. Multiple sealing options protect against contamination.

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SAF HOUSED UNIT NOMENCLATURE

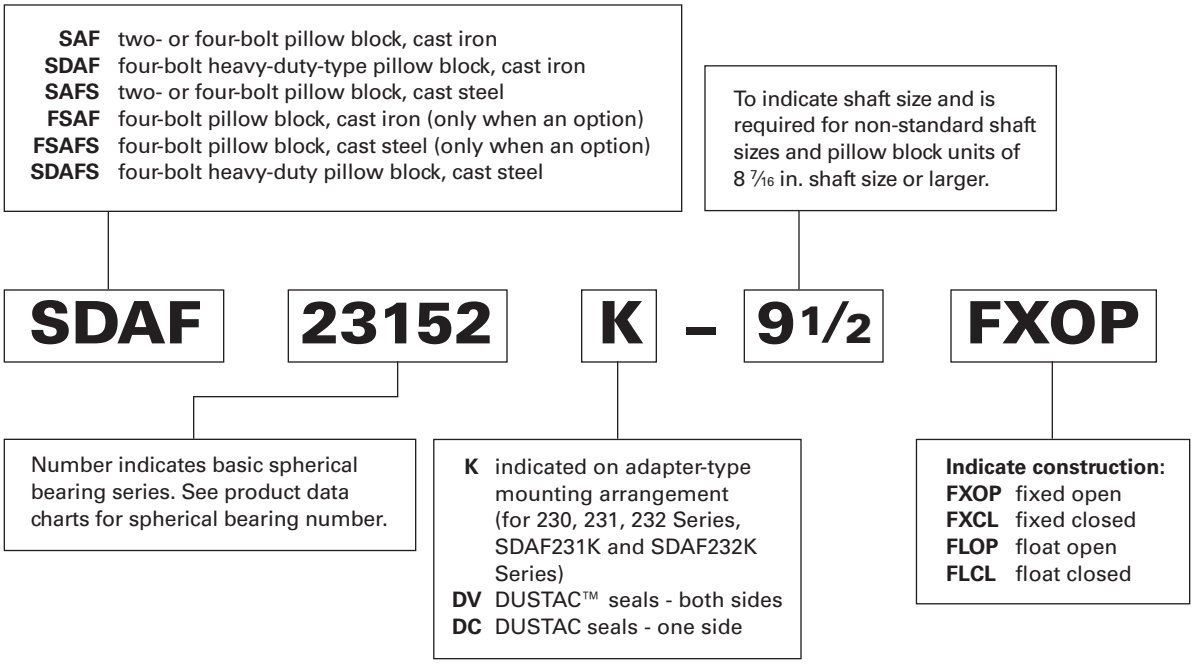


Fig. D-14. Pillow blocks.

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SAF HOUSED UNIT INTRODUCTION

Timken's capabilities in engineering and manufacturing heavy-duty pillow blocks provide important user benefits. In addition, Timken's worldwide sales organization is staffed with experienced engineers who are available for consultation on any pillow block or bearing application. Our expert engineering assistance also is available for applications involving shaft sizes 1016 mm (40 in.) and larger, such as BOF trunnions, bridge blocks and ball mills. If your design calls for shaft sizes or loads not listed in this catalog, contact your Timken engineer for information about availability of special units.

- **Sizes:** 35-300 mm shafts (1 3⁄8 up to 11 7⁄8 in.). Special shaft sizes up to 1000 mm (39 3⁄8 in.) and beyond.
- **Applications:** Conveyors, ball mills, casters, rolling mills, heavy movable structures.
- **Features:** Split construction for convenient assembly and disassembly. These units include pry tool slots and the exclusive Pry-Lug fulcrum, which simplifies bearing inspection, service and replacement.
- **Benefits:** Caps can be removed easily and quickly without damage to the bearing or housing.

DESIGN AND CONSTRUCTION

Timken supplies pillow blocks equipped with either tapered bore bearings with adapters for mounting on straight shafts or cylindrical bore bearings for assembly on shouldered shafts.

Timken uses a system of doweling caps and bases together at an early stage of manufacturing, so that they remain a single unit during machining. They are not interchangeable as separate parts and become precisely mated components, helping to ensure a precise fit. Timken manufactures pillow blocks in two styles: SAF and SDAF. The larger SDAF block is suggested for extreme-duty applications.

Standard caps and bases are made from high-grade, stress-relieved cast iron. They also are available in cast steel.

All Timken® split pillow blocks are designed for four-bolt mounting. Certain smaller sizes are normally furnished for two-bolt mounting. These assemblies are indicated in the following tables and can be ordered with an optional four-bolt base.

Four cap bolts are used in most Timken pillow blocks in order to equalize the pressure between the cap and the base, helping to prevent lubricant loss.

The illustration below shows all parts of a pillow block assembly that are described throughout this section.



Fig. D-15.

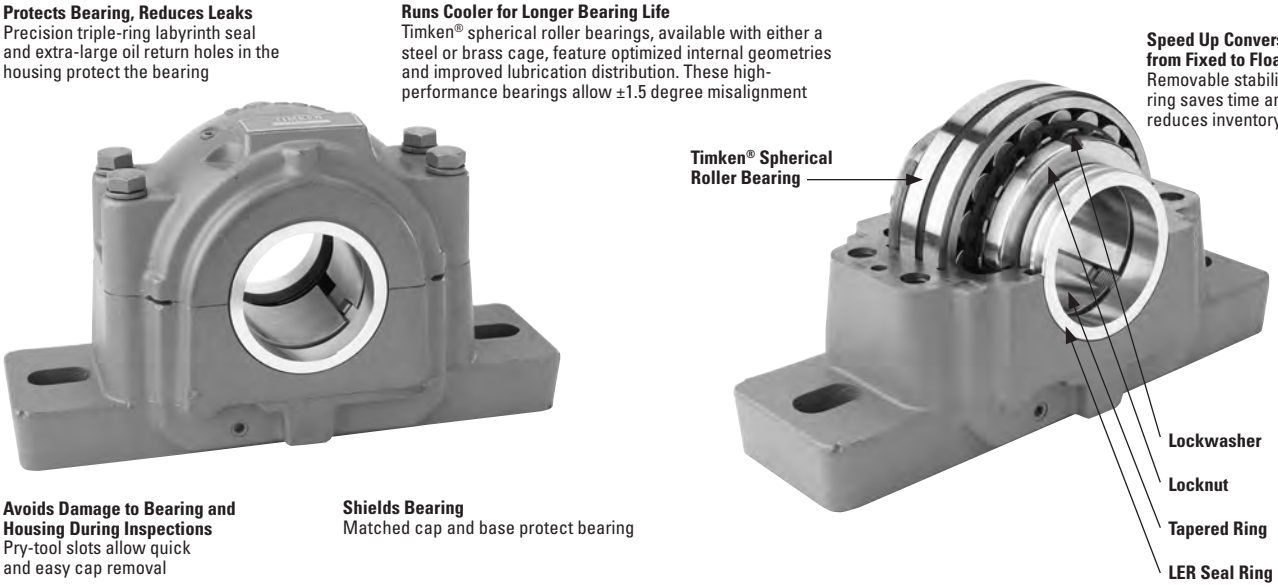


Fig. D-16. SAF housed unit components and features.

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MOUNTING

ADAPTER VERSUS STRAIGHT BORE

Usually a spherical roller bearing pillow block assembly is mounted on a straight shaft using a tapered bore bearing and adapter assembly. Standard commercial shafting can be used without additional machining. (Suggested inch shaft diameters are shown in table D-20 on page D-76.) Adapter mount also permits maximum flexibility in the axial positioning of the bearing on the shaft and will accommodate light locational thrust loads. Timken pillow blocks for tapered bore and adapter-mounted bearings are available in series 225, 226, 230, 231K and 232K.

Adapter-mounted spherical roller bearings require the correct removal of diametral clearance from the bearing to prevent relative rotation between inner race and sleeve or shaft. For proper shaft mounting of adapter-type spherical roller bearings, see page D-7.

When application conditions produce heavy thrust loads, or a need exists for exact axial location or a positive shaft interference fit, a direct straight bore mounting may be the best option. This requires a shouldered shaft, machined for proper fit, and a straight bore bearing. Timken pillow block assemblies for straight bore applications are available in series 222, 223, 231 and 232.

Suggested fits for shafts in cylindrical bore spherical roller bearings are shown in the engineering section of this catalog in table D-4 on page D-9. For applications involving heavy shock, vibration, unbalanced rotating loads or other non-standard conditions, consult your Timken engineer.

FIXED AND FLOAT PILLOW BLOCKS

Any style of Timken split pillow blocks can be easily installed at either the float or fixed position on the shaft. For the fixed position, a stabilizing ring is added between the bearing outer-face ring and the housing shoulder to positively locate the shaft and prevent axial movement.

Some applications require centering of the bearing in its housing. To accomplish this, two special-width stabilizing rings can be ordered.

In the float position, the ring is not used, allowing the bearing to move axially (a maximum of $^{3}/_{8}$ in.) to compensate for thermal expansion or contraction of the shaft.

Pillow blocks ordered by the numbers in the dimension tables are fixed units. To order float units, specify by adding suffix float or FL to the pillow block number.

CLOSED-END INSTALLATIONS

In some applications, the shaft end is designed to terminate inside the pillow block. For this design, positive fitting end-cap inserts are available to help seal out contaminants and retain lubricant. Timken heavy-duty end plugs include O-rings for positive sealing.

Designers and installers need to make sure the shaft end does not contact the closure. A minimum of $^{1}/_{8}$ in. clearance at maximum thermal expansion is suggested between the end of the shaft and the closure. Dimension Y in the tables defines the maximum permissible length of the shaft from the centerline of the pillow block housing. If end closure is desired, specify by adding CL (one end closed) to the pillow block assembly number.

NOTE

Failure to employ proper mounting procedures can cause heating and reduced bearing performance.

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LUBRICATION

Timken pillow block housings are designed for grease and oil-bath lubrication. They also can be modified easily to accommodate circulating oil- or oil/air-mist systems. Grease fittings or sight gages are available upon request.

A lubrication groove and oil holes are provided in the bearing outer ring. This feature, designated by adding suffix W33 to the bearing number, should be specified whenever re-ordering bearings for pillow blocks. In most cases, the fresh lubricant is fed directly to the center of the bearing between the rows of rollers and distributed to the rest of the bearing. This helps ensure the used lubricant is purged from the bearing.

SEALS

Precision triple-ring labyrinth seals are supplied with all Timken split pillow blocks to help exclude foreign matter and retain lubricants. The pillow block base includes extra-large oil return holes at the bottom of the seal grooves to help prevent leakage past the seals.

For extremely contaminated or abrasive environments, the DUSTAC™ seal offers protection against concentrations of dust or abrasive material that a labyrinth seal cannot keep out. See page D-80 for further information on DUSTAC.

LOAD RATINGS AND LIFE

Load ratings for the spherical roller bearings that are used in pillow blocks are found in the dimension tables on pages D-37 through D-43. Life calculation formulas are found in the Engineering Manual (order no. 10424) on page 48 available on www.timken.com.

In addition to individual bearing selection, the ability of the pillow block to carry the operating load should be considered.

It should be noted that the load rating figures supplied in this catalog are applicable only when the load direction is generally toward the base of the pillow block. If the pillow block must be mounted so the load can be applied in any other direction, consult your Timken engineer.

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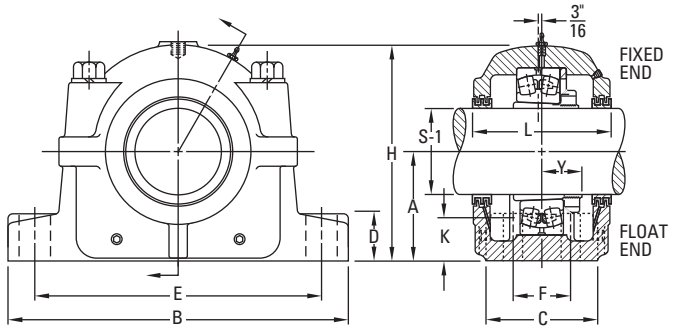
INCH TAPERED BORE MOUNTING SAF225 AND SAF226 SERIES

- The basic number for ordering complete pillow block assemblies is listed in the table below.
- Each assembly includes the housing cap and base, cap bolts, bearing, bearing adapter, locknut and lockwasher, stabilizing ring and triple-ring seals.
- If only the pillow block housing is desired, use the numbers listed in column headed Housing Only. These units include cap, base, cap bolts, triple-ring seals and stabilizing ring.
- Assemblies and pillow blocks described on this page constitute a fixed unit. To order float units, specify the part number plus the suffix float or FL.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SAFS 22515).
- Four-bolt bases are standard on all assemblies unless as noted.
- If one end closed assembly is required, specify CL in assembly number when ordering.

Pillow Block Assembly[1]	Shaft Dia. S-1[2]	A	B	C	D	E		F	H
						Max.	Min.		
	in.	in.	in.	in.	in.	in.	in.	in.	in.
SERIES SAF225									
SAF22509	1 3/8 **1 7/16** 1 1/2	**2 1/4**	**8 1/4**	**2 3/8**	**13/16**	**7**	**6 1/4**	–	**4 3/8**
SAF22510	1 5/8 **1 11/16** 1 3/4	**2 1/2**	**8 1/4**	**2 3/8**	**15/16**	**7**	**6 1/2**	–	**4 3/4**
SAF22511	1 7/8 **1 15/16** 2	**2 3/4**	**9 5/8**	**2 3/4**	**15/16**	**7 7/8**	**7 3/8**	–	**5 11/32**
SAF22513	2 1/8 **2 3/16** 2 1/4	**3**	**11**	**3 1/8**	**1**	**9 1/2**	**8 1/8**	–	**5 25/32**
SAF22515	2 3/8 **2 7/16** 2 1/2	**3 1/4**	**11 1/4**	**3 1/8**	**1 1/8**	**9 5/8**	**8 5/8**	–	**6 3/8**
FSAF22515	2 3/8 **2 7/16** 2 1/2	**3 1/4**	**11 1/4**	**3 1/8**	**1 1/8**	**9 5/8**	**8 5/8**	**1 7/8**	**6 3/8**
SAF22516	2 5/8 **2 11/16** 2 3/4	**3 1/2**	**13**	**3 1/2**	**1 3/16**	**11**	**9 5/8**	–	**6 7/8**
FSAF22516	2 5/8 **2 11/16** 2 3/4	**3 1/2**	**13**	**3 1/2**	**1 3/16**	**11**	**9 5/8**	**2 1/8**	**6 7/8**
SAF22517	2 13/16 2 7/8 **2 15/16** 3	**3 3/4**	**13**	**3 1/2**	**1 1/4**	**11**	**9 7/8**	–	**7 1/4**
FSAF22517	2 13/16 2 7/8 **2 15/16** 3	**3 3/4**	**13**	**3 1/2**	**1 1/4**	**11**	**9 7/8**	**2 1/8**	**7 1/4**

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies specify the shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only, specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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K Oil Level	L	Y	Base Bolts Required No.	 Size	Bearing No.	Adapter Assembly No.(3)	Housing Only(4)	Stabilizing Ring 1 Req'd(5)	Triple Seal 2 Req'd	Assembly Wt.
in.	in.	in.		in.						lbs.
						SNW-09 x 1 3/8			LER 16	
31/32	3 5/8	1 3/32	2	1/2	22209K	**SNW-09 x 1 7/16**	SAF509	SR-9-9	**LER 17**	12
						SNW-09 x 1 1/2			LER 18	
						SNW-10 x 1 5/8			LER 19	
1 3/32	3 5/8	1 3/32	2	1/2	22210K	**SNW-10 x 1 11/16**	SAF510	SR-10-0	**LER 20**	13
						SNW-10 x 1 3/4			LER 21	
						SNW-11 x 1 7/8			LER 23	
1 3/16	3 3/4	1 3/16	2	1/2	22211K	**SNW-11 x 1 15/16**	SAF 511	SR-11-0	**LER 24**	16
						SNW-11 x 2			LER 25	
						SNW-13 x 2 1/8			LER 28	
1 1/8	4 5/16	1 7/32	2	1/2	22213K	**SNW-13 x 2 3/16**	SAF 513	SR-13-0	**LER 29**	19.5
						SNW-13 x 2 1/4			LER 30	
						SNW-15 x 2 3/8			LER 35	
1 1/4	4 3/4	1 9/32	2	5/8	22215K	**SNW-15 x 2 7/16**	SAF515	SR-15-0	**LER 37**	30
						SNW-15 x 2 1/2			LER 39	
						SNW-15 x 2 3/8			LER 35	
1 1/4	4 3/4	1 9/32	4	1/2	22215K	**SNW-15 x 2 7/16**	FSAF515	SR-15-0	**LER 37**	30
						SNW-15 x 2 1/2			LER 39	
						SNW-16 x 2 5/8			LER 41	
1 11/32	4 7/8	1 21/64	2	3/4	22216K	**SNW-16 x 2 11/16**	SAF516	SR-16-13	**LER 44**	37
						SNW-16 x 2 3/4			LER 45	
						SNW-16 x 2 5/8			LER 41	
1 11/32	4 7/8	1 21/64	4	5/8	22216K	**SNW-16 x 2 11/16**	FSAF516	SR-16-13	**LER 44**	37
						SNW-16 x 2 3/4			LER 45	
						SNW-17 x 2 13/16			LER 51	
						SNW-17 x 2 7/8			LER 52	
1 7/16	4 15/16	1 27/64	2	3/4	22217K	**SNW-17 x 2 15/16**	SAF517	SR-17-14	**LER 53**	40
						SNW-17 x 3			LER 54	
						SNW-17 x 2 13/16			LER 51	
						SNW-17 x 2 7/8			LER 52	
1 7/16	4 15/16	1 27/64	4	5/8	22217K	**SNW-17 x 2 15/16**	FSAF517	SR-17-14	**LER 53**	40
						SNW-17 x 3			LER 54	

(1)Bold shaft sizes are standard. When ordering non-standard pillow block assemblies specify the shaft size.
(2)See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
(3)Includes sleeve, locknut and lockwasher. Add shaft size to order.
(4)Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only, specify the shaft size.
(5)Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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INCH TAPERED BORE MOUNTING SAF225 AND SAF226 SERIES – *continued*

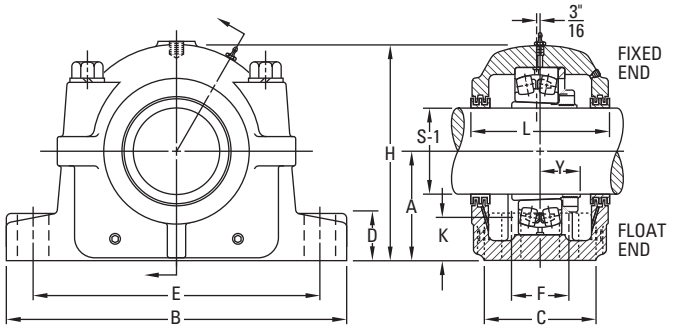
- The basic number for ordering complete pillow block assemblies is listed in the table below.
- Each assembly includes the housing cap and base, cap bolts, bearing, bearing adapter, locknut and lockwasher, stabilizing ring and triple-ring seals.
- If only the pillow block housing is desired, use the numbers listed in column headed Housing Only. These units include cap, base, cap bolts, triple-ring seals and stabilizing ring.
- Assemblies and pillow blocks described on this page constitute a fixed unit. To order float units, specify the part number plus the suffix float or FL.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SAFS 22515).
- Four-bolt bases are standard on all assemblies unless as noted.
- If one end closed assembly is required, specify CL in assembly number when ordering.

Continued from previous page.

Pillow Block Assembly[1]	Shaft Dia. S-1[2]	A	B	C	D	E		F	H
						Max.	Min.		
	in.	in.	in.	in.	in.	in.	in.	in.	in.
	3 1/16								
	3 1/8								
SAF22518	**3 3/16**	**4**	**13 3/4**	**3 7/8**	**1 1/2**	**11 5/8**	**10 3/8**	–	**7 3/4**
	3 1/4								
	3 1/16								
	3 1/8								
FSAF22518	**3 3/16**	**4**	**13 3/4**	**3 7/8**	**1 1/2**	**11 5/8**	**10 3/8**	**2 1/8**	**7 3/4**
	3 1/4								
	3 3/8								
SAF22520	**3 7/16**	**4 1/2**	**15 1/4**	**4 3/8**	**1 3/4**	**13 1/8**	**11 5/8**	–	**8 11/16**
	3 1/2								
	3 3/8								
FSAF22520	**3 7/16**	**4 1/2**	**15 1/4**	**4 3/8**	**1 3/4**	**13 1/8**	**11 5/8**	**2 3/8**	**8 11/16**
	3 1/2								
	3 13/16								
	3 7/8								
SAF22522	**3 15/16**	**4 15/16**	**16 1/2**	**4 3/4**	**2**	**14 1/2**	**12 5/8**	**2 3/4**	**9 9/16**
	4								
	4 1/16								
	4 1/8								
SAF22524	**4 3/16**	**5 1/4**	**16 1/2**	**4 3/4**	**2 1/8**	**14 1/2**	**13 1/4**	**2 3/4**	**10 1/4**
	4 1/4								
	4 5/16								
	4 3/8								
SAF22526	**4 7/16**	**6**	**18 3/8**	**5 1/8**	**2 3/8**	**16**	**14 5/8**	**3 1/4**	**11 9/16**
	4 1/2								
	4 13/16								
	4 7/8								
SAF22528	**4 15/16**	**6**	**20 1/8**	**5 7/8**	**2 3/8**	**17 1/8**	**16**	**3 3/8**	**11 3/4**
	5								
	5 1/8								
SAF22530	**5 3/16**	**6 5/16**	**21 1/4**	**6 1/4**	**2 1/2**	**18 1/4**	**17**	**3 3/4**	**12 1/2**
	5 1/4								

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies specify the shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only, specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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K Oil Level	L	Y	Base Bolts Required No.	Base Bolts Required Size	Bearing No.	Adapter Assembly No.(3)	Housing Only(4)	Stabilizing Ring 1 Req'd(5)	Triple Seal 2 Req'd	Assembly Wt.
in.	in.	in.		in.						lbs.
						SNW-18 x 3 1/16			LER 67	
						SNW-18 x 3 1/8			LER 68	
1 17/32	**6 1/4**	**1 37/64**	**2**	**3/4**	**22218K**	**SNW-18 x 3 3/16**	**SAF518**	**SR-18-15**	**LER 69**	**49**
						SNW-18 x 3 1/4			LER 70	
						SNW-18 x 3 1/16			LER 67	
						SNW-18 x 3 1/8			LER 68	
1 17/32	**6 1/4**	**1 37/64**	**4**	**5/8**	**22218K**	**SNW-18 x 3 3/16**	**FSAF518**	**SR-18-15**	**LER 69**	**49**
						SNW-18 x 3 1/4			LER 70	
						SNW-20 x 3 3/8			LER 101	
1 3/4	**6**	**1 49/64**	**2**	**7/8**	**22220K**	**SNW-20 x 3 7/16**	**SAF520**	**SR-20-17**	**LER 102**	**65**
						SNW-20 x 3 1/2			LER 103	
						SNW-20 x 3 3/8			LER 101	
1 3/4	**6**	**1 49/64**	**4**	**3/4**	**22220K**	**SNW-20 x 3 7/16**	**FSAF520**	**SR-20-17**	**LER 102**	**65**
						SNW-20 x 3 1/2			LER 103	
						SNW-22 x 3 13/16			LER 107	
						SNW-22 x 3 7/8			LER 108	
1 7/8	**6 3/8**	**1 61/64**	**4**	**3/4**	**22222K**	**SNW-22 x 3 15/16**	**SAF522**	**SR-22-19**	**LER 109**	**81**
						SNW-22 x 4			LER 110	
						SNW-24 x 4 1/16			LER 111	
						SNW-24 x 4 1/8			LER 112	
1 15/16	**7 3/8**	**2 3/32**	**4**	**3/4**	**22224K**	**SNW-24 x 4 3/16**	**SAF524**	**SR-24-20**	**LER 113**	**94**
						SNW-24 x 4 1/4			LER 114	
						SNW-26 x 4 5/16			LER 115	
						SNW-26 x 4 3/8			LER 115	
2 7/16	**8**	**2 17/64**	**4**	**7/8**	**22226K**	**SNW-26 x 4 7/16**	**SAF526**	**SR-26-0**	**LER 117**	**137**
						SNW-26 x 4 1/2			LER 118	
						SNW-28 x 4 13/16			LER 120	
						SNW-28 x 4 7/8			LER 121	
2 1/8	**7 3/4**	**2 13/32**	**4**	**1**	**22228K**	**SNW-28 x 4 15/16**	**SAF528**	**SR-28-0**	**LER 122**	**159**
						SNW-28 x 5			LER 123	
						SNW-30 x 5 1/8			LER 124	
2 3/16	**8 3/8**	**2 37/64**	**4**	**1**	**22230K**	**SNW-30 x 5 3/16**	**SAF530**	**SR-30-0**	**LER 125**	**189**
						SNW-30 x 5 1/4			LER 126	

(1)Bold shaft sizes are standard. When ordering non-standard pillow block assemblies specify the shaft size.
(2)See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
(3)Includes sleeve, locknut and lockwasher. Add shaft size to order.
(4)Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only, specify the shaft size.
(5)Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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INCH TAPERED BORE MOUNTING SAF225 AND SAF226 SERIES – *continued*

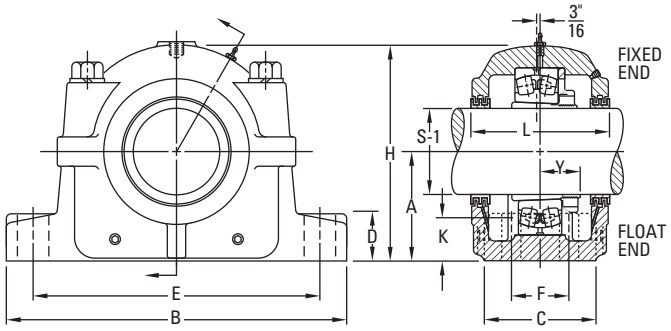
- The basic number for ordering complete pillow block assemblies is listed in the table below.
- Each assembly includes the housing cap and base, cap bolts, bearing, bearing adapter, locknut and lockwasher, stabilizing ring and triple-ring seals.
- If only the pillow block housing is desired, use the numbers listed in column headed Housing Only. These units include cap, base, cap bolts, triple-ring seals and stabilizing ring.
- Assemblies and pillow blocks described on this page constitute a fixed unit. To order float units, specify the part number plus the suffix float or FL.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SAFS 22515).
- Four-bolt bases are standard on all assemblies unless as noted.
- If one end closed assembly is required, specify CL in assembly number when ordering.

Continued from previous page.

Pillow Block Assembly[1]	Shaft Dia. S-1[2]	A	B	C	D	E		F	H
						Max.	Min.		
	in.	in.	in.	in.	in.	in.	in.	in.	in.
SAF22532	5 3/8 **5 7/16** 5 1/2	**6 11/16**	**22**	**6 1/4**	**2 5/8**	**19 1/4**	**17 3/8**	**3 3/4**	**13 5/16**
SAF22534	5 13/16 5 7/8 **5 15/16** 6	**7 1/16**	**24 3/4**	**6 3/4**	**2 3/4**	**21 5/8**	**19 3/8**	**4 1/4**	**14 9/16**
SAF22536	6 5/16 6 3/8 **6 7/16** 6 1/2	**7 1/2**	**26 3/4**	**7 1/8**	**3**	**23 5/8**	**20 7/8**	**4 5/8**	**15 1/2**
SAF22538	6 13/16 6 7/8 **6 15/16** 7	**7 7/8**	**28**	**7 1/2**	**3 1/8**	**24 3/8**	**21 5/8**	**4 1/2**	**15 11/16**
SAF22540	7 1/8 **7 3/16** 7 1/4	**8 1/4**	**29 1/2**	**8**	**3 3/8**	**25**	**22 1/2**	**5**	**17 3/16**
SAF22544	7 13/16 7 7/8 **7 15/16** 8	**9 1/2**	**32 3/4**	**8 3/4**	**3 3/4**	**27 7/8**	**24 3/4**	**5 1/4**	**19 5/8**
SERIES SAF226									
SAF22615	2 3/8 **2 7/16** 2 1/2	**4**	**13 3/4**	**3 7/8**	**1 5/8**	**11 5/8**	**10 3/8**	**2 1/8**	**7 9/16**
SAF22616	2 5/8 **2 11/16** 2 3/4	**4 1/4**	**14 1/4**	**3 7/8**	**1 3/4**	**12 5/8**	**10 5/8**	**2 1/8**	**8 1/4**

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies specify the shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only, specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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K Oil Level	L	Y	Base Bolts Required No.	 Size	Bearing No.	Adapter Assembly No.[3]	Housing Only[4]	Stabilizing Ring 1 Req'd[5]	Triple Seal 2 Req'd	Assembly Wt.
in.	in.	in.		in.						lbs.
2 3/16	**8 3/4**	**2 49/64**	**4**	**1**	**22232K**	SNW-32 x 5 3/8 **SNW-32 x 5 7/16** SNW-32 x 5 1/2	**SAF532**	**SR-32-0**	LER 129 **LER 130** LER 131	**225**
2 5/16	**9 3/8**	**2 59/64**	**4**	**1**	**22234K**	SNW-34 x 5 13/16 SNW-34 x 5 7/8 **SNW-34 x 5 15/16** SNW-34 x 6	**SAF534**	**SR-34-0**	LER 138 LER 139 **LER 140** LER 141	**300**
2 9/16	**9 11/16**	**2 61/64**	**4**	**1**	**22236K**	SNW-36 x 6 5/16 SNW-36 x 6 3/8 **SNW-36 x 6 7/16** SNW-36 x 6 1/2	**SAF536**	**SR-36-30**	LER 146 LER 147 **LER 148** LER 149	**330**
2 5/8	**10 3/4**	**3 7/64**	**4**	**1 1/4**	**22238K**	SNW-38 x 6 13/16 SNW-38 x 6 7/8 **SNW-38 x 6 15/16** SNW-38 x 7	**SAF538**	**SR-38-32**	LER 153 LER 154 **LER 155** LER 156	**375**
2 11/16	**10 13/16**	**3 9/32**	**4**	**1 1/4**	**22240K**	SNW-40 x 7 1/8 **SNW-40 x 7 3/16** SNW-40 x 7 1/4	**SAF540**	**SR-40-34**	LER 158 **LER 159** LER 160	**445**
3 3/8	**11 1/2**	**3 17/32**	**4**	**1 1/2**	**22244K**	SNW-44 x 7 13/16 SNW-44 x 7 7/8 **SNW-44 x 7 15/16** SNW-44 x 8	**SAF544**	**SR-44-38**	LER 165 LER 166 **LER 167** LER 168	**615**
1 19/32	**5 7/8**	**1 7/8**	**2, 4**	**3/4, 5/8**	**22315K**	SNW-115 x 2 3/8 **SNW-115 x 2 7/16** SNW-115 x 2 1/2	**SAF 615**	**SR-18-15**	LER 36 **LER 37** LER 38	**52**
1 11/16	**6 1/2**	**1 15/16**	**2, 4**	**3/4, 5/8**	**22316K**	SNW-116 x 2 5/8 **SNW-116 x 2 11/16** SNW-116 x 2 3/4	**SAF 616**	**SR-19-16**	LER 43 **LER 44** LER 45	**71**

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies specify the shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only, specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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08-19-13 DRAFT

INCH TAPERED BORE MOUNTING SAF225 AND SAF226 SERIES – *continued*

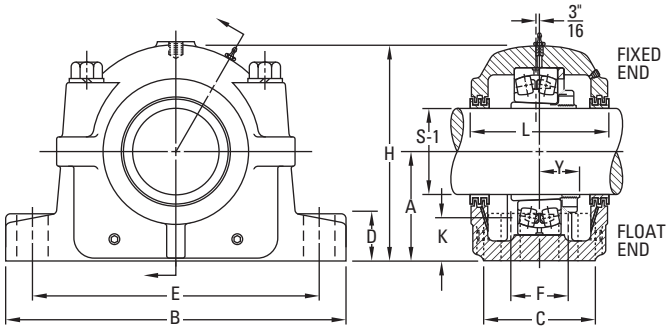
- The basic number for ordering complete pillow block assemblies is listed in the table below.
- Each assembly includes the housing cap and base, cap bolts, bearing, bearing adapter, locknut and lockwasher, stabilizing ring and triple-ring seals.
- If only the pillow block housing is desired, use the numbers listed in column headed Housing Only. These units include cap, base, cap bolts, triple-ring seals and stabilizing ring.
- Assemblies and pillow blocks described on this page constitute a fixed unit. To order float units, specify the part number plus the suffix float or FL.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SAFS 22515).
- Four-bolt bases are standard on all assemblies unless as noted.
- If one end closed assembly is required, specify CL in assembly number when ordering.

Continued from previous page.

Pillow Block Assembly[1]	Shaft Dia. S-1[2]	A	B	C	D	E		F	H
						Max.	Min.		
	in.	in.	in.	in.	in.	in.	in.	in.	in.
SAF22617	2 13/16 2 7/8 **2 15/16** 3	**4 1/2**	**15 1/4**	**4 3/8**	**1 3/4**	**13 1/8**	**11 5/8**	–	**8 11/16**
FSAF22617	2 13/16 2 7/8 **2 15/16** 3	**4 1/2**	**15 1/4**	**4 3/8**	**1 3/4**	**13 1/8**	**11 5/8**	**2 3/8**	**8 11/16**
SAF22618	3 1/16 3 1/8 **3 3/16** 3 1/4	**4 3/4**	**15 1/2**	**4 3/8**	**2**	**13 1/2**	**12**	**2 1/4**	**9 3/16**
SAF22620	3 5/16 3 3/8 **3 7/16** 3 1/2	**5 1/4**	**16 1/2**	**4 3/4**	**2 1/8**	**14 1/2**	**13 1/4**	**2 3/4**	**10 1/4**
SAF22622	3 13/16 3 7/8 **3 15/16** 4	**6**	**18 3/8**	**5 1/8**	**2 3/8**	**16**	**14 5/8**	**3 1/4**	**11 9/16**
SAF22624	4 1/16 4 1/8 **4 3/16** 4 1/4	**6 5/16**	**21 1/4**	**6 1/4**	**2 1/2**	**18 1/4**	**17**	**3 3/4**	**12 1/2**
SAF22626	4 5/16 4 3/8 **4 7/16** 4 1/2	**6 11/16**	**22**	**6 1/4**	**2 5/8**	**19 1/4**	**17 3/8**	**3 3/4**	**13 5/16**
SAF22628	4 13/16 4 7/8 **4 15/16** 5	**7 1/16**	**24 3/4**	**6 3/4**	**2 3/4**	**21 5/8**	**19 3/8**	**4 1/4**	**14 9/16**

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies specify the shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only, specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

08-19-13 DRAFT



K Oil Level	L	Y	Base Bolts Required No.	 Size	Bearing No.	Adapter Assembly No.(3)	Housing Only(4)	Stabilizing Ring 1 Req'd(5)	Triple Seal 2 Req'd	Assembly Wt.
in.	in.	in.		in.						lbs.
						SNW-117 x 2 13/16			LER 182	
						SNW-117 x 2 7/8			LER 183	
1 13/16	**6 5/8**	**1 57/64**	**2**	**7/8**	**22317K**	**SNW-117 x 2 15/16**	**SAF617**	**SR-20-17**	**LER 184**	**81**
						SNW-117 x 3			LER 185	
						SNW-117 x 2 13/16			LER 182	
						SNW-117 x 2 7/8			LER 183	
1 13/16	**6 5/8**	**1 57/64**	**4**	**3/4**	**22317K**	**SNW-117 x 2 15/16**	**FSAF617**	**SR-20-17**	**LER 184**	**81**
						SNW-117 x 3			LER 185	
						SNW-118 x 3 1/16			LER 186	
						SNW-118 x 3 1/8			LER 187	
2	**7**	**2 3/64**	**4**	**3/4**	**22318K**	**SNW-118 x 3 3/16**	**SAF618**	**SR-21-18**	**LER 188**	**90**
						SNW-118 x 3 1/4			LER 189	
						SNW-120 x 3 5/16			LER 100	
						SNW-120 x 3 3/8			LER 101	
2 1/8	**7 3/8**	**2 19/64**	**4**	**3/4**	**22320K**	**SNW-120 x 3 7/16**	**SAF620**	**SR-24-20**	**LER 102**	**113**
						SNW-120 x 3 1/2			LER 103	
						SNW-122 x 3 13/16			LER 107	
						SNW-122 x 3 7/8			LER 108	
2 1/2	**8**	**2 31/64**	**4**	**7/8**	**22322K**	**SNW-122 x 3 15/16**	**SAF622**	**SR-0-22**	**LER 109**	**151**
						SNW-122 x 4			LER 110	
						SNW-124 x 4 1/16			LER 111	
						SNW-124 x 4 1/8			LER 112	
2 9/16	**8 3/8**	**2 41/64**	**4**	**1**	**22324K**	**SNW-124 x 4 3/16**	**SAF624**	**SR-0-24**	**LER 113**	**201**
						SNW-124 x 4 1/4			LER 114	
						SNW-126 x 4 5/16			LER 115	
						SNW-126 x 4 3/8			LER 116	
2 5/8	**8 3/4**	**2 27/32**	**4**	**1**	**22326K**	**SNW-126 x 4 7/16**	**SAF626**	**SR-0-26**	**LER 117**	**245**
						SNW-126 x 4 1/2			LER 118	
						SNW-126 x 4 9/16			LER 120	
						SNW-128 x 4 13/16			LER 121	
2 11/16	**9 3/8**	**3 5/64**	**4**	**1**	**22328K**	**SNW-128 x 4 7/8**	**SAF628**	**SR-0-28**	**LER 122**	**310**
						SNW-128 x 4 15/16			LER 123	

(1)Bold shaft sizes are standard. When ordering non-standard pillow block assemblies specify the shaft size.
(2)See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
(3)Includes sleeve, locknut and lockwasher. Add shaft size to order.
(4)Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only, specify the shaft size.
(5)Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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08-19-13 DRAFT

INCH TAPERED BORE MOUNTING SAF225 AND SAF226 SERIES – *continued*

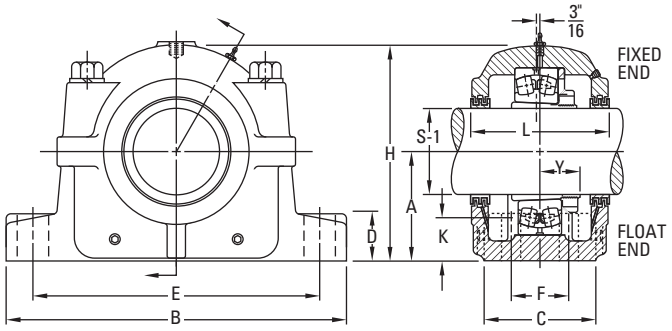
- The basic number for ordering complete pillow block assemblies is listed in the table below.
- Each assembly includes the housing cap and base, cap bolts, bearing, bearing adapter, locknut and lockwasher, stabilizing ring and triple-ring seals.
- If only the pillow block housing is desired, use the numbers listed in column headed Housing Only. These units include cap, base, cap bolts, triple-ring seals and stabilizing ring.
- Assemblies and pillow blocks described on this page constitute a fixed unit. To order float units, specify the part number plus the suffix float or FL.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SAFS 22515).
- Four-bolt bases are standard on all assemblies unless as noted.
- If one end closed assembly is required, specify CL in assembly number when ordering.

Continued from previous page.

Pillow Block Assembly[1]	Shaft Dia. S-1[2]	A	B	C	D	E		F	H
						Max.	Min.		
	in.	in.	in.	in.	in.	in.	in.	in.	in.
SAF22630	5 1/8 **5 3/16** 5 1/4	**7 1/2**	**26 3/4**	**7 1/8**	**3**	**23 5/8**	**20 7/8**	**4 5/8**	**15 1/2**
SAF22632	5 3/8 **5 7/16** 5 1/2	**7 7/8**	**28**	**7 1/2**	**3 1/8**	**24 3/8**	**21 5/8**	**4 1/2**	**15 11/16**
SAF22634	5 13/16 5 7/8 **5 15/16** 6	**8 1/4**	**29 1/2**	**8**	**3 3/8**	**25**	**22 1/2**	**5**	**17 3/16**
SAF22636	**6 7/16**	**8 7/8**	**31 1/4**	**8 1/4**	**3 1/2**	**26 5/8**	**24**	**5 1/4**	**18 1/2**
SAF22638	6 13/16 6 7/8 **6 15/16** 7	**9 1/2**	**32 3/4**	**8 3/4**	**3 3/4**	**27 7/8**	**24 3/4**	**5 1/4**	**19 5/8**
SAF22640	7 1/8 **7 3/16** 7 1/4	**9 7/8**	**34 1/4**	**9**	**4**	**29 1/2**	**26 1/4**	**5 1/2**	**20 3/16**

[1]Bold shaft sizes are standard. When ordering non standard pillow block assemblies specify the shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only, specify the shaft size.
[5]Stabiling ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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K Oil Level	L	Y	Base Bolts Required No.	 Size	Bearing No.	Adapter Assembly No.[3]	Housing Only[4]	Stabilizing Ring 1 Req'd[5]	Triple Seal 2 Req'd	Assembly Wt.
in.	in.	in.		in.						lbs.
2 7/8	**9 11/16**	**3 17/64**	**4**	**1**	**22330K**	SNW-130 x 5 1/8 **SNW-130 x 5 3/16** SNW-130 x 5 1/4	**SAF630**	**SR-36-30**	LER 124 **LER 125** LER 126	**350**
2 15/16	**10 3/4**	**3 7/16**	**4**	**1 1/4**	**22332K**	SNW-132 x 5 3/8 **SNW-132 x 5 7/16** SNW-132 x 5 1/2	**SAF632**	**SR-38-32**	LER 129 **LER 130** LER 131	**420**
3 1/16	**10 13/16**	**3 19/32**	**4**	**1 1/4**	**22334K**	SNW-134 x 5 13/16 SNW-134 x 5 7/8 **SNW-134 x 5 15/16** SNW-134 x 6	**SAF634**	**SR-40-34**	LER 138 LER 139 **LER 140** LER 141	**485**
3 3/8	**11 1/4**	**3 47/64**	**4**	**1 1/4**	**22336K**	**SNW-136 x 6 7/16**	**SAF636**	**SR-0-36**	**LER 148**	**545**
3 11/16	**11 1/2**	**3 57/64**	**4**	**1 1/2**	**22338K**	SNW-138 x 6 13/16 SNW-138 x 6 7/8 **SNW-138 x 6 15/16** SNW-138 x 7	**SAF638**	**SR-44-38**	LER 153 LER 154 **LER 155** LER 156	**655**
3 3/4	**12 1/4**	**4 5/64**	**4**	**1 1/2**	**22340K**	SNW-140 x 7 1/8 **SNW-140 x 7 3/16** SNW-140 x 7 1/4	**SAF640**	**SR-0-40**	LER 158 **LER 159** LER 160	**725**

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies specify the shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only, specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

08-19-13 DRAFT

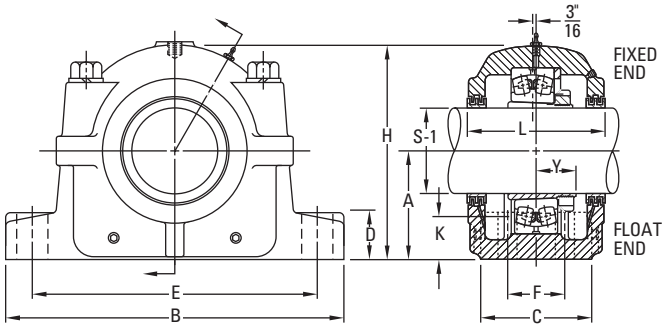
INCH TAPERED BORE MOUNTING SDAF225 AND SDAF226 SERIES

- Each assembly includes the housing cap and base, cap bolts, bearing, bearing adapter, locknut and lockwasher, stabilizing ring and triple-ring seals.
- To order pillow block housing only, use the number listed in the Housing Only column. These units include cap, base, cap bolts, triple-ring seals and stabilizing ring.
- Assemblies and pillow blocks described on this page constitute fixed units.
- To order float units, specify the part number plus the suffix float or FL.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SDAFS 22515).

Pillow Block Assembly[1]	Shaft Dia. S-1[2]	A	B	C	D	E		F	H
						Max.	Min.		
	in.	in.	in.	in.	in.	in.	in.	in.	in.
SERIES SDAF225									
SDAF22520	3 3/8 **3 7/16** 3 1/2	**4 1/2**	**15 1/4**	**6**	**1 7/8**	**13 1/8**	**11 5/8**	**3 3/8**	**8 15/16**
SDAF22522	3 13/16 3 7/8 **3 15/16** 4	**4 15/16**	**16 1/2**	**6 3/4**	**2 1/8**	**14 1/2**	**12 5/8**	**4**	**9 7/8**
SDAF22524	4 1/16 4 1/8 **4 3/16** 4 1/4	**5 1/4**	**16 1/2**	**6 7/8**	**2 1/4**	**14 1/2**	**13 1/4**	**4 1/8**	**10 1/2**
SDAF22526	4 5/16 4 3/8 **4 7/16** 4 1/2	**6**	**18 3/8**	**7 1/2**	**2 3/8**	**16**	**14 5/8**	**4 1/2**	**11 7/8**
SDAF22528	4 13/16 4 7/8 **4 15/16** 5	**6**	**20 1/8**	**7 1/2**	**2 3/8**	**17 1/8**	**16**	**4 1/2**	**12 1/16**
SDAF22530	5 1/8 **5 3/16** 5 1/4	**6 5/16**	**21 1/4**	**7 7/8**	**2 1/2**	**18 1/4**	**17**	**4 3/4**	**12 13/16**
SDAF22532	5 3/8 **5 7/16** 5 1/2	**6 11/16**	**22**	**8 1/4**	**2 1/2**	**19 1/4**	**17 3/8**	**5**	**13 11/16**
SDAF22534	**5 15/16**	**7 1/16**	**24 3/4**	**9**	**2 1/2**	**21 5/8**	**19 3/8**	**5 1/2**	**14 1/4**
SDAF22536	6 5/16 6 3/8 **6 7/16** 6 1/2	**7 1/2**	**26 3/4**	**9 3/8**	**2 3/4**	**23 5/8**	**20 7/8**	**5 7/8**	**15 3/16**
SDAF22538	**6 15/16**	**7 7/8**	**27 5/8**	**10**	**3**	**23 1/2**	**21 1/2**	**6 1/4**	**16 1/4**
SDAF22540	**7 3/16**	**8 1/4**	**28 3/4**	**10 1/2**	**3 1/4**	**25**	**23**	**6 3/4**	**17 1/8**
SDAF22544	**7 15/16**	**9 1/2**	**32**	**11 1/4**	**3 1/2**	**27 7/8**	**25 5/8**	**7 1/4**	**19 1/4**

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies, specify the shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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K Oil Level	L	Y	Base Bolts Required No.	Base Bolts Required Size	Bearing No.	Adapter Assembly No.(3)	Housing Only(4)	Stabilizing Ring 1 Req'd(5)	Triple Seal 2 Req'd	Assembly Wt.
in.	in.	in.		in.						lbs.
1 3/4	6 3/4	1 49/64	4	3/4	22220K	SNW-20 x 3 3/8 **SNW-20 x 3 7/16** SNW-20 x 3 1/2	SDAF520	SR-20-17	LER 74 **LER 75** LER 76	81
1 7/8	7 1/4	1 61/64	4	7/8	22222K	SNW-22 x 3 13/16 SNW-22 x 3 7/8 **SNW-22 x 3 15/16** SNW-22 x 4	SDAF522	SR-22-19	LER 91 LER 92 **LER 93** LER 94	94
1 15/16	7 3/8	2 3/32	4	7/8	22224K	SNW-24 x 4 1/16 SNW-24 x 4 1/8 **SNW-24 x 4 3/16** SNW-24 x 4 1/4	SDAF524	SR-24-20	LER 111 LER 112 **LER 113** LER 114	137
2 7/16	8	2 17/64	4	1	22226K	SNW-26 x 4 5/16 SNW-26 x 4 3/8 **SNW-26 x 4 7/16** SNW-26 x 4 1/2	SDAF526	SR-26-0	LER 115 LER 116 **LER 117** LER 118	159
2 1/8	7 13/16	2 13/32	4	1 1/8	22228K	SNW-28 x 4 13/16 SNW-28 x 4 7/8 **SNW-28 x 4 15/16** SNW-28 x 5	SDAF528	SR-28-0	LER 120 LER 121 **LER 122** LER 123	189
2 3/16	8 3/8	2 37/64	4	1 1/8	22230K	SNW-30 x 5 1/8 **SNW-30 x 5 3/16** SNW-30 x 5 1/4	SDAF530	SR-30-0	LER 124 **LER 125** LER 126	225
2 3/16	8 3/4	2 49/64	4	1 1/8	22232K	SNW-32 x 5 3/8 **SNW-32 x 5 7/16** SNW-32 x 5 1/2	SDAF532	SR-32-0	LER 129 **LER 130** LER 131	300
2 5/16	9 5/8	2 59/64	4	1 1/4	22234K	**SNW-34 x 5 15/16**	SDAF534	SR-34-0	**LER 140**	310
2 9/16	10	2 61/64	4	1 1/4	22236K	SNW-36 x 6 5/16 SNW-36 x 6 3/8 **SNW-36 x 6 7/16** SNW-36 x 6 1/2	SDAF536	SR-36-30	LER 146 LER 147 **LER 148** LER 149	350
2 5/8	10 5/8	3 7/64	4	1 3/8	22238K	**SNW-38 x 6 15/16**	SDAF538	SR-38-32	**LER 224**	420
2 11/16	11 1/8	3 9/32	4	1 3/8	22240K	**SNW-40 x 7 3/16**	SDAF540	SR-40-34	**LER 228**	545
3 3/8	11 7/8	3 17/32	4	1 1/2	22244K	**SNW-44 x 7 15/16**	SDAF544	SR-44-38	**LER 236**	665

(1)Bold shaft sizes are standard. When ordering non-standard pillow block assemblies, specify the shaft size.
(2)See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
Continued on next page.
(3)Includes sleeve, locknut and lockwasher. Add shaft size to order.
(4)Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only specify the shaft size.
(5)Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

08-19-13 DRAFT

INCH TAPERED BORE MOUNTING SDAF225 AND SDAF226 SERIES – *continued*

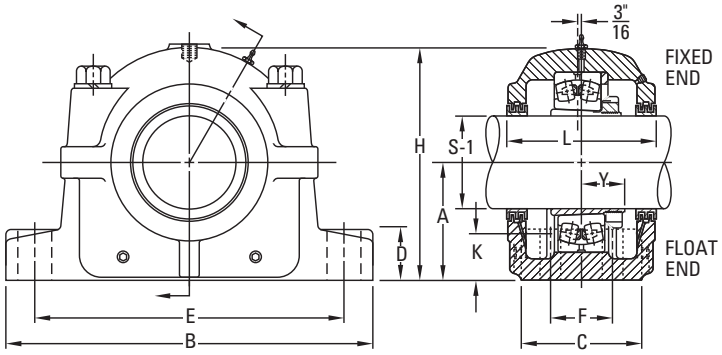
- Each assembly includes the housing cap and base, cap bolts, bearing, bearing adapter, locknut and lockwasher, stabilizing ring and triple-ring seals.
- To order pillow block housing only, use the number listed in the Housing Only column. These units include cap, base, cap bolts, triple-ring seals and stabilizing ring.
- Assemblies and pillow blocks described on this page constitute fixed units.
- To order float units, specify the part number plus the suffix float or FL.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SAFS 22515).

Continued from previous page.

Pillow Block Assembly[1]	Shaft Dia. S-1[2]	A	B	C	D	E		F	H
						Max.	Min.		
	in.	in.	in.	in.	in.	in.	in.	in.	in.
SERIES SDAF226									
	2 7/8								
SDAF22617	**2 15/16**	**4 1/2**	**15 1/4**	**6**	**1 7/8**	**13 1/8**	**11 5/8**	**3 3/8**	**8 15/16**
	3								
	3 1/16								
	3 1/8								
SDAF22618	**3 3/16**	**4 3/4**	**15 1/2**	**6 1/8**	**2**	**13 1/2**	**12**	**3 5/8**	**9 7/16**
	3 1/4								
	3 5/16								
	3 3/8								
SDAF22620	**3 7/16**	**5 1/4**	**16 1/2**	**6 7/8**	**2 1/4**	**14 1/2**	**13 1/4**	**4 1/8**	**10 1/2**
	3 1/2								
	3 13/16								
	3 7/8								
SDAF22622	**3 15/16**	**6**	**18 3/8**	**7 1/2**	**2 3/8**	**16**	**14 5/8**	**4 1/2**	**11 7/8**
	4								
	4 1/16								
	4 1/8								
SDAF22624	**4 3/16**	**6 5/16**	**21 1/4**	**7 7/8**	**2 1/2**	**18 1/4**	**17**	**4 3/4**	**12 13/16**
	4 1/4								
	4 5/16								
	4 3/8								
SDAF22626	**4 7/16**	**6 11/16**	**22**	**8 1/4**	**2 1/2**	**19 1/4**	**17 3/8**	**5**	**13 11/16**
	4 1/2								
	4 9/16								
SDAF22628	**4 15/16**	**7 1/16**	**24 3/4**	**9**	**2 1/2**	**21 5/8**	**19 3/8**	**5 1/2**	**14 1/4**
	5 1/8								
SDAF22630	**5 3/16**	**7 1/2**	**26 3/4**	**9 3/8**	**2 3/4**	**23 5/8**	**20 7/8**	**5 7/8**	**15 3/16**
	5 1/4								
	5 3/8								
	5 5/16								
SDAF22632	**5 7/16**	**7 7/8**	**27 5/8**	**10**	**3**	**23 1/2**	**21 1/2**	**6 1/4**	**16 1/4**
SDAF22634	**5 15/16**	**8 1/4**	**28 3/4**	**10 1/2**	**3 1/4**	**25**	**23**	**6 3/4**	**17 1/8**
SDAF22636	**6 7/16**	**8 7/8**	**30 1/2**	**10 3/4**	**3 1/4**	**26 3/8**	**24 1/8**	**6 7/8**	**17 15/16**
SDAF22638	**6 15/16**	**9 1/2**	**32**	**11 1/4**	**3 1/2**	**27 7/8**	**25 5/8**	**7 1/4**	**19 1/4**
SDAF22640	**7 3/16**	**9 7/8**	**33 1/2**	**11 3/4**	**3 1/2**	**29 1/4**	**26 5/8**	**7 5/8**	**19 15/16**

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies, specify the shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

08-19-13 DRAFT



K Oil Level	L	Y	Base Bolts Required No.	 Size	Bearing No.	Adapter Assembly No.[3]	Housing Only[4]	Stabilizing Ring 1 Req'd[5]	Triple Seal 2 Req'd	Assembly Wt.
in.	in.	in.		in.						lbs.
1 13/16	6 3/4	1 57/64	4	3/4	22317K	SNW-117 x 2 7/8 **SNW-117 x 2 15/16** SNW-117 x 3	SDAF617	SR-20-17	LER 58 **LER 59** LER 60	94
2	6 7/8	2 3/64	4	3/4	22318K	SNW-118 x 3 1/16 SNW-118 x 3 1/8 **SNW-118 x 3 3/16** SNW-118 x 3 1/4	SDAF618	SR-21-18	LER 67 LER 68 **LER 69** LER 70	137
2 1/8	7 3/8	2 19/64	4	7/8	22320K	SNW-120 x 3 5/16 SNW-120 x 3 3/8 **SNW-120 x 3 7/16** SNW-120 x 3 1/2	SDAF620	SR-24-20	LER 73 LER 74 **LER 75** LER 76	159
2 1/2	8	2 31/64	4	1	22322K	SNW-122 x 3 13/16 SNW-122 x 3 7/8 **SNW-122 x 3 15/16** SNW-122 x 4	SDAF622	SR-0-22	LER 91 LER 92 **LER 93** LER 94	189
2 9/16	8 3/8	2 41/64	4	1 1/8	22324K	SNW-124 x 4 1/16 SNW-124 x 4 1/8 **SNW-124 x 4 3/16** SNW-124 x 4 1/4	SDAF624	SR-0-24	LER 111 LER 112 **LER 113** LER 114	225
2 5/8	8 3/4	2 27/64	4	1 1/8	22326K	SNW-126 x 4 5/16 SNW-126 x 4 3/8 **SNW-126 x 4 7/16** SNW-126 x 4 1/2 SNW-126 x 4 9/16	SDAF626	SR-0-26	LER 115 LER 116 **LER 117** LER 118 LER 119	300
2 11/16	9 5/8	3 5/64	4	1 1/8	22328K	**SNW-128 x 4 15/16**	SDAF628	SR-0-28	**LER 122**	310
2 7/8	9 3/4	3 17/64	4	1 1/4	22330K	SNW-130 x 5 1/8 **SNW-130 x 5 3/16** SNW-130 x 5 1/4 SNW-130 x 5 5/16 SNW-130 x 5 3/8	SDAF630	SR-36-30	LER 124 **LER 125** LER 126 LER 128 LER 127	395
2 15/16	10 5/8	3 7/16	4	1 3/8	22332K	**SNW-132 x 5 7/16**	SDAF632	SR-38-32	**LER 211**	420
3 1/16	11 1/8	3 19/32	4	1 3/8	22334K	**SNW-134 x 5 15/16**	SDAF634	SR-40-34	**LER 215**	525
3 7/8	11 3/8	3 47/64	4	1 1/2	22336K	**SNW-136 x 6 7/16**	SDAF636	SR-0-36	**LER 220**	645
3 11/16	11 13/16	4 57/64	4	1 1/2	22338K	**SNW-138 x 6 15/16**	SDAF638	SR-44-38	**LER 224**	705
3 3/4	12 1/4	4 5/64	4	1 5/8	22340K	**SNW-140 x 7 3/16**	SDAF640	SR-0-40	**LER 228**	825

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies, specify the shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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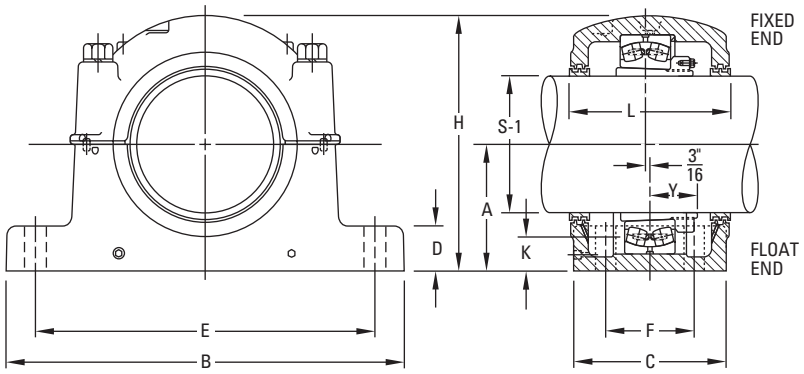
INCH TAPERED BORE MOUNTING SAF230K, SDAF230K SERIES

- Each assembly includes the housing cap and base, cap bolts, bearing, bearing adapter, locknut and lockwasher, stabilizing ring and triple-ring seals.
- If only the pillow block is desired, use the numbers listed in the Housing Only column. These units include cap and base, cap bolts, triple-ring seals and stabilizing ring.
- Assembly and pillow blocks described on this page constitute fixed units.
- To order float units, specify the part number plus the suffix float or FL.
- All assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SAFS 23024).
- Please note that for applications SAF23048 and larger, the shaft size must be included in the part description when ordering (e.g., SAF23048-8 15/16).
- Two stabilizing rings are supplied with housings SAF048 through SAF056 and SDAF060K through SDAF076K. For fixed applications both rings must be used. Do not use stabilizing rings for float mounting.

Pillow Block Assembly[1]	Shaft Dia. S-1[2]	A	B	C	D	E		F	H	K
						Max.	Min.			Oil Level
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
SERIES SAF230K										
SAF23024K	4 1/16 4 1/8 **4 3/16** 4 1/4	**4 1/2**	**15 1/4**	**4 3/8**	**1 3/4**	**13 1/8**	**11 5/8**	**2 3/8**	**8 11/16**	**1 9/16**
SAF23026K	4 5/16 4 3/8 **4 7/16** 4 1/2	**4 15/16**	**16 1/2**	**4 3/4**	**2**	**14 1/2**	**12 5/8**	**2 3/4**	**9 9/16**	**1 11/16**
SAF23028K	4 13/16 4 7/8 **4 15/16** 5	**5 1/4**	**16 1/2**	**4 3/4**	**2 1/8**	**14 1/2**	**13 1/4**	**2 3/4**	**10 1/4**	**1 13/16**
SAF23030K	5 1/8 **5 3/16** 5 1/4	**6**	**18 3/8**	**5 1/8**	**2 3/8**	**16**	**14 5/8**	**3 1/4**	**11 9/16**	**2 5/16**
SAF23032K	5 3/8 **5 7/16** 5 1/2	**6**	**18 3/8**	**5 1/8**	**2 3/8**	**16**	**14 5/8**	**3 1/4**	**11 9/16**	**2 1/16**
SAF23034K	5 13/16 5 7/8 **5 15/16** 6	**6**	**20 1/8**	**5 7/8**	**2 3/8**	**17 1/8**	**16**	**3 3/8**	**11 3/4**	**1 3/4**
SAF23036K	6 5/16 6 3/8 **6 7/16** 6 1/2	**6 11/16**	**22**	**6 1/4**	**2 5/8**	**19 1/4**	**17 3/8**	**3 3/4**	**13 5/16**	**2 3/16**
SAF23038K	6 13/16 6 7/8 **6 15/16** 7	**6 11/16**	**22**	**6 1/4**	**2 5/8**	**19 1/4**	**17 3/8**	**3 3/4**	**13 5/16**	**1 15/16**
SAF23040K	7 1/8 **7 3/16** 7 1/4	**7 1/16**	**24 3/4**	**6 3/4**	**2 3/4**	**21 5/8**	**19 3/8**	**4 1/4**	**14 9/16**	**2 13/16**
SAF23044K	7 13/16 7 7/8 **7 15/16** 8	**7 7/8**	**28**	**7 1/2**	**3 1/8**	**24 3/8**	**21 5/8**	**4 1/2**	**15 11/16**	**2 3/8**

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies, specify shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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L	Y	Base Bolts 4 Req'd	Bearing No.	Adapter Assembly No.[3]	Housing Only[4]	Stabilizing Ring 1 Req'd[5]	Triple Seal 2 Req'd	Assembly Wt.
in.	in.	in.						lbs.
				SNW-3024 x 4 1/16			LER 111	
				SNW-3024 x 4 1/8			LER 112	
6	**1 55/64**	**3/4**	**23024K**	**SNW-3024 x 4 3/16**	**SAF024K**	**SR-20-17**	**LER 113**	**60**
				SNW-3024 x 4 1/4			LER 114	
				SNW-3026 x 4 5/16			LER 115	
				SNW-3026 x 4 3/8			LER 116	
6 3/8	**2 1/32**	**3/4**	**23026K**	**SNW-3026 x 4 7/16**	**SAF026K**	**SR-22-19**	**LER 117**	**76**
				SNW-3026 x 4 1/2			LER 118	
				SNW-3028 x 4 13/16			LER 120	
				SNW-3028 x 4 7/8			LER 121	
7 3/8	**2 1/8**	**3/4**	**23028K**	**SNW-3028 x 4 15/16**	**SAF028K**	**SR- 0-20**	**LER 122**	**90**
				SNW-3028 x 5			LER 123	
				SNW-3030 x 5 1/8			LER 124	
8	**2 13/64**	**7/8**	**23030K**	**SNW-3030 x 5 3/16**	**SAF030K**	**SR- 0-21**	**LER 125**	**125**
				SNW-3030 x 5 1/4			LER 126	
				SNW-3032 x 5 3/8			LER 129	
8	**2 11/32**	**7/8**	**23032K**	**SNW-3032 x 5 7/16**	**SAF032K**	**SR- 0-22**	**LER 130**	**132**
				SNW-3032 x 5 1/2			LER 131	
				SNW-3034 x 5 13/16			LER 138	
				SNW-3034 x 5 7/8			LER 139	
7 3/4	**2 33/64**	**1**	**23034K**	**SNW-3034 x 5 15/16**	**SAF034K**	**SR- 0-24**	**LER 140**	**154**
				SNW-3034 x 6			LER 141	
				SNW-3036 x 6 5/16			LER 146	
				SNW-3036 x 6 3/8			LER 147	
8 3/4	**2 11/16**	**1**	**23036K**	**SNW-3036 x 6 7/16**	**SAF036K**	**SR- 0-26**	**LER 148**	**212**
				SNW-3036 x 6 1/2			LER 149	
				SNW-3038 x 6 13/16			LER 153	
				SNW-3038 x 6 7/8			LER 154	
8 3/4	**2 47/64**	**1**	**23038K**	**SNW-3038 x 6 15/16**	**SAF038K**	**SR-32- 0**	**LER 155**	**220**
				SNW-3038 x 7			LER 156	
				SNW-3040 x 7 1/8			LER 158	
9 3/8	**2 15/16**	**1**	**23040K**	**SNW-3040 x 7 3/16**	**SAF040K**	**SR-34- 0**	**LER 159**	**295**
				SNW-3040 x 7 1/4			LER 160	
				SNW-3044 x 7 13/16			LER 165	
				SNW-3044 x 7 7/8			LER 166	
10 3/4	**3 5/32**	**1 1/4**	**23044K**	**SNW-3044 x 7 15/16**	**SAF044K**	**SR-38-32**	**LER 167**	**370**
				SNW-3044 x 8			LER 168	

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies, specify shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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INCH TAPERED BORE MOUNTING SAF230K, SDAF230K SERIES – continued

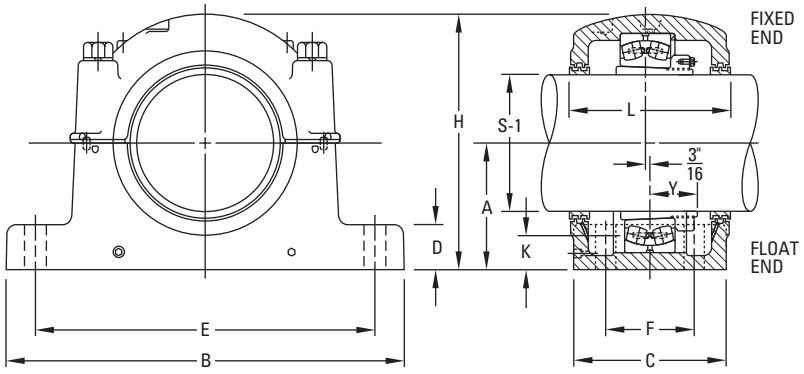
- Each assembly includes the housing cap and base, cap bolts, bearing, bearing adapter, locknut and lockwasher, stabilizing ring and triple-ring seals.
- If only the pillow block is desired, use the numbers listed in the Housing Only column. These units include cap and base, cap bolts, triple-ring seals and stabilizing ring.
- Assembly and pillow blocks described on this page constitute fixed units.
- To order float units, specify the part number plus the suffix float or FL.
- All assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SAFS 23024).
- Please note that for applications SAF23048 and larger, the shaft size must be included in the part description when ordering (e.g., SAF23048-8 15/16).
- Two stabilizing rings are supplied with housings SAF048 through SAF056 and SDAF060K through SDAF076K. For fixed applications both rings must be used. Do not use stabilizing rings for float mounting.

Continued from previous page.

Pillow Block Assembly[1]	Shaft Dia. S-1[2]	A	B	C	D	E		F	H	K
						Max.	Min.			Oil Level
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
SAF23048K-8 7/16	8 7/16	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	17 3/16	2 1/4
SAF23048K-8 1/2	8 1/2	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	17 3/16	2 1/4
SAF23048K-8 15/16	8 15/16	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	17 3/16	2 1/4
SAF23048K-9	9	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	17 3/16	2 1/4
SAF23052K-9 7/16	9 7/16	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	19 7/16	2 15/16
SAF23052K-9 1/2	9 1/2	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	19 7/16	2 15/16
SAF23056K-9 15/16	9 15/16	9 7/8	34 1/4	9	4	29 1/2	26 1/4	5 1/2	20 3/16	2 15/16
SAF23056K-10	10	9 7/8	34 1/4	9	4	29 1/2	26 1/4	5 1/2	20 3/16	2 15/16
SAF23056K-10 7/16	10 7/16	9 7/8	34 1/4	9	4	29 1/2	26 1/4	5 1/2	20 3/16	2 15/16
SAF23056K-10 1/2	10 1/2	9 7/8	34 1/4	9	4	29 1/2	26 1/4	5 1/2	20 3/16	2 15/16
SERIES SDAF230K										
SDAF23060K-10 15/16	10 15/16	12	38 1/4	14 3/4	3 1/2	33 1/2	32 3/4	9	23 7/16	4 7/16
SDAF23060K-11	11	12	38 1/4	14 3/4	3 1/2	33 1/2	32 3/4	9	23 7/16	4 7/16
SDAF23064K-11 7/16	11 7/16	12	38 1/4	14 3/4	3 1/2	33 1/2	32 3/4	9	23 7/16	4 1/16
SDAF23064K-11 1/2	11 1/2	12	38 1/4	14 3/4	3 1/2	33 1/2	32 3/4	9	23 7/16	4 1/16
SDAF23064K-11 15/16	11 15/16	12	38 1/4	14 3/4	3 1/2	33 1/2	32 3/4	9	23 7/16	4 1/16
SDAF23064K-12	12	12	38 1/4	14 3/4	3 1/2	33 1/2	32 3/4	9	23 7/16	4 1/16
SDAF23068K-12 7/16	12 7/16	12	39	15 1/4	4 3/16	33 1/2	32	10	24	3 7/16
SDAF23068K-12 1/2	12 1/2	12	39	15 1/4	4 3/16	33 1/2	32	10	24	3 7/16
SDAF23072K-12 15/16	12 15/16	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	10 1/2	26	3 7/8
SDAF23072K-13	13	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	10 1/2	26	3 7/8
SDAF23072K-13 7/16	13 7/16	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	10 1/2	26	3 7/8
SDAF23072K-13 1/2	13 1/2	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	10 1/2	26	3 7/8
SDAF23076K-13 15/16	13 15/16	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	10 1/2	26	3 7/16
SDAF23076K-14	14	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	10 1/2	26	3 7/16
SDAF23080K-15	15	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	11	29	4 7/16
SDAF23084K-15 3/4	15 3/4	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	11	29	4 1/16
SDAF23088K-16 1/2	16 1/2	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	12 1/4	30 1/2	4 1/2
SDAF23092K-17	17	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	12 1/4	30 1/2	4
SDAF23096K-18	18	17	53	21	5 1/2	46 1/8	44 3/8	14 1/2	33 3/4	5 1/8
SDAF230/530K-18 1/2	18 1/2	17	53	21	5 1/2	46 1/8	44 3/8	14 1/2	33 3/4	4 3/4
SDAF230/530K-19 1/2	19 1/2	18	54 1/4	21 5/8	5 3/4	48 7/8	47 1/8	15	35 3/4	4 13/16

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies, specify shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

08-19-13 DRAFT



L	Y	Base Bolts 4 Req'd	Bearing No.	Adapter Assembly No.[3]	Housing Only[4]	Stabilizing Ring 1 Req'd[5]	Triple Seal 2 Req'd	Assembly Wt.
in.	in.	in.						lbs.
11 1/8	3 17/32	1 1/4	23048K	SNP-3048 x 8 7/16	SAF048K-8 7/16	A8897	LER 526	430
11 1/8	3 17/32	1 1/4	23048K	SNP-3048 x 8 1/2	SAF048K-8 1/2	A8897	LER 527	428
11 1/8	3 17/32	1 1/4	23048K	SNP-3048 x 8 15/16	SAF048K-8 15/16	A8897	LER 529	422
11 1/8	3 17/32	1 1/4	23048K	SNP-3048 x 9	SAF048K-9	A8897	LER 530	420
11 7/8	3 53/64	1 1/2	23052K	SNP-3052 x 9 7/16	SAF052K-9 7/16	A8898	LER 178-1	587
11 7/8	3 53/64	1 1/2	23052K	SNP-3052 x 9 1/2	SAF052K-9 1/2	A8898	LER 178	585
12 1/16	3 61/64	1 1/2	23056K	SNP-3056 x 10	SAF056K-9 15/16	A8819	ER 751	640
12 1/16	3 61/64	1 1/2	23056K	SNP-3056 x 10 7/16	SAF056K-10	A8819	ER705	635
12 1/16	3 61/64	1 1/2	23056K	SNP-3056 x 10 1/2	SAF056K-10 7/16	A8819	ER 745	625
12 1/16	3 61/64	1 1/2	23056K	SNP-3056 x 9 15/16	SAF056K-10 1/2	A8819	ER 710	620
15 1/2	4 9/32	1 5/8	23060K	SNP-3060 x 10 15/16	SDAF060K-10 15/16	A8967	ER 858	1175
15 1/2	4 9/32	1 5/8	23060K	SNP-3060 x 11	SDAF060K-11	A8967	ER 825	1174
15 1/2	4 7/16	1 5/8	23064K	SNP-3064 x 11 7/16	SDAF064K-11 7/16	A8968	ER 861	1275
15 1/2	4 7/16	1 5/8	23064K	SNP-3064 x 11 1/2	SDAF064K-11 1/2	A8968	ER 832	1274
15 1/2	4 7/16	1 5/8	23064K	SNP-3064 x 11 15/16	SDAF064K-11 15/16	A8968	ER 859	1269
15 1/2	4 7/16	1 5/8	23064K	SNP-3064 x 12	SDAF064K-12	A8968	ER 818	1268
15 3/4	4 13/16	1 7/8	23068K	SNP-3068 x 12 7/16	SDAF068K-12 7/16	A8969	ER 865	1553
15 3/4	4 13/16	1 7/8	23068K	SNP-3068 x 12 1/2	SDAF068K-12 1/2	A8969	ER 866	1552
16 1/4	4 53/64	1 7/8	23072K	SNP-3072 x 12 15/16	SDAF072K-12 15/16	A8970	ER 869	1632
16 1/4	4 53/64	1 7/8	23072K	SNP-3072 x 13	SDAF072K-13	A8970	ER 846	1630
16 1/4	4 53/64	1 7/8	23072K	SNP-3072 x 13 7/16	SDAF072K-13 7/16	A8970	ER 872	1614
16 1/4	4 53/64	1 7/8	23072K	SNP-3072 x 13 1/2	SDAF072K-13 1/2	A8970	ER 823	1610
16 1/4	5 1/16	1 7/8	23076K	SNP-3076 x 13 15/16	SDAF076K-13 15/16	A8971	ER 875	1687
16 1/4	5 1/16	1 7/8	23076K	SNP-3076 x 14	SDAF076K-14	A8971	ER 876	1685
17 5/8	5 17/32	4, 2	23080K	SNP-3080 x 15	SDAF080K-15	A8974	ER 847	2300
17 5/8	5 9/16	4, 2	23087K	SNP-3084 x 15 3/4	SDAF084K-15 3/4	A8978	ER 885	2300
19 1/4	5 3/4	4, 2 1/4	230994K	SNP-3088 x 16 1/2	SDAF3088K-16 1/2	A8979	ER 958	2550
19 1/4	5 7/8	4, 2 1/4	23082K	SNP-3092 x 17	SDAF3092K-17	A8980	ER 838	2850
21 3/4	5 29/32	4, 2 1/4	23096K	SNP-3096 x 18	SDAF3096K-18	A8984	ER 888	4250
21 3/4	6 1/2	4, 2 1/4	230/500K	SNP-30-500 x 18 1/2	SDAF30-500K-18 1/2	A8976	ER 978	4350
22 1/4	6 27/32	4, 2 1/2	230/530/K	SNP-30-530 x 19 1/2	SDAF 30-530K-19 1/2		ER 926	5200

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies, specify shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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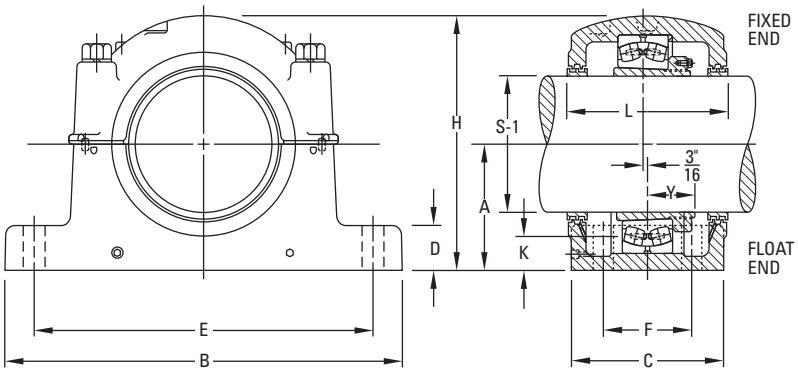
INCH TAPERED BORE MOUNTING SDAF231K AND SDAF232K SERIES

- Each assembly includes the housing cap and base, cap bolts, bearing, bearing adapter, locknut and lockwasher, stabilizing ring and triple-ring seals.
- To order pillow block housing only, use the numbers listed in the Housing Only column. These units include cap and base, cap bolts, triple-ring seals and stabilizing ring.
- Assembly and pillow blocks described on this page constitute fixed units.
- To order float units, specify part number plus suffix float or FL.
- All assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SDAFS 23152K).

Pillow Block Assembly	Shaft Dia. S-1[1]	A	B	C	D	E		F	H
						Max.	Min.		
	in.	in.	in.	in.	in.	in.	in.	in.	in.
SERIES SDAF231K									
SDAF23152K	**9 7/16** 9 1/2	**10 1/4**	**35**	**13 1/8**	**3 3/4**	**30 1/2**	**29**	**8 3/4**	**20 7/8**
SDAF23156K	9 15/16 10 **10 7/16** 10 1/2	**12**	**38 1/4**	**14 3/4**	**3 3/8**	**33 1/2**	**32 3/4**	**9**	**23 7/16**
SDAF23160K	**10 15/16**	**12**	**38 1/4**	**14 3/4**	**3 3/8**	**33 1/2**	**32 3/4**	**9**	**23 7/16**
SDAF23164K	11 **11 15/16**	**12 13/16**	**41 3/4**	**15 3/4**	**4 1/2**	**36 1/2**	**35**	**10 1/2**	**25 3/4**
SDAF23168K	**12 7/16**	**14**	**43 3/4**	**17 3/4**	**5**	**38 1/4**	**36 3/4**	**10 3/4**	**27 7/8**
SDAF23172K	**13 7/16** 13 1/2	**14 1/2**	**46**	**17 1/8**	**5 1/4**	**40 3/4**	**39 1/4**	**11**	**28 7/8**
SDAF23176K	**13 15/16** 14	**14 1/2**	**46**	**17 1/8**	**5 1/4**	**40 3/4**	**39 1/4**	**11**	**28 7/8**
SDAF23180K	14 15/16 **15**	**15 1/2**	**48 3/4**	**18 3/4**	**5 1/2**	**43 1/2**	**41 3/4**	**12 1/4**	**30 1/2**
SDAF23184K	**15 3/4**	**17**	**52**	**21**	**5 1/2**	**46 1/8**	**44 3/8**	**14 1/2**	**33 3/4**
SDAF23188K	**16 1/2**	**17**	**52**	**21**	**5 1/2**	**46 1/8**	**44 3/8**	**14 1/2**	**33 3/4**
SDAF23192K	**17**	**18**	**54 1/4**	**21 5/8**	**5 3/4**	**48 7/8**	**47 1/8**	**15**	**35 3/4**
SDAF23196K	**18**	**18**	**54 1/4**	**21 5/8**	**5 3/4**	**48 7/8**	**47 1/8**	**15**	**35 3/4**
SERIES SDAF232K									
SDAF23248K	**8 15/16** 9	**10 1/4**	**35**	**13 1/8**	**3 3/4**	**30 1/2**	**29**	**8 3/4**	**20 7/8**
SDAF23252K	**9 7/16** 9 1/2	**12**	**38 1/4**	**14 3/4**	**3 3/8**	**33 1/2**	**32 3/4**	**9**	**23 7/16**
SDAF23256K	**10 7/16** 10 1/2	**12**	**38 1/4**	**14 3/4**	**3 3/8**	**33 1/2**	**32 3/4**	**9**	**23 7/16**
SDAF23260K	**10 15/16** 11	**12 13/16**	**41 3/4**	**15 3/4**	**4 1/2**	**36 1/2**	**35**	**10 1/2**	**25 3/4**
SDAF23264K	**11 15/16**	**14**	**43 3/4**	**17 3/4**	**5**	**38 1/4**	**36 3/4**	**10 3/4**	**27 7/8**
SDAF23268K	**12 7/16**	**14 1/2**	**46**	**17 1/8**	**5 1/4**	**40 3/4**	**39 1/4**	**11**	**28 7/8**
SDAF23272K	**13 7/16**	**15 1/2**	**48 3/4**	**18 3/4**	**5 1/2**	**43 1/2**	**41 3/4**	**12 1/4**	**30 1/2**
SDAF23276K	**13 15/16**	**15 1/2**	**48 3/4**	**18 3/4**	**5 1/2**	**43 1/2**	**41 3/4**	**12 1/4**	**30 1/2**
SDAF23280K	**14 15/16**	**17**	**52**	**21**	**5 1/2**	**46 1/8**	**44 3/8**	**14 1/2**	**33 3/4**
SDAF23284K	**15 3/4**	**18**	**54 1/4**	**21 5/8**	**5 3/4**	**48 7/8**	**47 1/8**	**15**	**35 3/4**
SDAF23288K	**16 1/2**	**18**	**54 1/4**	**21 5/8**	**5 3/4**	**48 7/8**	**47 1/8**	**15**	**35 3/4**

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies, specify shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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K Oil Level	L	Base Bolts 4 Req'd	Bearing No.	Adapter Assembly No.[3]	Housing Only[4]	Stabilizing Ring 1 Req'd[5]	Triple Seal 2 Req'd	Assembly Wt.
in.	in.	in.						lbs.
3 3/8	**13 3/4**	**1 5/8**	**23152K**	**SNP-3152 x 9 7/16**	**SDAF3152K**	**A5679**	**ER 891**	**1050**
				SNP-3152 x 9 1/2			ER 842	
				SNP-3156 x 10			ER 845	
				SNP-3156 x 10 7/16			ER 820	
4 3/4	**15 3/8**	**1 5/8**	**23156K**	**SNP-3156 x 10 1/2**	**SDAF3156K**	**A8967**	**ER 973**	**1300**
				SNP-3156 x 9 15/16			ER 840	
4 1/8	**15 3/8**	**1 5/8**	**23160K**	**SNP-3160 x 10 15/16**	**SDAF3160K**	**A8975**	**ER 858**	**1350**
				SNP-3160 x 11			ER 825	
4 3/8	**16 1/4**	**1 7/8**	**23164K**	**SNP-3164 x 11 15/16**	**SDAF3164K**	**A8970**	**ER 900**	**1900**
4 15/16	**18 1/4**	**2**	**23168K**	**SNP-3168 x 12 7/16**	**SDAF3168K**	**A8977**	**ER 975**	**2550**
5	**17 3/4**	**2**	**23172K**	**SNP-3172 x 13 7/16**	**SDAF3172K**	**A8974**	**ER 872**	**2600**
				SNP-3172 x 13 1/2			ER 823	
4 5/8	**17 3/4**	**2**	**23176K**	**SNP-3176 x 13 15/16**	**SDAF3176K**	**A8978**	**ER 875**	**2600**
				SNP-3176 x 14			ER 876	
				SNP-3180 x 14 15/16			ER 976	
5 1/8	**19 1/4**	**2 1/4**	**23180K**	**SNP-3180 x 15**	**SDAF3180K**	**A8979**	**ER 847**	**3000**
6	**21 3/4**	**2 1/4**	**23184K**	**SNP-3184 x 15 3/4**	**SDAF3184K**	**A8984**	**ER 907**	**4400**
5 9/16	**21 3/4**	**2 1/4**	**23188K**	**SNP-3188 x 16 1/2**	**SDAF3188K**	**A8976**	**ER 958**	**4600**
6	**22 1/4**	**2 1/2**	**23192K**	**SNP-3192 x 17**	**SDAF3192K**	**A8990**	**ER 838**	**5100**
5 1/2	**22 1/4**	**2 1/2**	**23196K**	**SNP-3196 x 18**	**SDAF3196K**	**A8998**	**ER 888**	**5200**
3 9/16	**13 3/4**	**1 5/8**	**23248K**	**SNP-148 x 8 15/16**	**SDAF3248K**	**A5679**	**ER 914**	**1100**
				SNP-148 x 9			ER 828	
4 3/4	**15 3/8**	**1 5/8**	**23252K**	**SNP-152 x 9 7/16**	**SDAF3252K**	**A8968**	**ER 891**	**1400**
				SNP-152 x 9 1/2			ER 842	
4 3/8	**15 3/8**	**1 5/8**	**23256K**	**SNP-3256 x 10 7/16**	**SDAF3256K**	**A8975**	**ER 973**	**1400**
				SNP-3256 x 10 1/2			ER 840	
4 1/2	**16 1/4**	**1 7/8**	**23260K**	**SNP-3260 x 10 15/16**	**SDAF3260K**	**A8970**	**ER 974**	**1900**
				SNP-3260 x 11			ER 974-1	
5 1/8	**18 1/4**	**2**	**23264K**	**SNP-3264 x 11 15/16**	**SDAF3264K**	**A8977**	**ER 900**	**2600**
5	**17 3/4**	**2**	**23268K**	**SNP-3268 x 12 7/16**	**SDAF3268K**	**A8978**	**ER 975**	**2700**
5 1/2	**19 1/4**	**2 1/4**	**23272K**	**SNP-3272 x 13 7/16**	**SDAF3272K**	**A8979**	**ER 979**	**3050**
4 3/8	**19 1/4**	**2 1/4**	**23276K**	**SNP-3276 x 13 15/16**	**SDAF3276K**	**A8980**	**ER 875**	**3000**
6	**21 3/4**	**2 1/4**	**23280K**	**SNP-3280 x 14 15/16**	**SDAF3280K**	**A8976**	**ER976**	**4650**
6 3/8	**22 1/4**	**2 1/2**	**23284K**	**SNP-3284 x 15 3/4**	**SDAF3284K**	**A8990**	**ER 907**	**4900**
5 7/8	**22 1/4**	**2 1/2**	**23288K**	**SNP-3288 x 16 1/2**	**SDAF3288K**	**A8988**	**ER 907**	**5200**

[1]Bold shaft sizes are standard. When ordering non-standard pillow block assemblies, specify shaft size.
[2]See page D-76, table D-20 for suggested shaft diameter S-1 tolerances.
[3]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[4]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing ring as required. When ordering non-standard housing only specify the shaft size.
[5]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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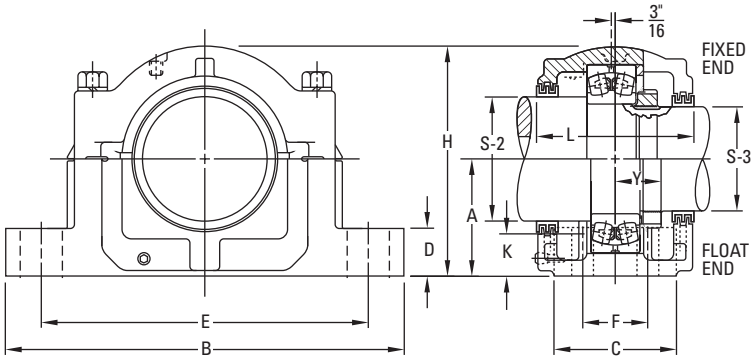
INCH STRAIGHT BORE MOUNTING SAF222 AND SAF223 SERIES

- Each assembly includes the housing cap and base, cap bolts, bearing, locknut and lockwasher, stabilizing ring and triple-ring seals.
- To order pillow block housing only, use the numbers listed in Housing Only column. These units include cap and base, cap bolts, triple-ring seals and stabilizing ring.
- Assembly and pillow blocks described on this page constitute fixed units.
- To order float units, specify part number plus suffix float or FL.
- All assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SAFS 22217).
- Four-bolt bases are standard on all assemblies, unless noted.

Pillow Block Assembly	Shaft Dia.[1]		A	B	C	D	E		F	H	K	L	Y	Base Bolts Required	
	S-2	S-3					Max.	Min.			Oil Level			No.	Size
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.		in.
SERIES SAF222															
SAF22217	3 15/16	3 3/16	3 3/4	13	3 1/2	1 1/4	11	9 7/8	–	7 1/4	1 7/16	4 15/16	1 27/64	2	3/4
FSAF22217	3 15/16	3 3/16	3 3/4	13	3 1/2	1 1/4	11	9 7/8	2 1/8	7 1/4	1 7/16	4 15/16	1 27/64	4	5/8
SAF22218	4 1/8	3 3/8	4	13 3/4	3 7/8	1 1/2	11 5/8	10 3/8	–	7 3/4	1 17/32	6 1/4	1 37/64	2	3/4
FSAF22218	4 1/8	3 3/8	4	13 3/4	3 7/8	1 1/2	11 5/8	10 3/8	2 1/8	7 3/4	1 17/32	6 1/4	1 37/64	4	5/8
SAF22220	4 1/2	3 13/16	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	–	8 11/16	1 3/4	6	1 49/64	2	7/8
FSAF22220	4 1/2	3 13/16	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 11/16	1 3/4	6	1 49/64	4	3/4
SAF22222	4 7/8	4 3/16	4 15/16	16 1/2	4 3/4	2	14 1/2	12 5/8	2 3/4	9 9/16	1 7/8	6 3/8	1 61/64	4	3/4
SAF22224	5 5/16	4 9/16	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 1/4	1 15/16	7 3/8	2 3/32	4	3/4
SAF22226	5 7/8	4 15/16	6	18 3/8	5 1/8	2 3/8	16	14 5/8	3 1/4	11 9/16	2 7/16	8	2 17/64	4	7/8
SAF22228	6 1/4	5 5/16	6	20 1/8	5 7/8	2 3/8	17 1/8	16	3 3/8	11 3/4	2 1/8	7 3/4	2 13/32	4	1
SAF22230	6 5/8	5 3/4	6 5/16	21 1/4	6 1/4	2 1/2	18 1/4	17	3 3/4	12 1/2	2 3/16	8 3/8	2 37/64	4	1
SAF22232	7	6 1/16	6 11/16	22	6 1/4	2 5/8	19 1/4	17 3/8	3 3/4	13 5/16	2 3/16	8 3/4	2 49/64	4	1
SAF22234	7 1/16	6 7/16	7 1/16	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 9/16	2 5/16	9 3/8	2 59/64	4	1
SAF22236	7 13/16	6 7/8	7 1/2	26 3/4	7 1/8	3	23 5/8	20 7/8	4 5/8	15 1/2	2 9/16	9 11/16	2 61/64	4	1
SAF22238	8 3/8	7 1/4	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 11/16	2 5/8	10 3/4	3 7/64	4	1 1/4
SAF22240	8 3/4	7 5/8	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	17 3/16	2 11/16	10 13/16	3 9/32	4	1 1/4
SAF22244	9 9/16	8 5/16	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	19 5/8	3 3/8	11 1/2	3 17/32	4	1 1/2
SERIES SAF223															
SAF22317	3 15/16	3 3/16	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	–	8 11/16	1 13/16	6	1 57/64	2	7/8
FSAF22317	3 15/16	3 3/16	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 11/16	1 13/16	6	1 57/64	4	3/4
SAF22318	4 1/8	3 3/8	4 3/4	15 1/2	4 3/8	2	13 1/2	12	2 1/4	9 3/16	2	7	2 3/64	4	3/4
SAF22320	4 1/2	3 13/16	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 1/4	2 1/8	7 3/8	2 19/64	4	3/4
SAF22322	4 7/8	4 3/16	6	18 3/8	5 1/8	2 3/8	16	14 5/8	3 1/4	11 9/16	2 1/2	8	2 31/64	4	7/8
SAF22324	5 5/16	4 9/16	6 5/16	21 1/4	6 1/4	2 1/2	18 1/4	17	3 3/4	12 1/2	2 9/16	8 3/8	2 41/64	4	1
SAF22326	5 7/8	4 15/16	6 11/16	22	6 1/4	2 5/8	19 1/4	17 3/8	3 3/4	13 15/16	2 5/8	8 3/4	2 27/32	4	1
SAF22328	6 1/4	5 5/16	7 1/16	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 9/16	2 11/16	9 3/8	3 5/64	4	1
SAF22330	6 5/8	5 3/4	7 1/2	26 3/4	7 1/8	3	23 5/8	20 7/8	4 5/8	15 1/2	2 7/8	9 11/16	3 17/64	4	1
SAF22332	7	6 1/16	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 11/16	2 15/16	10 3/4	3 7/16	4	1 1/4
SAF22334	7 7/16	6 7/16	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	17 3/16	3 1/16	10 13/16	3 19/32	4	1 1/4
SAF22336	7 13/16	6 7/8	8 7/8	31 1/4	8 1/4	3 1/2	26 5/8	24	5 1/4	18 1/2	3 3/8	11 1/4	3 47/64	4	1 1/4
SAF22338	8 3/8	7 1/4	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	19 5/8	3 11/16	11 1/2	3 57/64	4	1 1/2
SAF22340	8 3/4	7 5/8	9 7/8	34 1/4	9	4	29 1/2	26 1/4	5 1/2	20 3/16	3 3/4	12 1/4	4 5/64	4	1 1/2

[1]See page D-76, table D-20 for suggested shaft diameter S-2, S-3 tolerances.
[2]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing rings as required.
[3]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
[4]Triple-ring seals for other shaft diameters are available upon special order.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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Bearing No.	Locknut	Lockwasher	Housing Only[2]	Stabilizing Ring 1 Req'd[3]	Triple Seal 1 Req'd[4]		Assembly Wt.
					S-2	S-3	
							lbs.
22217	AN17	W17	SAF217	SR-17-14	LER89	LER63	43
22217	AN17	W17	FSAF217	SR-17-14	LER89	LER63	43
22218	AN18	W18	SAF218	SR-18-15	LER96	LER72	50
22218	AN18	W18	FSAF218	SR-18-15	LER96	LER72	50
22220	AN20	W20	SAF220	SR-20-17	LER118	LER106	71
22220	AN20	W20	FSAF220	SR-20-17	LER118	LER106	71
22222	AN22	W22	SAF222	SR-22-19	LER121	LER113	81
22224	AN24	W24	SAF224	SR-24-20	LER127	LER119	90
22226	AN26	W26	SAF226	SR-26-0	LER136	LER122	127
22228	AN28	W28	SAF228	SR-28-0	LER144	LER127	149
22230	AN30	W30	SAF230	SR-30-0	LER151	LER134	175
22232	AN32	W32	SAF232	SR-32-0	LER156	LER142	210
22234	AN34	W34	SAF234	SR-34-0	LER161	LER148	280
22236	AN36	W36	SAF236	SR-36-30	LER165	LER154	305
22238	AN38	W38	SAF238	SR-38-32	LER171	LER160	350
22240	AN40	W40	SAF240	SR-40-34	LER175	LER164	420
22244	N44	W44	SAF244	SR-44-38	LER179	LER170	590
22317	AN17	W17	SAF317	SR-20-17	LER109	LER188	80
22317	AN17	W17	FSAF317	SR-20-17	LER109	LER188	80
22318	AN18	W18	SAF318	SR-21-18	LER112	LER191	92
22320	AN20	W20	SAF320	SR-24-20	LER118	LER106	109
22322	AN22	W22	SAF322	SR-0-22	LER121	LER113	145
22324	AN24	W24	SAF324	SR-0-24	LER127	LER119	195
22326	AN26	W26	SAF326	SR-0-26	LER136	LER122	235
22328	AN28	W28	SAF328	SR-0-28	LER144	LER127	300
22330	AN30	W30	SAF330	SR-36-30	LER151	LER134	335
22332	AN32	W32	SAF332	SR-38-32	LER156	LER142	405
22334	AN34	W34	SAF334	SR-40-34	LER161	LER148	465
22336	AN36	W36	SAF336	SR-0-36	LER165	LER154	525
22338	AN38	W38	SAF338	SR-44-38	LER171	LER160	635
22340	AN40	W40	SAF340	SR-0-40	LER175	LER164	700

[1]See page D-76, table D-20 for suggested shaft diameter S-2, S-3 tolerances.
[2]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing rings as required.
[3]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
[4]Triple-ring seals for other shaft diameters are available upon special order.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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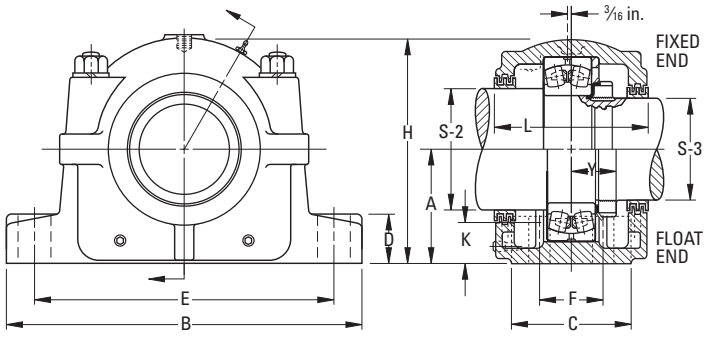
INCH STRAIGHT BORE MOUNTING SDAF222 AND SDAF223 SERIES

- Each assembly includes the housing cap and base, cap bolts, bearing, locknut and washer, stabilizing ring, and triple-ring seals.
- To order pillow block housing only, use the numbers listed in the Housing Only column. These units include cap and base, cap bolts, triple-ring seals and stabilizing ring.
- Assembly and pillow blocks described on this page constitute fixed units.
- To order float units, specify part number plus suffix float or FL.
- All assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SDAS 22220).

Pillow Block Assembly	Shaft Dia.[1]		A	B	C	D	E		F	H	K	L	Y	Base Bolts Required	
	S-2	S-3					Max.	Min.			Oil Level			No.	Size
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.		in.
SERIES SDAF222															
SDAF22220	4 1/2	3 13/16	4 1/2	15 1/4	6	1 7/8	13 1/8	11 5/8	3 3/8	8 15/16	1 3/4	6 3/4	1 49/64	4	3/4
SDAF22222	4 7/8	4 3/16	4 15/16	16 1/2	6 3/4	2 1/8	14 1/2	12 5/8	4	9 7/8	1 7/8	7 1/4	1 61/64	4	7/8
SDAF22224	5 5/16	4 9/16	5 1/4	16 1/2	6 7/8	2 1/4	14 1/2	13 1/4	4 1/8	10 1/2	1 15/16	7 3/8	2 3/32	4	7/8
SDAF22226	5 7/8	4 15/16	6	18 3/8	7 1/2	2 3/8	16	14 5/8	4 1/2	11 7/8	2 7/16	8	2 17/64	4	1
SDAF22228	6 1/4	5 5/16	6	20 1/8	7 1/2	2 3/8	17 1/8	16	4 1/2	12 1/16	2 1/8	7 13/16	2 13/32	4	1
SDAF22230	6 5/8	5 3/4	6 5/16	21 1/4	7 7/8	2 1/2	18 1/4	17	4 3/4	12 13/16	2 3/16	8 3/8	2 37/64	4	1 1/8
SDAF22232	7	6 1/16	6 11/16	22	8 1/4	2 1/2	19 1/4	17 3/8	5	13 11/16	2 3/16	8 3/4	2 49/64	4	1 1/8
SDAF22234	7 1/16	6 7/16	7 1/16	24 3/4	9	2 1/2	21 5/8	19 3/8	5 1/2	14 1/4	2 5/16	9 5/8	2 59/64	4	1 1/4
SDAF22236	7 13/16	6 7/8	7 1/2	26 3/4	9 3/8	2 3/4	23 5/8	20 7/8	5 7/8	15 3/16	2 9/16	10	2 61/64	4	1 1/4
SDAF22238	8 3/8	7 1/4	7 7/8	27 5/8	10	3	23 1/2	21 1/2	6 1/4	16 1/4	2 5/8	10 5/8	3 7/64	4	1 3/8
SDAF22240	8 3/4	7 5/8	8 1/4	28 3/4	10 1/2	3 1/4	25	23	6 3/4	17 1/8	2 11/16	11 1/8	3 9/32	4	1 3/8
SDAF22244	9 9/16	8 5/16	9 1/2	32	11 1/4	3 1/2	27 7/8	25 5/8	7 1/4	19 1/4	3 3/8	11 7/8	3 17/32	4	1 1/2
SERIES SDAF223															
SDAF22317	3 15/16	3 3/16	4 1/2	15 1/4	6	1 7/8	13 1/8	11 5/8	3 3/8	8 15/16	1 3/16	6 3/4	1 57/64	4	3/4
SDAF22318	4 1/8	3 3/8	4 3/4	15 1/2	6 1/8	2	13 1/2	12	3 5/8	9 7/16	2	6 7/8	2 3/64	4	3/4
SDAF22320	4 1/2	3 13/16	5 1/4	16 1/2	6 7/8	2 1/4	14 1/2	13 1/4	4 1/8	10 1/2	2 1/8	7 3/8	2 19/64	4	7/8
SDAF22322	4 7/8	4 3/16	6	18 3/8	7 1/2	2 3/8	16	14 5/8	4 1/2	11 7/8	2 1/2	8	2 31/64	4	1
SDAF22324	5 5/16	4 9/16	6 5/16	21 1/4	7 7/8	2 1/2	18 1/4	17	4 3/4	12 13/16	2 3/16	8 3/8	2 41/64	4	1 1/8
SDAF22326	5 7/8	4 15/16	6 11/16	22	8 1/4	2 1/2	19 1/4	17 3/8	5	13 11/16	2 5/8	8 3/4	2 27/64	4	1 1/8
SDAF22328	6 1/4	5 5/16	7 1/16	24 3/4	9	2 1/2	21 5/8	19 3/8	5 1/2	14 1/4	2 11/16	9 5/8	3 5/64	4	1 1/4
SDAF22330	6 5/8	5 3/4	7 1/2	26 3/4	9 3/8	2 3/4	23 5/8	20 7/8	5 7/8	15 3/16	2 7/8	9 3/4	3 17/64	4	1 1/4
SDAF22332	7	6 1/16	7 7/8	27 5/8	10	3	23 1/2	21 1/2	6 1/4	16 1/4	2 15/16	10 5/8	3 7/16	4	1 3/8
SDAF22334	7 1/16	6 7/16	8 1/4	28 3/4	10 1/2	3 1/4	25	23	6 3/4	17 1/8	3 1/16	11 1/8	3 19/32	4	1 3/8
SDAF22336	7 13/16	6 7/8	8 7/8	30 1/2	10 3/4	3 1/4	26 3/8	24 1/8	6 7/8	17 15/16	3 3/8	11 3/8	3 47/64	4	1 1/2
SDAF22338	8 3/8	7 1/4	9 1/2	32	11 1/4	3 1/2	27 7/8	25 5/8	7 1/4	19 1/4	3 11/16	11 13/16	3 57/64	4	1 1/2
SDAF22340	8 3/4	7 5/8	9 7/8	33 1/2	11 3/4	3 1/2	29 1/4	26 5/8	7 5/8	19 15/16	3 3/4	12 1/4	4 5/64	4	1 5/8

[1]See page D-76, table D-20 for suggested shaft diameter S-2, S-3 tolerances.
[2]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing rings as required.
[3]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
[4]Triple-ring seals for other shaft diameters are available upon special order.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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Bearing No.	Locknut	Lockwasher	Housing Only[2]	Stabilizing Ring 1 Req'd[3]	Triple Seal 1 Req'd[4]		Assembly Wt.
					S-2	S-3	
							lbs.
22220	AN20	W20	SDAF220	SR-20-17	LER118	LER106	81
22222	AN22	W22	SDAF222	SR-22-19	LER121	LER113	109
22224	AN24	W24	SDAF224	SR-24-20	LER127	LER119	113
22226	AN26	W26	SDAF226	SR-26-0	LER136	LER122	151
22228	AN28	W28	SDAF228	SR-28-0	LER144	LER127	175
22230	AN30	W30	SDAF230	SR-30-0	LER151	LER134	201
22232	AN32	W32	SDAF232	SR-32-0	LER156	LER142	245
22234	AN34	W34	SDAF234	SR-34-0	LER161	LER148	300
22236	AN36	W36	SDAF236	SR-36-30	LER165	LER154	335
22238	AN38	W38	SDAF238	SR-38-32	LER240	LER229	405
22240	AN40	W40	SDAF240	SR-40-34	LER244	LER233	465
22244	N44	W44	SDAF240	SR-44-38	LER248	LER239	650
22317	AN17	W17	SDAF317	SR-20-17	LER109	LER188	80
22318	AN18	W18	SDAF318	SR-21-18	LER112	LER191	92
22320	AN20	W20	SDAF320	SR-24-20	LER118	LER106	109
22322	AN22	W22	SDAF322	SR-0-22	LER121	LER113	145
22324	AN24	W24	SDAF324	SR-0-24	LER127	LER119	195
22326	AN26	W26	SDAF326	SR-0-26	LER136	LER122	280
22328	AN28	W28	SDAF328	SR-0-28	LER144	LER127	305
22330	AN30	W30	SDAF330	SR-36-30	LER151	LER134	375
22332	AN32	W32	SDAF332	SR-38-32	LER225	LER217	445
22334	AN34	W34	SDAF334	SR-40-34	LER230	LER220	525
22336	AN36	W36	SDAF336	SR-0-36	LER234	LER223	635
22338	AN38	W38	SDAF338	SR-44-38	LER240	LER229	700
22340	AN40	W40	SDAF340	SR-0-40	LER244	LER233	725

[1]See page D-76, table D-20 for suggested shaft diameter S-2, S-3 tolerances.
[2]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing rings as required.
[3]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
[4]Triple-ring seals for other shaft diameters are available upon special order.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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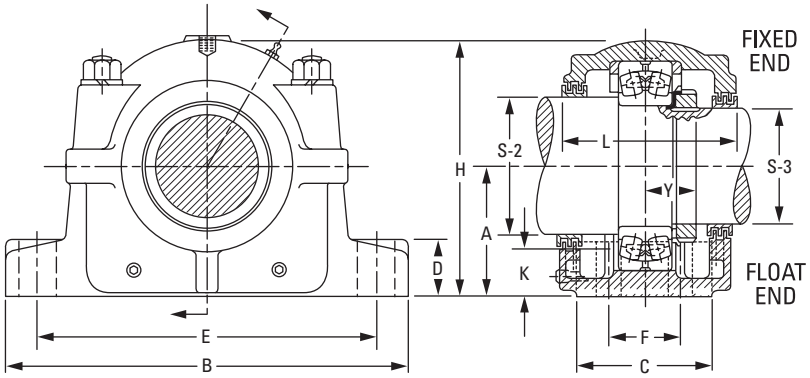
INCH STRAIGHT BORE MOUNTING SDAF231 AND SDAF232 SERIES

- Each assembly includes the housing cap and base, cap bolts, bearing, locknut and washer, stabilizing ring and triple-ring seals.
- To order pillow block housing only, use the numbers listed in the Housing Only column. These units include cap and base, cap bolts, triple-ring seals and stabilizing ring.
- Assembly and pillow blocks described on this page constitute fixed units.
- To order float units, specify part number plus suffix float or FL.
- All assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SDAFS 23152).
- For fixed applications, both stabilizing rings must be used. Do not use stabilizing rings for float mounting.

Pillow Block Assembly	Shaft Dia.[1]		A	B	C	D	E		F	H	K	L
	S-2	S-3					Max.	Min.			Oil Level	
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
SERIES SDAF231												
SDAF23152	11 1/2	9 15/16	10 1/4	35	13 1/8	3 3/4	30 1/2	29	8 3/4	20 7/8	3 3/8	14 1/4
SDAF23156	12 1/2	10 3/4	12	38 1/4	14 3/4	3 3/8	33 1/2	32 3/4	9	23 7/16	4 3/4	15 7/8
SDAF23160	13	11 1/2	12	38 1/4	14 3/4	3 3/8	33 1/2	32 3/4	9	23 7/16	4 1/8	15 7/8
SDAF23164	14	12 1/4	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	10 1/2	25 3/4	4 3/8	16 3/4
SDAF23168	15	13	14	43 3/4	17 3/4	5	38 1/4	36 3/4	10 3/4	27 7/8	4 15/16	18 3/4
SDAF23172	16	13 3/4	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	11	28 7/8	5	18
SDAF23176	17	14 1/2	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	11	28 7/8	4 5/8	18
SDAF23180	17 1/2	15 1/4	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	12 1/4	30 1/2	5 1/8	19 3/4
SDAF23184	18 1/2	15 3/4	17	52	21	5 1/2	46 1/8	44 3/8	14 1/2	33 3/4	6	22 1/4
SDAF23188	19 1/2	17	17	52	21	5 1/2	46 1/8	44 3/8	14 1/2	33 3/4	5 9/16	22 1/4
SDAF23192	20	17 3/4	18	54 1/4	21 5/8	5 3/4	48 7/8	47 1/8	15	35 3/4	6	22 3/4
SERIES SDAF232												
SDAF23248	10 1/2	9 3/16	10 1/4	35	13 1/8	3 3/4	30 1/2	29	8 3/4	20 7/8	3 9/16	14 1/4
SDAF23252	11 1/2	9 15/16	12	38 1/4	14 3/4	3 3/8	33 1/2	32 3/4	9	23 7/16	4 3/4	15 7/8
SDAF23256	12 1/2	10 3/4	12	38 1/4	14 3/4	3 3/8	33 1/2	32 3/4	9	23 7/16	4 3/8	15 7/8
SDAF23260	13	11 1/2	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	10 1/2	25 3/4	4 1/2	16 3/4
SDAF23264	14	12 1/4	14	43 3/4	17 3/4	5	38 1/4	36 3/4	10 3/4	27 7/8	5 1/8	18 3/4
SDAF23268	15	13	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	11	28 7/8	5	18
SDAF23272	16	13 3/4	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	12 1/4	30 1/2	5 1/2	19 3/4
SDAF23276	17	14 1/2	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	12 1/4	30 1/2	4 3/8	19 3/4
SDAF23280	17 1/2	15 1/4	17	52	21	5 1/2	46 1/8	44 3/8	14 1/2	33 3/4	6	22 1/4
SDAF23284	18 1/2	15 3/4	18	54 1/2	21 5/8	5 3/4	48 7/8	47 1/8	15	35 3/4	6 3/8	22 3/4
SDAF23288	19 1/2	17	18	54 1/2	21 5/8	5 3/4	48 7/8	47 1/8	15	35 3/4	5 7/8	22 3/4

[1]See page D-76, table D-20 for suggested shaft diameter S-2, S-3 tolerances.
[2]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing rings as required.
[3]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
[4]Triple-ring seals for other shaft diameters are available upon special order.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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4 Base Bolts Req'd	Bearing No.	Locknut	Lockwasher	Housing Only[2]	Stabilizing Ring 1 Req'd[3]	Triple Seal 1 Req'd[4]		Assembly Wt.
						S-2	S-3	
in.								lbs.
1 5/8	23152	N052	P52	SDAF3152	A5679	ER832	ER845	1050
1 5/8	23156	N056	P56	SDAF3156	A8967	ER866	ER826	1250
1 5/8	23160	N060	P60	SDAF3160	A8975	ER824	ER832	1350
1 7/8	23164	N064	P64	SDAF3164	A8970	ER876	ER983	1850
2	23168	N068	P68	SDAF3168	A8977	ER847	ER846	2450
2	23172	N072	P72	SDAF3172	A8974	ER809	ER874	2500
2	23176	N076	P76	SDAF3176	A8978	ER811	ER950	2500
2 1/4	23180	N080	P80	SDAF3180	A8979	ER967	ER895	2800
2 1/4	23184	N084	P84	SDAF3184	A8984	ER978	ER907	4300
2 1/4	23188	N088	P88	SDAF3188	A8976	ER926	ER838	4300
2 1/2	23192	N092	P92	SDAF3192	A8990	ER808	ER906	5000
1 5/8	23248	N048	P48	SDAF3248	A5679	ER840	ER923	1100
1 5/8	23252	N052	P52	SDAF3252	A8968	ER832	ER845	1350
1 5/8	23256	N056	P56	SDAF3256	A8975	ER866	ER826	1400
1 7/8	23260	N060	P60	SDAF3260	A8970	ER846	ER856	1900
2	23264	N064	P64	SDAF3264	A8977	ER876	ER983	2500
2	23268	N068	P68	SDAF3268	A8978	ER847	ER846	2650
2 1/4	23272	N072	P72	SDAF3272	A8979	ER965	ER981	2950
2 1/4	23276	N076	P76	SDAF3276	A8980	ER838	ER984	3050
2 1/4	23280	N080	P80	SDAF3280	A8976	ER967	ER895	4500
2 1/2	23284	N084	P84	SDAF3284	A8990	ER978	ER907	5000
2 1/2	23288	N088	P88	SDAF3288	A8988	ER926	ER838	5050

[1]See page D-76, table D-20 for suggested shaft diameter S-2, S-3 tolerances.
[2]Housing Only includes cap, base, cap bolts, triple-ring seals and stabilizing rings as required.
[3]Stabilizing ring used for fixed (FX) block; do not use for float (FL) mounting.
[4]Triple-ring seals for other shaft diameters are available upon special order.
NOTE: Speed ratings are found in the dimension tables on pages D-37 through D-43.

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INCH SHAFT DIAMETERS

TABLE D-20. SUGGESTED S-1, S-2, S-3 INCH SHAFT DIAMETERS

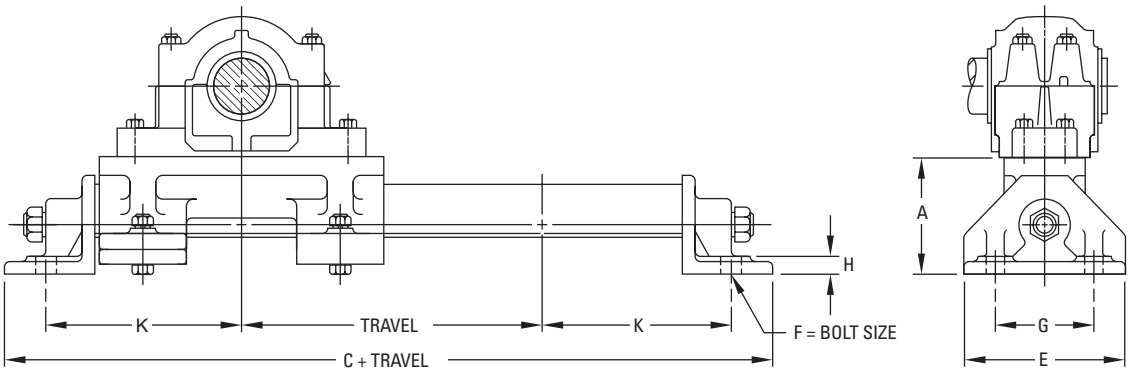
Diameter	Max.	Min.
1 7/16	1.4375	1.4345
1 11/16	1.6875	1.6845
1 7/8	1.8750	1.8720
1 15/16	1.9375	1.9345
2 1/16	2.0625	2.0585
2 1/8	2.1250	2.1210
2 3/16	2.1875	2.1835
2 1/4	2.2500	2.2460
2 3/8	2.3750	2.3710
2 7/16	2.4375	2.4335
2 9/16	2.5625	2.5585
2 5/8	2.6250	2.6210
2 11/16	2.6875	2.6835
2 13/16	2.8125	2.8085
2 7/8	2.8750	2.8710
2 15/16	2.9375	2.9335
3	3.0000	2.9960
3 1/16	3.0625	3.0585
3 3/16	3.1875	3.1835
3 1/4	3.2500	3.2460
3 3/8	3.3750	3.3710
3 7/16	3.4375	3.4335
3 5/8	3.6250	3.6210
3 15/16	3.9375	3.9335
4 1/8	4.1250	4.1200
4 3/16	4.1875	4.1825
4 7/16	4.4375	4.4325
4 1/2	4.5000	4.4950
4 9/16	4.5625	4.5575
4 7/8	4.8750	4.8700
4 15/16	4.9375	4.9325
5 3/16	5.1875	5.1825
5 5/16	5.3125	5.3075
5 7/16	5.4375	5.4325
5 3/4	5.7500	5.7450
5 7/8	5.8750	5.8700
5 15/16	5.9375	5.9325
6 1/16	6.0625	6.0575
6 1/4	6.2500	6.2450
6 7/16	6.4375	6.4325
6 5/8	6.6250	6.6200
6 7/8	6.8750	6.8700
6 15/16	6.9375	6.9325
7	7.0000	6.9950
7 3/16	7.1875	7.1825

Diameter	Max.	Min.
7 1/4	7.2500	7.2450
7 7/16	7.4375	7.4325
7 5/8	7.6250	7.6200
7 13/16	7.8125	7.8075
7 15/16	7.9375	7.9325
8 5/16	8.3125	8.3065
8 3/8	8.3750	8.3690
8 7/16	8.4375	8.4315
8 1/2	8.5000	8.4940
8 3/4	8.7500	8.7440
8 15/16	8.9375	8.9315
9	9.0000	8.9940
9 7/16	9.4375	9.4315
9 1/2	9.5000	9.4940
9 9/16	9.5625	9.5565
9 15/16	9.9375	9.9315
10	10.0000	9.9940
10 7/16	10.4375	10.4305
10 1/2	10.5000	10.4930
10 15/16	10.9375	10.9305
11	11.0000	10.9930
11 7/16	11.4375	11.4305
11 1/2	11.5000	11.4930
11 15/16	11.9375	11.9305
12	12.0000	11.9930
12 7/16	12.4375	12.4295
12 1/2	12.5000	12.4920
12 15/16	12.9375	12.9295
13	13.0000	12.9920
13 7/16	13.4375	13.4295
13 1/2	13.5000	13.4920
13 15/16	13.9375	13.9295
14	14.0000	13.9920
15	15.0000	14.9920
16	16.0000	15.9920
17	17.0000	16.9920
17 1/2	17.5000	17.4920
18 1/2	18.5000	18.4920
19 1/2	19.5000	19.4920
20	20.0000	19.9920

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INCH TU TAKE-UP UNITS

- The same care taken in the selection of stationary pillow blocks also must be applied to selecting the proper take-up unit.
- Load requirements should be carefully evaluated before specifying a particular Timken take-up assembly.
- The pedestal is made of stress-relieved cast iron. End bases are made of ductile iron. The guide rail and screw are steel.
- Units are available with travel lengths from 12 to 36 in., in 6-in. increments.
- Catalog numbers shown here are for the TU take-up unit only; pillow block assemblies must be ordered separately.
- Both two- and four-bolt pedestals are available and must be specified.



TU Take-Up Unit Catalog No.[1]	Pillow Block Housing No. (SAF or SDAF)			A	C	E	Bolt Size F	G	H	K
				in.	in.	in.	in.	in.	in.	in.
TU-3x	515L	–	–	4 7/8	20	6 1/2	5/8	4	3/4	8 1/4
TU-4x	516L	–	517L	5	21 3/4	6 1/2	3/4	4	3/4	9 1/8
TU-5x	518L	–	615L	5 1/4	23	7 1/2	3/4	5	3/4	9 3/4
TU-6x	520L	–	617L	5 1/2	24 3/4	7 1/2	3/4	5	7/8	10 3/4
TU-7x	522L	524L	620L	6	26	9	3/4	6 1/2	1	11 1/2
TU-8x	526L	–	622L	6	28	9	3/4	6 1/2	1	12 1/2
TU-8-1x	528L	–	–	6	29 1/2	9	3/4	6 1/2	1	13 1/4

[1]Enter 12, 18, 24, 30 or 36 to indicate travel in inches.

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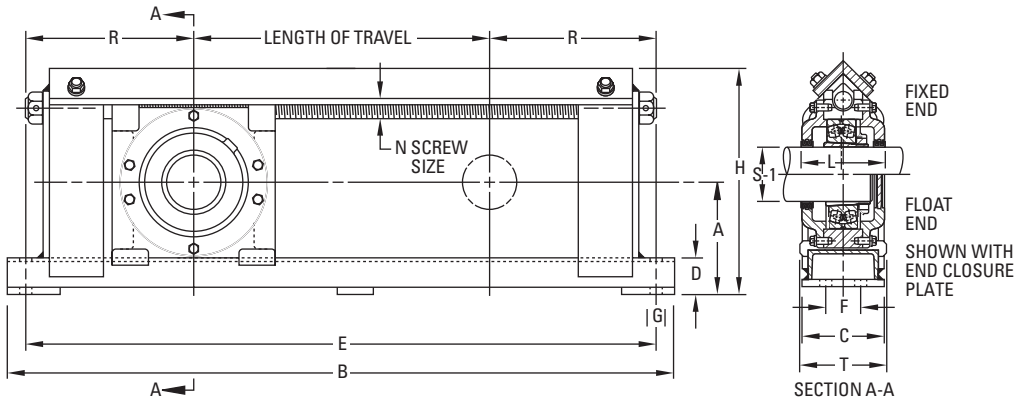
INCH TTU TAKE-UP UNITS

- The same care taken in the selection of stationary pillow blocks also must be applied to selecting the proper take-up unit.
- Load requirements should be carefully evaluated before specifying a particular take-up assembly.
- The frame assembly and adjusting screw of TTU units are made of steel.
- The bearing housing is cast iron. Steel or ductile iron housings are additional options.
- Units include housing for adapter-mounted bearings only, for either fixed or float position (be sure to specify).
- One stabilizing ring is included for fixed-position assemblies.
- Sealing is triple-ring labyrinth or end closures.
- For extremely contaminated environments, the DUSTAC seal is suggested. See page D-80 for more information.

Take-Up Unit and Frame No. (Travel in Bold)	Shaft Dia. S-1[1]	A	B	C	D	E	F	Bolt Size G	H	L	N	R	T
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	
TTU-55-**12**	1 15/16	4 5/8	28 1/2	3 1/2	1 3/4	26 1/2	–	5/8	9	4	3/4	7 1/4	4
TTU-55-**18**		4 5/8	34 1/2	3 1/2	1 3/4	32 1/2	–	5/8	9	4	3/4	7 1/4	4
TTU-55-**24**		4 5/8	40 1/2	3 1/2	1 3/4	38 1/2	–	5/8	9	4	3/4	7 1/4	4
TTU-65-**12**	2 3/16	5	29 1/2	3 1/2	1 3/4	27 1/2	–	5/8	10	4 1/2	3/4	7 3/4	4
TTU-65-**18**		5	35 1/2	3 1/2	1 3/4	33 1/2	–	5/8	10	4 1/2	3/4	7 3/4	4
TTU-65-**24**		5	41 1/2	3 1/2	1 3/4	39 1/2	–	5/8	10	4 1/2	3/4	7 3/4	4
TTU-75-**6**	2 7/16	5 3/16	24 1/2	3 1/2	1 3/4	22 1/2	–	3/4	10 1/2	4 1/2	7/8	8 1/4	4
TTU-75-**12**		5 3/16	30 1/2	3 1/2	1 3/4	28 1/2	–	3/4	10 1/2	4 1/2	7/8	8 1/4	4
TTU-75-**18**		5 3/16	36 1/2	3 1/2	1 3/4	34 1/2	–	3/4	10 1/2	4 1/2	7/8	8 1/4	4
TTU-75-**24**		5 3/16	42 1/2	3 1/2	1 3/4	40 1/2	–	3/4	10 1/2	4 1/2	7/8	8 1/4	4
TTU-75-**30**		5 3/16	48 1/2	3 1/2	1 3/4	46 1/2	–	3/4	10 1/2	4 1/2	7/8	8 1/4	4
TTU-85-**6**	2 15/16	6	26 1/2	4 5/8	2	24 1/2	2	5/8	12 1/4	4 3/4	1	9 1/4	5
TTU-85-**12**		6	32 1/2	4 5/8	2	30 1/2	2	5/8	12 1/4	4 3/4	1	9 1/4	5
TTU-85-**18**		6	38 1/2	4 5/8	2	36 1/2	2	5/8	12 1/4	4 3/4	1	9 1/4	5
TTU-85-**24**		6	44 1/2	4 5/8	2	42 1/2	2	5/8	12 1/4	4 3/4	1	9 1/4	5
TTU-85-**30**		6	50 1/2	4 5/8	2	48 1/2	2	5/8	12 1/4	4 3/4	1	9 1/4	5
TTU-100-**12**	3 7/16	6 5/8	34 1/4	4 5/8	2	32	2	3/4	13 7/8	6	1 1/8	10	5 1/2
TTU-100-**18**		6 5/8	40 1/4	4 5/8	2	38	2	3/4	13 7/8	6	1 1/8	10	5 1/2
TTU-100-**24**		6 5/8	46 1/4	4 5/8	2	44	2	3/4	13 7/8	6	1 1/8	10	5 1/2
TTU-100-**30**		6 5/8	52 1/4	4 5/8	2	50	2	3/4	13 7/8	6	1 1/8	10	5 1/2
TTU-110-**12**	3 15/16	7 3/4	38 1/2	5 5/8	2 1/4	36	2 1/2	3/4	16 1/4	6 1/2	1 1/4	12	7
TTU-110-**18**		7 3/4	44 1/2	5 5/8	2 1/4	42	2 1/2	3/4	16 1/4	6 1/2	1 1/4	12	7
TTU-110-**24**		7 3/4	50 1/2	5 5/8	2 1/4	48	2 1/2	3/4	16 1/4	6 1/2	1 1/4	12	7
TTU-110-**30**		7 3/4	56 1/2	5 5/8	2 1/4	54	2 1/2	3/4	16 1/4	6 1/2	1 1/4	12	7
TTU-110-**36**		7 3/4	62 1/2	5 5/8	2 1/4	60	2 1/2	3/4	16 1/4	6 1/2	1 1/4	12	7
TTU-130-**12**	4 7/16	8 5/8	45 3/4	8 3/4	2 3/4	40 3/4	5	1 1/8	18 7/8	7 1/4	2	14 3/8	10
TTU-130-**18**		8 5/8	51 3/4	8 3/4	2 3/4	46 3/4	5	1 1/8	18 7/8	7 1/4	2	14 3/8	10
TTU-130-**24**		8 5/8	57 3/4	8 3/4	2 3/4	52 3/4	5	1 1/8	18 7/8	7 1/4	2	14 3/8	10
TTU-130-**30**		8 5/8	63 3/4	8 3/4	2 3/4	58 3/4	5	1 1/8	18 7/8	7 1/4	2	14 3/8	10
TTU-140-**12**	4 15/16	9 1/2	49 1/2	9 3/4	3	44 1/2	5 1/2	1 1/4	20 3/8	7 1/2	2 1/4	16 1/4	11
TTU-140-**18**		9 1/2	55 1/2	9 3/4	3	50 1/2	5 1/2	1 1/4	20 3/8	7 1/2	2 1/4	16 1/4	11
TTU-140-**24**		9 1/2	61 1/2	9 3/4	3	56 1/2	5 1/2	1 1/4	20 3/8	7 1/2	2 1/4	16 1/4	11
TTU-140-**30**		9 1/2	67 1/2	9 3/4	3	62 1/2	5 1/2	1 1/4	20 3/8	7 1/2	2 1/4	16 1/4	11

[1]See page D-76, table D-20 for suggested shaft diameter S-2, S-3 tolerances.
[2]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[3]Stabilizing ring is used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in dimension tables on pages D-37 through D-43.

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Bearing No.	Adapter Assembly No.[2]	Stabilizing Ring 1 Req'd[3]	Triple Seal 2 Req'd	Approx. Wt.
				lbs.
22211K	SNW-11	SR-11-0	LER24	55
22211K	SNW-11	SR-11-0	LER24	60
22211K	SNW-11	SR-11-0	LER24	65
22213K	SNW-13	SR-13-0	LER29	60
22213K	SNW-13	SR-13-0	LER29	65
22213K	SNW-13	SR-13-0	LER29	70
22215K	SNW-15	SR-15-0	LER37	65
22215K	SNW-15	SR-15-0	LER37	70
22215K	SNW-15	SR-15-0	LER37	75
22215K	SNW-15	SR-15-0	LER37	80
22215K	SNW-15	SR-15-0	LER37	85
22217K	SNW-17	SR-17-14	LER53	95
22217K	SNW-17	SR-17-14	LER53	100
22217K	SNW-17	SR-17-14	LER53	105
22217K	SNW-17	SR-17-14	LER53	110
22217K	SNW-17	SR-17-14	LER53	115
22220K	SNW-20	SR-20-17	LER102	140
22220K	SNW-20	SR-20-17	LER102	145
22220K	SNW-20	SR-20-17	LER102	150
22220K	SNW-20	SR-20-17	LER102	155
22222K	SNW-22	SR-22-19	LER109	200
22222K	SNW-22	SR-22-19	LER109	210
22222K	SNW-22	SR-22-19	LER109	220
22222K	SNW-22	SR-22-19	LER109	230
22222K	SNW-22	SR-22-19	LER109	240
22226K	SNW-26	SR-26-0	LER117	360
22226K	SNW-26	SR-26-0	LER117	380
22226K	SNW-26	SR-26-0	LER117	400
22226K	SNW-26	SR-26-0	LER117	420
22228K	SNW-28	SR-28-0	LER122	460
22228K	SNW-28	SR-28-0	LER122	480
22228K	SNW-28	SR-28-0	LER122	510
22228K	SNW-28	SR-28-0	LER122	530

[1]See page D-76, table D-20 for suggested shaft diameter S-2, S-3 tolerances.
[2]Includes sleeve, locknut and lockwasher. Add shaft size to order.
[3]Stabilizing ring is used for fixed (FX) block; do not use for float (FL) mounting.
NOTE: Speed ratings are found in dimension tables on pages D-37 through D-43.

08-19-13 DRAFT

INCH DUSTAC™ SHAFT SEAL

- Suggested for pillow blocks used in extremely contaminated environments, such as taconite mines.
- Provides protection against residual and airborne contaminants better than the triple-labyrinth shaft seal.
- Contributes significantly to extending service bearing life; reduces costs by helping prevent premature bearing damage.
- Because of its unique design, no special finish is required on the shaft. DUSTAC utilizes a V-shaped nitrile ring that rotates with the shaft and applies pressure to the cartridge face to help exclude contaminates.

TABLE D-21.

Pillow Block Housing No.		Shaft Dia. S-1	Assembly Standout B	DUSTAC™ Seal Assembly	V-Ring Seal	O-Ring	End Plug
500	600						
515	615	2 7/16	59/64	DV-37	V-60-A	2-228	EPS-4
516	616	2 11/16	59/64	DV-44	V-65-A	2-231	EPS-5
517	–	2 15/16	1	DV-53	V-75-A	2-230	EPS-6
518	–	3 3/16	1	DV-69	V-80-A	2-235	EPS-9
520	620	3 7/16	1	DV-102	V-85-A	2-234	EPS-11
522	622	3 15/16	1	DV-109	V-100-A	2-239	EPS-13
524	624	4 3/16	1 1/16	DV-113	V-110-A	2-238	EPS-14
526	626	4 7/16	1 1/16	DV-117	V-110-A	2-242	EPS-15
528	628	4 15/16	1 1/16	DV-122	V-130-A	2-244	EPS-16
530	630	5 3/16	1 1/16	DV-125	V-130-A	2-247	EPS-17
532	632	5 7/16	1 1/16	DV-130	V-140-A	2-249	EPS-18
534	634	5 15/16	1 1/16	DV-140	V-150-A	2-253	EPS-20
536	636	6 7/16	1 9/64	DV-148	V-160-A	2-259	EPS-21
538	638	6 15/16	1 9/64	DV-155	V-180-A	2-259	EPS-22
540	640	7 3/16	1 9/64	DV-159	V-180-A	2-259	EPS-23
544	–	7 15/16	1 15/32	DV-167	V-200-A	2-262	EPS-25

ORDER INSTRUCTIONS

- Shaft seal may be ordered in place of the standard LER triple-ring seals supplied with the pillow blocks listed. They also are available to retrofit existing installations.
- To order any pillow block housings with DUSTAC shaft seal on both sides, add the suffix DV to the number (e.g., SAF2522DV).
- To order pillow block housings with DUSTAC shaft seal and one end closed, add the suffix DC to the number (e.g., SAF22522DC).
- Standard sizes of DUSTAC shaft seals are shown in the table. Other sizes are available upon request.

INSTALLATION PROCEDURE

1. Check shaft diameters to print specification. Remove any burrs or sharp edges. Be sure that the shaft surface is clean and dry beyond the area of seal location.
2. Expand the V-ring seal over the shaft to the approximate inboard position (reference dimension B in the tables). *Make sure the lip of the seal faces the bearing.*
3. Slide the seal cartridge onto the shaft until the V-ring fits into its cavity.
4. Mount the bearing, sleeve, lockwasher and locknut in a normal manner and adjust for internal clearance.
5. If both ends have seals, repeat steps 2 and 3 with the V-ring going on last with its lip facing the bearing.
6. Thoroughly clean the housing base and remove any paint or burrs from the mating surfaces of the housing cap.
7. Lower shaft, bearing and seals into the housing base, taking care to guide the seals into the seal grooves.
8. On each shaft, there must be only one fixed bearing. If the bearing is to be fixed, the stabilizing ring can be inserted between the bearing outer ring and the housing shoulder on the locknut side of the bearing. All other bearings on this shaft should be centered in the housing.
9. The upper half of the housing or cap should be thoroughly cleaned and checked for burrs. Place it over the bearing and seals. The dowel pins will align the cap to the base.
10. After the cap bolts are tightened, it is most important to position the V-ring seal to its proper fitted width. This is accomplished by moving the seal until it is flush with the outside face of the cavity. This provides proper compression of the lip against the cartridge face.

NOTE

Housing caps and bases are not interchangeable.

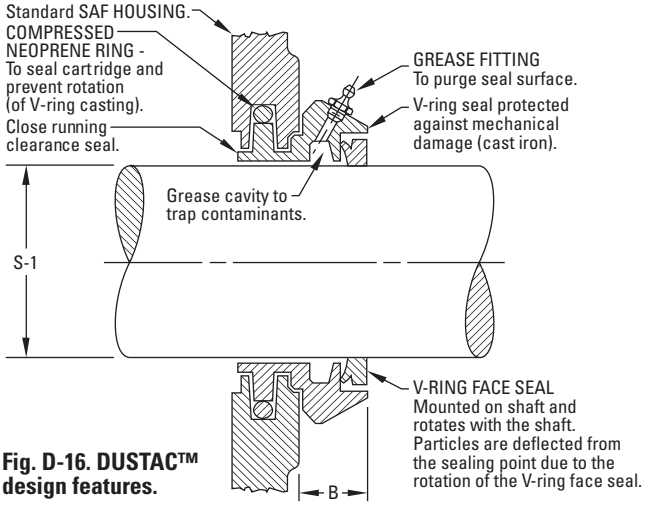


Fig. D-16. DUSTAC™ design features.

08-19-13 DRAFT

INCH SINE BAR GAGES

- Tapered-bore, antifriction bearings are mounted either on adapter sleeves or on tapered shaft seats.
- In cases where tapered bore bearings are mounted directly on the shaft, the shaft must conform to the tapered bore of the bearing to ensure a proper fit. If a proper fit is not achieved, the results could be:
  - Turning of the bearing inner race on the shaft.
  - Uneven loading of the bearing.
  - Severe inner race hoop stress.
  - Insufficient support (back-up) of the inner race on the shaft.
- All of these conditions could lead to premature bearing wear. Therefore, the manufacture, maintenance and measurement of accurate shaft tapers is important.
- There are two accepted ways of measuring tapered shafts: ring gages and sine bar gages.
- Precision measurement of tapered shafts is difficult with ring gages and may be impossible in the case of large shafts where gages are large, cumbersome and heavy.
- Sine bar gages provide an accurate and easy method of measurement.
- Lightweight, and easy to handle and use, sine bar gages achieve precise gaging of the shaft size and taper.
- A complete set for measurement of 1:12 shaft tapers consists of 3 in., 4 in., 5½ in., 7 in., 10 in. and 14 in. sine bar gages, sine bar saddle no. T-5491-C, web clamp no. T-5489-A and a wooden box no. T-5224-C. A complete set for 1:30 shaft tapers consists of 4 in., 6 in., 8 in. and 12 in. sine bar gages.
- Sine bars can be purchased individually or in any combination of sizes to meet your individual needs. Use tables D-22 and D-23 to select appropriate sine bar part number.
- All sine bars require a sine bar saddle and web clamp. A wooden box is optional.
- For information on the use of sine bars, prices and delivery, consult your Timken engineer.

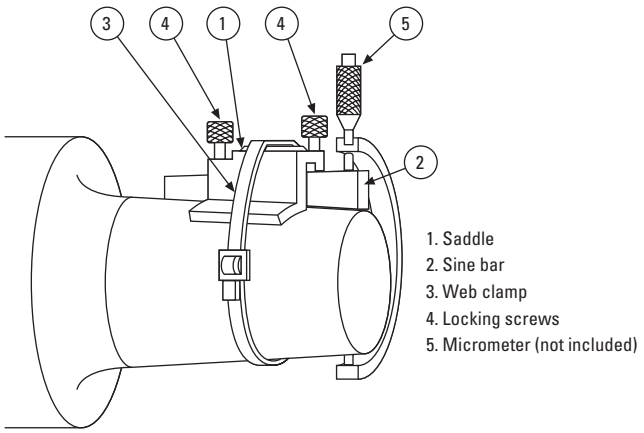


Fig. D-17. Parts of a sine gage.

TABLE D-22.

Part No.	Size	For Bearings
	in.	
T-3071-C	3.0000	22232K to 22240K
	3.0000	22322K to 22328K
	3.0000	23040K to 23048K
	3.0000	23130K to 23136K
	3.0000	23226K to 23230K
		23960K to 23972K
T-3072-C	4.0000	22248K to 22256K
	4.0000	22330K to 22340K
	4.0000	23052K to 23076K
	4.0000	23138K to 23148K
	4.0000	23232K to 23240K
		23976K to 239/560K
T-3073-C	5.5000	22260K to 22264K
	5.5000	23080K to 230/500K
	5.5000	23152K to 23164K
	5.5000	23244K to 23256K
		239/600K to 239/710K

NOTE: All sine bars require a sine bar saddle, T-5491-C, and a web clamp, T-5489-A.

TABLE D-23.

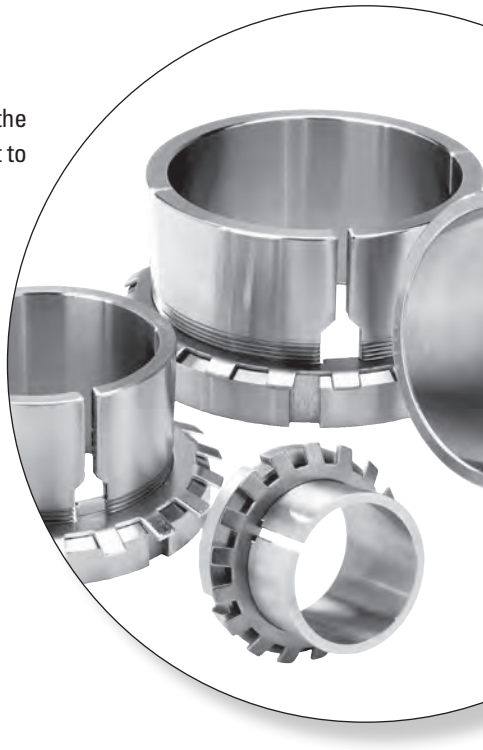
Part No.	Size	For Bearings
	in.	
T-3074-C	7.0000	230/530K to 230/750K
	7.0000	23168K to 23196K
	7.0000	23260K to 23276K
		239/750K to 239/1120K
T-3075-C	10.0000	230/800K to 230/1180
	10.0000	231/500K to 231/710K
	10.0000	23280K to 232/530K
		230/1250 and up
T-3076-C	14.0000	231/750K and up
	14.0000	232/560K and up
		239/118K and up
T-5476-C	4.0000	24040K to 24056K
	4.0000	24132K to 24144K
T-5477-C	6.0000	24060K to 24084K
	6.0000	24148K to 24160K
T-5478-C	8.0000	24089K to 240/630K
	8.0000	24164K to 24192K
T-5479-C	12.0000	240/670K and up
	12.0000	24196K and up

NOTE: The table above represents the sine bar sizes developed for a full range of tapered bore bearings with a 1:12 and a 1:30 taper. Additional sizes are available to fit a variety of width-and-taper combinations. Consult your local Timken engineer for availability.

08-19-13 DRAFT

08-19-13 DRAFT

SAF SPHERICAL ROLLER BEARING INCH ACCESSORIES



Spherical roller bearing accessories are manufactured to the same quality standards as our bearings, ensuring a secure fit to straight and stepped shafts.

- **Sizes**: Standard accessories for use with SAF assemblies are available in inch shaft sizes up to 1000 mm (40 in.). Accessories for metric shaft sizes also are available upon request.
- **Features**: Extensive product range, including hydraulic assist, for integration into a full range of industrial applications.
- **Benefits**: Supports full range of installation and removal needs, minimizing the chance for damage to the bearing.

Nomenclature. D-84
Accessories Prefixes and Suffixes. D-85
Inch Accessories – Pull-Type Sleeves. D-86
Inch Accessories – Push-Type Sleeves. D-96
Inch Accessories – Locknuts and Lockwashers D-100
Inch Accessories – Locknuts and Lockplates D-104
Inch HMVC Hydraulic Nuts D-108

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NOMENCLATURE

Timken provides accessories for your every need. To complement our line of Timken® spherical roller bearings, we offer bearing sleeves and locking devices in a wide range of sizes. These accessories are manufactured to the same quality standards as our bearings, ensuring a secure fit to straight and stepped shafts. Available in sizes up to 1000 mm (39.3701 in.), bearing sleeves are available in two distinct designs: assembled adapter sleeves and withdrawal sleeves.

ADAPTER SLEEVES

Timken adapter sleeves are used in conjunction with a nut and locking device to mount a tapered bore bearing onto a straight shaft using a pull-type fit. Smaller size assemblies (20 mm [0.78 in.] - 200 mm [12 in.] shaft) commonly use simple nuts, whereas larger assemblies (sizes >200 mm [12 in.]) may use HMV hydraulic nuts to assist in mounting. Table D-24 outlines our part number nomenclature, which is consistent with world standards for adapter sleeves.

TABLE D-24. INCH ADAPTER SLEEVES (SNW, SNP) FOR INCH SHAFT SIZES ARE SUPPLIED WITH CORRESPONDING LOCKNUT AND LOCKING DEVICE

Assembly	Sleeve	Locknut	Locking Device
SNW	S	N, AN	W
SNP	S	N	P

NOTE: SNW assembly consists of a sleeve, locknut and lockwasher.
NOTE: SNP assembly consists of a sleeve, locknut and lockplate.
NOTE: Metric accessories are available. Please reference the Timken Spherical Roller Bearing Catalog (order no. 10446).

WITHDRAWAL SLEEVES

Withdrawal sleeves feature a push-type mounting arrangement and a locking device (i.e., locknut or lockplate) to secure a bearing to a shaft. This design is not as widely used as the adapter sleeve assembly, and it does require the use of a specially designed dismounting nut. Timken's part number nomenclature for withdrawal sleeves also conforms to industry-accepted standards. Nuts are not supplied with the withdrawal sleeve and must be ordered separately. The dismounting of large assemblies can be eased by using a hydraulic nut (HMV).

TABLE D-25. INCH WITHDRAWAL SLEEVE FOR INCH SHAFT SIZES

Sleeve	Locknut	Lockwasher/Plate	Dismounting Nut
SK	N, AN	W, P	AN, ARN, RN, N

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LOCKING DEVICE

Timken offers a wide range of locknuts to locate bearing assemblies on application shafts. Sometimes referred to as shaft or withdrawal nuts, they are used to secure the assembly onto, and sometimes aid with the removal from the shaft.

LOCKWASHERS (W)

Locking washers are designed to secure the relative movement of a properly positioned locknut, so that a bearing and adapter sleeve remain tightly fitted to a shaft or a bearing remains secure against a shaft shoulder. The tab in the bore of the washer engages a keyway in the shaft or slot in the adapter sleeve. There are tabs on the O.D. of the washer that can be bent over into slots on the circumference of the locknut. Locking washers are used with locknuts with inch dimensions in the N and AN series.

LOCKPLATES (P)

Lockplates are bolted onto the outboard face of the locknut and fit into a keyway machined in the shaft or a slot in the adapter sleeve.

- P series are mounted on inch shafts sizes with N locknuts.

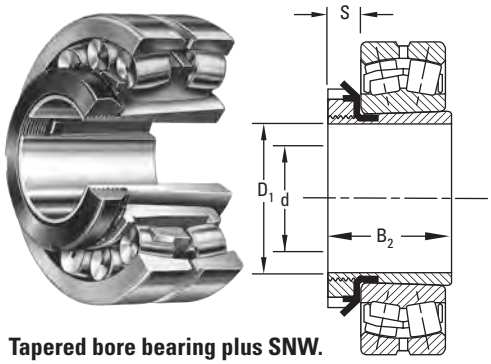
To learn more about our spherical roller bearing accessories, contact your Timken engineer. Standard suffixes and prefixes are found on page D-85.

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INCH ACCESSORIES – PULL-TYPE SLEEVES

SNW/SNP – PULL-TYPE SLEEVE, LOCKNUT, LOCKWASHER/LOCKPLATE ASSEMBLIES

- The table below shows dimensions for adapter assemblies and components used in the mounting of tapered bore bearings on shafts.
- SNW assembly consists of a sleeve, locknut and lockwasher.
- SNP assembly consists of a sleeve, locknut and lockplate.



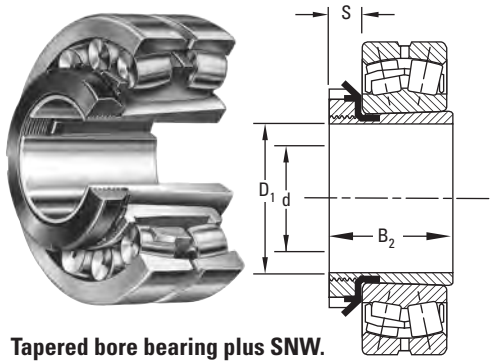
Tapered bore bearing plus SNW.

Bearing No.[1]	Accessory Numbers				Shaft Dimensions		Adapter Dimensions			SNW/SNP Assembly Wt.
	Assembly	Sleeve	Locknut	Lockwasher Lockplate	Diameter d	Tolerance[2]	B_2	S	D_1	
					in.	in.	in.	in.	in.	lbs.
SERIES 222K										
22207K	**SNW-07 x 1 3/16**	**S-07**	**N-07**	**W-07**	**1 3/16**	**-0.003**	**1 29/64**	**29/64**	**2 1/16**	**0.32**
22208K	**SNW-08 x 1 5/16**	**S-08**	**N-08**	**W-08**	**1 5/16**	**-0.003**	**1 21/32**	**29/64**	**2 1/4**	**0.42**
	SNW-09 x 1 3/8	S-09 x 1 3/8			1 3/8					
22209K	**SNW-09 x 1 7/16**	**S-09**	**N-09**	**W-09**	**1 7/16**	**-0.003**	**1 37/64**	**1/2**	**2 17/32**	**0.6**
	SNW-09 x 1 1/2	S-09 x 1 1/2			1 1/2					
	SNW-10 x 1 5/8	S-10 x 1 5/8			1 5/8					
22210K	**SNW-10 x 1 11/16**	**S-10**	**N-10**	**W-10**	**1 11/16**	**-0.003**	**1 49/64**	**9/16**	**2 11/16**	**0.7**
	SNW-10 x 1 3/4	S-10 x 1 3/4			1 3/4					
	SNW-11 x 1 7/8	S-11 x 1 7/8			1 7/8					
22211K	**SNW-11 x 1 15/16**	**S-11**	**N-11**	**W-11**	**1 15/16**	**-0.003**	**1 27/32**	**9/16**	**2 31/32**	**0.8**
	SNW-11 x 2	S-11 x 2			2					
22212K	**SNW-12 x 2 1/16**	**S-12**	**N-12**	**W-12**	**2 1/16**	**-0.004**	**1 63/64**	**19/32**	**3 5/32**	**1.1**
	SNW-13 x 2 1/8	S-13 x 2 1/8			2 1/8					
22213K	**SNW-13 x 2 3/16**	**S-13**	**N-13**	**W-13**	**2 3/16**	**-0.004**	**2 3/32**	**5/8**	**3 3/8**	**1.4**
	SNW-13 x 2 1/4	S-13 x 2 1/4			2 1/4					
22214K	**SNW-14 x 2 5/16**	**S-14**	**N-14**	**W-14**	**2 5/16**	**-0.004**	**2 11/64**	**5/8**	**3 5/8**	**1.8**
	SNW-15 x 2 3/8	S-15 x 2 3/8			2 3/8					
22215K	**SNW-15 x 2 7/16**	**S-15**	**AN-15**	**W-15**	**2 7/16**	**-0.004**	**2 19/64**	**43/64**	**3 7/8**	**2.0**
	SNW-15 x 2 1/2	S-15 x 2 1/2			2 1/2					
	SNW-16 x 2 5/8	S-16 x 2 5/8			2 5/8					
22216K	**SNW-16 x 2 11/16**	**S-16**	**AN-16**	**W-16**	**2 11/16**	**-0.004**	**2 3/8**	**43/64**	**4 5/32**	**2.4**
	SNW-16 x 2 3/4	S-16 x 2 3/4			2 3/4					
	SNW-17 x 2 13/16	S-17 x 2 13/16			2 13/16					
	SNW-17 x 2 7/8	S-17 x 2 7/8			2 7/8					
22217K	**SNW-17 x 2 15/16**	**S-17**	**AN-17**	**W-17**	**2 15/16**	**-0.004**	**2 31/64**	**45/64**	**4 13/32**	**3.0**
	SNW-17 x 3	S-17 x 3			3					
	SNW-18 x 3 1/16	S-18 x 3 1/16			3 1/16					
	SNW-18 x 3 1/8	S-18 x 3 1/8			3 1/8					
22218K	**SNW-18 x 3 3/16**	**S-18**	**AN-18**	**W-18**	**3 3/16**	**-0.004**	**2 41/64**	**25/32**	**4 21/32**	**3.0**
	SNW-18 x 3 1/4	S-18 x 3 1/4			3 1/4					
22219K	**SNW-19 x 3 5/16**	**S-19**	**AN-19**	**W-19**	**3 5/16**	**-0.004**	**2 49/64**	**13/16**	**4 15/16**	**3.3**
	SNW-20 x 3 3/8	S-20 x 3 3/8			3 3/8					

[1]Bold shaft sizes are standard. When ordering non-standard accessories, specify shaft size.
[2]Tolerance range is from +0 to value listed.

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Tapered bore bearing plus SNW.

Continued from previous page.

Bearing No.[1]	Accessory Numbers				Shaft Dimensions		Adapter Dimensions			SNW/SNP Assembly Wt.
	Assembly	Sleeve	Locknut	Lockwasher Lockplate	Diameter d	Tolerance[2]	B_2	S	D_1	
					in.	in.	in.	in.	in.	lbs.
22220K	**SNW-20 x 3 7/16**	**S-20**	**AN-20**	**W-20**	**3 7/16**	**-0.004**	**2 7/8**	**27/32**	**5 3/16**	**4.4**
	SNW-20 x 3 1/2	S-20 x 3 1/2			3 1/2					
	SNW-22 x 3 13/16	S-22 x 3 13/16			3 13/16					
	SNW-22 x 3 7/8	S-22 x 3 7/8			3 7/8					
22222K	**SNW-22 x 3 15/16**	**S-22**	**AN-22**	**W-22**	**3 15/16**	**-0.004**	**3 13/64**	**29/32**	**5 23/32**	**5.0**
	SNW-22 x 4	S-22 x 4			4					
	SNW-24 x 4 1/16	S-22 x 4 1/16			4 1/16					
	SNW-24 x 4 1/8	S-22 x 4 1/8			4 1/8					
22224K	**SNW-24 x 4 3/16**	**S-24**	**AN-24**	**W-24**	**4 3/16**	**-0.005**	**3 15/32**	**15/16**	**6 1/8**	**6.7**
	SNW-24 x 4 1/4	S-24 x 4 1/4			4 1/4					
	SNW-26 x 4 5/16	S-26 x 4 5/16			4 5/16					
	SNW-26 x 4 3/8	S-26 x 4 3/8			4 3/8					
22226K	**SNW-26 x 4 7/16**	**S-26**	**AN-26**	**W-26**	**4 7/16**	**-0.005**	**3 49/64**	**1**	**6 3/4**	**8.6**
	SNW-26 x 4 1/2	S-26 x 4 1/2			4 1/2					
	SNW-28 x 4 13/16	S-28 x 4 13/16			4 13/16					
	SNW-28 x 4 7/8	S-28 x4 7/8			4 7/8					
22228K	**SNW-28 x 4 15/16**	**S-28**	**AN-28**	**W-28**	**4 15/16**	**-0.005**	**3 63/64**	**1 1/16**	**7 3/32**	**10.3**
	SNW-28 x 5	S-28 x 5			5					
	SNW-30 x 5 1/8	S-30 x 5 1/8			5 1/8					
22230K	**SNW-30 x 5 3/16**	**S-30**	**AN-30**	**W-30**	**5 3/16**	**-0.005**	**4 15/64**	**1 1/8**	**7 11/16**	**13.5**
	SNW-30 x 5 1/4	S-30 x 5 1/4			5 1/4					
	SNW-32 x 5 3/8	S-30 x 5 3/8			5 3/8					
22232K	**SNW-32 x 5 7/16**	**S-32**	**AN-32**	**W-32**	**5 7/16**	**-0.005**	**4 37/64**	**1 3/16**	**8 1/16**	**15.6**
	SNW-32 x 5 1/2	S-32 x 5 1/2			5 1/2					
	SNW-34 x 5 13/16	S-34 x 5 13/16			5 13/16					
	SNW-34 x 5 7/8	S-34 x 5 7/8			5 7/8					
22234K	**SNW-34 x 5 15/16**	**S-34**	**AN-34**	**W-34**	**5 15/16**	**-0.005**	**4 27/32**	**1 7/32**	**8 21/32**	**19.4**
	SNW-34 x 6	S-34 x 6			6					
	SNW-36 x 6 15/16	S-36 x 6 15/16			6 5/16					
	SNW-36 x 6 3/8	S-36 x 6 3/8			6 3/8					
22236K	**SNW-36 x 6 7/16**	**S-36**	**AN-36**	**W-36**	**6 7/16**	**-0.005**	**5 1/32**	**1 1/4**	**9 1/16**	**20.5**
	SNW-36 x 6 1/2	S-36 x 6 1/2			6 1/2					

[1]Bold shaft sizes are standard. When ordering non-standard accessories, specify shaft size.
[2]Tolerance range is from +0 to value listed.

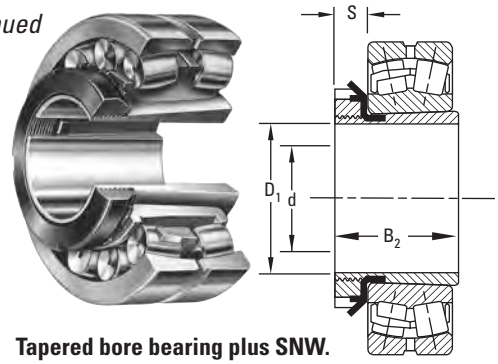
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INCH ACCESSORIES – PULL-TYPE SLEEVES – *continued*

SNW/SNP – PULL-TYPE SLEEVE, LOCKNUT, LOCKWASHER/LOCKPLATE ASSEMBLIES

- The table below shows dimensions for adapter assemblies and components used in the mounting of tapered bore bearings on shafts.
- SNW assembly consists of a sleeve, locknut and lockwasher.
- SNP assembly consists of a sleeve, locknut and lockplate.



Tapered bore bearing plus SNW.

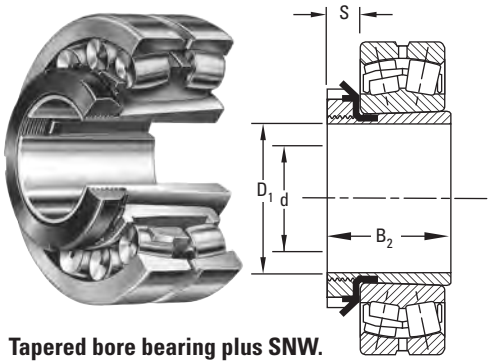
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Bearing No.[1]	Accessory Numbers				Shaft Dimensions		Adapter Dimensions			SNW/SNP Assembly Wt.
	Assembly	Sleeve	Locknut	Lockwasher Lockplate	Diameter d	Tolerance[2]	B_2	S	D_1	
					in.	in.	in.	in.	in.	lbs.
	SNW-38 x 6 13/16	S-38 x 6 13/16			6 13/16					
	SNW-38 x 6 7/8	S-38 x 6 7/8			6 7/8					
22238K	**SNW-38 x 6 15/16**	**S-38**	**AN-38**	**W-38**	**6 15/16**	**-0.005**	**5 17/64**	**1 9/32**	**9 15/32**	**23.4**
	SNW-38 x 7	S-38 x 7			7					
	SNW-40 x 7 1/8	S-40 x 7 1/8			7 1/8					
22240K	**SNW-40 x 7 3/16**	**S-40**	**AN-40**	**W-40**	**7 3/16**	**-0.005**	**5 31/64**	**1 11/32**	**9 27/32**	**30.5**
	SNW-40 x 7 1/4	S-40 x 7 1/4			7 1/4					
	SNW-44 x 7 13/16	S-44 x 7 13/16			7 13/16					
	SNW-44 x 7 7/8	S-44 x 7 7/8			7 7/8					
22244K	**SNW-44 x 7 15/16**	**S-44**	**N-044**	**W-44**	**7 15/16**	**-0.005**	**5 29/32**	**1 3/8**	**11**	**33.0**
	SNW-44 x 8	S-44 x 8			8					
22248K	**SNP-48 x 8 7/16**	**S-48**	**N-048**	**P-48**	**8 7/16**	**-0.006**	**6 5/8**	**1 23/64**	**11 7/16**	**37.5**
	SNP-48 x 8 15/16	S-48 x 8 15/16			8 15/16					
22252K	**SNP-52 x 9 7/16**	**S-52**	**N-052**	**P-52**	**9 7/16**	**-0.006**	**7 37/64**	**1 27/64**	**12 3/16**	**44.0**
SERIES 230K										
	SNW-3024 x 4 1/16	S-3024 x 4 1/16			4 1/16					
	SNW-3024 x 4 1/8	S-3024 x 4 1/8			4 1/8					
23024K	**SNW-3024 x 4 3/16**	**S-3024**	**N-024**	**W-024**	**4 3/16**	**-0.005**	**2 61/64**	**13/16**	**5 11/16**	**6.1**
	SNW-3024 x 4 1/4	S-3024 x 4 1/4			4 1/4					
	SNW-3026 x 4 5/16	S-3024 x 4 5/16			4 5/16					
	SNW-3026 x 4 3/8	S-3024 x 4 3/8			4 3/8					
23026K	**SNW-3026 x 4 7/16**	**S-3026**	**N-026**	**W-026**	**4 7/16**	**-0.005**	**3 15/64**	**7/8**	**6 1/8**	**7.5**
	SNW-3026 x 4 1/2	S-3026 x 4 1/2			4 1/2					
	SNW-3028 x 4 13/16	S-3028 x 4 13/16			4 13/16					
	SNW-3028 x 4 7/8	S-3028 x 4 7/8			4 7/8					
23028K	**SNW-3028 x 4 15/16**	**S-3028**	**N-028**	**W-028**	**4 15/16**	**-0.005**	**3 11/32**	**15/16**	**6 1/2**	**8.4**
	SNW-3030 x 5 1/8	S-3030 x 5 1/8			5 1/8					
23030K	**SNW-3030 x 5 3/16**	**S-3030**	**N-030**	**W-030**	**5 3/16**	**-0.005**	**3 31/64**	**31/32**	**7 1/8**	**9.8**
	SNW-3030 x 5 1/4	S-3030 x 5 1/4			5 1/4					
	SNW-3032 x 5 3/8	S-3032 x 5 3/8			5 3/8					
23032K	**SNW-3032 x 5 7/16**	**S-3032**	**N-032**	**W-032**	**5 7/16**	**-0.005**	**3 23/32**	**1 1/32**	**7 1/2**	**11.8**
	SNW-3032 x 5 1/2	S-3032 x 5 1/2			5 1/2					

[1]Bold shaft sizes are standard. When ordering non-standard accessories, specify shaft size.
[2]Tolerance range is from +0 to value listed.

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Tapered bore bearing plus SNW.

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Bearing No.[1]	Accessory Numbers				Shaft Dimensions		Adapter Dimensions			SNW/SNP Assembly Wt.
	Assembly	Sleeve	Locknut	Lockwasher Lockplate	Diameter d	Tolerance[2]	B_2	S	D_1	
					in.	in.	in.	in.	in.	lbs.
	SNW-3034 x 5 13/16	S-3034 x 5 13/16			5 13/16					
	SNW-3034 x 5 7/8	S-3034 x 5 7/8			5 7/8					
23034K	**SNW-3034 x 5 15/16**	**S-3034**	**N-034**	**W-034**	**5 15/16**	**-0.005**	**4 1/64**	**1 1/16**	**7 7/8**	**13.3**
	SNW-3034 x 6	S-3034 x 6			6					
	SNW-3036 x 6 5/16	S-3036 x 6 5/16			6 5/16					
	SNW-3036 x 6 3/8	S-3036 x 6 3/8			6 3/8					
23036K	**SNW-3036 x 6 7/16**	**S-3036**	**N-036**	**W-036**	**6 7/16**	**-0.005**	**4 11/32**	**1 3/32**	**8 1/4**	**15.2**
	SNW-3036 x 6 1/2	S-3036 x 6 1/2			6 1/2					
	SNW-3038 x 6 13/16	S-3038 x 6 13/16			6 13/16					
	SNW-3038 x 6 7/8	S-3038 x 6 7/8			6 7/8					
23038K	**SNW-3038 x 6 15/16**	**S-3038**	**N-038**	**W-038**	**6 15/16**	**-0.005**	**4 13/32**	**1 1/8**	**8 11/16**	**16.7**
	SNW-3038 x 7	S-3038 x 7			7					
	SNW-3040 x 7 1/8	S-3040 x 7 1/8			7 1/8					
23040K	**SNW-3040 x 7 3/16**	**S-3040**	**N-040**	**W-040**	**7 3/16**	**-0.005**	**4 3/4**	**1 3/16**	**9 7/16**	**19.7**
	SNW-3040 x 7 1/4	S-3040 x 7 1/4			7 1/4					
	SNW-3044 x 7 13/16	S-3044 x 7 13/16			7 13/16					
	SNW-3044 x 7 7/8	S-3044 x 7 7/8			7 7/8					
23044K	**SNW-3044 x 7 15/16**	**S-3044**	**N-044**	**W-044**	**7 15/16**	**-0.005**	**5 1/8**	**1 1/4**	**10 1/4**	**24.4**
	SNW-3044 x 8	S-3044 x 8			8					
	SNP-3048 x 8 7/16	S-3048 x 8 7/16			8 7/16					
	SNP-3048 x 8 1/2	S-3048 x 8 1/2			8 1/2					
23048K	**SNP-3048 x 8 15/16**	**S-3048**	**N-048**	**P-48**	**8 15/16**	**-0.006**	**5 7/16**	**1 11/32**	**11 7/16**	**32.2**
	SNP-3048 x 9	S-3048 x 9			9					
23052K	**SNP-3052 x 9 7/16**	**S-3052**	**N-052**	**P-52**	**9 7/16**	**-0.006**	**6 1/64**	**1 13/32**	**12 3/16**	**41.1**
	SNP-3052 x 9 1/2	S-3052 x 9 1/2			9 1/2					
	SNP-3056 x 9 15/16	S-3056 x 9 15/16			9 15/16					
	SNP-3056 x 10	S-3056 x 10			10					
23056K	**SNP-3056 x 10 7/16**	**S-3056**	**N-056**	**P-56**	**10 7/16**	**-0.007**	**6 3/16**	**1 1/2**	**13**	**45.4**
	SNP-3056 x 10 1/2	S-3056 x 10 1/2			10 1/2					
23060K	**SNP-3060 x 10 15/16**	**S-3060**	**N-060**	**P-60**	**10 15/16**	**-0.007**	**6 47/64**	**1 9/16**	**14 3/16**	**58.9**
	SNP-3060 x 11	S-3060 x 11			11					
	SNP-3064 x 11 7/16	S-3060 x 11 7/16			11 7/16					
	SNP-3064 x 11 1/2	S-3060 x 11 1/2			11 1/2					
23064K	**SNP-3064 x 11 15/16**	**S-3064**	**N-064**	**P-64**	**11 15/16**	**-0.007**	**6 61/64**	**1 21/32**	**15**	**65.7**
	SNP-3064 x 12	S-3064 x 12			12					

[1]Bold shaft sizes are standard. When ordering non-standard accessories, specify shaft size.
[2]Tolerance range is from +0 to value listed.

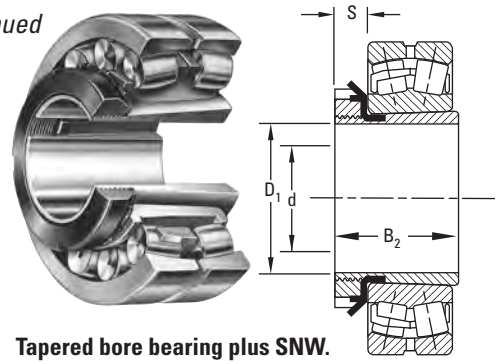
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INCH ACCESSORIES – PULL-TYPE SLEEVES – continued

SNW/SNP – PULL-TYPE SLEEVE, LOCKNUT, LOCKWASHER/LOCKPLATE ASSEMBLIES

- The table below shows dimensions for adapter assemblies and components used in the mounting of tapered bore bearings on shafts.
- SNW assembly consists of a sleeve, locknut and lockwasher.
- SNP assembly consists of a sleeve, locknut and lockplate.



Tapered bore bearing plus SNW.

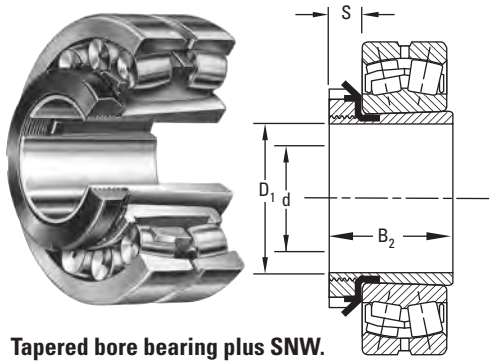
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Bearing No.[1]	Accessory Numbers				Shaft Dimensions		Adapter Dimensions			SNW/SNP Assembly Wt.
	Assembly	Sleeve	Locknut	Lockwasher Lockplate	Diameter d	Tolerance[2]	B_2	S	D_1	
					in.	in.	in.	in.	in.	lbs.
23068K	**SNP-3068 X 12 7/16**	**S-3068**	**N-068**	**P-68**	**12 7/16**	**-0.008**	**7 35/64**	**1 25/32**	**15 3/4**	**77.8**
	SNP-3068 X 12 1/2	S-3068 x 12 1/2			12 1/2					
	SNP-3072 X 12 15/16	S-3072 x 12 15/16			12 15/16					
	SNP-3072 X 13	S-3072 x 13			13					
23072K	**SNP-3072 X 13 7/16**	**S-3072**	**N-072**	**P-72**	**13 7/16**	**-0.008**	**7 37/64**	**1 25/32**	**16 1/2**	**86.2**
	SNP-3072 X 13 1/2	S-3072 x 13 1/2			13 1/2					
23076K	**SNP-3076 X 13 15/16**	**S-3076**	**N-076**	**P-76**	**13 15/16**	**-0.008**	**7 3/4**	**1 57/64**	**17 3/4**	**94.3**
	SNP-3076 X 14	S-3076 x 14			14					
23080K	**SNP-3080 x 15**	**S-3080**	**N-080**	**P-80**	**15**	**-0.008**	**8 13/32**	**2 1/16**	**18 1/2**	**100.0**
23084K	**SNP-3084 x 15 3/4**	**S-3084**	**N-084**	**P-84**	**15 3/4**	**-0.008**	**8 31/64**	**2 1/16**	**19 5/16**	**110.0**
23088K	**SNP-3088 x 16 1/2**	**S-3088**	**N-088**	**P-88**	**16 1/2**	**-0.008**	**9 7/64**	**2 3/8**	**20 1/2**	**144.0**
23092K	**SNP-3092 x 17**	**S-3092**	**N-092**	**P-92**	**17**	**-0.008**	**9 11/32**	**2 3/8**	**21 1/4**	**153.0**
23096K	**SNP-3096 x 18**	**S-3096**	**N-096**	**P-96**	**18**	**-0.008**	**9 29/64**	**2 3/8**	**22 1/16**	**162.0**
230/500K	**SNP-30/500 x 18 1/2**	**S-30/500**	**N-500**	**P-500**	**18 1/2**	**-0.008**	**9 27/32**	**2 45/64**	**22 13/16**	**180.0**
230/530K	**SNP-30/530 x 19 1/2**	**S-30/530**	**N-530**	**P-530**	**19 1/2**	**-0.008**	**10 37/64**	**2 45/64**	**24 13/16**	**221.0**
230/560K	**SNP-30/560 x 20 15/16**	**S-30/560**	**N-560**	**P-560**	**20 15/16**	**-0.008**	**11 7/32**	**2 61/64**	**25 9/16**	**243.0**
230/600K	**SNP-30/600 x 21 15/16**	**S-30/600**	**N-600**	**P-600**	**21 15/16**	**-0.008**	**11 29/64**	**2 61/64**	**27 9/16**	**322.0**
230/630K	**SNP-30/630 x 23 15/16**	**S-30/630**	**N-630**	**P-630**	**23 15/16**	**-0.008**	**11 59/64**	**2 61/64**	**28 3/4**	**350.0**
230/670K	**SNP-30/670 x 24 15/16**	**S-30/670**	**N-670**	**P-670**	**24 15/16**	**-0.008**	**12 27/32**	**3 9/64**	**30 11/16**	**421.0**
230/710K	**SNP-30/710 x 26 7/16**	**S-30/710**	**N-710**	**P-710**	**26 7/16**	**-0.008**	**13 1/2**	**3 37/64**	**32 11/16**	**492.0**
230/750K	**SNP-30/750 x 27 15/16**	**S-30/750**	**N-750**	**P-750**	**27 15/16**	**-0.008**	**14 3/32**	**3 37/64**	**34 1/4**	**536.0**
230/800K	**SNP-30/800 x 29 7/16**	**S-30/800**	**N-800**	**P-800**	**29 7/16**	**-0.008**	**14 13/32**	**3 37/64**	**36 1/4**	**662.0**
230/850K	**SNP-30/850 x 31 7/16**	**S-30/850**	**N-850**	**P-850**	**31 7/16**	**-0.008**	**15**	**3 37/64**	**38 9/16**	**747.0**
230/900K	**SNP-30/900 x 33 7/16**	**S-30/900**	**N-900**	**P-900**	**33 7/16**	**-0.008**	**15 11/16**	**3 61/64**	**40 9/16**	**853.0**
230/950K	**SNP-30/950 x 34 7/16**	**S-30/950**	**N-950**	**P-950**	**35 7/16**	**-0.008**	**16 1/2**	**3 61/64**	**43**	**935.0**

[1]Bold shaft sizes are standard. When ordering non-standard accessories, specify shaft size.
[2]Tolerance range is from +0 to value listed.

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Tapered bore bearing plus SNW.

Continued from previous page.

Bearing No.[1]	Accessory Numbers				Shaft Dimensions		Adapter Dimensions			SNW/SNP Assembly Wt.
	Assembly	Sleeve	Locknut	Lockwasher Lockplate	Diameter d	Tolerance[2]	B_2	S	D_1	
					in.	in.	in.	in.	in.	lbs.
SERIES 223K AND 232K										
22308K	**SNW-108 x 1 5/16**	**S-108**	**N-08**	**W-08**	**1 5/16**	**-0.003**	**2 1/64**	**1/2**	**2 1/4**	**0.8**
22309K	**SNW-109 x 1 7/16**	**S-109**	**N-09**	**W-09**	**1 7/16**	**-0.003**	**2 9/64**	**1/2**	**2 17/32**	**0.8**
22310K	**SNW-110 x 1 11/16**	**S-110**	**N-10**	**W-10**	**1 11/16**	**-0.003**	**2 25/64**	**9/16**	**2 11/16**	**0.9**
22311K	**SNW-111 x 1 15/16**	**S-111**	**N-11**	**W-11**	**1 15/16**	**-0.003**	**2 33/64**	**9/16**	**2 31/32**	**0.9**
22312K	**SNW-112 x 2 1/16**	**S-112**	**N-12**	**W-12**	**2 1/16**	**-0.004**	**2 21/32**	**19/32**	**3 5/32**	**1.2**
22313K	**SNW-113 x 2 3/16**	**S-113**	**N-13**	**W-13**	**2 3/16**	**-0.004**	**2 49/64**	**5/8**	**3 3/8**	**1.7**
22314K	**SNW-114 x 2 5/16**	**S-114**	**N-14**	**W-14**	**2 5/16**	**-0.004**	**2 61/64**	**5/8**	**3 5/8**	**2.3**
	SNW-115 x 2 3/8	S-115 x 2 3/8			2 3/8					
22315K	**SNW-115 x 2 7/16**	**S-115**	**AN-15**	**W-15**	**2 7/16**	**-0.004**	**3 5/64**	**43/64**	**3 7/8**	**3.0**
	SNW-115 x 2 1/2	S-115 x 2 1/2			2 1/2					
	SNW-116 x 2 5/8	S-116 x 2 5/8			2 5/8					
22316K	**SNW-116 x 2 11/16**	**S-116**	**AN-16**	**W-16**	**2 11/16**	**-0.004**	**3 13/64**	**43/64**	**4 5/32**	**3.2**
	SNW-116 x 2 3/4	S-116 x 3/4			2 3/4					
	SNW-117 x 2 13/16	S-117 x 2 13/16			2 13/16					
	SNW-117 x 2 7/8	S-117 x 2 7/8			2 7/8					
22317K	**SNW-117 x 2 15/16**	**S-117**	**AN-17**	**W-17**	**2 15/16**	**-0.004**	**3 5/16**	**45/64**	**4 13/32**	**3.5**
	SNW-117 x 3	S-117 x 3			3					
	SNW-118 x 3 1/16	S-118 x 3 1/16			3 1/16					
	SNW-118 x 3 1/8	S-118 x 3 1/8			3 1/8					
22318K	**SNW-118 x 3 3/16**	**S-118**	**AN-18**	**W-18**	**3 3/16**	**-0.004**	**3 35/64**	**25/32**	**4 21/32**	**4.0**
	SNW-118 x 3 1/4	S-118 x 3 1/4			3 1/4					
22319K	**SNW-119 x 3 5/16**	**S-119**	**AN-19**	**W-19**	**3 5/16**	**-0.004**	**3 45/64**	**13/16**	**4 15/16**	**5.0**
	SNW-120 x 3 5/16	S-120 x 3 5/16			3 5/16					
	SNW-120 x 3 3/8	S-120 x 3 7/8			3 3/8					
22320K 23220K	**SNW-120 x 3 7/16**	**S-120**	**AN-20**	**W-20**	**3 7/16**	**-0.004**	**3 31/32**	**27/32**	**5 3/16**	**6.2**
	SNW-120 x 3 1/2	S-120 x 3 1/2			3 1/2					
	SNW-122 x 3 13/16	S-122 x 3 13/16			3 13/16					
	SNW-122 x 3 3/8	S-122 x 3 3/8			3 7/8					
22322K 23222K	**SNW-122 x 3 15/16**	**S-122**	**AN-22**	**W-22**	**3 15/16**	**-0.004**	**4 11/32**	**29/32**	**5 23/32**	**6.5**
	SNW-122 x 4	S-122 x 4			4					

[1]Bold shaft sizes are standard. When ordering non-standard accessories, specify shaft size.
[2]Tolerance range is from +0 to value listed.

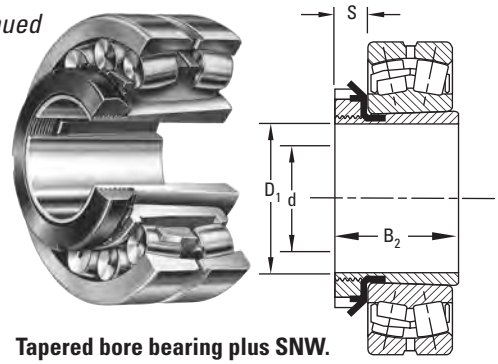
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08-19-13 DRAFT

INCH ACCESSORIES – PULL-TYPE SLEEVES – continued

SNW/SNP – PULL-TYPE SLEEVE, LOCKNUT, LOCKWASHER/LOCKPLATE ASSEMBLIES

- The table below shows dimensions for adapter assemblies and components used in the mounting of tapered bore bearings on shafts.
- SNW assembly consists of a sleeve, locknut and lockwasher.
- SNP assembly consists of a sleeve, locknut and lockplate.



Tapered bore bearing plus SNW.

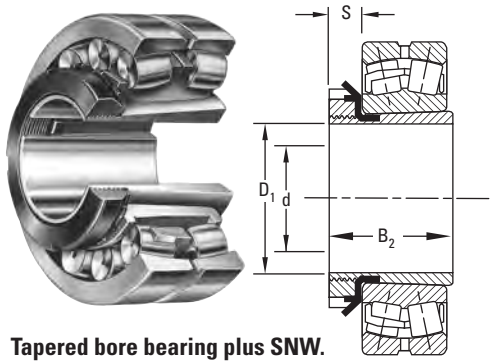
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Bearing No.[1]		Accessory Numbers				Shaft Dimensions		Adapter Dimensions			SNW/SNP Assembly Wt.
		Assembly	Sleeve	Locknut	Lockwasher Lockplate	Diameter d	Tolerance[2]	B_2	S	D_1	
						in.	in.	in.	in.	in.	lbs.
		SNW-124 x 4 1/16	S-124 x 4 1/16			4 1/16					
		SNW-124 x 4 1/8	S-124 x 4 1/8			4 1/8					
22324K	**23224K**	**SNW-124 x 4 3/16**	**S-124**	**AN-24**	**W-24**	**4 3/16**	**-0.005**	**4 41/64**	**15/16**	**6 1/8**	**8.0**
		SNW-124 x 4 1/4	S-124 x 4 1/4			4 1/4					
		SNW-126 x 4 5/16	S-126 x 4 5/16			4 5/16					
		SNW-126 x 4 3/8	S-126 4 3/8			4 3/8					
22326K	**23226K**	**SNW-126 x 4 7/16**	**S-126**	**AN-26**	**W-26**	**4 7/16**	**-0.005**	**4 63/64**	**1**	**6 3/4**	**12.4**
		SNW-126 x 4 1/2	S-126 x 4 1/2			4 1/2					
		SNW-126 x 4 9/16	S-126 x 4 9/16			4 9/16					
		SNW-128 x 4 13/16	S-128 x 4 13/16			4 13/16					
		SNW-128 x 4 7/8	S-128 x 4 7/8			4 7/8					
22328K	**23228K**	**SNW-128 x 4 15/16**	**S-128**	**AN-28**	**W-28**	**4 15/16**	**-0.005**	**5 21/64**	**1 1/16**	**7 3/32**	**13.0**
		SNW-128 x 5	S-128 x 5			5					
		SNW-130 x 5 1/8	S-130 x 5 1/8			5 1/8					
22330K	**23230K**	**SNW-130 x 5 3/16**	**S-130**	**AN-30**	**W-30**	**5 3/16**	**-0.005**	**5 5/8**	**1 1/8**	**7 11/16**	**17.6**
		SNW-130 x 5 1/4	S-130 x 5 1/4			5 1/4					
		SNW-130 x 5 5/16	S-130 x 5 5/16			5 5/16					
		SNW-130 x 5 3/8	S-130 x 5 3/8			5 3/8					
		SNW-132 x 5 3/8	S-132 x 5 3/8								
22332K	**23232K**	**SNW-132 x 5 7/16**	**S-132**	**AN-32**	**W-32**	**5 7/16**	**-0.005**	**5 59/64**	**1 3/16**	**8 1/16**	**18.5**
		SNW-132 x 5 1/2	S-132 x 5 1/2								
		SNW-134 x 5 13/16	S-134 x 5 13/16								
		SNW-134 x 5 7/8	S-134 x 5 7/8								
22334K	**23234K**	**SNW-134 x 5 15/16**	**S-134**	**AN-34**	**W-34**	**5 15/16**	**-0.005**	**6 3/16**	**1 7/32**	**8 21/32**	**21.0**
		SNW-134 x 6	S-134 x 6								
22336K	**23236K**	**SNW-136 x 6 7/16**	**S-136**	**AN-36**	**W-36**	**6 7/16**	**-0.005**	**6 29/64**	**1 1/4**	**9 1/16**	**22.5**
		SNW-138 x 6 13/16	S-138 x 6 13/16								
		SNW-138 x 6 7/8	S-138 x 6 7/8								
22338K	**23238K**	**SNW-138 x 6 15/16**	**S-138**	**AN-38**	**W-38**	**6 15/16**	**-0.005**	**6 3/4**	**1 9/32**	**9 15/32**	**28.0**
		SNW-138 x 7	S-138 x 7								
		SNW-140 x 7 1/8	S-140 x 7 1/8			7 1/8					
22340K	**23240K**	**SNW-140 x 7 3/16**	**S-140**	**AN-40**	**W-40**	**7 3/16**	**-0.005**	**7 3/32**	**1 11/32**	**9 27/32**	**36.0**
		SNW-140 x 7 1/4	S-140 x 7 1/4			7 1/4					

[1]Bold shaft sizes are standard. When ordering non-standard accessories, specify shaft size.
[2]Tolerance range is from +0 to value listed.

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Tapered bore bearing plus SNW.

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Bearing No.[1]		Accessory Numbers				Shaft Dimensions		Adapter Dimensions			SNW/SNP Assembly Wt.
		Assembly	Sleeve	Locknut	Lockwasher Lockplate	Diameter d	Tolerance[2]	B_2	S	D_1	
						in.	in.	in.	in.	in.	lbs.
22344K	**23244K**	**SNW-144 x 7 15/16**	**S-144**	**N-044**	**W-44**	**7 15/16**	**-0.005**	**7 9/32**	**1 3/8**	**11**	**47.0**
22348K	**23248K**	**SNP-148 x 8 15/16**	**S-148**	**N-048**	**P-48**	**8 15/16**	**-0.006**	**8 7/64**	**1 11/32**	**11 7/16**	**38.3**
		SNP-148 x 9	S-148 x 9			9					
22352K	**23252K**	**SNP-152 x 9 7/16**	**S-152**	**N-052**	**P-52**	**9 7/16**	**-0.006**	**8 49/64**	**1 13/32**	**12 13/16**	**53.4**
		SNP-152 x 9 ½	S-152 x 9 ½			9 ½					
22356K	**23256K**	**SNP-3256 x 10 7/16**	**S-3256**	**N-056**	**P-56**	**10 7/16**	**-0.007**	**8 15/16**	**1 ½**	**13**	**61.3**
		SNP-3256 x 10 ½	S-3256 x 10 ½			10 ½	-0.007				
23260K		**SNP-3260 x 10 15/16**	**S-3260**	**N-060**	**P-60**	**10 15/16**	**-0.007**	**9 5/8**	**1 9/16**	**14 3/32**	**68.5**
		SNP-3260 x 11	S-3260 x 11			11	-0.007				
23264K		**SNP-3264 x 11 15/16**	**S-3264**	**N-064**	**P-64**	**11 15/16**	**-0.007**	**10 23/64**	**1 21/32**	**15**	**98.0**
		SNP-3264 x 12	S-3264 x 12			12	-0.007				
		SNP-3268 x 12 ½	S-3268 x 12 ½			12 ½	-0.007				
23268K		**SNP-3268 x 12 7/8**	**S-3268**	**N-068**	**P-68**	**12 7/8**	**-0.007**	**11 1/8**	**1 25/32**	**15 3/4**	**105.0**
23272K		**SNP-3272 x 13 7/16**	**S-3272**	**N-072**	**P-72**	**13 7/16**	**-0.007**	**11 27/64**	**1 25/32**	**16 ½**	**135.0**
		SNP-3272 x 13 ½	S-3272 x 13 ½			13 ½	-0.007				
23276K		**SNP-3276 x 13 15/16**	**S-3276**	**N-076**	**P-76**	**13 15/16**	**-0.007**	**11 7/8**	**1 29/32**	**17 3/4**	**145.0**
		SNP-3276 x 14	S-3276 x 14			14	-0.007				
23280K		**SNP-3280 x 15**	**S-3280**	**N-080**	**P-80**	**15**	**-0.007**	**12 21/32**	**2 1/16**	**18 ½**	**165.0**
23284K		**SNP-3284 x 15 3/4**	**S-3284**	**N-084**	**P-84**	**15 3/4**	**-0.007**	**13 19/64**	**2 1/16**	**19 5/16**	**170.0**
23288K		**SNP-3288 x 16 ½**	**S-3288**	**N-088**	**P-88**	**16 ½**	**-0.007**	**13 61/64**	**2 3/8**	**20 ½**	**260.0**
23292K		**SNP-3292 x 16 15/16**	**S-3292**	**N-092**	**P-92**	**16 15/16**	**-0.007**	**18 1/16**	**2 3/8**	**21 1/4**	**291.0**
23296K		**SNP-3296 x 17 15/16**	**S-3296**	**N-096**	**P-96**	**17 15/16**	**-0.007**	**15 5/32**	**2 3/8**	**22 1/16**	**335.0**
232/500K		**SNP-32/500 x 18 7/16**	**S-32/500**	**N-500**	**P-500**	**18 7/16**	**-0.007**	**16 ½**	**2 45/64**	**22 13/16**	**366.0**
232/530K		**SNP-32/530 x 18 15/16**	**S-32/530 x 18 15/16**	**N-530**	**P-530**	**18 15/16**	**-0.007**	**17 17/64**	**2 45/64**	**24 13/16**	**421.0**
		SNP-32/530 x 19 7/16	S-32/530 x 19 7/16			19 7/16	-0.007				
232/560K		**SNP-32/560 x 20 15/16**	**S-32/560**	**N-560**	**P-560**	**20 15/16**	**-0.007**	**17 59/64**	**2 61/64**	**25 9/16**	**478.0**
232/600K		**SNP-32/600 x 21 15/16**	**S-32/600**	**N-600**	**P-600**	**21 15/16**	**-0.007**	**18 55/64**	**2 61/64**	**27 9/16**	**613.0**
232/630K		**SNP-32/630 x 23 15/16**	**S-32/630**	**N-630**	**P-630**	**23 15/16**	**-0.007**	**19 51/64**	**2 61/64**	**28 3/4**	**657.0**
232/670K		**SNP-32/670 x 24 15/16**	**S-32/670**	**N-670**	**P-670**	**24 15/16**	**-0.007**	**21 1/32**	**3 9/64**	**30 11/16**	**891.0**
232/710K		**SNP-32/710 x 26 7/16**	**S-32/710**	**N-710**	**P-710**	**26 7/16**	**-0.007**	**21 15/16**	**3 37/64**	**32 11/16**	**979.0**
232/750K		**SNP-32/750 x 27 15/16**	**S-32/750**	**N-750**	**P-750**	**27 15/16**	**-0.007**	**22 63/64**	**3 37/64**	**34 1/4**	**1118.0**

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[2]Tolerance range is from +0 to value listed.

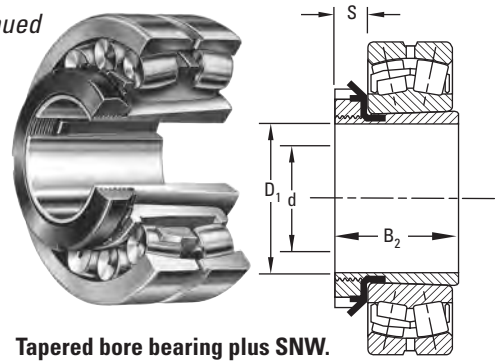
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08-19-13 DRAFT

INCH ACCESSORIES – PULL-TYPE SLEEVES – *continued*

SNW/SNP – PULL-TYPE SLEEVE, LOCKNUT, LOCKWASHER/LOCKPLATE ASSEMBLIES

- The table below shows dimensions for adapter assemblies and components used in the mounting of tapered bore bearings on shafts.
- SNW assembly consists of a sleeve, locknut and lockwasher.
- SNP assembly consists of a sleeve, locknut and lockplate.



Tapered bore bearing plus SNW.

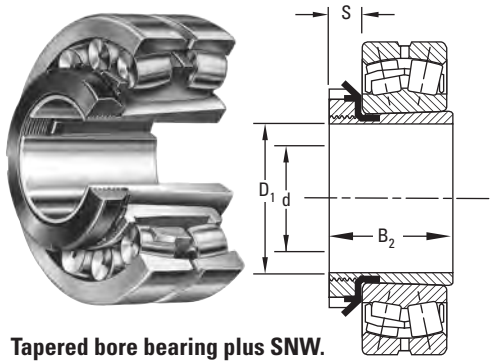
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Bearing No.[1]	Accessory Numbers				Shaft Dimensions		Adapter Dimensions			SNW/SNP Assembly Wt.
	Assembly	Sleeve	Locknut	Lockwasher Lockplate	Diameter d	Tolerance[2]	B_2	S	D_1	
					in.	in.	in.	in.	in.	lbs.
SERIES 231K										
23122K	**SNW-3122 x 3 15/16**	**S-22**	**N-022**	**W-022**	**3 15/16**	**-0.004**	**3 13/64**	**25/32**	**5 5/32**	**4.2**
23124K	**SNW-3124 x 4 3/16**	**S-24**	**N-024**	**W-024**	**4 3/16**	**-0.005**	**3 15/32**	**13/16**	**5 11/16**	**5.8**
23126K	**SNW-3126 x 4 7/16**	**S-26**	**N-026**	**W-026**	**4 7/16**	**-0.005**	**3 49/64**	**7/8**	**6 1/8**	**8.3**
23128K	**SNW-3128 x 4 15/16**	**S-28**	**N-028**	**W-028**	**4 15/16**	**-0.005**	**3 63/64**	**15/16**	**6 1/2**	**8.8**
23130K	**SNW-3130 x 5 3/16**	**S-30**	**N-030**	**W-030**	**5 3/16**	**-0.005**	**4 15/64**	**31/32**	**7 1/8**	**13.7**
23132K	**SNW-3132 x 5 7/16**	**S-32**	**N-032**	**W-032**	**5 7/16**	**-0.005**	**4 37/64**	**1 1/32**	**7 1/2**	**13.3**
23134K	**SNW-3134 x 5 15/16**	**S-34**	**N-034**	**W-034**	**5 15/16**	**-0.005**	**4 27/32**	**1 1/16**	**7 7/8**	**16.1**
23136K	**SNW-3136 x 6 7/16**	**S-36**	**N-036**	**W-036**	**6 7/16**	**-0.005**	**5 1/32**	**1 3/32**	**8 1/4**	**17.1**
23138K	**SNW-3138 x 6 15/16**	**S-38**	**N-038**	**W-038**	**6 15/16**	**-0.005**	**5 17/64**	**1 1/8**	**8 11/16**	**19.7**
23140K	**SNW-3140 x 7 3/16**	**S-40**	**N-040**	**W-040**	**7 3/16**	**-0.005**	**5 31/64**	**1 3/16**	**9 7/16**	**28.4**
23144K	**SNW-3144 x 7 15/16**	**S-44**	**N-044**	**W-044**	**7 15/16**	**-0.005**	**5 29/32**	**1 1/4**	**10 1/4**	**28.1**
23148K	**SNW-3144 x 8 15/16**	**S-48**	**N-048**	**P-48**	**8 15/16**	**-0.006**	**6 41/64**	**1 11/32**	**11 7/16**	**36.0**
23152K	**SNP-3152 x 9 7/16**	**S-52**	**N-052**	**P-52**	**9 7/16**	**-0.006**	**7 19/32**	**1 13/32**	**12 3/16**	**39.0**
	SNP-3152 x 9 1/2	S-52 x 9 1/2			9 1/2					
	SNP-3156 x 9 15/16	S-3156 x 9 15/16			9 15/16					
	SNP-3156 x 10	S-3156 x 10			10					
23156K	**SNP-3156 x 10 7/16**	**S-3156**	**N-056**	**P-56**	**10 7/16**	**-0.007**	**7 49/64**	**1 1/2**	**13**	**60.0**
	SNP-3156 x 10 1/2	S-3156 x 10 1/2			10 1/2					
23160K	**SNP-3160 x 10 15/16**	**S-3160**	**N-060**	**P-60**	**10 15/16**	**-0.007**	**8 3/8**	**1 9/16**	**14 3/16**	**65.0**
	SNP-3160 x 11	S-3160 x 11			11					
23164K	**SNP-3164 x 11 15/16**	**S-3164**	**N-064**	**P-64**	**11 15/16**	**-0.007**	**9 7/64**	**1 21/32**	**15**	**70.0**
	SNP-3164 x 12	S-3164 x 12			12					
	SNP-3168 x 12 1/2	S-3168 x 12 1/2			12 1/2					
23168K	**SNP-3168 x 12 7/8**	**S-3168**	**N-068**	**P-68**	**12 7/8**	**-0.007**	**9 25/32**	**1 25/32**	**15 3/4**	**93.5**
23172K	**SNP-3172 x 13 7/16**	**S-3172**	**N-072**	**P-72**	**13 7/16**	**-0.007**	**11 27/64**	**1 25/32**	**16 1/2**	**120.0**
	SNP-3172 x 13 1/2	S-3172 x 13 1/2			13 1/2					
23176K	**SNP-3176 x 13 15/16**	**S-3176**	**N-076**	**P-76**	**13 15/16**	**-0.007**	**11 7/8**	**1 29/32**	**17 3/4**	**125.0**
	SNP-3176 x 14	S-3176 x 14			14					
	SNP-3180 x 14 15/16	S-3180 x 14 15/16			14 15/16					
23180K	**SNP-3180 x 15**	**S-3180**	**N-080**	**P-80**	**15**	**-0.007**	**12 21/32**	**2 1/16**	**18 1/2**	**140.0**

[1]Bold shaft sizes are standard. When ordering non-standard accessories, specify shaft size.
[2]Tolerance range is from +0 to value listed.

Continued on next page.

08-19-13 DRAFT



Tapered bore bearing plus SNW.

Continued from previous page.

Bearing No.[1]	Accessory Numbers				Shaft Dimensions		Adapter Dimensions			SNW/SNP Assembly Wt.
	Assembly	Sleeve	Locknut	Lockwasher Lockplate	Diameter d	Tolerance[2]	B_2	S	D_1	
					in.	in.	in.	in.	in.	lbs.
23184K	**SNP-3184 x 15 3/4**	**S-3184**	**N-084**	**P-84**	**15 3/4**	**-0.007**	**13 19/64**	**2 1/16**	**19 5/16**	**145.0**
23188K	**SNP-3188 x 16 1/2**	**S-3188**	**N-088**	**P-88**	**16 1/2**	**-0.007**	**13 61/64**	**2 3/8**	**20 1/2**	**229.0**
23192K	**SNP-3192 x 17**	**S-3192**	**N-092**	**P-92**	**17**	**-0.007**	**18 1/16**	**2 3/8**	**21 1/4**	**255.0**
23196K	**SNP-3196 x 18**	**S-3196**	**N-096**	**P-96**	**18**	**-0.007**	**15 5/32**	**2 3/8**	**22 1/16**	**293.0**
231/500K	**SNP-31/500 x 18 7/16**	**S-31/500**	**N-500**	**P-500**	**18 7/16**	**-0.007**	**16 1/2**	**2 45/64**	**22 13/16**	**315.0**
231/530K	**SNP-31/530 x 18 15/16**	**S-31/500 x 18 15/16**	**N-530**	**P-530**	**18 15/16**	**-0.007**	**17 17/64**	**2 45/64**	**24 13/16**	**355.0**
	SNP-31/530 x 19 7/16	S-31/530 x 19 7/16			19 7/16					
231/560K	**SNP-31/560 x 20 15/16**	**S-31/560**	**N-560**	**P-560**	**20 15/16**	**-0.007**	**17 59/64**	**2 61/64**	**25 9/16**	**408.0**
231/600K	**SNP-31/600 x 21 15/16**	**S-31/600**	**N-600**	**P-600**	**21 15/16**	**-0.007**	**18 55/64**	**2 61/64**	**27 9/16**	**516.0**
231/630K	**SNP-31/630 x 23 15/16**	**S-31/630**	**N-630**	**P-630**	**23 15/16**	**-0.007**	**19 51/64**	**2 61/64**	**28 3/4**	**556.0**
231/670K	**SNP-31/670 x 24 15/16**	**S-31/670**	**N-670**	**P-670**	**24 15/16**	**-0.007**	**21 1/32**	**3 9/64**	**30 11/16**	**759.0**
231/710K	**SNP-31/710 x 26 7/16**	**S-31/710**	**N-710**	**P-710**	**26 7/16**	**-0.007**	**21 15/16**	**3 37/64**	**32 11/16**	**833.0**
231/750K	**SNP-31/750 x 27 15/16**	**S-31/750**	**N-750**	**P-750**	**27 15/16**	**-0.007**	**22 63/64**	**3 37/64**	**34 1/4**	**997.0**
231/800K	**SNP-31/800 x 29 7/16**	**S-31/800**	**N-800**	**P-800**	**29 7/16**	**-0.007**	**19 1/64**	**3 37/64**	**36 1/4**	**1136.0**
231/850K	**SNP-31/850 x 31 7/16**	**S-31/850**	**N-850**	**P-850**	**31 7/16**	**-0.007**	**20 1/32**	**3 37/64**	**38 9/16**	**1303.0**

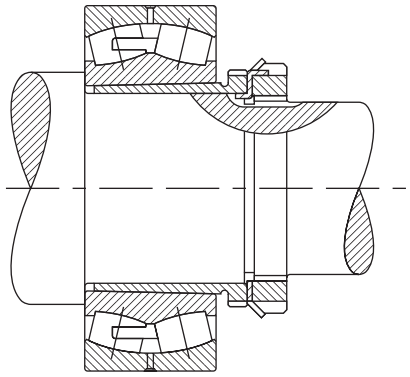
[1]Bold shaft sizes are standard. When ordering non-standard accessories, specify shaft size.
[2]Tolerance range is from +0 to value listed.

08-19-13 DRAFT

INCH ACCESSORIES – PUSH-TYPE SLEEVES

PUSH-TYPE REMOVABLE SLEEVE, LOCKNUT AND LOCKWASHER

The chart below shows dimensions for adapter assemblies and components used in the mounting of tapered bore bearings on shafts.

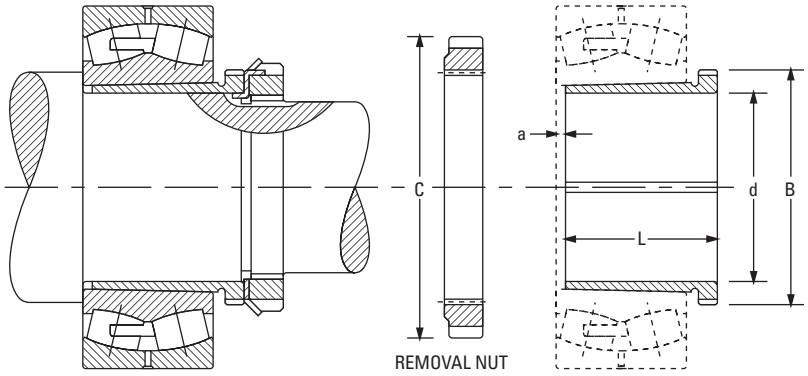


Bearing No.	Accessory Numbers				Shaft Dimensions		Adapter Dimensions			Removal Nut O.D.	Sleeve Wt.
	Sleeve	Locknut	Lockwasher Lockplate	Removal Nut	Diameter d	Tolerance[1]	Pitch Dia. B	L	a	C	
					mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
SERIES 222K											
22216K	SK-8022	N-14	W-14	AN-18	**70** 2.7559	**-0.10** -0.004	**88.19** 3.472	**50** 1.969	**3.50** 0.138	**118.39** 4.661	**0.5** 1.2
22217K	SK-8522	AN-15	W-15	AN-19	**75** 2.9528	**-0.10** -0.004	**93.35** 3.675	**52** 2.047	**3.50** 0.138	**125.55** 4.943	**0.6** 1.4
22218K	SK-9022	AN-16	W-16	AN-20	**80** 3.1496	**-0.10** -0.004	**98.12** 3.863	**53** 2.087	**3.50** 0.138	**131.90** 5.193	**0.6** 1.5
22219K	SK-9522	AN-17	W-17	AN-21	**85** 3.3465	**-0.10** -0.004	**103.28** 4.066	**57** 2.244	**4.00** 0.157	**138.25** 5.443	**0.8** 1.8
22220K	SK-10022	AN-18	W-18	AN-22	**90** 3.5433	**-0.10** -0.004	**109.12** 4.269	**59** 2.323	**4.00** 0.157	**145.39** 5.724	**0.9** 2.0
22222K	SK-11022	AN-20	W-20	ARN-22	**100** 3.9370	**-0.10** -0.004	**119.94** 4.722	**65** 2.559	**4.00** 0.157	**158.75** 6.250	**1.1** 2.4
22224K	SK-12022	AN-22	W-22	ARN-24	**110** 4.3307	**-0.13** -0.005	**130.28** 5.129	**72** 2.835	**4.00** 0.157	**174.63** 6.875	**1.4** 3.1
22226K	SK-13022	AN-22	W-22	ARN-26	**115** 4.5276	**-0.13** -0.005	**141.38** 5.566	**78** 3.071	**4.00** 0.15.7	**184.15** 7.250	**2.2** 5.0
22228K	SK-14022	AN-24	W-24	RN-28	**125** 4.9213	**-0.13** -0.005	**152.73** 6.013	**82** 3.228	**5.00** 0.197	**200.03** 7.875	**2.6** 5.8
22230K	SK-15022	AN-26	W-26	RN-30	**135** 5.3150	**-0.13** -0.005	**163.04** 6.419	**88** 3.465	**5.00** 0.197	**209.55** 8.250	**3.0** 6.8
22232K	SK-16022	AN-28	W-28	RN-32	**140** 5.5118	**-0.13** -0.005	**173.76** 6.841	**96** 3.780	**5.00** 0.197	**225.43** 8.875	**4.5** 9.9

[1]Tolerance range is from +0 to value listed.

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08-19-13 DRAFT



Tapered bore bearing mounted with push-type removable sleeve.

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Bearing No.	Accessory Numbers				Shaft Dimensions		Adapter Dimensions			Removal Nut O.D.	Sleeve Wt.
	Sleeve	Locknut	Lockwasher Lockplate	Removal Nut	Diameter d	Tolerance[1]	Pitch Dia. B	L	a	C	
					mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
22234K	SK-17022	AN-30	W-30	RN-34	**150** 5.9055	**-0.13** -0.005	**184.07** 7.247	**104** 4.095	**5.00** 0.197	**234.95** 9.250	**5.2** 11.5
22236K	SK-18022	AN-32	W-32	RN-36	**160** 6.2992	**-0.13** -0.005	**194.79** 7.669	**104** 4.095	**5.00** 0.197	**247.65** 9.750	**5.6** 12.5
22238K	SK-19022	AN-34	W-34	RN-38	**170** 6.6929	**-0.13** -0.005	**205.92** 8.107	**112** 4.409	**5.00** 0.197	**269.88** 10.625	**6.5** 14.5
22240K	SK-20022	AN-36	W-36	N-044	**180** 7.0866	**-0.13** -0.005	**217.02** 8.544	**118** 4.646	**5.00** 0.197	**279.53** 11.005	**7.4** 16.3
22244K	SK-22022	AN-40	W-40	N-048	**200** 7.8740	**-0.13** -0.005	**236.98** 9.330	**130** 5.118	**6.00** 0.236	**290.65** 11.443	**8.8** 19.6
22248K	SK-24022	N-44	W-44	N-052	**220** 8.6614	**-0.15** -0.006	**256.03** 10.080	**144** 5.669	**6.00** 0.236	**309.70** 12.193	**11.0** 24.3
22252K	SK-26022	N-048	P-48	N-056	**240** 9.4488	**-0.15** -0.006	**276.66** 10.892	**155** 6.102	**6.00** 0.236	**330.33** 13.005	**14.0** 30.9
22256K	SK-28022	N-052	P-52	RN-56	**260** 10.2362	**-0.15** -0.006	**301.27** 11.861	**155** 6.102	**8.00** 0.315	**425.45** 16.750	**15.0** 33.1
22260K	SK-30022	N-056	P-56	RN-60	**280** 11.0236	**-0.15** -0.006	**325.88** 12.830	**170** 6.693	**8.00** 0.315	**416.10** 16.382	**17.7** 39.2
22264K	SK-32022	N-060	P-60	RN-64	**300** 11.8110	**-0.15** -0.006	**345.72** 13.611	**180** 7.087	**10.00** 0.394	**431.8** 17.000	**21.0** 46.3

[1]Tolerance range is from +0 to value listed.

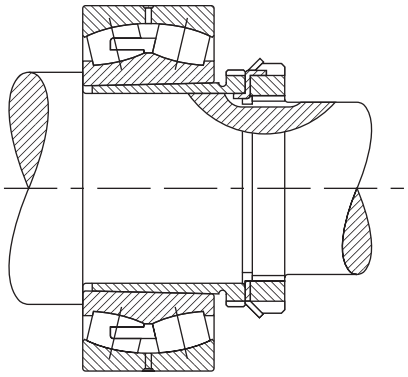
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08-19-13 DRAFT

INCH ACCESSORIES – PUSH-TYPE SLEEVES – *continued*

PUSH-TYPE REMOVABLE SLEEVE, LOCKNUT AND LOCKWASHER

The chart below shows dimensions for adapter assemblies and components used in the tapered bore bearings on shafts.



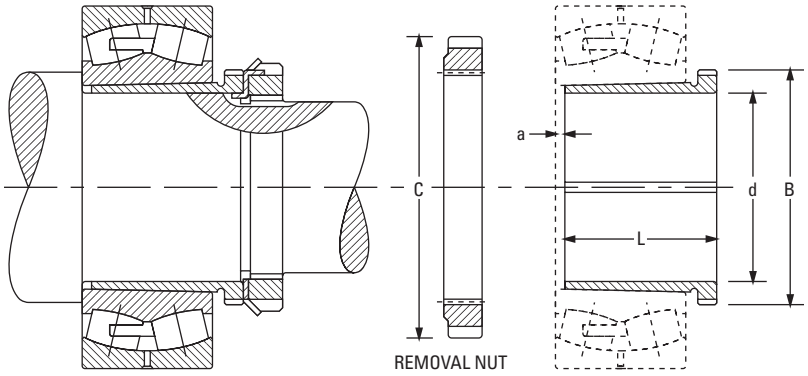
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Bearing No.	Accessory Numbers				Shaft Dimensions		Adapter Dimensions			Removal Nut O.D.	Sleeve Wt.
	Sleeve	Locknut	Lockwasher Lockplate	Removal Nut	Diameter d	Tolerance[1]	Pitch Dia. B	L	a	C	
					mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg lbs.
SERIES 223K											
22308K	SK-4023	N-07	W-07	N-09	**35** 1.3780	**-0.08** -0.003	**43.94** 1.730	**40** 1.575	**3.00** 0.118	**64.41** 2.536	**0.1** 0.2
22309K	SK-4523	N-08	W-08	N-10	**40** 1.5748	**-0.08** -0.003	**49.02** 1.930	**44** 1.732	**3.00** 0.118	**68.40** 2.693	**0.1** 0.3
22310K	SK-5023	N-09	W-09	RN-10	**45** 1.7717	**-0.08** -0.003	**55.04** 2.167	**50** 1.969	**3.00** 0.118	**76.20** 3.000	**0.2** 0.4
22311K	SK-5523	N-10	W-10	RN-11	**50** 1.9685	**-0.08** -0.003	**60.20** 2.370	**54** 2.126	**3.00** 0.118	**81.76** 3.219	**0.2** 0.5
22312K	SK-6023	N-11	W-11	RN-12	**55** 2.1654	**-0.10** -0.004	**65.76** 2.589	**57** 2.244	**3.50** 0.138	**87.33** 3.438	**0.3** 0.6
22313K	SK-6523	N-12	W-12	AN-15	**60** 2.3622	**-0.10** -0.004	**73.10** 2.878	**61** 2.402	**3.50** 0.138	**98.55** 3.880	**0.3** 0.8
22314K	SK-7023	N-12	W-12	AN-16	**60** 2.3622	**-0.10** -0.004	**78.28** 3.082	**65** 2.559	**3.50** 0.138	**105.69** 4.161	**0.6** 1.5
22315K	SK-7523	N-13	W-13	AN-17	**65** 2.5591	**-0.10** -0.004	**83.44** 3.285	**69** 2.717	**3.50** 0.138	**112.04** 4.411	**0.8** 1.7
22316K	SK-8023	N-14	W-14	AN-18	**70** 2.7559	**-0.10** -0.004	**88.19** 3.472	**72** 2.835	**3.50** 0.138	**118.39** 4.661	**0.9** 2.0
22317K	SK-8523	AN-15	W-15	AN-19	**75** 2.9528	**-0.10** -0.004	**93.35** 3.675	**75** 2.953	**3.50** 0.138	**125.55** 4.943	**1.0** 2.2
22318K	SK-9023	AN-16	W-16	AN-20	**80** 3.1496	**-0.10** -0.004	**98.12** 3.863	**80** 3.150	**3.50** 0.138	**131.90** 5.193	**1.1** 2.5
22319K	SK-9523	AN-17	W-17	AN-21	**85** 3.3465	**-0.10** -0.004	**103.28** 4.066	**85** 3.346	**4.00** 0.157	**138.25** 5.443	**1.3** 2.9
22320K	SK-10023	AN-18	W-18	AN-22	**90** 3.5433	**-0.10** -0.004	**109.12** 4.269	**90** 3.543	**4.00** 0.157	**145.39** 5.724	**1.5** 3.3

[1]Tolerance range is from +0 to value listed.

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08-19-13 DRAFT



Tapered bore bearing mounted with push-type removable sleeve.

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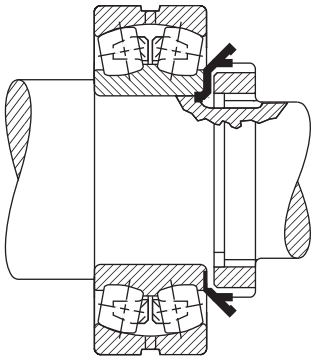
Bearing No.	Accessory Numbers				Shaft Dimensions		Adapter Dimensions			Removal Nut O.D.	Sleeve Wt.
	Sleeve	Locknut	Lockwasher Lockplate	Removal Nut	Diameter d	Tolerance[1]	Pitch Dia. B	L	a	C	
					mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.
22322K	SK-11023	AN-20	W-20	ARN-22	**100** 3.9370	**-0.10** -0.004	**119.94** 4.722	**98** 3.858	**4.00** 0.157	**158.75** 6.250	**1.9** 4.2
22324K	SK-12023	AN-22	W-22	ARN-24	**110** 4.3307	**-0.13** -0.005	**130.28** 5.129	**105** 4.134	**4.00** 0.157	**174.63** 6.875	**2.2** 5.0
22326K	SK-13023	AN-22	W-22	ARN-26	**115** 4.5276	**-0.13** -0.005	**141.38** 5.566	**115** 4.528	**4.00** 0.157	**184.15** 7.250	**3.6** 8.0
22328K	SK-14023	AN-24	W-24	RN-28	**125** 4.9213	**-0.13** -0.005	**152.73** 6.013	**125** 4.921	**5.00** 0.197	**200.03** 7.875	**4.3** 9.5
22330K	SK-15023	AN-26	W-26	RN-30	**135** 5.3150	**-0.13** -0.005	**163.04** 6.419	**135** 5.315	**5.00** 0.197	**209.55** 8.250	**5.1** 11.4
22332K	SK-16023	AN-28	W-28	RN-32	**140** 5.5118	**-0.13** -0.005	**173.76** 6.841	**140** 5.512	**6.00** 0.236	**225.43** 8.875	**7.0** 15.5
22334K	SK-17023	AN-30	W-30	RN-34	**150** 5.9055	**-0.13** -0.005	**184.07** 7.247	**146** 5.748	**6.00** 0.236	**234.95** 9.250	**7.8** 17.2
22336K	SK-18023	AN-32	W-32	RN-36	**160** 6.2992	**-0.13** -0.005	**194.79** 7.669	**154** 6.063	**6.00** 0.236	**247.65** 9.750	**9.1** 20.2
22338K	SK-19023	AN-34	W-34	RN-38	**170** 6.6929	**-0.13** -0.005	**205.92** 8.107	**160** 6.299	**7.00** 0.276	**269.88** 10.625	**10.0** 22.1
22340K	SK-20023	AN-36	W-36	N-044	**180** 7.0866	**-0.13** -0.005	**217.02** 8.544	**170** 6.693	**7.00** 0.276	**279.53** 11.005	**11.4** 25.2
22344K	SK-22023	AN-40	W-40	N-048	**200** 7.8740	**-0.13** -0.005	**236.98** 9.330	**181** 7.126	**8.00** 0.315	**290.65** 11.443	**13.3** 29.5
22348K	SK-24023	N-44	W-44	N-052	**220** 8.6614	**-0.15** -0.006	**256.03** 10.080	**189** 7.441	**8.00** 0.315	**309.70** 12.193	**15.5** 34.2
22352K	SK-26023	N-048	P-48	N-056	**240** 9.4488	**-0.15** -0.006	**276.66** 10.892	**200** 7.874	**8.00** 0.315	**330.33** 13.005	**18.2** 40.2
22356K	SK-28023	N-052	P-52	RN-56	**260** 10.2362	**-0.15** -0.006	**301.27** 11.861	**210** 8.268	**10.00** 0.394	**425.45** 16.75	**22.0** 48.5

[1]Tolerance range is from +0 to value listed.

08-19-13 DRAFT

INCH ACCESSORIES – LOCKNUTS AND LOCKWASHERS

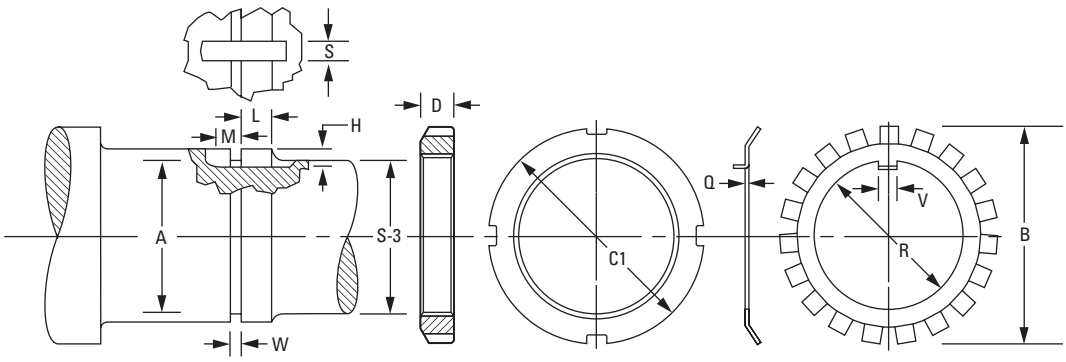
- The chart below shows dimensions for locknuts and lockwashers used in the mounting of straight bore bearings on shafts.
- Other dimensions and tolerances related to shaft configurations are also shown.
- Dimensions are presented according to bearing bore size and are applicable to bearings in the various series (e.g., 222, 223, etc.).



Bearing Bore	Locknut	Lockwasher	Threads Per Inch	Threads					
				Major Dia.		Pitch Dia.		Minor Dia.	Relief Dia. A
				Max.	Min.	Max.	Min.		
mm				**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
35	N 07	W 07	18	**34.950** 1.3760	**34.740** 1.3678	**34.030** 1.3399	**33.930** 1.3359	**33.220** 1.3078	**32.820** 1.2922
40	N 08	W 08	18	**39.700** 1.5630	**39.490** 1.5548	**38.780** 1.5269	**38.670** 1.5224	**37.970** 1.4948	**37.570** 1.4792
45	N 09	W 09	18	**44.880** 1.7670	**44.670** 1.7588	**43.960** 1.7309	**43.850** 1.7264	**43.150** 1.6988	**42.750** 1.6832
50	N 10	W 10	18	**49.960** 1.9670	**49.750** 1.9588	**49.050** 1.9309	**48.930** 1.9264	**48.230** 1.8988	**47.830** 1.8832
55	N 11	W 11	18	**54.790** 2.1570	**54.580** 2.1488	**53.870** 2.1209	**53.740** 2.1158	**53.060** 2.0888	**52.660** 2.0732
60	N 12	W 12	18	**59.940** 2.3600	**59.740** 2.3518	**59.030** 2.3239	**58.900** 2.3188	**58.210** 2.2918	**57.820** 2.2762
65	N 13	W 13	18	**64.720** 2.5480	**64.510** 2.5398	**63.800** 2.5119	**63.670** 2.5068	**62.990** 2.4798	**62.590** 2.4642
70	N 14	W 14	18	**69.880** 2.7510	**69.670** 2.7428	**68.960** 2.7149	**68.830** 2.7098	**68.140** 2.6828	**67.750** 2.6672
75	AN 15	W 15	12	**74.500** 2.9330	**74.210** 2.9218	**73.120** 2.8789	**72.990** 2.8735	**71.900** 2.8308	**71.110** 2.7995
80	AN 16	W 16	12	**79.680** 3.1370	**79.400** 3.1258	**78.310** 3.0829	**78.160** 3.0770	**77.080** 3.0348	**76.290** 3.0035
85	AN 17	W 17	12	**84.840** 3.3400	**84.550** 3.3288	**83.460** 3.2859	**83.310** 3.2800	**82.240** 3.2378	**81.450** 3.2065
90	AN 18	W 18	12	**89.590** 3.5270	**89.300** 3.5158	**88.210** 3.4729	**88.020** 3.4655	**86.990** 3.4248	**86.200** 3.3935
95	AN 19	W 19	12	**94.740** 3.7300	**94.460** 3.7188	**93.370** 3.6759	**93.180** 3.6685	**92.150** 3.6278	**91.350** 3.5965
100	AN 20	W 20	12	**99.520** 3.9180	**99.230** 3.9068	**98.140** 3.8639	**97.960** 3.8565	**96.920** 3.8158	**96.130** 3.7845
105	AN 21	W 21	12	**104.700** 4.1220	**104.410** 4.1108	**103.320** 4.0679	**103.110** 4.0596	**102.100** 4.0198	**101.310** 3.9885
110	AN 22	W 22	12	**109.860** 4.3250	**109.570** 4.3138	**108.480** 4.2709	**108.270** 4.2626	**107.260** 4.2228	**106.460** 4.1915
120	AN 24	W 24	12	**119.790** 4.7160	**119.500** 4.7048	**118.410** 4.6619	**118.200** 4.6536	**117.190** 4.6138	**116.400** 4.5825

(1) See page D-76, table D-20 for suggested S-3 shaft limits.
(2) For W, L, H, S and M, tolerance is -0 to +0.4 mm, -0 to +1/64 in.

08-19-13 DRAFT



Shaft						Locknut		Lockwasher			
S-3[1]	W[2]	L[2]	H[2]	S[2]	M[2]	C1	D	Q	R	B	V
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
31.750 1 1/4	**2.4** 3/32	**12.7** 1/2	**2.4** 3/32	**4.8** 3/16	**3.2** 1/8	**52.39** 2 1/16	**11.40** 0.448	**1.30** 0.050	**36.00** 1.416	**57.20** 2 1/4	**4.50** 0.176
36.510 1 7/16	**3.2** 1/8	**13.5** 17/32	**2.4** 3/32	**7.9** 5/16	**3.2** 1/8	**57.15** 2 1/4	**11.40** 0.448	**1.50** 0.058	**40.70** 1.603	**62.70** 2 15/32	**7.40** 0.290
42.860 1 11/16	**3.2** 1/8	**13.5** 17/32	**2.4** 3/32	**7.9** 5/16	**4.0** 5/32	**64.30** 2 17/32	**11.40** 0.448	**1.50** 0.058	**46.20** 1.817	**69.50** 2 47/64	**7.40** 0.290
47.630 1 7/8	**3.2** 1/8	**15.1** 19/32	**2.4** 3/32	**7.9** 5/16	**4.0** 5/32	**68.30** 2 11/16	**13.00** 0.510	**1.50** 0.058	**51.20** 2.017	**74.20** 2 59/64	**7.40** 0.290
52.390 2 1/16	**3.2** 1/8	**15.1** 19/32	**3.2** 1/8	**7.9** 5/16	**4.0** 5/32	**75.40** 2 31/32	**13.00** 0.510	**1.60** 0.063	**56.10** 2.207	**79.00** 3 7/64	**7.40** 0.290
57.150 2 1/4	**3.2** 1/8	**15.9** 5/8	**3.2** 1/8	**7.9** 5/16	**4.0** 5/32	**80.20** 3 5/32	**13.70** 0.541	**1.60** 0.063	**61.60** 2.425	**85.00** 3 11/32	**7.40** 0.290
61.910 2 7/16	**3.2** 1/8	**16.7** 21/32	**3.2** 1/8	**7.9** 5/16	**4.0** 5/32	**85.70** 3 3/8	**14.60** 0.573	**1.60** 0.063	**66.40** 2.613	**90.90** 3 37/64	**7.40** 0.290
66.680 2 5/8	**3.2** 1/8	**16.7** 21/32	**3.2** 1/8	**7.9** 5/16	**6.4** 1/4	**92.10** 3 5/8	**14.60** 0.573	**1.60** 0.063	**71.50** 2.816	**97.20** 3 53/64	**7.40** 0.290
71.440 2 13/16	**4.0** 5/32	**17.5** 11/16	**3.2** 1/8	**7.9** 5/16	**6.4** 1/4	**98.40** 3 7/8	**15.30** 0.604	**1.60** 0.072	**76.30** 3.003	**104.40** 4 7/64	**7.40** 0.290
76.200 3	**4.0** 5/32	**17.5** 11/16	**3.2** 1/8	**9.5** 3/8	**6.4** 1/4	**105.60** 4 5/32	**15.30** 0.604	**1.80** 0.072	**81.50** 3.207	**111.10** 4 3/8	**9.00** 0.353
80.960 3 3/16	**4.0** 5/32	**16.7** 21/32	**3.2** 1/8	**9.5** 3/8	**6.4** 1/4	**111.90** 4 13/32	**16.10** 0.635	**1.80** 0.072	**87.00** 3.425	**117.50** 4 5/8	**9.00** 0.353
85.730 3 3/8	**4.0** 5/32	**20.6** 13/16	**4.0** 5/32	**9.5** 3/8	**6.4** 1/4	**118.30** 4 21/32	**17.70** 0.698	**2.40** 0.094	**91.70** 3.612	**125.40** 4 15/16	**9.00** 0.353
90.490 3 9/16	**4.0** 5/32	**21.4** 27/32	**4.0** 5/32	**9.5** 3/8	**6.4** 1/4	**125.40** 4 15/16	**18.50** 0.729	**2.40** 0.094	**97.30** 3.830	**132.60** 5 7/32	**9.00** 0.353
96.840 3 13/16	**4.0** 5/32	**22.2** 7/8	**4.0** 5/32	**9.5** 3/8	**7.9** 5/16	**131.80** 5 3/16	**19.30** 0.760	**2.40** 0.094	**102.10** 4.018	**139.70** 5 1/2	**9.00** 0.353
100.010 3 15/16	**4.0** 5/32	**22.2** 7/8	**4.0** 5/32	**9.5** 3/8	**7.9** 5/16	**138.10** 5 7/16	**19.30** 0.760	**2.40** 0.094	**107.20** 4.222	**144.90** 5 45/64	**9.00** 0.353
106.360 4 3/16	**4.0** 5/32	**23** 29/32	**4.8** 3/16	**9.5** 3/8	**7.9** 5/16	**145.30** 5 23/32	**20.10** 0.791	**3.20** 0.125	**112.40** 4.425	**154.00** 6 1/16	**9.00** 0.353
115.890 4 9/16	**4.0** 5/32	**23.8** 15/16	**4.8** 3/16	**9.5** 3/8	**7.9** 5/16	**155.60** 6 1/8	**20.90** 0.823	**3.20** 0.125	**122.70** 4.831	**164.30** 6 15/32	**9.00** 0.353

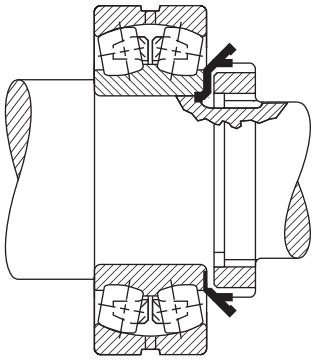
[1]See page D-76, table D-20 for suggested S-3 shaft limits.
[2]For W, L, H, S and M, tolerance is -0 to +0.4 mm, -0 to +1/64 in.

Continued on next page.

08-19-13 DRAFT

INCH ACCESSORIES – LOCKNUTS AND LOCKWASHERS – continued

- The chart below shows dimensions for locknuts and lockwashers used in the mounting of straight bore bearings on shafts.
- Other dimensions and tolerances related to shaft configurations are also shown.
- Dimensions are presented according to bearing bore size and are applicable to bearings in the various series (e.g., 222 and 223, etc.).

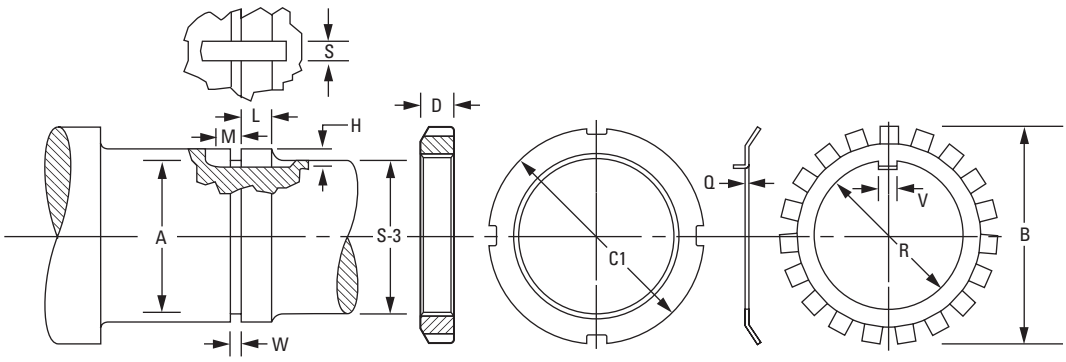


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Bearing Bore	Locknut	Lockwasher	Threads Per Inch	Threads					
				Major Dia.		Pitch Dia.		Minor Dia.	Relief Dia. A
				Max.	Min.	Max.	Min.		
mm				**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
130	AN 26	W 26	12	**129.690** 5.1060	**129.410** 5.0948	**128.320** 5.0519	**128.110** 5.0436	**127.100** 5.0038	**126.300** 4.9725
140	AN 28	W 28	12	**139.620** 5.4970	**139.340** 5.4858	**138.250** 5.4429	**138.040** 5.4346	**137.030** 5.3948	**136.230** 5.3635
150	AN 30	W 30	12	**149.560** 5.8880	**149.270** 5.8768	**148.180** 5.8339	**147.970** 5.8256	**146.960** 5.7858	**146.160** 5.7545
160	AN 32	W 32	8	**159.610** 6.2840	**159.230** 6.2688	**157.550** 6.2028	**157.320** 6.1937	**155.720** 6.1306	**154.920** 6.0993
170	AN 34	W 34	8	**169.140** 6.6590	**168.750** 6.6438	**167.080** 6.5778	**166.850** 6.5687	**165.240** 6.5056	**164.450** 6.4743
180	AN 36	W 36	8	**179.480** 7.0660	**179.090** 7.0508	**177.410** 6.9848	**177.180** 6.9757	**175.580** 6.9126	**174.790** 6.8813
190	AN 38	W 38	8	**189.790** 7.4720	**189.400** 7.4568	**187.730** 7.3908	**187.500** 7.3817	**185.890** 7.3186	**185.100** 7.2873
200	AN 40	W 40	8	**199.310** 7.8470	**198.930** 7.8318	**197.250** 7.7658	**196.960** 7.7544	**195.420** 7.6936	**194.620** 7.6623
220	N 044	W 44	8	**219.150** 8.6280	**218.770** 8.6128	**217.090** 8.5468	**216.780** 8.5347	**215.250** 8.4746	**214.460** 8.4433

(1) See page D-76, table D-20 for suggested S-3 shaft limits.
(2) For W, L, H, S and M, tolerance is -0 to +0.4 mm, -0 to +1/64 in.

08-19-13 DRAFT



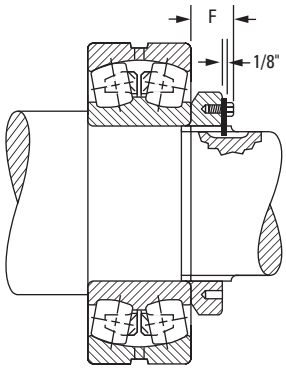
Shaft						Locknut		Lockwasher			
S-3[1]	W[2]	L[2]	H[2]	S[2]	M[2]	C1	D	Q	R	B	V
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
125.410 4 15/16	**4.0** 5/32	**25.4** 1	**4.8** 3/16	**12.7** 1/2	**7.9** 5/16	**171.50** 6 3/4	**22.50** 0.885	**3.20** 0.125	**132.70** 5.226	**178.60** 7 1/32	**11.10** 0.435
134.940 5 5/16	**4.0** 5/32	**27** 1 1/16	**4.8** 3/16	**15.9** 5/8	**7.9** 5/16	**180.20** 7 3/32	**24.10** 0.948	**3.20** 0.125	**142.70** 5.617	**188.90** 7 7/16	**15.00** 0.590
146.050 5 3/4	**4.0** 5/32	**28.6** 1 1/8	**5.6** 7/32	**15.9** 5/8	**9.5** 3/8	**195.30** 7 11/16	**24.90** 0.979	**4.00** 0.156	**152.90** 6.018	**204.80** 8 1/16	**15.00** 0.590
153.990 6 1/16	**6.4** 1/4	**30.2** 1 3/16	**6.0** 15/64	**15.9** 5/8	**9.5** 3/8	**204.80** 8 1/16	**26.40** 1.041	**4.00** 0.156	**163.20** 6.424	**214.30** 8 7/16	**15.00** 0.590
163.510 6 7/16	**6.4** 1/4	**31** 1 7/32	**6.0** 15/64	**19.1** 3/4	**9.5** 3/8	**219.90** 8 21/32	**27.30** 1.073	**4.00** 0.156	**172.70** 6.799	**230.20** 9 1/16	**18.20** 0.715
174.630 6 7/8	**6.4** 1/4	**31.8** 1 1/4	**6.0** 15/64	**19.1** 3/4	**9.5** 3/8	**230.20** 9 1/16	**28.00** 1.104	**4.00** 0.156	**183.00** 7.206	**239.70** 9 7/16	**18.20** 0.715
184.150 7 1/4	**6.4** 1/4	**32.5** 1 9/32	**6.0** 15/64	**19.1** 3/4	**9.5** 3/8	**240.50** 9 15/32	**28.80** 1.135	**4.00** 0.156	**193.30** 7.612	**250.80** 9 7/8	**18.20** 0.715
193.680 7 5/8	**6.4** 1/4	**34.1** 1 11/32	**6.0** 15/64	**22.2** 7/8	**9.5** 3/8	**250.00** 9 27/32	**30.40** 1.198	**4.00** 0.156	**203.60** 8.017	**261.90** 10 5/16	**21.30** 0.840
211.140 8 5/16	**6.4** 1/4	**34.9** 1 3/8	**9.5** 3/8	**27.0** 1 1/16	**9.5** 3/8	**279.40** 11	**31.80** 1.250	**3.20** 0.125	**221.10** 8.703	**290.50** 11 7/16	**23.90** 0.940

[1]See page D-76, table D-20 for suggested S-3 shaft limits.
[2]For W, L, H, S and M, tolerance is -0 to +0.4 mm, -0 to +1/64 in.

08-19-13 DRAFT

INCH ACCESSORIES – LOCKNUTS AND LOCKPLATES

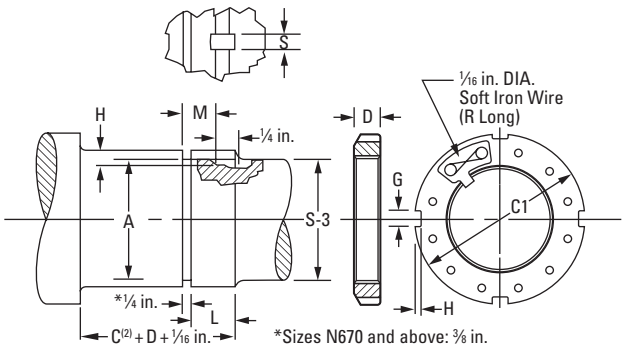
- The chart below shows dimensions for locknuts and lockplates used in the mounting of straight bore bearings on shafts.
- Other dimensions and tolerances related to shaft configurations are also shown.
- Dimensions are presented according to bearing bore size and are applicable to bearings in the various series (e.g., 222, 223, etc.).



Bearing Bore	Locknut	Lockplate	Threads Per Inch	Threads					
				Major Dia.		Pitch Dia.		Minor Dia.	Relief Dia. A
				Max.	Min.	Max.	Min.		
mm				**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
240	N 048	P 48	6	**239.83** 9.442	**239.31** 9.4218	**237.08** 9.3337	**236.76** 9.3213	**234.63** 9.2374	**233.44** 9.1905
260	N 052	P 52	6	**258.88** 10.192	**258.36** 10.1718	**256.13** 10.0837	**255.8** 10.0707	**253.68** 9.9874	**252.49** 9.9405
280	N 056	P 56	6	**279.50** 11.004	**278.99** 10.9838	**276.75** 10.8957	**276.42** 10.8827	**274.31** 10.7994	**273.11** 10.7525
300	N 060	P 60	6	**299.34** 11.785	**298.83** 11.7648	**296.59** 11.6767	**296.26** 11.6637	**294.14** 11.5804	**292.95** 11.5335
320	N 064	P 64	6	**319.08** 12.562	**318.56** 12.5418	**316.32** 12.4537	**315.98** 12.4402	**313.88** 12.3574	**312.69** 12.3105
340	N 068	P 68	5	**337.90** 13.303	**337.49** 13.287	**335.36** 13.203	**334.95** 13.187	**332.31** 13.083	**331.11** 13.036
360	N 072	P 72	5	**359.00** 14.134	**358.60** 14.118	**356.46** 14.034	**356.06** 14.018	**353.42** 13.914	**352.22** 13.867
380	N 076	P 76	5	**378.99** 14.921	**378.59** 14.905	**376.45** 14.821	**376.05** 14.805	**373.41** 14.701	**372.21** 14.654
400	N 080	P 80	5	**399.01** 15.709	**398.60** 15.693	**396.47** 15.609	**396.06** 15.593	**393.42** 15.489	**392.23** 15.442
420	N 084	P 84	5	**419.00** 16.496	**418.59** 16.480	**416.46** 16.396	**416.05** 16.380	**413.41** 16.276	**412.22** 16.229
440	N 088	P 88	5	**438.99** 17.283	**438.58** 17.267	**436.45** 17.183	**436.05** 17.167	**433.40** 17.063	**432.21** 17.016
460	N 092	P 92	5	**459.00** 18.071	**458.60** 18.055	**456.46** 17.971	**456.06** 17.955	**453.42** 17.851	**452.22** 17.804
480	N 096	P 96	5	**478.99** 18.858	**478.59** 18.842	**476.45** 18.758	**476.05** 18.742	**473.41** 18.638	**472.21** 18.591

(1)See page D-76, table D-20 for suggested S-3 shaft limits.
(2)C is outer-ring width that may be obtained from bearing dimension tables.
(3)For L, H, S and M, tolerance is -0 to +1/64 in., -0 to + 0.4 mm.

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Shaft					Locknut/Lockplate					
S-3(1)	L(3)	H(3)	S(3)	M(3)	C1	D	G	H ±0.25 mm ±0.010 in.	R	F
mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.
233.36 9 3/16	**42.86** 1 11/16	**11.1** 7/16	**28.6** 1 1/8	**34.9** 1 3/8	**290.5** 11 7/16	**34.1** 1 11/32	**22.48** 0.885	**9.5** 3/8	**203.2** 8	**43.26** 1 45/64
252.41 9 15/16	**45.24** 1 25/32	**11.1** 7/16	**30.2** 1 3/16	**37.3** 1 15/32	**309.6** 12 3/16	**35.7** 1 13/32	**22.48** 0.885	**9.5** 3/8	**228.6** 9	**44.85** 1 49/64
273.05 10 3/4	**47.63** 1 7/8	**11.1** 7/16	**31.8** 1 1/4	**39.7** 1 9/16	**330.2** 13	**38.1** 1 1/2	**25.65** 1.010	**9.5** 3/8	**228.6** 9	**47.23** 1 55/64
292.1 11 1/2	**49.21** 1 15/16	**11.1** 7/16	**34.9** 1 3/8	**41.3** 1 5/8	**360.4** 14 3/16	**39.7** 1 9/16	**25.65** 1.010	**12.7** 1/2	**254.0** 10	**50.01** 1 31/32
312.74 12 5/16	**51.59** 2 1/32	**11.1** 7/16	**36.5** 1 7/16	**43.7** 1 23/32	**381.0** 15	**42.1** 1 21/32	**25.65** 1.010	**12.7** 1/2	**254.0** 10	**52.39** 2 1/16
331.79 13 1/16	**56.36** 2 7/32	**11.1** 7/16	**38.1** 1 1/2	**48.4** 1 29/32	**400.1** 15 3/4	**45.2** 1 25/32	**25.65** 1.010	**12.7** 1/2	**279.4** 11	**55.56** 2 3/16
350.84 13 13/16	**56.36** 2 7/32	**12.7** 1/2	**38.1** 1 1/2	**48.4** 1 29/32	**419.1** 16 1/2	**45.2** 1 25/32	**32.00** 1.260	**12.7** 1/2	**279.4** 11	**55.56** 2 3/16
371.48 14 5/8	**59.53** 2 11/32	**12.7** 1/2	**38.1** 1 1/2	**51.59** 2 1/32	**450.9** 17 3/4	**48.4** 1 29/32	**32.00** 1.260	**15.1** 19/32	**304.8** 12	**61.12** 2 13/32
390.53 15 3/8	**63.50** 2 1/2	**12.7** 1/2	**41.3** 1 5/8	**55.6** 2 3/16	**469.9** 18 1/2	**52.4** 2 1/16	**32.00** 1.260	**15.1** 19/32	**330.2** 13	**65.09** 2 9/16
411.16 16 3/16	**63.50** 2 1/2	**12.7** 1/2	**41.3** 1 5/8	**55.6** 2 3/16	**490.5** 19 5/16	**52.4** 2 1/16	**35.18** 1.385	**15.1** 19/32	**330.2** 13	**65.09** 2 9/16
431.80 17	**71.44** 2 13/16	**12.7** 1/2	**46.0** 1 13/16	**63.50** 2 1/2	**520.7** 20 1/2	**60.3** 2 3/8	**35.18** 1.385	**15.1** 19/32	**355.6** 14	**75.41** 2 31/32
450.85 17 3/4	**71.44** 2 13/16	**12.7** 1/2	**46.0** 1 13/16	**63.50** 2 1/2	**539.8** 21 1/4	**60.3** 2 3/8	**35.18** 1.385	**15.1** 19/32	**406.4** 16	**75.41** 2 31/32
469.9 18 1/2	**71.44** 2 13/16	**12.7** 1/2	**46.0** 1 13/16	**63.50** 2 1/2	**560.4** 22 1/16	**60.3** 2 3/8	**38.35** 1.510	**15.1** 19/32	**406.4** 16	**75.41** 2 31/32

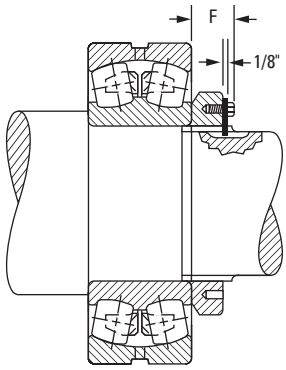
(1)See page D-76, table D-20 for suggested S-3 shaft limits.
(2)C is outer-ring width that may be obtained from bearing dimension tables.
(3)For L, H, S and M, tolerance is -0 to +1/64 in., -0 to + 0.4 mm.

Continued on next page.

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INCH ACCESSORIES – LOCKNUTS AND LOCKPLATES – continued

- The chart below shows dimensions for locknuts and lockplates used in the mounting of straight bore bearings on shafts.
- Other dimensions and tolerances related to shaft configurations are also shown.
- Dimensions are presented according to bearing bore size and are applicable to bearings in the various series (e.g., 222, 223, etc.).

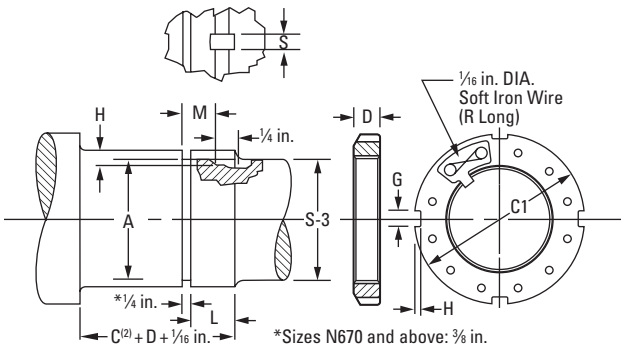


Continued from previous page.

Bearing Bore	Locknut	Lockplate	Threads Per Inch	Threads					
				Major Dia.		Pitch Dia.		Minor Dia.	Relief Dia. A
				Max.	Min.	Max.	Min.		
mm				**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
500	N 500	P 500	5	**499.01** 19.646	**498.60** 19.630	**496.47** 19.546	**496.06** 19.530	**493.42** 19.426	**492.23** 19.379
530	N 530	P 530	4	**529.01** 20.827	**528.50** 20.807	**525.83** 20.702	**525.32** 20.682	**522.15** 20.557	**520.55** 20.494
560	N 560	P 560	4	**559.00** 22.008	**558.50** 21.988	**555.83** 21.883	**555.32** 21.863	**552.15** 21.738	**550.55** 21.675
600	N 600	P 600	4	**599.01** 23.583	**598.50** 23.563	**595.83** 23.458	**595.33** 23.438	**592.15** 23.313	**590.55** 23.250
630	N 630	P 630	4	**629.01** 24.764	**628.50** 24.744	**625.83** 24.639	**625.32** 24.619	**622.15** 24.494	**520.55** 24.431
670	N 670	P 670	4	**669.01** 26.339	**668.50** 26.319	**665.84** 26.214	**665.33** 26.194	**662.15** 26.069	**660.55** 26.006
710	N 710	P 710	3	**709.02** 27.914	**708.33** 27.887	**704.77** 27.747	**704.09** 27.720	**700.02** 27.56	**698.42** 27.497
750	N 750	P 750	3	**749.02** 29.489	**748.34** 29.462	**744.78** 29.322	**744.09** 29.295	**740.03** 29.135	**738.43** 29.072
800	N 800	P 800	3	**799.01** 31.457	**798.32** 31.430	**794.77** 31.290	**794.08** 31.263	**790.02** 31.103	**788.42** 31.040
850	N 850	P 850	3	**849.02** 33.426	**848.34** 33.399	**844.78** 33.259	**844.09** 33.232	**840.03** 33.072	**838.43** 33.009
900	N 900	P 900	3	**899.01** 35.394	**898.32** 35.367	**894.77** 35.227	**894.08** 35.200	**890.02** 35.040	**888.42** 34.977
950	N 950	P 950	3	**949.02** 37.363	**948.33** 37.336	**944.78** 37.196	**944.09** 37.169	**940.03** 37.009	**938.43** 36.946

(1)See page D-76, table D-20 for suggested S-3 shaft limits.
(2)C is outer-ring width that may be obtained from bearing dimension tables.
(3)For L, H, S and M, tolerance is -0 to +1/64 in., -0 to + 0.4 mm.

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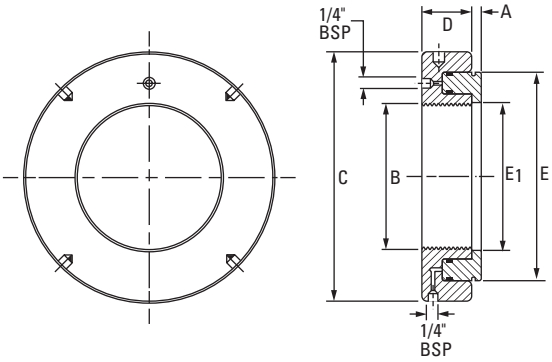


Shaft					Locknut/Lockplate					
S-3[1]	L[3]	H[3]	S[3]	M[3]	C1	D	G	H ±0.25 mm ±0.010 in.	R	F
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
489.0 19 ¼	**79.4** 3 ⅛	**12.7** ½	**46.0** 1 13/16	**71.4** 2 13/16	**579.4** 22 13/16	**68.3** 2 11/16	**38.35** 1.510	**15.1** 19/32	**406.4** 16	**83.3** 3 9/32
517.5 20 ⅜	**79.4** 3 ⅛	**12.7** ½	**46.0** 1 13/16	**71.4** 2 13/16	**630.2** 24 13/16	**68.3** 2 11/16	**41.53** 1.635	**20.6** 13/16	**425.5** 16 ¾	**83.3** 3 9/32
549.3 21 ⅝	**85.7** 3 ⅜	**12.7** ½	**46.0** 1 13/16	**77.8** 3 1/16	**649.3** 25 9/16	**74.6** 2 15/16	**41.53** 1.635	**20.6** 13/16	**476.3** 18 ¾	**89.7** 3 17/32
587.4 23 ⅛	**85.7** 3 ⅜	**12.7** ½	**46.0** 1 13/16	**77.8** 3 1/16	**700.1** 27 9/16	**74.6** 2 15/16	**41.53** 1.635	**20.6** 13/16	**508.0** 20	**89.7** 3 17/32
619.1 24 ⅜	**85.7** 3 ⅜	**12.7** ½	**50.8** 2	**77.8** 3 1/16	**730.3** 28 ¾	**74.6** 2 15/16	**47.88** 1.885	**20.6** 13/16	**520.7** 20 ½	**92.1** 3 ⅝
657.2 25 ⅞	**90.5** 3 9/16	**12.7** ½	**50.8** 2	**82.6** 3 ¼	**779.5** 30 11/16	**79.4** 3 ⅛	**47.88** 1.885	**20.6** 13/16	**546.1** 21 ½	**96.8** 3 13/16
695.3 27 ⅜	**101.6** 4	**15.9** ⅝	**50.8** 2	**93.7** 3 11/16	**830.3** 32 11/16	**90.5** 3 9/16	**51.30** 2.020	**25.4** 1	**571.5** 22 ½	**108.0** 4 ¼
736.6 29	**101.6** 4	**15.9** ⅝	**50.8** 2	**93.7** 3 11/16	**870.0** 34 ¼	**90.5** 3 9/16	**57.66** 2.270	**25.4** 1	**584.2** 23	**108.0** 4 ¼
787.4 31	**101.6** 4	**15.9** ⅝	**50.8** 2	**93.7** 3 11/16	**920.8** 36 ¼	**90.5** 3 9/16	**57.66** 2.270	**25.4** 1	**616.0** 24 ¼	**108.0** 4 ¼
835.0 32 ⅞	**101.6** 4	**15.9** ⅝	**50.8** 2	**93.7** 3 11/16	**979.5** 38 9/16	**90.5** 3 9/16	**64.01** 2.520	**25.4** 1	**647.7** 25 ½	**108.0** 4 ¼
885.8 34 ⅞	**111.1** 4 ⅜	**15.9** ⅝	**50.8** 2	**103.2** 4 1/16	**1030.3** 40 9/16	**100.0** 3 15/16	**64.01** 2.520	**25.4** 1	**666.8** 26 ¼	**117.5** 4 ⅝
933.5 36 ¾	**114.3** 4 ½	**19.1** ¾	**50.8** 2	**108** 4 ¼	**1092.2** 43	**100.0** 3 15/16	**64.01** 2.520	**25.4** 1	**692.2** 27 ¼	**117.5** 4 ⅝

[1]See page D-76, table D-20 for suggested S-3 shaft limits.
[2]C is outer-ring width that may be obtained from bearing dimension tables.
[3]For L, H, S and M, tolerance is -0 to +1/64 in., -0 to + 0.4 mm.

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INCH HMVC HYDRAULIC NUTS



Part No.	Major Dia. B	Threads Per Inch	Dimensions					Piston Length of Travel	Piston Area	Assembly Wt.
			C	D	E	E_1	A			
	in.		in.	in.	in.	in.	in.	in.	in.²	lbs.
HMVC - 10	1.967	18	4.488	1.496	3.386	2.008	0.157	0.197	4.5	5.5
HMVC - 12	2.360	18	4.921	1.496	3.701	2.402	0.197	0.197	5.0	6.2
HMVC - 13	2.548	18	5.315	1.496	3.976	2.598	0.197	0.197	5.4	6.6
HMVC - 14	2.751	18	5.512	1.496	4.213	2.795	0.197	0.197	6.0	7.3
HMVC - 15	2.933	12	5.709	1.496	4.409	2.992	0.197	0.197	6.3	7.7
HMVC - 16	3.137	12	5.906	1.496	4.606	3.189	0.197	0.197	6.5	8.4
HMVC - 17	3.340	12	6.102	1.496	4.803	3.386	0.197	0.197	6.8	8.6
HMVC - 18	3.527	12	6.299	1.496	5.000	3.583	0.197	0.197	7.4	9.0
HMVC - 19	3.730	12	6.496	1.496	5.236	3.780	0.197	0.197	7.7	9.7
HMVC - 20	3.918	12	6.693	1.496	5.433	3.976	0.236	0.197	8.1	10.0
HMVC - 22	4.325	12	7.087	1.496	5.866	4.370	0.236	0.197	8.8	12.5
HMVC - 24	4.716	12	7.480	1.496	6.260	4.764	0.236	0.197	9.5	11.7
HMVC - 26	5.106	12	7.874	1.496	6.693	5.157	0.236	0.197	10.1	12.5
HMVC - 28	5.497	12	8.268	1.496	7.087	5.551	0.276	0.197	10.7	13.4
HMVC - 30	5.888	12	8.661	1.535	7.480	5.945	0.276	0.197	11.6	14.5
HMVC - 32	6.284	8	9.252	1.575	8.110	6.339	0.276	0.236	13.3	17.0
HMVC - 34	6.659	8	9.645	1.614	8.465	6.732	0.276	0.236	14.7	18.5
HMVC - 36	7.066	8	10.039	1.615	8.858	7.126	0.276	0.236	16.0	20.0
HMVC - 38	7.472	8	10.630	1.653	9.409	7.520	0.315	0.276	17.8	23.1
HMVC - 40	7.847	8	11.024	1.693	9.882	7.913	0.315	0.276	19.4	25.1
HMVC - 44	8.628	8	12.008	1.732	10.748	8.740	0.315	0.354	22.3	29.5
HMVC - 48	9.442	6	12.992	1.811	11.654	9.528	0.354	0.394	25.6	35.9
HMVC - 52	10.192	6	13.976	1.850	12.559	10.315	0.354	0.433	29.1	41.8
HMVC - 56	11.004	6	14.961	1.929	13.425	11.102	0.354	0.472	32.7	48.4
HMVC - 60	11.785	6	15.945	2.008	14.331	11.890	0.394	0.551	36.6	56.3
HMVC - 64	12.562	6	16.929	2.087	15.236	12.677	0.394	0.551	40.8	65.1
HMVC - 68	13.334	5	17.717	2.087	16.063	13.465	0.394	0.551	44.0	71.5
HMVC - 72	14.170	5	18.701	2.205	16.969	14.252	0.394	0.590	48.5	81.4
HMVC - 76	14.957	5	19.685	2.283	17.795	15.039	0.433	0.630	52.1	90.2
HMVC - 80	15.745	5	20.669	2.362	18.701	15.827	0.433	0.669	56.9	101.2
HMVC - 84	16.532	5	21.457	2.401	19.606	16.614	0.433	0.669	62.0	110.9
HMVC - 88	17.319	5	22.244	2.441	20.433	17.402	0.472	0.669	65.9	121.0
HMVC - 92	18.107	5	23.228	2.520	21.299	18.189	0.472	0.669	69.8	134.2
HMVC - 96	18.894	5	24.094	2.559	22.165	18.976	0.472	0.748	75.2	143.0
HMVC - 100	19.682	5	25.000	2.598	23.031	19.764	0.472	0.748	80.6	157.3
HMVC - 106	20.867	4	26.378	2.716	24.291	20.945	0.512	0.827	87.1	176.0
HMVC - 112	21.923	4	27.756	2.795	25.591	22.126	0.512	0.866	94.9	198.0
HMVC - 120	23.623	4	29.528	2.874	27.283	23.701	0.512	0.905	104.5	220.0
HMVC - 126	24.804	4	30.709	2.913	28.583	24.882	0.551	0.905	113.0	242.0
HMVC - 134	26.379	4	32.480	2.992	30.236	26.457	0.551	0.945	123.2	270.6
HMVC - 142	27.961	3	34.252	3.071	31.969	28.031	0.590	0.984	135.9	301.4
HMVC - 150	29.536	3	36.024	3.110	33.661	29.606	0.590	0.984	150.4	330.0
HMVC - 160	31.504	3	38.189	3.150	35.748	31.575	0.630	0.984	161.2	380.6
HMVC - 170	33.473	3	40.157	3.268	37.874	33.543	0.630	1.024	177.6	418.0
HMVC - 180	35.441	3	42.126	3.386	39.960	35.511	0.669	1.181	192.2	462.0
HMVC - 190	37.410	3	44.291	3.386	42.087	37.480	0.669	1.181	210.2	523.6

HMVC - 10 through HMVC - 64 have American National Threads Class 3.

HMVC - 68 through HMVC - 190 have Acme General-Purpose Threads Class 3G.

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E

TIMKEN® SNT SPLIT PLUMMER BLOCKS

The Timken® SNT plummer blocks metric product line is available with a variety of components and accessories that allow for customizable solutions. SNT split plummer blocks are available in rugged cast iron, ductile iron or cast steel to match a range of industrial environments and applications. Our Timken SNT plummer blocks have separate, matched caps and bases. These housings feature multiple design attributes to ease installation, including center marks for easier alignment and dimples for positioning pins and mounting bolt holes. Remove the cap using a pry-tool slot for bearing inspection, service and replacement.

Available in a variety of shaft sizes, Timken SNT plummer blocks offer the choice of tapered-bore design for easy mounting or a straight-bore design for better axial location. The block can be converted from fixed to float by adding or removing locating rings. Sealing options for the Timken SNT include double-lip, labyrinth, V-ring and taconite designs.

Updates are made periodically to this catalog. Visit www.timken.com for the most recent version of the Timken® Housed Unit Catalog.



TYPICAL INDUSTRIES AND APPLICATIONS

Common uses include processing and material handling equipment found in many industries, including power generation (coal), mining, aggregate, cement, metal mills, pulp, paper and other forestry operations, water treatment and food processing. Applications include conveyors, bulk material handling, industrial fans and blowers.

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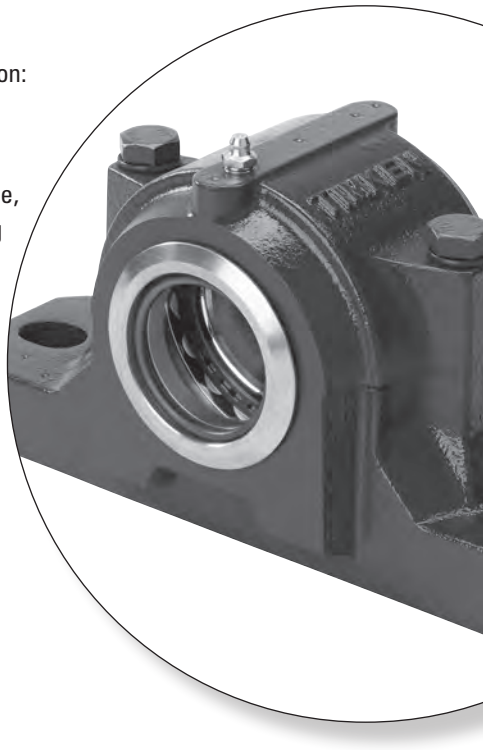
ENGINEERING

The following topics are covered within this engineering section:

- Spherical roller bearing design types.
- Shaft fitting practice and mounting recommendations.

This engineering section is not intended to be comprehensive, but does serve as a useful guide in spherical roller bearing and SNT plummer block housing selection.

To view the complete engineering catalog, please visit www.timken.com. To order the catalog, please contact your Timken engineer and request a copy of the Timken Engineering Manual (order no. 10424).



The following topics are covered within this section:

Radial Spherical Roller Bearing Types and Cages E-4
Metric System Tolerances E-4
Spherical Roller Bearing Mounting, Fitting,
Setting and Installation E-7
Shaft Fits for Cylindrical Bore Bearings E-15
Fitting Practice Tables E-16

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RADIAL SPHERICAL ROLLER BEARING TYPES AND CAGES

The principle styles of radial spherical roller bearings that Timken offers are:

- ≤600 mm O.D.: EJ, EM and EMB
- ≥600 mm O.D.: YMB

Above suffixes correspond to different types of designs depending on bearing size and geometry. The main difference is the cage design used in the assembly. Spherical roller bearings with an EJ cage suffix are fitted with a stamped-steel cage. YM/EM/YMB suffixes are used with brass cage designs.

The newly redesigned Timken® EJ, EM and EMB bearings offer higher load ratings, increased thermal speed ratings and reduced operating temperatures compared to the previous offering.

In addition to these improvements, cage designs vary between the different styles as noted below.

Style	Cage Design
EJ	Land-riding steel cage; one per row
EM	Roller-riding one-piece brass cage
EMB/YMB	Land-riding one-piece brass cage

Most Timken® spherical roller bearings are available with a cylindrical bore as well as a tapered bore. Tapered bore bearing part numbers are designated with a K suffix.

METRIC SYSTEM TOLERANCES

Spherical roller bearings are manufactured to a number of specifications, with each having classes that define tolerances on dimensions such as bore, O.D., width and runout. Metric bearings have been manufactured to corresponding standard negative tolerances.

The following table summarizes the different specifications and classes for spherical roller bearings and other available Timken bearing lines. For the purposes of this catalog, ISO specifications are shown for spherical roller bearings.

Boundary dimension tolerances for spherical roller bearing usage are listed in the following tables. These tolerances are provided for use in selecting bearings for general applications, in conjunction with the bearing mounting and fitting practices offered in later sections.

TABLE E-1. BEARING SPECIFICATIONS AND CLASSES

System	Specification	Bearing Type	Standard Bearing Class		Precision Bearing Class			
Metric	ISO/DIN	All Bearing Types	P0	P6	P5	P4	P2	–
Imperial	ABMA	Spherical	RBEC 1	RBEC 3	RBEC 5	RBEC 7	RBEC 9	–

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Standard Timken radial spherical roller bearings maintain normal tolerances according to ISO 492. Tables E-2 and E-3 list the critical tolerances for these bearing types. Timken SNT housings are used with bearings that conform to ISO P0, or standard tolerances.

The term deviation is defined as the difference between a single ring dimension and the nominal dimension. For metric tolerances, the nominal dimension is at a +0 mm tolerance. The deviation is the tolerance range for the listed parameter. Variation is defined as the difference between the largest and smallest measurements of a given parameter for an individual ring.

TABLE E-2. SPHERICAL ROLLER BEARING TOLERANCES – INNER RING (METRIC)[1]

Bearing Bore		Bore Deviation[2] Δ_{dmp}			Width Variation V_{BS}			Radial Runout K_{ia}			Face Runout with Bore S_d	Axial Runout S_{ia}	Width Deviation Inner & Outer Rings[2] Δ_{Bs} and Δ_{Cs}	
Over	Incl.	P0	P6	P5	P0	P6	P5	P0	P6	P5	P5	P5	P0, P6	P5
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
2.5000 0.0984	**10.000** 0.3937	**-0.008** -0.0003	**-0.007** -0.0003	**-0.005** -0.0002	**0.015** 0.0006	**0.015** 0.0006	**0.005** 0.0002	**0.010** 0.0004	**0.006** 0.0002	**0.004** 0.0002	**0.007** 0.0003	**0.007** 0.0003	**-0.120** -0.0047	**-0.040** -0.0157
10.000 0.3937	**18.000** 0.7087	**-0.008** -0.0003	**-0.007** -0.0003	**-0.005** -0.0002	**0.020** 0.0008	**0.020** 0.0008	**0.005** 0.0002	**0.010** 0.0004	**0.007** 0.0003	**0.004** 0.0002	**0.007** 0.0003	**0.007** 0.0003	**-0.120** -0.0047	**-0.080** -0.0031
18.000 0.7087	**30.000** 1.1811	**-0.010** -0.0004	**-0.008** -0.0003	**-0.006** -0.0002	**0.020** 0.0008	**0.020** 0.0008	**0.005** 0.0002	**0.013** 0.0005	**0.008** 0.0003	**0.004** 0.0002	**0.008** 0.0003	**0.008** 0.0003	**-0.120** -0.0047	**-0.120** -0.0047
30.000 1.1811	**50.000** 1.9685	**-0.012** -0.0005	**-0.010** -0.0004	**-0.008** -0.0003	**0.020** 0.0008	**0.020** 0.0008	**0.005** 0.0002	**0.015** 0.0006	**0.010** 0.0004	**0.005** 0.0002	**0.008** 0.0003	**0.008** 0.0003	**-0.120** -0.0047	**-0.120** -0.0047
50.000 1.9685	**80.000** 3.1496	**-0.015** -0.0006	**-0.012** -0.0005	**-0.009** -0.0004	**0.025** 0.0010	**0.025** 0.0010	**0.006** 0.0002	**0.020** 0.0008	**0.010** 0.0004	**0.005** 0.0002	**0.008** 0.0003	**0.008** 0.0003	**-0.150** -0.0059	**-0.150** -0.0059
80.000 3.1496	**120.000** 4.7244	**-0.020** -0.0008	**-0.015** -0.0006	**-0.010** -0.0004	**0.025** 0.0010	**0.025** 0.0010	**0.007** 0.0003	**0.025** 0.0010	**0.013** 0.0005	**0.006** 0.0002	**0.009** 0.0004	**0.009** 0.0004	**-0.200** -0.0079	**-0.200** -0.0079
120.000 4.7244	**150.000** 5.9055	**-0.025** -0.0010	**-0.018** -0.0007	**-0.013** -0.0005	**0.030** 0.0012	**0.030** 0.0012	**0.008** 0.0003	**0.030** 0.0012	**0.018** 0.0007	**0.008** 0.0003	**0.010** 0.0004	**0.010** 0.0004	**-0.250** -0.0098	**-0.250** -0.0098
150.000 5.9055	**180.000** 7.0866	**-0.025** -0.0010	**-0.018** -0.0007	**-0.013** -0.0005	**0.030** 0.0012	**0.030** 0.0012	**0.008** 0.0003	**0.030** 0.0012	**0.018** 0.0007	**0.008** 0.0003	**0.010** 0.0004	**0.010** 0.0004	**-0.250** -0.0098	**-0.250** -0.0098
180.000 7.0866	**250.000** 9.8425	**-0.030** -0.0012	**-0.022** -0.0009	**-0.015** -0.0006	**0.030** 0.0012	**0.030** 0.0012	**0.010** 0.0004	**0.040** 0.0016	**0.020** 0.0008	**0.010** 0.0004	**0.011** 0.0004	**0.013** 0.0005	**-0.300** -0.0018	**-0.300** -0.0018
250.000 9.8425	**315.000** 12.4016	**-0.035** -0.0014	**-0.025** -0.0010	**-0.018** -0.0007	**0.035** 0.0014	**0.035** 0.0014	**0.013** 0.0005	**0.050** 0.0020	**0.025** 0.0010	**0.013** 0.0005	**0.013** 0.0005	**0.015** 0.0006	**-0.350** -0.0138	**-0.350** -0.0138
315.000 12.4016	**400.000** 15.7480	**-0.040** -0.0016	**-0.030** -0.0012	**-0.023** -0.0009	**0.040** 0.0016	**0.040** 0.0016	**0.015** 0.0006	**0.060** 0.0024	**0.030** 0.0012	**0.015** 0.0006	**0.015** 0.0006	**0.020** 0.0008	**-0.400** -0.0157	**-0.400** -0.0157
400.000 15.7480	**500.000** 19.6850	**-0.045** -0.0018	**-0.035** -0.0014	–	**0.050** 0.0020	**0.045** 0.0018	–	**0.065** 0.0026	**0.035** 0.0014	–	–	–	**-0.450** -0.0177	–
500.000 19.6850	**630.000** 24.8031	**-0.050** -0.0020	**-0.040** -0.0016	–	**0.060** 0.0024	**0.050** 0.0020	–	**0.070** 0.0028	**0.040** 0.0016	–	–	–	**-0.500** -0.0197	–
630.000 24.8031	**800.000** 31.4961	**-0.075** -0.0030	–	–	**0.070** 0.0028	–	–	**0.080** 0.0031	–	–	–	–	**-0.750** -0.0295	–

[1]Symbol definitions are found on pages 32–33 of the Timken Engineering Manual (order no. 10424).
[2]Tolerance range is from +0 to value listed.
NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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TABLE E-3. SPHERICAL ROLLER BEARING TOLERANCES – OUTER RING (METRIC)[1]

Bearing O.D.		Outside Deviation[2] Δ_{Dmp}			Width Variation V_{CS}		Radial Runout K_{ea}			Axial Runout S_{ea}	Outside Diameter Runout With Face S_D
Over	Incl.	P0	P6	P5	P0	P6	P0	P6	P5	P5	P5
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
0.000 0.0000	**18.000** 0.7087	**-0.008** -0.0003	**-0.007** -0.0003	**-0.005** -0.0002	**0.015** 0.0006	**0.005** 0.0002	**0.015** 0.0006	**0.008** 0.0003	**0.005** 0.0002	**0.008** 0.0003	**0.008** 0.0003
18.000 0.7087	**30.000** 1.1811	**-0.009** -0.0004	**-0.008** -0.0003	**-0.006** -0.00024	**0.020** 0.0008	**0.005** 0.0002	**0.015** 0.0006	**0.009** 0.0004	**0.006** 0.00024	**0.008** 0.0003	**0.008** 0.0003
30.000 1.1811	**50.000** 1.9685	**-0.011** -0.0004	**-0.009** -0.0004	**-0.007** -0.0003	**0.020** 0.0008	**0.005** 0.0002	**0.020** 0.0008	**0.010** 0.0004	**0.007** 0.0003	**0.008** 0.0003	**0.008** 0.0003
50.000 1.9685	**80.000** 3.1496	**-0.013** -0.0005	**-0.011** -0.0004	**-0.009** -0.0004	**0.025** 0.0010	**0.006** 0.00024	**0.025** 0.0010	**0.013** 0.0005	**0.008** 0.0003	**0.010** 0.0004	**0.008** 0.0003
80.000 3.1496	**120.000** 4.7244	**-0.015** -0.0006	**-0.013** -0.0005	**-0.010** -0.0004	**0.025** 0.0010	**0.008** 0.0003	**0.035** 0.0014	**0.018** 0.0007	**0.010** 0.0004	**0.011** 0.0004	**0.009** 0.0004
120.000 4.7244	**150.000** 5.9055	**-0.018** -0.0007	**-0.015** -0.0006	**-0.011** -0.0004	**0.030** 0.0012	**0.008** 0.0003	**0.040** 0.0016	**0.020** 0.0008	**0.011** 0.0004	**0.013** 0.0005	**0.010** 0.0004
150.000 5.9055	**180.000** 7.0866	**-0.025** -0.0010	**-0.018** -0.0007	**-0.013** -0.0005	**0.030** 0.0012	**0.008** 0.0003	**0.045** 0.0018	**0.023** 0.0009	**0.013** 0.0005	**0.014** 0.0006	**0.010** 0.0004
180.000 7.0866	**250.000** 9.8425	**-0.030** -0.0012	**-0.020** -0.0008	**-0.015** -0.0006	**0.030** 0.0012	**0.010** 0.0004	**0.050** 0.0020	**0.025** 0.0010	**0.015** 0.0006	**0.015** 0.0006	**0.011** 0.0004
250.000 9.8425	**315.000** 12.4016	**-0.035** -0.0014	**-0.025** -0.0010	**-0.018** -0.0007	**0.035** 0.0014	**0.011** 0.0004	**0.060** 0.0024	**0.030** 0.0012	**0.018** 0.0007	**0.018** 0.0007	**0.013** 0.0005
315.000 12.4016	**400.000** 15.7480	**-0.040** -0.0016	**-0.028** -0.0011	**-0.020** -0.0008	**0.040** 0.0016	**0.013** 0.0005	**0.070** 0.0028	**0.035** 0.0014	**0.020** 0.0008	**0.020** 0.0008	**0.013** 0.0005
400.000 15.7480	**500.000** 19.6850	**-0.045** -0.0018	**-0.033** -0.0013	**-0.023** -0.0009	**0.045** 0.0018	**0.015** 0.0006	**0.080** 0.0031	**0.040** 0.0016	**0.023** 0.0009	**0.023** 0.0009	**0.015** 0.0006
500.000 19.6850	**630.000** 24.8031	**-0.050** -0.0020	**-0.038** -0.0015	**-0.028** -0.0011	**0.050** 0.0020	**0.018** 0.0007	**0.100** 0.0039	**0.050** 0.0020	**0.025** 0.0010	**0.025** 0.0010	**0.018** 0.0007
630.000 24.8031	**800.000** 31.4961	**-0.075** -0.0030	**-0.045** -0.0018	**-0.035** -0.0014	–	**0.020** 0.0008	**0.120** 0.0047	**0.060** 0.0024	**0.030** 0.0012	**0.030** 0.0012	**0.020** 0.0008
800.000 31.4961	**1000.000** 39.3701	**-0.100** -0.0040	**-0.060** -0.0024	–	–	–	**0.140** 0.0055	**0.075** 0.0030	–	–	–
1000.000 39.3701	**1250.000** 49.2126	**-0.125** -0.0050	–	–	–	–	**0.160** 0.0063	– –	–	–	–

[1]Symbol definitions are found on pages 32–33 of the Timken Engineering Manual (order no. 10424).
[2]Tolerance range is from +0 to value listed.
NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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SPHERICAL ROLLER BEARING MOUNTING, FITTING, SETTING AND INSTALLATION

MOUNTING

Typically, spherical roller bearings are mounted in combination with another spherical roller bearing or a cylindrical roller bearing.

With spherical roller bearings, typically one bearing is fixed axially and the other is mounted with loose fits and axial clearance. This allows axial movement or float for environmental conditions such as uneven thermal growth between shaft and housing. In SNT housings, two or more locating rings can be used. With these ring(s) installed, a fixed bearing is achieved. When the ring(s) are removed, and provided the bearing is properly located in the housing, the bearing can float freely.

Fig. E-1 shows a fixed split housing with a locating ring installed and a float bearing without the locating ring.

FITTING PRACTICE

Tables E-6 through E-8 on pages E-15 through E-21 list the recommended fitting practice for spherical roller bearing inner rings on shafts. The tables assume:

- The bearing is of normal precision.
- The shaft is solid and made from steel.
- The bearing seats are ground or turned to less than approximately 1.6 Ra finish.

The suggested fit symbols are in accordance with ISO 286. For help with suggested fitting practice, contact your Timken engineer.

As a general guideline, rotating inner rings should be applied with an interference fit. Loose fits may permit the inner rings to creep or turn, and wear the shaft and the backing shoulder. This wear may result in excessive bearing looseness and possible bearing and shaft damage. Additionally, abrasive metal particles resulting from creep or turning may enter into the bearing and cause damage and vibration.

The load conditions and bearing envelope dimensions should be used to select the suggested shaft fit from the tables.

Contact your Timken engineer if you require the specific fit practice used for a given SNT housing.

⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

Overheated bearings can ignite explosive atmospheres. Special care must be taken to properly select, install, maintain, and lubricate housed unit bearings that are used in or near atmospheres that may contain explosive levels of combustible gases or accumulations of dust such as from grain, coal, or other combustible materials. Consult your equipment designer or supplier for installation and maintenance instructions.

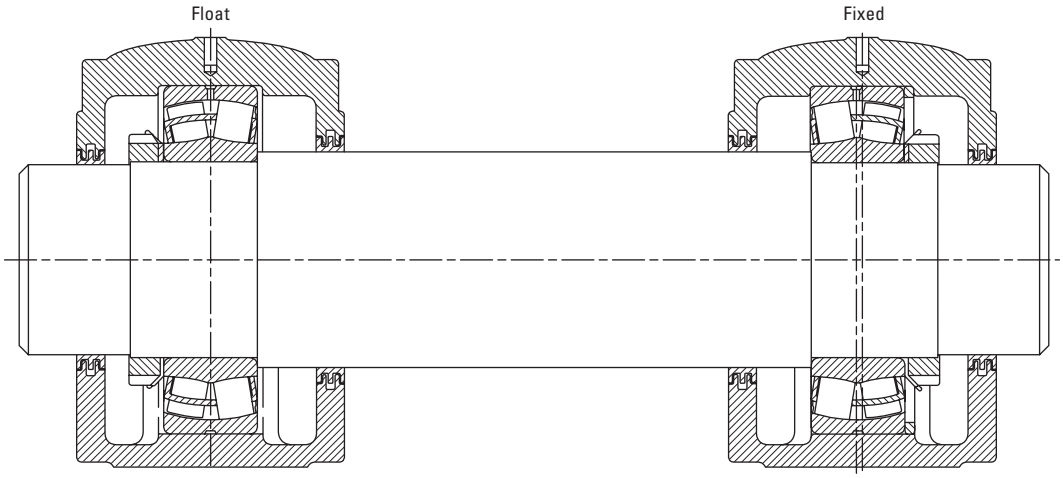


Fig. E-1. Split housing showing fixed and float mounting.

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TAPERED BORE DESIGNS

Typically, tapered bore bearings are selected to simplify shaft mounting and dismounting. Since the spherical roller bearing is not separable, mounting can be simplified by use of an adapter sleeve with a cylindrical bore and tapered O.D. A tapered bore roller bearing also can be mounted directly onto a tapered shaft.

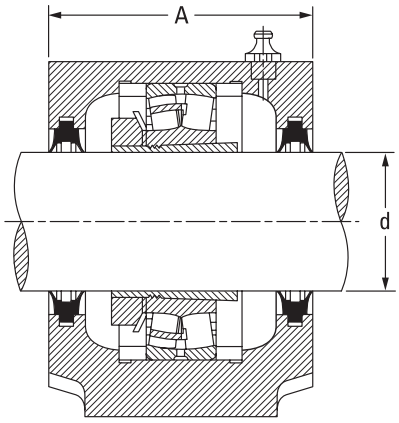


Fig. E-2. Spherical roller bearing mounted with an adapter sleeve.

Bearings with a tapered bore typically require a tighter fit on the shaft than bearings with a cylindrical bore. A locknut is typically used to drive the inner ring up a tapered shaft sleeve. The locknut position is then secured by use of a lockwasher or lockplate. Timken offers a wide range of accessories to ease the assembly of spherical roller bearings with a tapered bore (see page E-11). For approximating the clearance loss for axial drive-up, an 85 percent radial loss approximation can be used. That is, the radial clearance loss per axial drive-up can roughly be approximated as 71 µm/mm for a 1:12 tapered. Table E-5 on page E-10 provides a direct relation between suggested RIC (radial internal clearance) reduction due to installation and the corresponding axial displacement of the inner ring.

SETTING

To achieve appropriate operating clearance, attention must be paid to the effects that fitting practice and thermal gradients have within the bearing.

FITTING PRACTICE

- An interference fit between the inner ring and a solid steel shaft will reduce the radial clearance within the bearing by approximately 80 percent of the fit.

NOTE

It is critical to select the RIC that allows for this reduction.

- Spherical roller bearings with a tapered bore require a slightly greater interference fit on the shaft than a cylindrical bore bearing.

THERMAL GRADIENTS

- Thermal gradients within the bearing are primarily a function of the bearing rotational speed. As speed increases, thermal gradients increase, thermal growth occurs and the radial clearance is reduced.
- As a rule of thumb, radial clearance should be increased for speeds in excess of 70 percent of the speed rating.

For help selecting the correct radial internal clearance for your application, consult with your Timken engineer.

Radial internal clearance tolerances are listed in tables E-4 and E-5 for spherical roller bearings.

Spherical roller bearings are ordered with a specified standard or non-standard radial internal clearance value. The standard radial internal clearances are designated as C2, C0 (normal), C3, C4 or C5 and are in accordance with ISO 5753. C2 represents the minimum clearance and C5 represents the maximum clearance. Non-standardized values also are available by special request.

The clearance required for a given application depends on the desired operating precision, the rotational speed of the bearing, and the fitting practice used. SNT housings are commonly used with C0 or C3 clearance bearing, though other clearances may be ordered for specific applications. Typically, larger clearance reduces the operating load zone of the bearing, increases the maximum roller load, and reduces the bearing's expected life. However, a spherical roller bearing that has been put into a preload condition can experience premature bearing damage caused by excessive heat generation and/or material fatigue. As a general guideline, spherical roller bearings should not operate in a preloaded condition.

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TABLE E-4. RADIAL INTERNAL CLEARANCE LIMITS – SPHERICAL ROLLER BEARINGS – CYLINDRICAL BORE

Bore (Nominal)		Cylindrical Bore						Typical Reduction of RIC Due to Installation		Typical RIC After Installation
			Normal CO		C4					
			Min.	Max.	Min.	Max.				
		C2		C3		C5				
Over	Incl.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
20 0.9449	**30** 1.1811	**0.015** 0.0006	**0.025** 0.001	**0.04** 0.0016	**0.055** 0.0022	**0.075** 0.003	**0.095** 0.0037	**0.015** 0.0006	**0.02** 0.0008	**0.015** 0.0006
30 1.1811	**40** 1.5748	**0.015** 0.0006	**0.03** 0.0012	**0.045** 0.0018	**0.06** 0.0024	**0.08** 0.0031	**1** 0.0039	**0.02** 0.0008	**0.025** 0.001	**0.015** 0.0006
40 1.5748	**50** 1.9685	**0.02** 0.0008	**0.035** 0.0014	**0.055** 0.0022	**0.075** 0.003	**0.1** 0.0039	**0.125** 0.0049	**0.025** 0.001	**0.03** 0.0012	**0.02** 0.0008
50 1.9685	**65** 2.5591	**0.02** 0.0008	**0.04** 0.0016	**0.065** 0.0026	**0.09** 0.0035	**0.12** 0.0047	**0.15** 0.0059	**0.03** 0.0012	**0.038** 0.0015	**0.025** 0.001
65 2.5591	**80** 3.1496	**0.03** 0.0012	**0.05** 0.002	**0.08** 0.0031	**0.11** 0.0043	**0.145** 0.0057	**0.18** 0.0071	**0.038** 0.0015	**0.051** 0.002	**0.025** 0.001
80 3.1496	**100** 3.9370	**0.035** 0.0014	**0.06** 0.0024	**0.1** 0.0039	**0.135** 0.0053	**0.18** 0.0071	**0.225** 0.0089	**0.046** 0.0018	**0.064** 0.0025	**0.036** 0.0014
100 3.9370	**120** 4.7244	**0.04** 0.0016	**0.075** 0.003	**0.12** 0.0047	**0.16** 0.0063	**0.21** 0.0083	**0.26** 0.0102	**0.051** 0.002	**0.071** 0.0028	**0.051** 0.002
120 4.7244	**140** 5.5118	**0.05** 0.002	**0.095** 0.0037	**0.145** 0.0057	**0.19** 0.0075	**0.24** 0.0094	**0.3** 0.0118	**0.064** 0.0025	**0.089** 0.0035	**0.056** 0.0022
140 5.5118	**160** 6.2992	**0.06** 0.0024	**0.11** 0.0043	**0.17** 0.0067	**0.22** 0.0087	**0.28** 0.011	**0.35** 0.0138	**0.076** 0.003	**0.102** 0.004	**0.056** 0.0022
160 6.2992	**180** 7.0866	**0.065** 0.0026	**0.12** 0.0047	**0.18** 0.0071	**0.24** 0.0094	**0.31** 0.0122	**0.39** 0.0154	**0.076** 0.003	**0.114** 0.0045	**0.061** 0.0024
180 7.0866	**200** 7.8740	**0.07** 0.0028	**0.13** 0.0051	**0.2** 0.0079	**0.26** 0.0102	**0.34** 0.0134	**0.43** 0.0169	**0.089** 0.0035	**0.127** 0.005	**0.071** 0.0028
200 7.8740	**225** 8.8582	**0.08** 0.0031	**0.14** 0.0055	**0.22** 0.0087	**0.29** 0.0114	**0.38** 0.015	**0.47** 0.0185	**0.102** 0.004	**0.14** 0.0055	**0.076** 0.003
225 8.8582	**250** 9.8425	**0.09** 0.0035	**0.15** 0.0059	**0.24** 0.0094	**0.32** 0.0126	**0.42** 0.0165	**0.52** 0.0205	**0.114** 0.0045	**0.152** 0.006	**0.089** 0.0035
250 9.8425	**280** 11.0236	**0.1** 0.0039	**0.17** 0.0067	**0.26** 0.0102	**0.35** 0.0138	**0.46** 0.0181	**0.57** 0.0224	**0.114** 0.0045	**0.165** 0.0065	**0.102** 0.004
280 11.0236	**315** 12.4016	**0.11** 0.0043	**0.19** 0.0075	**0.28** 0.011	**0.37** 0.0146	**0.5** 0.0197	**0.63** 0.0248	**0.127** 0.005	**0.178** 0.007	**0.102** 0.004
315 12.4016	**355** 13.9764	**0.12** 0.0047	**0.2** 0.0079	**0.31** 0.0122	**0.41** 0.0161	**0.55** 0.0217	**0.69** 0.0272	**0.14** 0.0055	**0.19** 0.0075	**0.114** 0.0045
355 13.9764	**400** 15.7480	**0.13** 0.0051	**0.22** 0.0087	**0.34** 0.0134	**0.45** 0.0177	**0.6** 0.0236	**0.75** 0.0295	**0.152** 0.006	**0.203** 0.008	**0.127** 0.005
400 15.7480	**450** 17.7165	**0.14** 0.0055	**0.24** 0.0094	**0.37** 0.0146	**0.5** 0.0197	**0.66** 0.026	**0.82** 0.0323	**0.165** 0.0065	**0.216** 0.0085	**0.152** 0.006
450 17.7165	**500** 19.6850	**0.14** 0.0055	**0.26** 0.0102	**0.41** 0.0161	**0.55** 0.0217	**0.72** 0.0283	**0.9** 0.0354	**0.178** 0.007	**0.229** 0.009	**0.165** 0.0065
500 19.6850	**560** 22.0472	**0.15** 0.0059	**0.28** 0.011	**0.44** 0.0173	**0.6** 0.0236	**0.78** 0.0307	**1** 0.0394	**0.203** 0.008	**0.254** 0.01	**0.178** 0.007
560 22.0472	**630** 24.8031	**0.17** 0.0067	**0.31** 0.0122	**0.48** 0.0189	**0.65** 0.0256	**0.85** 0.0335	**1.1** 0.0433	**0.229** 0.009	**0.279** 0.011	**0.203** 0.008
630 24.8031	**710** 27.9528	**0.19** 0.0075	**0.35** 0.0138	**0.53** 0.0209	**0.7** 0.0276	**0.92** 0.0362	**1.19** 0.0469	**0.254** 0.01	**0.305** 0.012	**0.203** 0.008
710 27.9528	**800** 31.4961	**0.21** 0.0083	**0.39** 0.0154	**0.58** 0.0228	**0.77** 0.0303	**1.01** 0.0398	**1.3** 0.0512	**0.279** 0.011	**0.356** 0.014	**0.229** 0.009
800 31.4961	**900** 35.4331	**0.23** 0.0091	**0.43** 0.0169	**0.65** 0.0256	**0.86** 0.0339	**1.12** 0.0441	**1.44** 0.0567	**0.305** 0.012	**0.381** 0.015	**0.252** 0.01
900 35.4331	**1000** 39.3701	**0.26** 0.0102	**0.48** 0.0189	**0.71** 0.028	**0.93** 0.0366	**1.22** 0.048	**1.57** 0.0618	**0.356** 0.014	**0.432** 0.017	**0.279** 0.011

NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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TABLE E-5. RADIAL INTERNAL CLEARANCE LIMITS – SPHERICAL ROLLER BEARINGS – TAPERED BORE

Bore (Nominal)		Tapered Bore						Suggested Reduction of RIC Due to Installation		Axial Displacement of Inner Ring for RIC Reduction – Tapered Shaft[1][2]				Suggested RIC After Installation[1]
			Normal CO		C4					Taper 1:12		Taper 1:30		
		C2		C3		C5								
Over	Incl.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
20 0.9449	**30** 1.1811	**0.02** 0.0008	**0.03** 0.0012	**0.04** 0.0016	**0.055** 0.0022	**0.075** 0.003	**0.095** 0.0037	**0.015** 0.0006	**0.02** 0.0008	**0.23** 0.0091	**0.30** 0.0118	–	–	**0.015** 0.0006
30 1.1811	**40** 1.5748	**0.025** 0.001	**0.035** 0.0014	**0.05** 0.002	**0.065** 0.0026	**0.085** 0.0033	**0.105** 0.0041	**0.02** 0.0008	**0.025** 0.001	**0.30** 0.0118	**0.38** 0.0150	–	–	**0.015** 0.0006
40 1.5748	**50** 1.9685	**0.03** 0.0012	**0.045** 0.0018	**0.06** 0.0024	**0.08** 0.0031	**0.1** 0.0039	**0.13** 0.0051	**0.025** 0.001	**0.03** 0.0012	**0.38** 0.0150	**0.46** 0.0181	–	–	**0.02** 0.0008
50 1.9685	**65** 2.5591	**0.04** 0.0016	**0.055** 0.0022	**0.075** 0.003	**0.095** 0.0037	**0.12** 0.0047	**0.16** 0.0063	**0.03** 0.0012	**0.038** 0.0015	**0.46** 0.0181	**0.56** 0.0220	–	–	**0.025** 0.001
65 2.5591	**80** 3.1496	**0.05** 0.002	**0.07** 0.0028	**0.095** 0.0037	**0.12** 0.0047	**0.15** 0.0059	**0.2** 0.0079	**0.038** 0.0015	**0.051** 0.002	**0.56** 0.0220	**0.76** 0.0299	–	–	**0.025** 0.001
80 3.1496	**100** 3.9370	**0.055** 0.0022	**0.08** 0.003	**0.11** 0.0043	**0.14** 0.0055	**0.18** 0.0071	**0.23** 0.0091	**0.046** 0.0018	**0.064** 0.0025	**0.68** 0.0268	**0.97** 0.0382	–	–	**0.036** 0.0014
100 3.9370	**120** 4.7244	**0.065** 0.0026	**0.1** 0.0039	**0.135** 0.0053	**0.17** 0.0067	**0.22** 0.0087	**0.28** 0.011	**0.051** 0.002	**0.071** 0.0028	**0.76** 0.0299	**1.07** 0.0421	**1.90** 0.0748	**2.54** 0.1000	**0.051** 0.002
120 4.7244	**140** 5.5118	**0.08** 0.0031	**0.12** 0.0047	**0.16** 0.0063	**0.2** 0.0079	**0.26** 0.0102	**0.33** 0.013	**0.064** 0.0025	**0.089** 0.0035	**0.89** 0.0350	**1.27** 0.0500	**2.29** 0.0902	**3.05** 0.1201	**0.056** 0.0022
140 5.5118	**160** 6.2992	**0.09** 0.0035	**0.13** 0.0051	**0.18** 0.0071	**0.23** 0.0091	**0.3** 0.0118	**0.38** 0.015	**0.076** 0.003	**0.102** 0.004	**1.14** 0.0449	**1.52** 0.0598	**2.67** 0.1051	**3.43** 0.1350	**0.056** 0.0022
160 6.2992	**180** 7.0866	**0.1** 0.0039	**0.14** 0.0055	**0.2** 0.0079	**0.26** 0.0102	**0.34** 0.0134	**0.43** 0.0169	**0.076** 0.003	**0.114** 0.0045	**1.14** 0.0449	**1.65** 0.0650	**2.67** 0.1051	**4.06** 0.1598	**0.061** 0.0024
180 7.0866	**200** 7.8740	**0.11** 0.0043	**0.16** 0.0063	**0.22** 0.0087	**0.29** 0.0114	**0.37** 0.0146	**0.47** 0.0185	**0.089** 0.0035	**0.127** 0.005	**1.40** 0.0551	**1.90** 0.0748	**3.05** 0.1201	**4.45** 0.1752	**0.071** 0.0028
200 7.8740	**225** 8.8582	**0.12** 0.0047	**0.18** 0.0071	**0.25** 0.0098	**0.32** 0.0126	**0.41** 0.0161	**0.52** 0.0205	**0.102** 0.004	**0.14** 0.0055	**1.52** 0.0598	**2.03** 0.0799	**3.56** 0.1402	**4.83** 0.1902	**0.076** 0.003
225 8.8582	**250** 9.8425	**0.14** 0.0055	**0.2** 0.0079	**0.27** 0.0106	**0.35** 0.0138	**0.45** 0.0177	**0.57** 0.0224	**0.114** 0.0045	**0.152** 0.006	**1.78** 0.0701	**2.29** 0.0902	**4.06** 0.1598	**5.33** 0.2098	**0.089** 0.0035
250 9.8425	**280** 11.0236	**0.15** 0.0059	**0.22** 0.0087	**0.3** 0.0118	**0.39** 0.0154	**0.49** 0.0193	**0.62** 0.0244	**0.114** 0.0045	**0.165** 0.0065	**1.78** 0.0701	**2.54** 0.1000	**4.06** 0.1598	**5.84** 0.2299	**0.102** 0.004
280 11.0236	**315** 12.4016	**0.17** 0.0067	**0.24** 0.0094	**0.33** 0.013	**0.43** 0.0169	**0.54** 0.0213	**0.68** 0.0268	**0.127** 0.005	**0.178** 0.007	**1.90** 0.0748	**2.67** 0.1051	**4.45** 0.1752	**6.22** 0.2449	**0.102** 0.004
315 12.4016	**355** 13.9764	**0.19** 0.0075	**0.27** 0.0106	**0.36** 0.0142	**0.47** 0.0185	**0.59** 0.0232	**0.74** 0.0291	**0.14** 0.0055	**0.19** 0.0075	**2.03** 0.0799	**2.79** 0.1098	**4.83** 0.1902	**6.60** 0.2598	**0.114** 0.0045
355 13.9764	**400** 15.7480	**0.21** 0.0083	**0.3** 0.0118	**0.4** 0.0157	**0.52** 0.0205	**0.65** 0.0256	**0.82** 0.0323	**0.152** 0.006	**0.203** 0.008	**2.29** 0.0902	**3.05** 0.1201	**5.33** 0.2098	**7.11** 0.2799	**0.127** 0.005
400 15.7480	**450** 17.7165	**0.23** 0.0091	**0.33** 0.013	**0.44** 0.0173	**0.57** 0.0224	**0.72** 0.0283	**0.91** 0.0358	**0.165** 0.0065	**0.216** 0.0085	**2.54** 0.1000	**3.3** 0.1299	**5.84** 0.2299	**7.62** 0.3000	**0.152** 0.006
450 17.7165	**500** 19.6850	**0.26** 0.0102	**0.37** 0.0146	**0.49** 0.0193	**0.63** 0.0248	**0.79** 0.0311	**1** 0.0394	**0.178** 0.007	**0.229** 0.009	**2.67** 0.1051	**3.43** 0.1350	**6.22** 0.2449	**8.00** 0.3150	**0.165** 0.0065
500 19.6850	**560** 22.0472	**0.29** 0.0114	**0.41** 0.0161	**0.54** 0.0213	**0.68** 0.0268	**0.87** 0.0343	**1.1** 0.0433	**0.203** 0.008	**0.254** 0.01	**3.05** 0.1201	**3.81** 0.1500	**7.11** 0.2799	**8.89** 0.3500	**0.178** 0.007
560 22.0472	**630** 24.8031	**0.32** 0.0126	**0.46** 0.0181	**0.6** 0.0236	**0.76** 0.0299	**0.98** 0.0386	**1.23** 0.0484	**0.229** 0.009	**0.279** 0.011	**3.43** 0.1350	**4.19** 0.1650	**8.00** 0.3150	**9.78** 0.3850	**0.203** 0.008
630 24.8031	**710** 27.9528	**0.35** 0.0138	**0.51** 0.0201	**0.67** 0.0264	**0.85** 0.0335	**1.09** 0.0429	**1.36** 0.0535	**0.254** 0.01	**0.305** 0.012	**3.81** 0.1500	**4.57** 0.1799	**8.89** 0.3500	**10.67** 0.4201	**0.203** 0.008
710 27.9528	**800** 31.4961	**0.39** 0.0154	**0.57** 0.0224	**0.75** 0.0295	**0.96** 0.0378	**1.22** 0.048	**1.5** 0.0591	**0.279** 0.011	**0.356** 0.014	**4.19** 0.1650	**5.33** 0.2098	**9.78** 0.3850	**12.45** 0.4902	**0.229** 0.009
800 31.4961	**900** 35.4331	**0.44** 0.0173	**0.64** 0.0252	**0.84** 0.0331	**1.07** 0.0421	**1.37** 0.0539	**1.69** 0.0665	**0.305** 0.012	**0.381** 0.015	**4.57** 0.1799	**5.72** 0.2252	**10.67** 0.4201	**13.33** 0.5248	**0.252** 0.01
900 35.4331	**1000** 39.3701	**0.49** 0.0193	**0.71** 0.028	**0.93** 0.0366	**1.19** 0.0469	**1.52** 0.0598	**1.86** 0.0732	**0.356** 0.014	**0.432** 0.017	**5.33** 0.2100	**6.48** 0.2551	**12.45** 0.4902	**15.11** 0.5949	**0.279** 0.011

[1]This displacement is valid for assembly of tapered bore bearings and is measured starting from a line-to-line fit of the bearing bore to the tapered shaft.

[2]1:12 Taper used for 222, 223, 230, 231, 232, 233, 239 series. 1:30 Taper used for 240, 241, 242 series. For sleeve mounting, multiply axial displacement values by 1.1 for 1:12 Taper or by 1.05 for 1:30 Taper. For questions on tapered shaft data, consult your Timken engineer.

NOTE: Axial displacement values apply to solid steel shafts or hollow shafts with bore diameter less than half the shaft diameter. For shaft materials other than steel, or for thin-walled shafts, please consult your Timken engineer.

NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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EXAMPLE #1 –
Calculating RIC Reduction Using a Spherical Roller Bearing with Tapered Bore

Given bearing number 22328K C3 (140 mm bore with C3 clearance) is to be mounted on a tapered shaft. Using a set of feeler gages, RIC is measured at (see fig. E-3):

RIC = 0.178 mm

Suggested reduction of RIC due to installation = 0.064 mm – 0.089 mm, found in table E-5 on page E-10.

Calculate the clearance after mounting (see fig. E-4):

0.178 mm – 0.076 mm = 0.102 mm

For this example, the value of 0.076 mm was obtained by taking the mid-range value of the upper and lower limits found in the tables on page E-10.

Therefore, the locknut should be tightened until RIC reaches 0.102 mm.

It also should be noted that the value obtained by reading the suggested RIC after installation directly from the table is 0.056 mm.



Fig. E-3. Measure RIC before installation.



Fig. E-4. During mounting, the RIC should be checked at the unloaded roller.

This differs from the value calculated in the example. The value taken directly from the table is provided as a minimum value. It is not suggested to use a calculated value that falls below this minimum.

EXAMPLE #2 –
Calculating RIC Reduction Using a Spherical Roller Bearing with Cylindrical Bore

Observations:

- Bearing 22230EM, nominal 150 mm bore and 270 mm O.D., standard class, operating at 1200 RPM.
- Float bearing position so the stationary O.D. should be free to move in SNT housing, with the locating ring removed.
- With shaft/inner ring rotation and the moderate loading 0.09C, the bore should be tight fit.

We can use the nominal fit charts in table E-6 on page E-15 (shaft fit) to help guide our ISO fit selection.

Shaft Fit at 150 mm Bore: ISO p6

From the shaft fit chart at 150 mm nominal bore at p6 (table E-8, page E-20), the shaft tolerance is nominal +0.043 to +0.068 mm. Therefore we have the following bore range:

max. shaft = 150.068 mm
min. shaft = 150.043 mm

This yields a shaft fit:

max. fit = max. shaft - min. bore
= 150.068 - 149.075
= 0.093 mm tight

min. fit = min. shaft - max. bore
= 150.043 - 150.000
= 0.043 mm tight

For the primary selection of RIC, the major parameters are the bearing speed and the fits. For our example, we know that the shaft fit is 0.043 mm tight to 0.093 mm tight. We know the housing fit is loose. We also know that the bearing speed is 1200 RPM or 60 percent of the speed rating.

As a general rule of thumb, we increase the clearance for operating speeds that exceed 70 percent of the speed rating, due to concerns over internal heat generation and thermal growth. In this case, we are at 60 percent of the speed rating, so normal clearance, ISO CO or the SNT standard C3, can be selected.

Observing the RIC chart on page E-9, we find for 150 mm nominal bore at CO, the RIC will be 0.110 mm to 0.170 mm. We also note that the minimum recommended RIC (installed) is 0.056 mm.

Also from page E-9, we note that we get an approximate reduction of RIC that is 80 percent of interference fit on a solid housing. Since we have a loose housing fit, there will be no RIC reduction from that fit.

Shaft fit RIC reductions and clearance:

For a 150 mm nominal bore at C3, the RIC will be 0.115 mm to 0.165 mm. Recalculating shaft fit RIC reduction and clearance:

max. clearance = max. RIC - min. fit reduction
= 0.165 - 0.034 = 0.131 mm

min. clearance = min. RIC - max. fit reduction
= 0.115 - 0.074 = 0.041 mm

Since the minimum mounted clearance is less than the minimum suggested RIC of 0.056 mm, the C3 RIC clearance limit needs to be reevaluated.

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INSTALLATION

When using a tight fit inner ring, the method of assembly will depend on whether the bearing has a cylindrical or tapered bore.

CLEANLINESS

- Choose a clean environment, free from dust and moisture.
- The installer should make every effort to ensure cleanliness by use of protective screens and clean cloths.

PLAN THE WORK

- Know your plans in advance and have the necessary tools at hand. This reduces the amount of time for the job and decreases the chance for contamination to get into the bearing.

INSPECTION AND PREPARATION

- All component parts of the machine should be on hand and thoroughly cleaned before proceeding.
- Housings should be cleaned, including blowing out the oil holes.
- Do not use an air hose on bearings.
- If blind holes are used, insert a magnetic rod to remove metal chips that might be lodged there during fabrication.
- Shaft shoulders and spacer rings contacting the bearing should be square with the shaft axis.
- The shaft fillet must be small enough to clear the radius of the bearing.
- On original installations, all component parts should be checked against the detail specification prints for dimensional accuracy. Shaft and housing should be carefully checked for size and form (roundness, etc.).

⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

Never spin a bearing with compressed air. The components may be forcefully expelled.

⚠ CAUTION

Failure to follow these cautions could create a risk of injury.

Remove oil or rust inhibitor from parts before heating, to avoid fire and fumes.

SHAFT AND HOUSING FINISH

- Shaft surfaces on which the bearing will be mounted must be clean and free from nicks and burrs.
- For applications with stationary housing and rotating shaft, it is suggested that the bearing seat on the shaft be ground to 1.6 µm (65 µin.) Ra maximum.
- If it is impractical to use a ground finish, a machined finish of 3.2 µm (125 µin.) Ra is acceptable in many cases, but the amount of interference fit should be slightly increased.

INSTALLING CYLINDRICAL BORE BEARINGS

Heat expansion method

- Most applications require a tight interference fit on the shaft.
- Mounting is simplified by heating the bearing to expand it sufficiently to slide easily onto the shaft.
- Two methods of heating are commonly used:

1. Tank of heated oil.
   - Accomplished by heating the bearing in a tank of oil that has a high flash point (see fig. E-5).
   - The oil temperature should not be allowed to exceed 121° C (250° F). A temperature of 93° C (200° F) is sufficient for most applications.
   - The bearing should be heated for 20 or 30 minutes, or until it is expanded sufficiently to slide onto the shaft easily.
   - The oil bath is shown in fig. E-5. The bearing should not be in direct contact with the heat source.
   - The usual arrangement is to have a screen several inches from the bottom of the tank. Small support blocks separate the bearing from the screen.
   - It is important to keep the bearing away from any localized high-heat source that may raise its temperature excessively, resulting in metallurgical property changes such as in ring hardness reduction.
   - Flame-type burners are commonly used. An automatic device for temperature control is desirable.
   - If safety regulations prevent the use of an open heated oil bath, a mixture of 15 percent soluble-oil water may be used. This mixture may be heated to a maximum of 93° C (200° F) without being flammable.

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2. Induction heating.
   - The induction heating process can be used for mounting bearings.
   - Induction heating is rapid. Care must be taken to prevent bearing temperature from exceeding 93° C (200° F).
   - Trial runs with the unit and bearing are usually necessary to obtain proper timing.
- Thermal crayons melted at predetermined temperatures or thermal gun can be used to check the bearing temperature.
- While the bearing is hot, it should be positioned squarely against the shoulder.
- Lockwashers and locknuts or clamping plates are then installed to hold the bearing against the shoulder of the shaft.
- As the bearing cools, the locknut or clamping plate should be tightened.
- For more information see the Timken Spherical Roller Bearing Catalog (order no. 10446), found on www.timken.com.

NOTE

Never use steam or hot water when cleaning the bearings because these methods can create rust or corrosion.

Never expose any surface of a bearing to the flame of a torch.

Do not heat bearing beyond 149° C (300° F).

Arbor press method

- An alternate method of mounting, generally used only on smaller size bearings, is to press the bearing onto the shaft or into the housing. This can be done by using an arbor press and a mounting tube as shown in fig. E-6.
- The tube should be made from soft steel with an inside diameter slightly larger than the shaft.
- The O.D. of the tube should not exceed the shaft backing diameter given in the Timken Spherical Roller Bearing Catalog (order no. 10446), found on www.timken.com.
- The tube should be faced square at both ends. It should be thoroughly clean inside and out, and long enough to clear the end of the shaft after the bearing is mounted.
- If the outer ring is being pressed into the housing, the O.D. of the mounting tube should be slightly smaller than the housing bore. The I.D. should not be less than the suggested housing backing diameter in the table of dimensions available in the Timken Spherical Roller Bearing Catalog (order no. 10446), found on www.timken.com.
- Coat the shaft with a light machine oil to reduce the force needed for a press fit.
- Carefully place the bearing on the shaft, making sure it is square with the shaft axis.
- Apply steady pressure from the arbor ram to drive the bearing firmly against the shoulder.

NOTE

Never attempt a press fit on a shaft by applying pressure to the outer ring or a press fit in a housing by applying pressure to the inner ring.

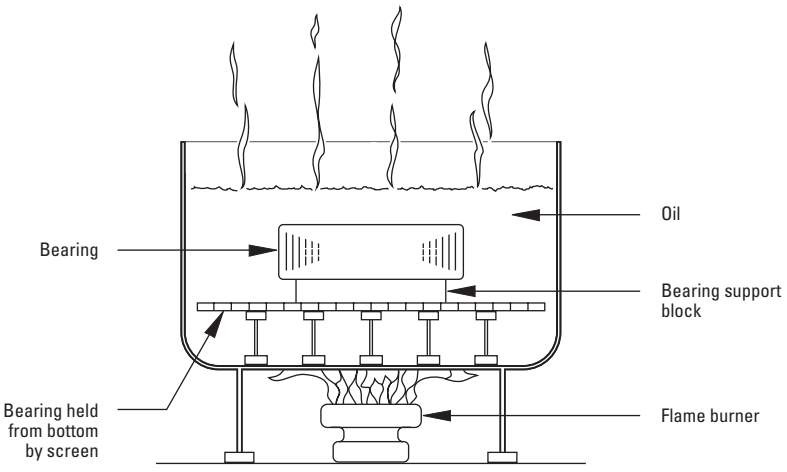


Fig. E-5. Heat expansion method.

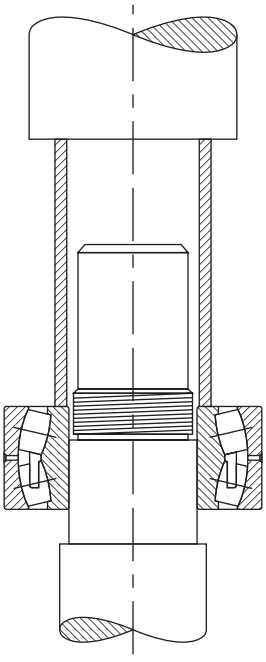


Fig. E-6. Arbor press method.

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Mounting tapered bore spherical roller bearings

- Use a feeler gage with the thinnest blade of 0.038 mm.
- Place the bearing in an upright position with the inner and outer ring faces parallel.
- Place thumbs on the inner ring bore and oscillate the inner ring the distance of two or three roller spacings.
- Position the individual roller assemblies so that a roller is at the top of the inner ring on both sides of the bearing.
- With the roller in the correct position, insert a thin blade of the feeler gage between the roller and the outer ring, as shown in fig. E-7.
- Move the feeler gage carefully along the top roller between the roller and outer ring raceway. Repeat this procedure using thicker feeler gage blades until one is found that will not go through.
- The blade thickness that preceded the no-go blade is a measure of RIC before installation.
- Start the mounting procedure by lubricating the tapered shaft with a light coat of machine oil.
- Slide the bearing onto the shaft as far as it will go by hand.
- As the locknut is tightened, the interference fit builds up, resulting in expansion of the inner ring.
- Periodically measure to monitor the reduction in RIC.
- Continue the procedure until the proper amount of reduction is obtained. Do not exceed calculated amount of reduction.
- As a final check, make sure the remaining RIC equals or exceeds the minimum mounted clearance shown in table E-5 on page E-10.
- During mounting, the RIC should be checked at the unloaded roller. If this is at the bottom, make sure that the roller is raised to seat firmly at the inboard position of the inner ring.
- When the suggested amount of RIC reduction has been accomplished, the bearing is properly fitted.
- Complete the procedure by peening the lockwasher tang into the locknut slot or securing the lockplate.



Fig. E-7. Measure RIC before installation.

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SHAFT FITS FOR CYLINDRICAL BORE BEARINGS

This chart is a guideline for specifying shaft fits related to particular operating conditions. Please contact your Timken engineer for more information.

TABLE E-6. RADIAL SPHERICAL ROLLER BEARING SHAFT FITS

	Conditions	Examples	Shaft Dia.		Tolerance Symbol[1]	Remarks
			mm in.			
Stationary inner ring load	The inner ring not to be easily displaced on the shaft	Wheel on non-rotating shaft	All diameters		g6	
		Tension pulleys and rope sheaves			h6	
Rotating inner ring load or indeterminate load direction	Light and variable loads P ≤ 0.07C	Electrical apparatus, machine tools, pumps, ventilators, industrial trucks	over	incl.	k6	In very accurate applications, k5 and m5 are used instead of k6 and m6 respectively.
			18 0.7087	**100** 3.9370		
			100 3.9370	**200** 7.8740	m6	
	Normal and heavy loads P > 0.07C ≤ 0.25C	Applications in general, electrical motors, turbines, pumps, combustion engines, gear transmissions, woodworking machines	**18** 0.7087	**65** 2.5590	m5	
			65 2.5590	**100** 3.9370	m6	
			100 3.9370	**140** 5.5118	n6	
			140 5.5118	**280** 11.0236	p6	
			280 11.0236	**500** 19.6850	r6	
			500 19.6850	**and up**	r7	
	Very heavy loads and shock loads P > 0.25C	Journal boxes for locomotives and other heavy rail vehicles, traction motors	**18** 0.7087	**65** 2.5590	m6	Bearings with greater clearance than normal must be used.
			65 2.5590	**100** 3.9370	n6	
			100 3.9370	**140** 5.5118	p6	
			140 5.5118	**200** 7.8740	r6	
			200 7.8740	**500** 19.6850	r7	
BEARINGS WITH TAPERED BORE AND ADAPTER SLEEVE						
	All loads	Applications in general	All diameters			See tables for Reduction of RIC on pages E-9 and E-10.

[1]For solid steel shaft. See tables on pages E-16 through E-21 for tolerance value.
NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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These charts are guidelines for specifying shaft and housing fits related to particular operating conditions in table E-6 on page E-15.

FITTING PRACTICE TABLES

TABLE E-7. SPHERICAL ROLLER BEARINGS - SHAFT TOLERANCES (CLASSES g6, h5, h6, j5, j6, k5, k6, m5)

Bearing Bore			g6			h6			h5			j5		
Nominal (Max.)		Tolerance[1]	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit
Over	Incl.		Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.	
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
					0.025L			**0.016L**						**0.005L**
30.000	**50.000**	**-0.014**	**-0.009**	**-0.025**	**0.003T**	**0.000**	**-0.016**	**0.012T**	–	–	–	**+0.006**	**-0.005**	**0.018T**
1.1811	1.9685	-0.0006	-0.0004	-0.0010	0.0010L	0.0000	-0.0006	0.0006L				+0.0002	-0.0002	0.0002L
					0.0001T			0.0005T						0.0007T
					0.029L			**0.019L**						**0.007L**
50.000	**80.000**	**-0.015**	**-0.010**	**-0.029**	**0.005T**	**0.000**	**-0.019**	**0.015T**	–	–	–	**+0.006**	**-0.007**	**0.021T**
1.9685	3.1496	-0.0006	-0.0004	-0.0011	0.0011L	0.0000	-0.0007	0.0007L				+0.0002	-0.0003	0.0003L
					0.0002T			0.0006T						0.0008T
					0.034L			**0.022L**						**0.009L**
80.000	**120.000**	**-0.020**	**-0.012**	**-0.034**	**0.008T**	**0.000**	**-0.022**	**0.020T**	–	–	–	**+0.006**	**-0.009**	**0.026T**
3.1496	4.7244	-0.0008	-0.0005	-0.0013	0.0013L	0.0000	-0.0009	0.0009L				+0.0002	-0.0004	0.0004L
					0.0003T			0.0008T						0.0010T
					0.039L			**0.025L**						**0.011L**
120.000	**180.000**	**-0.025**	**-0.014**	**-0.039**	**0.011T**	**0.000**	**-0.025**	**0.025T**	–	–	–	**+0.007**	**-0.011**	**0.032T**
4.7244	7.0866	-0.0010	-0.0006	-0.0015	0.0015L	0.0000	-0.0010	0.0010L				+0.0003	-0.0004	0.0004L
					0.0004T			0.0010T						0.0013T
					0.044T			**0.029L**						**0.013L**
180.000	**200.000**	**-0.030**	**-0.015**	**-0.044**	**0.015T**	**0.000**	**-0.029**	**0.030T**	–	–	–	**+0.007**	**-0.013**	**0.037T**
7.0866	7.8740	-0.0012	-0.0006	-0.0017	0.0017L	0.0000	-0.0011	0.0011L				+0.0003	-0.0005	0.0005L
					0.0006T			0.0012T						0.0015T
					0.044T			**0.029L**						**0.013L**
200.000	**225.000**	**-0.030**	**-0.015**	**-0.044**	**0.015T**	**0.000**	**-0.029**	**0.030T**	–	–	–	**+0.007**	**-0.013**	**0.037T**
7.8740	8.8583	-0.0012	-0.0006	-0.0017	0.0017L	0.0000	-0.0011	0.0011L				+0.0003	-0.0005	0.0005L
					0.0006T			0.0012T						0.0015T
					0.044T			**0.029L**						**0.013L**
225.000	**250.000**	**-0.030**	**-0.015**	**-0.044**	**0.015T**	**0.000**	**-0.029**	**0.030T**	–	–	–	**+0.007**	**-0.013**	**0.037T**
8.8583	9.8425	-0.0012	-0.0006	-0.0017	0.0017L	0.0000	-0.0011	0.0011L				+0.0003	-0.0005	0.0005L
					0.0006T			0.0012T						0.0015T
					0.049L			**0.032L**						**0.016L**
250.000	**280.000**	**-0.035**	**-0.017**	**-0.049**	**0.018T**	**0.000**	**-0.032**	**0.035T**	–	–	–	**+0.007**	**-0.016**	**0.042T**
9.8425	11.0236	-0.0014	-0.0007	-0.0019	0.0019L	0.0000	-0.0013	0.0013L				+0.0003	-0.0006	0.0006L
					0.0007T			0.0014T						0.0017T
					0.049L			**0.032L**						**0.016L**
280.000	**315.000**	**-0.035**	**-0.017**	**-0.049**	**0.018T**	**0.000**	**-0.032**	**0.035T**	–	–	–	**+0.007**	**-0.016**	**0.042T**
11.0236	12.4016	-0.0014	-0.0007	-0.0019	0.0019L	0.0000	-0.0013	0.0013L				+0.0003	-0.0006	0.0006L
					0.0007T			0.0014T						0.0017T
					0.054L			**0.036L**						**0.018L**
315.000	**355.000**	**-0.040**	**-0.018**	**-0.054**	**0.022T**	**0.000**	**-0.036**	**0.040T**	–	–	–	**+0.007**	**-0.018**	**0.047T**
12.4016	13.9764	-0.0016	-0.0007	-0.0021	0.0021L	0.0000	-0.0014	0.0014L				+0.0003	-0.0007	0.0007L
					0.0009T			0.0016T						0.0019T

[1]Tolerance range is from +0 to value listed.
NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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These charts are guidelines for specifying shaft and housing fits related to particular operating conditions in table E-6 on page E-15.

j6			k5			k6			m5		
Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit
Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.	
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
		0.005L			**0.002T**			**0.002T**			**0.009T**
+0.011	**-0.005**	**0.023T**	**+0.013**	**+0.002**	**0.025T**	**+0.018**	**+0.002**	**0.030T**	**+0.020**	**+0.009**	**0.032T**
+0.0004	-0.0002	0.0002L	+0.0005	+0.0001	0.0001T	+0.0007	+0.0001	0.0001T	+0.0008	+0.0004	0.0004T
		0.00085T			0.0010T			0.0012T			0.00125T
		0.007L			**0.002T**			**0.002T**			**0.011T**
+0.012	**-0.007**	**0.027T**	**+0.015**	**+0.002**	**0.030T**	**+0.021**	**+0.002**	**0.036T**	**+0.024**	**+0.011**	**0.039T**
+0.0005	-0.0003	0.0003L	+0.0006	+0.0001	0.0001T	+0.0008	+0.0001	0.0001T	+0.0009	+0.0004	0.0004T
		0.0011T			0.0012T			0.0014T			0.0015T
		0.009L			**0.003T**			**0.003T**			**0.013T**
+0.013	**-0.009**	**0.033T**	**+0.018**	**+0.003**	**0.038T**	**+0.025**	**+0.003**	**0.045T**	**+0.028**	**+0.013**	**0.048T**
+0.0005	-0.0004	0.0004L	+0.0007	+0.0001	0.0001T	+0.0010	+0.0001	0.0001T	+0.0011	+0.0005	0.0005T
		0.0013T			0.0015T			0.0018T			0.0019T
		0.011L			**0.003T**			**0.003T**			**0.015T**
+0.014	**-0.011**	**0.039T**	**+0.021**	**+0.003**	**0.046T**	**+0.028**	**+0.003**	**0.053T**	**+0.033**	**+0.015**	**0.058T**
+0.0006	-0.0004	0.0004L	+0.0008	+0.0001	0.0001T	+0.0011	+0.0001	0.0001T	+0.0013	+0.0006	0.0006T
		0.0016T			0.0018T			0.0021T			0.0023T
		0.013L			**0.004T**						**0.017T**
+0.016	**-0.013**	**0.046T**	**+0.024**	**+0.004**	**0.054T**	–	–	–	**+0.037**	**+0.017**	**0.067T**
+0.0006	-0.0005	0.0005L	+0.0009	+0.0002	0.0002T				+0.0015	+0.0007	0.0007T
		0.0018T			0.0021T						0.0027T
		0.013L			**0.004T**						**0.017T**
+0.016	**-0.013**	**0.046T**	**+0.024**	**+0.004**	**0.054T**	–	–	–	**+0.037**	**+0.017**	**0.067T**
+0.0006	-0.0005	0.0005L	+0.0009	+0.0002	0.0002T				+0.0015	+0.0007	0.0007T
		0.0018T			0.0021T						0.0027T
		0.013L			**0.004T**						**0.017T**
+0.016	**-0.013**	**0.046T**	**+0.024**	**+0.004**	**0.054T**	–	–	–	**+0.037**	**+0.017**	**0.067T**
+0.0006	-0.0005	0.0005L	+0.0009	+0.0002	0.0002T				+0.0015	+0.0007	0.0007T
		0.0018T			0.0021T						0.0027T
		0.016L			**0.004T**						**0.020T**
+0.016	**-0.016**	**0.051T**	**+0.027**	**+0.004**	**0.062T**	–	–	–	**+0.043**	**+0.020**	**0.078T**
+0.0006	-0.0006	0.0006L	+0.0011	+0.0002	0.0002T				+0.0017	+0.0008	0.0008T
		0.0020T			0.0025T						0.0031T
		0.016L			**0.004T**						**0.020T**
+0.016	**-0.016**	**0.051T**	**+0.027**	**+0.004**	**0.062T**	–	–	–	**+0.043**	**+0.020**	**0.078T**
+0.0006	-0.0006	0.0006L	+0.0011	+0.0002	0.0002T				+0.0017	+0.0008	0.0008T
		0.0020T			0.0025T						0.0031T
		0.018L			**0.004T**						**0.021T**
+0.018	**-0.018**	**0.058T**	**+0.029**	**+0.046**	**0.069T**	–	–	–	**+0.046**	**+0.021**	**0.086T**
+0.0007	-0.0007	0.0007L	+0.0011	+0.0002	0.0002T				+0.0018	+0.0008	0.0008T
		0.0023T			0.0027T						0.0034T

(1)Tolerance range is from +0 to value listed.
NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

Continued on next page.

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These charts are guidelines for specifying shaft and housing fits related to particular operating conditions in table E-6 on page E-15.

TABLE E-7. SPHERICAL ROLLER BEARINGS - SHAFT TOLERANCES (CLASSES g6, h5, h6, j5, j6, k5, k6, m5) *– continued*

Bearing Bore			g6			h6			h5			j5		
Nominal (Max.)		Tolerance[1]	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit
Over	Incl.		Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.	
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
					0.054L			**0.036L**						**0.018L**
355.000	**400.000**	**-0.040**	**-0.018**	**-0.054**	**0.022T**	**0.000**	**-0.036**	**0.040T**	–	–	–	**+0.007**	**-0.018**	**0.047T**
13.9764	15.7480	-0.0016	-0.0007	-0.0021	0.0021L	0.0000	-0.0014	0.0014L				+0.0003	-0.0007	0.0007L
					0.0009T			0.0016T						0.0019T
					0.060L			**0.040L**						**0.020L**
400.000	**450.000**	**-0.045**	**-0.020**	**-0.060**	**0.025T**	**0.000**	**-0.040**	**0.045T**	–	–	–	**+0.007**	**-0.020**	**0.052T**
15.7480	17.7165	-0.0018	-0.0008	-0.0024	0.0024L	0.0000	-0.0016	0.0016L				+0.0003	-0.0008	0.0008L
					0.0010T			0.0018T						0.0021T
					0.060L			**0.040L**						**0.020L**
450.000	**500.000**	**-0.045**	**-0.020**	**-0.060**	**0.025T**	**0.000**	**-0.040**	**0.045T**	–	–	–	**+0.007**	**-0.020**	**0.052T**
17.7165	19.6850	-0.0018	-0.0008	-0.0024	0.0024L	0.0000	-0.0016	0.0016L				+0.0003	-0.0008	0.0008L
					0.0010T			0.0018T						0.0020T

[1]Tolerance range is from +0 to value listed.
NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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These charts are guidelines for specifying shaft and housing fits related to particular operating conditions in table E-6 on page E-15.

j6			k5			k6			m5		
Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit
Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.	
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
		0.018L			**0.004T**						**0.021T**
+0.018	**-0.018**	**0.058T**	**+0.029**	**+0.004**	**0.069T**	–	–	–	**+0.046**	**+0.021**	**0.086T**
+0.0007	-0.0007	0.0007L	+0.0011	+0.0002	0.0002T				+0.0018	+0.0008	0.0008T
		0.0023T			0.0027T						0.0034T
		0.020L			**0.005T**						**0.023T**
+0.020	**-0.020**	**0.065T**	**+0.032**	**+0.005**	**0.077T**	–	–	–	**+0.050**	**+0.023**	**0.095T**
+0.0008	-0.0008	0.0008L	+0.0013	+0.0002	0.0002T				+0.0020	+0.0009	0.0009T
		0.0026T			0.0031T						0.0037T
		0.020L			**0.005T**						**0.023T**
+0.020	**-0.020**	**0.065T**	**+0.032**	**+0.005**	**0.077T**	–	–	–	**+0.050**	**+0.023**	**0.095T**
+0.0008	-0.0008	0.0008L	+0.0013	+0.0002	0.0002T				+0.0020	+0.0009	0.0009T
		0.0026T			0.0031T						0.0037T

(1)Tolerance range is from +0 to value listed.
NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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These charts are guidelines for specifying shaft and housing fits related to particular operating conditions in table E-6 on page E-15.

TABLE E-8. SPHERICAL ROLLER BEARINGS - SHAFT TOLERANCES (CLASSES m6, n6, p6, r6, r7)

Bearing Bore			m6			n6			p6			r6			r7		
Nominal (Max.)		Tolerance[1]	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit
Over	Incl.		Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.	
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
					0.009T												
30.000	**50.000**	**-0.014**	**+0.025**	**+0.009**	**0.037T**	–	–	–	–	–	–	–	–	–	–	–	–
1.1811	1.9685	-0.0006	+0.0010	+0.0004	0.0004T												
					0.0145T												
					0.011T			**0.020T**									
50.000	**80.000**	**-0.015**	**+0.030**	**+0.011**	**0.045T**	**+0.039**	**+0.020**	**0.054T**	–	–	–	–	–	–	–	–	–
1.9685	3.1496	-0.0006	+0.0012	+0.0004	0.0004T	+0.0015	+0.0008	0.0008T									
					0.0018T			0.0021T									
					0.013T			**0.023T**			**0.037T**						
80.000	**120.000**	**-0.020**	**+0.035**	**+0.013**	**0.055T**	**+0.045**	**+0.023**	**0.065T**	**+0.059**	**+0.037**	**0.079T**	–	–	–	–	–	–
3.1496	4.7244	-0.0008	+0.0014	+0.0005	0.0005T	+0.0018	+0.0009	0.0009T	+0.0023	+0.0015	0.0015T						
					0.0022T			0.0026T			0.0031T						
					0.015T			**0.027T**			**0.043T**			**0.065T**			
120.000	**180.000**	**-0.025**	**+0.040**	**+0.015**	**0.065T**	**+0.052**	**+0.027**	**0.077T**	**+0.068**	**+0.043**	**0.093T**	**+0.090**	**+0.065**	**0.115T**	–	–	–
4.7244	7.0866	-0.0010	+0.0016	+0.0006	0.0006T	+0.0020	+0.0011	0.0011T	+0.0027	+0.0017	0.0017T	+0.0035	+0.0026	0.0026T			
					0.0026T			0.0030T			0.0037T			0.0045T			
					0.017T			**0.031L**			**0.050T**			**0.077T**			
180.000	**200.000**	**-0.030**	**+0.046**	**+0.017**	**0.076T**	**+0.060**	**+0.031**	**0.090T**	**+0.079**	**+0.050**	**0.109T**	**+0.106**	**+0.077**	**0.136T**	–	–	–
7.0866	7.8740	-0.0012	+0.0018	+0.0007	0.0007T	+0.0024	+0.0012	0.0012L	+0.0031	+0.0020	0.0020T	+0.0042	+0.0030	0.0030T			
					0.0030T			0.0036T			0.0043T			0.0054T			
					0.017T			**0.031L**			**0.050T**			**0.080T**			**0.080T**
200.000	**225.000**	**-0.030**	**+0.046**	**+0.017**	**0.076T**	**+0.060**	**+0.031**	**0.090T**	**+0.079**	**+0.050**	**0.109T**	**+0.109**	**+0.080**	**0.139T**	**+0.126**	**+0.080**	**0.156T**
7.8740	8.8583	-0.0012	+0.0018	+0.0007	0.0007T	+0.0024	+0.0012	0.0012L	+0.0031	+0.0020	0.0020T	+0.0043	+0.0031	0.0031T	+0.0050	+0.0031	0.0031T
					0.0030T			0.0036T			0.0043T			0.0055T			0.0062T
					0.017T			**0.031L**			**0.050T**			**0.084T**			**0.084T**
225.000	**250.000**	**-0.030**	**+0.046**	**+0.017**	**0.076T**	**+0.060**	**+0.031**	**0.090T**	**+0.079**	**+0.050**	**0.109T**	**+0.113**	**+0.084**	**0.143T**	**+0.130**	**+0.084**	**0.160T**
8.8583	9.8425	-0.0012	+0.0018	+0.0007	0.0007T	+0.0024	+0.0012	0.0012L	+0.0031	+0.0020	0.0020T	+0.0044	+0.0033	0.0033T	+0.0051	+0.0033	0.0033T
					0.0030T			0.0036T			0.0043T			0.0056T			0.0063T
					0.020T			**0.034T**			**0.056T**			**0.094T**			**0.094T**
250.000	**280.000**	**-0.035**	**+0.052**	**+0.020**	**0.087T**	**+0.066**	**+0.034**	**0.101T**	**+0.088**	**+0.056**	**0.123T**	**+0.126**	**+0.094**	**0.161T**	**+0.146**	**+0.094**	**0.181T**
9.8425	11.0236	-0.0014	+0.0020	+0.0008	0.0008T	+0.0026	+0.0013	0.0013T	+0.0035	+0.0022	0.0022T	+0.0050	+0.0037	0.0037T	+0.0057	+0.0037	0.0037T
					0.0034T			0.0040T			0.0049T			0.0064T			0.0071T
					0.020T			**0.034T**			**0.056T**			**0.098T**			**0.098T**
280.000	**315.000**	**-0.035**	**+0.052**	**+0.020**	**0.087T**	**+0.066**	**+0.034**	**0.101T**	**+0.088**	**+0.056**	**0.123T**	**+0.130**	**+0.098**	**0.165T**	**+0.150**	**+0.098**	**0.185T**
11.0236	12.4016	-0.0014	+0.0020	+0.0008	0.0008T	+0.0026	+0.0013	0.0013T	+0.0035	+0.0022	0.0022T	+0.0051	+0.0039	0.0039T	+0.0059	+0.0039	0.0039T
					0.0034T			0.0040T			0.0049T			0.0065T			0.0073T
					0.021T			**0.037T**			**0.062T**			**0.108T**			**0.108T**
315.000	**355.000**	**-0.040**	**+0.057**	**+0.021**	**0.097T**	**+0.073**	**+0.037**	**0.113T**	**+0.098**	**+0.062**	**0.138T**	**+0.144**	**+0.108**	**0.184T**	**+0.165**	**+0.108**	**0.205T**
12.4016	13.9764	-0.0016	+0.0022	+0.0008	0.0008T	+0.0029	+0.0015	0.0015T	+0.0039	+0.0024	0.0024T	+0.0057	+0.0043	0.0043T	+0.0065	+0.0043	0.0043T
					0.0038T			0.0045T			0.0055T			0.0073T			0.0081T

[1]Tolerance range is from +0 to value listed.

NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

Continued on next page.

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These charts are guidelines for specifying shaft and housing fits related to particular operating conditions in table E-6 on page E-15.

Continued from previous page.

Bearing Bore			m6			n6			p6			r6			r7		
Nominal (Max.)		Tolerance[1]	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit	Shaft Dia.		Fit
Over	Incl.		Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.		Max.	Min.	
mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.
								0.037T			**0.062T**			**0.114T**			**0.114T**
355.000	**400.000**	**-0.040**	–	–	–	**+0.073**	**+0.037**	**0.113T**	**+0.098**	**+0.062**	**0.138T**	**+0.150**	**+0.114**	**0.190T**	**+0.171**	**+0.114**	**0.211T**
13.9764	15.7480	-0.0016				+0.0029	+0.0015	0.0015T	+0.0039	+0.0024	0.0024T	+0.0059	+0.0045	0.0045T	+0.0067	+0.0045	0.0045T
								0.0045T			0.0055T			0.0075T			0.0083T
								0.040T			**0.068T**			**0.126T**			**0.126T**
400.000	**450.000**	**-0.045**	–	–	–	**+0.080**	**+0.040**	**0.125T**	**+0.108**	**+0.068**	**0.153T**	**+0.166**	**+0.126**	**0.211T**	**+0.189**	**+0.126**	**0.234T**
15.7480	17.7165	-0.0018				+0.0031	+0.0016	0.0016T	+0.0043	+0.0027	0.0027T	+0.0065	+0.0050	0.0050T	+0.0074	+0.0050	0.0050T
								0.0049T			0.0061T			0.0083T			0.0092T
								0.040T			**0.068T**			**0.132T**			**0.132T**
450.000	**500.000**	**-0.045**	–	–	–	**+0.080**	**+0.040**	**0.125T**	**+0.108**	**+0.068**	**0.153T**	**+0.172**	**+0.132**	**0.217T**	**+0.195**	**+0.132**	**0.240T**
17.7165	19.6850	-0.0018				+0.0031	+0.0016	0.0016T	+0.0043	+0.0027	0.0027T	+0.0068	+0.0052	0.0052T	+0.0077	+0.0052	0.0052T
								0.0049T			0.0061T			0.0086T			0.0095T

[1]Tolerance range is from +0 to value listed.

NOTE: Tolerance and shaft diameters are shown in the table as variances from nominal bearing bore.

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LUBRICATION

To help maintain a bearing's antifriction characteristics, lubrication is needed to:

- Minimize rolling resistance caused by deformation of the rolling elements and raceway under load by separating the mating surfaces.
- Minimize sliding friction occurring between rolling elements, raceways and cage.
- Transfer heat (with oil lubrication).
- Protect from corrosion and, with grease lubrication, from contaminant ingress.

Lubrication E-24
General-Purpose Industrial Grease E-31



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LUBRICATION

The wide range of bearing types and operating conditions precludes any simple, all-inclusive statement or guideline allowing the selection of the proper lubricant. At the design level, the first consideration is whether oil or grease is best for the particular operation. The advantages of oil and grease are outlined in the table below. When heat must be carried away from the bearing, oil must be used. It is typically preferred for very high-speed applications. **Timken® SNT housings and seal systems are specifically designed for grease lubrication. If an application requires oil lubrication, contact your Timken engineer for assistance.**

TABLE E-9. ADVANTAGES OF OIL AND GREASE

Oil	Grease
Carries heat away from the bearings	Simplifies seal design and acts as a sealant
Carries away moisture and particulate matter	Permits prelubrication of sealed or shielded bearings
Easily controlled lubrication	Generally requires less frequent lubrication

European REACH compliance

Timken-branded lubricants, greases and similar products sold in stand-alone containers or delivery systems are subject to the European REACH (**R**egistration, **E**valuation, **A**uthorization and Restriction of **CH**emicals) directive. For import into the European Union, Timken can sell and provide only those lubricants and greases that are registered with ECHA (**E**uropean **CH**emical **A**gency). For further information, please contact your Timken engineer.

GREASE LUBRICATION

Grease lubrication is generally applicable to low-to-moderate speed applications that have operating temperatures within the limits of the grease. There is no universal antifriction bearing grease. Each grease has limiting properties and characteristics.

Greases consist of a base oil, a thickening agent and additives. Conventionally, bearing greases have consisted of petroleum base oils thickened to the desired consistency by some form of metallic soap. More recently synthetic base oils have been used with organic and inorganic thickeners. Table E-10 summarizes the composition of typical lubricating greases.

TABLE E-10. COMPOSITION OF GREASES

Base Oil	+	Thickening Agents	+	Additives	=	Lubricating Grease
Mineral oil Synthetic hydrocarbon Esters Perfluorinated oil Silicone		Soaps and complex soaps lithium, aluminum, barium, calcium Non-Soap (inorganic) microgel (clay), carbon black, silica-gel, PTFE Non-Soap (organic) Urea compounds		Rust inhibitors Dyes Tactifiers Metal deactivates Oxidation inhibitors Anti-wear EP		

Calcium- and aluminum-based greases have excellent water resistance and are used in industrial applications where water ingress is an issue. Lithium-based greases are multi-purpose and are used in industrial applications and wheel bearings.

Synthetic base oils such as esters, organic esters and silicones used with conventional thickeners and additives typically have higher maximum operating temperatures than petroleum-based greases. Synthetic greases can be designed to operate in temperatures from -73° C (-100° F) to 288° C (550° F).

In table E-11 are the general characteristics of common thickeners used with petroleum base oils.

Use of the thickeners in table E-11 with synthetic hydrocarbon or ester base oils increases the maximum operating temperature by approximately 10° C (18° F).

TABLE E-11. GENERAL CHARACTERISTICS OF THICKENERS USED WITH PETROLEUM-BASED OILS

Thickener	Typical Dropping Point		Maximum Temperature		Typical Water Resistance
	°C	°F	°C	°F	
Lithium soap	**193**	380	**121**	250	Good
Lithium complex	**260+**	500+	**149**	300	Good
Aluminum complex	**249**	480	**149**	300	Excellent
Calcium sulfonate	**299**	570	**177**	350	Excellent
Polyurea	**260**	500	**149**	300	Good

Using polyurea as a thickener for lubricating fluids is one of the most significant lubrication developments in more than 30 years. Polyurea grease performance is outstanding in a wide range of bearing applications.

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BASE OILS

Base oils are classified as either petroleum types (refined from crude oil) or synthetic types (produced by chemical synthesis).

Petroleum oils

Petroleum oils are made from a petroleum hydrocarbon derived from crude oil, with additives to improve certain properties. Greases with petroleum oils can be used in most general industrial bearing applications and many specialty applications with moderate operating temperatures.

Synthetic oils

Synthetic oils cover a broad range or categories and include polyalphaolefins, silicones, polyglycols and various esters. In general, synthetic oils are less prone to oxidation and perform more efficiently than petroleum oils at extreme hot or cold temperatures. Physical properties, such as pressure-viscosity coefficients, tend to vary between oil types. Use caution when making oil selections.

The polyalphaolefins (PAO) have a hydrocarbon chemistry that parallels petroleum oil both in chemical structures and pressure-viscosity coefficients. Therefore, PAO oil is mostly used in the oil-lubricated applications of bearings when severe temperature environments (hot and cold) are encountered or when extended lubricant life is required.

The silicone, ester and polyglycol oils have an oxygen-based chemistry that is structurally quite different from petroleum oils and PAO oils. This difference has a profound effect on its physical properties where pressure-viscosity coefficients can be lower compared to mineral and PAO oils. This means that these types of synthetic oils may actually generate a smaller elastohydrodynamic (EHD) film thickness than a mineral or PAO oil of equal viscosity at operating temperature. Reductions in bearing fatigue life and increases in bearing wear could result from this reduction of lubricant film thickness.

WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

Viscosity

The selection of oil viscosity for any bearing application requires consideration of several factors: load, speed, bearing setting, type of oil and environmental factors. Since oil viscosity varies inversely with temperature, a viscosity value must always be stated with the temperature at which it was determined. High-viscosity oil is used for low-speed or high-ambient-temperature applications. Low-viscosity oil is used for high-speed or low-ambient-temperature applications.

There are several classifications of oils based on viscosity grades. The most familiar are the Society of Automotive Engineers (SAE) classifications for automotive engine and gear oils. The American Society for Testing and Materials (ASTM) and the International Organization for Standardization (ISO) have adopted standard viscosity grades for industrial fluids. Fig. E-8 shows the viscosity comparisons of ISO/ASTM with SAE classification systems at 40° C (104° F).

VISCOSITY CLASSIFICATION COMPARISON

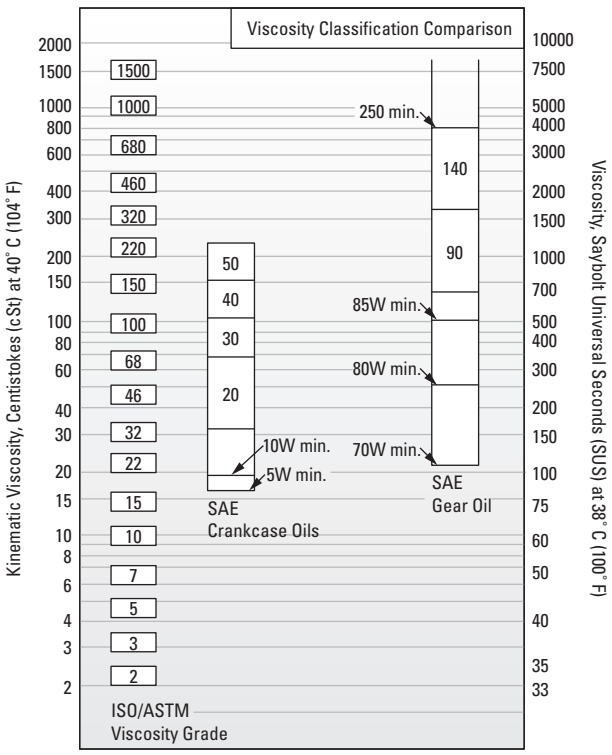


Fig. E-8. Comparison between ISO/ASTM grades (ISO 3448/ASTM D2442) and SAE grades (SAE J 300-80 for crankcase oils, SAE J 306-81 for axle and manual transmission oils).

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The ASTM/ISO viscosity grade system for industrial oils is depicted in fig. E-9 below.

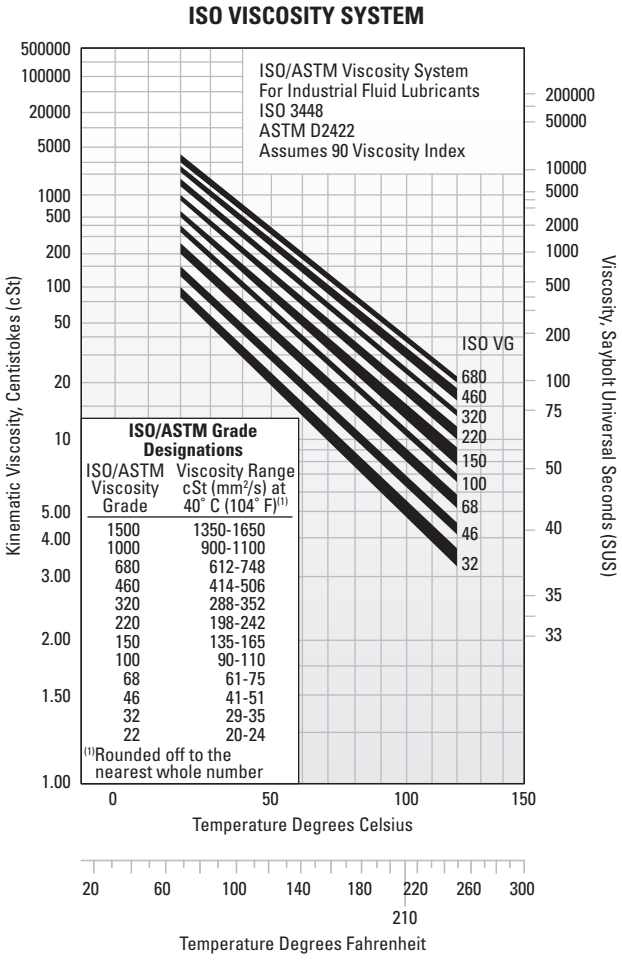


Fig. E-9. Viscosity grade system for industrial oils.

CONSISTENCY

Greases may vary in consistency from semi-fluids that are hardly thicker than a viscous oil to solid grades almost as hard as a soft wood.

Consistency is measured by a penetrometer in which a standard weighted cone is dropped into the grease. The distance the cone penetrates (measured in tenths of a millimeter in a specific time) is the penetration number.

The National Lubricating Grease Institute (NLGI) classification of grease consistency is shown in table E-12 below.

TABLE E-12. NLGI CLASSIFICATIONS

NLGI Grease Grades	Penetration No.
0	355-385
1	310-340
2	265-295
3	220-250
4	175-205
5	130-160
6	85-115

Grease consistency is not fixed, it normally becomes softer when sheared or worked. In the laboratory, this working is accomplished by forcing a perforated plate up and down through a closed container of grease. This working does not compare with the violent shearing action that takes place in a bearing and does not necessarily correlate with actual performance.

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LOW TEMPERATURES

Starting torque in a grease-lubricated bearing at low temperatures can be critical. Some greases may function adequately as long as the bearing is operating, but resistance to initial movement may be excessive. In certain smaller machines, starting may be impossible when very cold. Under such operating circumstances, greases containing low-temperature characteristic oils are generally required.

If the operating temperature range is wide, synthetic greases offer advantages. Synthetic greases are available to provide very low starting and running torque at temperatures as low as -73° C (-100° F). In certain instances, these greases perform better in this respect than oil.

An important point concerning lubricating greases is that the starting torque is not necessarily a function of the consistency or the channel properties of the grease. Starting torque is more a function of the individual rheological properties of a particular grease and is best evaluated by application experience.

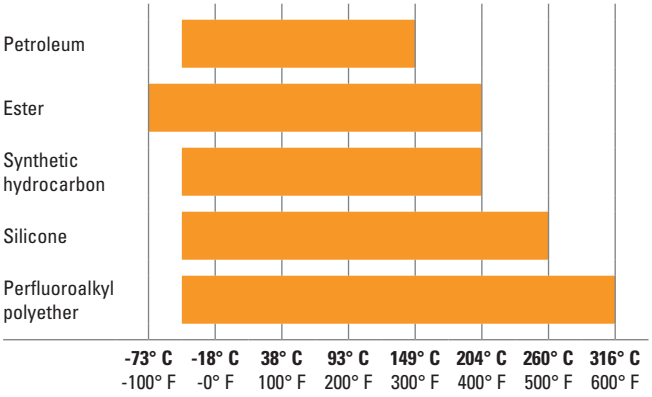
HIGH TEMPERATURES

The high temperature limit for lubricating greases is generally a function of the thermal and oxidation stability of the fluid and the effectiveness of the oxidation inhibitors. Grease temperature ranges are defined by both the dropping point of the grease thickener and composition of the base oil. Table E-13 shows the temperature ranges of various base oils used in grease formulations.

A rule of thumb, developed from years of testing grease-lubricated bearings, indicates that grease life is halved for every 10° C (18° F) increase in temperature. For example, if a particular grease provides 2000 hours of life at 90° C (194° F), by raising the temperature to 100° C (212° F), reduction in life to approximately 1000 hours would result. On the other hand, 4000 hours could be expected by lowering the temperature to 80° C (176° F).

Thermal stability, oxidation resistance and temperature limitations must be considered when selecting greases for high-temperature applications. In non-relubricatable applications, highly refined mineral oils or chemically stable synthetic fluids are required as the oil component of greases for operation at temperatures above 121° C (250° F).

TABLE E-13. TEMPERATURE RANGES FOR BASE OILS USED IN LUBRICATING GREASES



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CONTAMINATION

Abrasive Particles

When roller bearings operate in a clean environment, the primary cause of damage is the eventual fatigue of the surfaces where rolling contact occurs. However, when particle contamination enters the bearing system, it is likely to cause damage such as bruising, which can shorten bearing life.

When dirt from the environment or metallic wear debris from some component in the application are allowed to contaminate the lubricant, wear can become the predominant cause of bearing damage. If bearing wear becomes significant, changes will occur to critical bearing dimensions that could adversely affect machine operation.

Bearings operating in a contaminated lubricant exhibit a higher initial rate of wear than those running in an uncontaminated lubricant. With no further contaminant ingress, this wear rate quickly diminishes. The contamination particles are reduced in size as they pass through the bearing contact area during normal operation.

Water

Water and moisture can be particularly conducive to bearing damage. Lubricating greases may provide a measure of protection from this contamination. Certain greases, such as calcium and aluminum-complex, are highly water-resistant.

Sodium-soap greases are water-soluble and should not be used in applications involving water.

Either dissolved or suspended water in lubricating oils can exert a detrimental influence on bearing fatigue life. Water can cause bearing etching that also can reduce bearing fatigue life. The exact mechanism by which water lowers fatigue life is not fully understood. It has been suggested that water enters micro-cracks in the bearing rings that are caused by repeated stress cycles. This leads to corrosion and hydrogen embrittlement in the micro-cracks, reducing the time required for these cracks to propagate to an unacceptable-sized spall.

Water-based fluids, such as water glycol and invert emulsions, also have shown a reduction in bearing fatigue life. Although water from these sources is not the same as contamination, the results support the previous discussion concerning water-contaminated lubricants.

GREASE SELECTION

The successful use of bearing grease depends on the physical and chemical properties of the lubricant as well as application and environmental conditions. Because the choice of grease for a particular bearing under certain service conditions is often difficult to make, you should consult with your lubricant supplier or equipment maker for specific questions about lubrication requirements for your application. You also can contact your Timken engineer for general lubrication guidelines for any application.

Grease must be carefully selected with regard to its consistency at operating temperature. It should not exhibit thickening, separation of oil, acid formation or hardening to any marked degree. It should be smooth, non-fibrous and entirely free from chemically active ingredients. Its dropping point should be considerably higher than the operating temperature.

PERFORMANCE ENHANCING GREASE ADDITIVES

Greases can be enhanced with a variety of base oil and soap additive packages that improve the performance of the grease and extend the life of the bearing the grease is lubricating. These additive packages can include agents which:

- inhibit oxidation, rust and corrosion
- resist water immersion and washout
- provide anti-wear protection
- allow extreme pressure from extraordinary loading

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Timken® application-specific lubricants were developed by leveraging our knowledge of tribology and antifriction bearings, and how these two elements affect overall system performance. Timken lubricants help bearings and related components operate effectively in demanding industrial operations. High-temperature, anti-wear and water-resistant additives offer superior protection in challenging environments. Table E-14 provides an overview of the Timken greases available for general applications. Contact your Timken engineer for a more detailed publication on Timken lubrication solutions.

TABLE E-14. GREASE LUBRICATION SELECTION GUIDE

ENVIRONMENT		APPLICATION
High Wear • Moderate Loads Moderate Speeds Moderate Temperatures	Timken Premium All-Purpose Industrial Grease Part No. GR217	Agriculture • Bushings/Ball Joints Truck and Auto Wheel Bearings Heavy-Duty Industrial
Extreme Heat • Heavy Loads High Sliding Wear Dirty Environments Slow Speeds • Shock Loading	Timken Construction and Off-Highway Grease Part No. GR219	Agriculture/Mining • Cement Plants Construction/Off Road • Rock Quarry Earth-Moving Equipment Fleet Equipment • Heavy Industry Pivot Pins/Splined Shafts
Wet and Corrosive Conditions Quiet Environments • Light Loads Moderate to High Speeds Moderate Temperatures Light Load Moderate Water	Timken Ball Bearing Pillow Block Grease Part No. GR220	Lightly Loaded Pillow Blocks Idler Pulleys • Oven Conveyors Electric Motors • Fans • Pumps Alternators • Generators
Corrosive Media • Extreme Heat Heavy Loads • Wet Conditions Slow to Moderate Speeds	Timken Mill Grease Part Nos. GR180 - NLGI No. 1 GR182 - NLGI No. 2	Aluminum Mills • Paper Mills Steel Mills • Offshore Rigs Power Generation
Incidental Food Contact Hot and Cold Temperatures Moderate to High Speeds Medium Loads	Timken Food Safe Grease Part No. GR231	Food and Beverage Industries Pharmaceuticals
Extreme Low and High Temperatures Severe Loads Corrosive Media Slow to Moderate Speeds	Timken Synthetic Industrial Grease Part No. GR232	Wind Energy Main Bearing Pulp and Paper Machines General Heavy Industry Marine Applications Centralized Grease Systems
Moderate Speeds Light to Moderate Loads Moderate Temperatures Moderate Water	Timken Multi-Use Lithium Grease Part Nos. GR236 - NLGI No. 1, EP1 GR237 - NLGI No. 2, EP2	General Industrial Applications Pins and Bushings • Track Rollers Water Pumps Plain and Antifriction Bearings

This selection guide is not intended to replace the specifications by the equipment builder, who is responsible for its performance.

Many bearing applications require lubricants with special properties or lubricants formulated specifically for certain environments, such as:

- Friction oxidation (fretting corrosion).
- Chemical and solvent resistance.
- Food handling.

For assistance with these or other areas requiring special lubricants, consult your Timken engineer.

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GREASE USE GUIDELINES

It is important to use the proper amount of grease in the application. In typical industrial applications, the bearing cavity should be kept approximately one-third to one-half full. Less grease may result in the bearing being starved for lubrication. More grease may result in churning. Both conditions may result in excessive heat generation. As the grease temperature rises, viscosity decreases and the grease becomes thinner. This can reduce the lubricating effect and increase leakage of the grease from the bearing. It also may cause the grease components to separate, leading to a general breakdown of the lubricant properties. As the grease breaks down, bearing torque increases. In the case of excess grease resulting in churning, torque may also increase due to the resistance caused by the grease.

For best results, there should be ample space in the housing to allow room for excess grease to be displaced. However, it is equally important that the grease be retained all around the bearing. If a large void exists between the bearings, grease closures should be used to prevent the grease from leaving the bearing area.

Frictional torque is influenced by the quantity and the quality of lubricant present. Excessive quantities of grease causes churning. The adverse effects of churn are accelerated with increases in operating speed. The churn results in excessive temperatures, separation of the grease components, and breakdown in lubrication values. In normal-speed applications, the housings should be kept approximately one-third to one-half full.

Only in low-speed applications may the housing be entirely filled with grease. This method of lubrication is a safeguard against the entry of foreign matter, where sealing provisions are inadequate for exclusion of contaminants or moisture.

During periods of non-operation, completely filling the housings with grease can provide additional protection to the bearing surfaces. Prior to restarting operation, remove the excess grease and restore the proper level.

Applications using grease lubrication should have a grease fitting and a vent at opposite ends of the housing near the top. A drain plug should be located near the bottom of the housing to allow the grease to purge as needed.

Bearings should be relubricated at regular intervals to help prevent damage. Relubrication intervals are difficult to determine. If plant practice or experience with other applications is not available, consult your lubricant supplier.



Fig. E-10. Grease can easily be packed by hand.



Fig. E-11. Mechanical grease packer.

Timken offers a range of lubricants to help bearings and related components operate effectively in demanding industrial operations. High-temperature, anti-wear and water-resistant additives offer greater protection in challenging environments. Timken also offers a line of single- and multi-point lubricators to simplify grease delivery.

Grease application methods

Grease, in general, is easier to use than oil in industrial bearing applications. Most bearings that are initially packed with grease require periodic relubrication to operate efficiently.

Grease should be packed into the bearing so that it gets between the rolling elements and coats raceway surfaces.

Grease can be easily packed into small- and medium-size bearings by hand (fig. E-10). In shops where bearings are frequently regreased, a mechanical grease packer that forces grease through the bearing under pressure may be appropriate (fig. E-11). Regardless of the method, after packing the internal areas of the bearing, a small amount of grease also should be smeared on the outside of the rollers.

The two primary considerations that can effect the relubrication cycle are operating temperature and sealing efficiency. High-operating-temperature applications generally require more frequent regreasing. The less efficient the seals, the greater the grease loss and the more frequently grease must be added.

Grease should be added any time the amount in the bearing falls below the desired amount. The grease should be replaced when its lubrication properties have been reduced through contamination, high temperature, water, oxidation or any other factors. It is also important to follow suggested practice for seal lubrication. Mounting instructions shown starting on page E-41 indicated appropriate methods based on seal and housing construction.

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GENERAL-PURPOSE INDUSTRIAL GREASE

Polyurea and lithium-based greases are typical of greases that can be used to lubricate many Timken bearing applications in all types of standard equipment. Polyurea and lithium-based greases are normally preferred for general-purpose bearing lubrication and are advantageous in high moisture applications. Both greases have good water-resistant characteristics.

Special consideration should be given to applications where speed, load, temperature or environmental conditions are extreme. For temperature ranges of standard greases see table E-13.

Lithium greases, lithium complex greases, or calcium sulfonate thickened grease are suitable for most centralized, single-point, or manually lubricated product. These greases should be smooth, homogeneous and uniform, premium-quality product composed of mineral or synthetic oil, a thickener and appropriate inhibitors (see table E-15).

TABLE E-15. SUGGESTED LITHIUM SOAP, LITHIUM COMPLEX AND CALCIUM SULFONATE GREASE PROPERTIES

Thickener type	Lithium Complex, or equivalent
Consistency	NLGI No.1 or No. 2
Additives	Anti-wear, corrosion and oxidation inhibitors
Base oil	Mineral oil or synthetic
Viscosity at 40° C	ISO VG 150-220
Viscosity index	80 min.
Pour point	-18° C (0° F) max.

They should not contain materials that are corrosive or abrasive to bearings or seals. The grease should have excellent mechanical and chemical stability. The grease should contain inhibitors to provide long-term protection against oxidation in high-performance applications and protect the bearings from corrosion in the presence of moisture. The suggested base oil viscosity covers a fairly wide range. Lower viscosity products should be used in high-speed and/or lightly loaded applications to minimize heat generation and torque. Higher viscosity products should be used in moderate- to low-speed applications and under heavy loads to maximize lubricant film thickness.

Speed ratings are listed for each size/class part number in the Timken Spherical Roller Bearing Catalog (order no. 10446) on pages 59–88. When application speeds exceed 70 percent of grease speed rating, consider increasing RIC by one ISO clearance range (CNormal to C3). Table E-16 is provided as a reference for typical grease thickener compatibilities. For general industrial applications, consider a grease that is NLGI No. 1 or No. 2, with a ISO 150 to 220 viscosity grade.

NOTE

Mixing greases can result in improper bearing lubrication. Always follow the specific lubrication instructions of your equipment supplier.

Consult your lubricant supplier for further information for your specific requirement.

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TABLE E-16. GREASE COMPATIBILITY CHART

■ = Best Choice
■ = Compatible
■ = Borderline
■ = Incompatible

	Al Complex	Ba Complex	Ca Stearate	Ca 12 Hydroxy	Ca Complex	Ca Sulfonate	Non-Soap Clay	Li Stearate	Li 12 Hydroxy	Li Complex	Polyurea	Polyurea S S
Aluminum Complex	■	■	■	■	■	■	■	■	■	■	■	■
Timken Food Safe	■	■	■	■	■	■	■	■	■	■	■	■
Barium Complex	■	■	■	■	■	■	■	■	■	■	■	■
Calcium Stearate	■	■	■	■	■	■	■	■	■	■	■	■
Calcium 12 Hydroxy	■	■	■	■	■	■	■	■	■	■	■	■
Calcium Complex	■	■	■	■	■	■	■	■	■	■	■	■
Calcium Sulfonate	■	■	■	■	■	■	■	■	■	■	■	■
Timken Premium Mill Timken Heavy-Duty Moly	■	■	■	■	■	■	■	■	■	■	■	■
Clay Non-Soap	■	■	■	■	■	■	■	■	■	■	■	■
Lithium Stearate	■	■	■	■	■	■	■	■	■	■	■	■
Lithium 12 Hydroxy	■	■	■	■	■	■	■	■	■	■	■	■
Lithium Complex	■	■	■	■	■	■	■	■	■	■	■	■
Polyurea Conventional	■	■	■	■	■	■	■	■	■	■	■	■
Polyurea Shear Stable	■	■	■	■	■	■	■	■	■	■	■	■
Timken Multi-Use	■	■	■	■	■	■	■	■	■	■	■	■
Timken All -Purpose Timken Synthetic	■	■	■	■	■	■	■	■	■	■	■	■
Timken Pillow Block	■	■	■	■	■	■	■	■	■	■	■	■

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APPLICATION CONSIDERATIONS

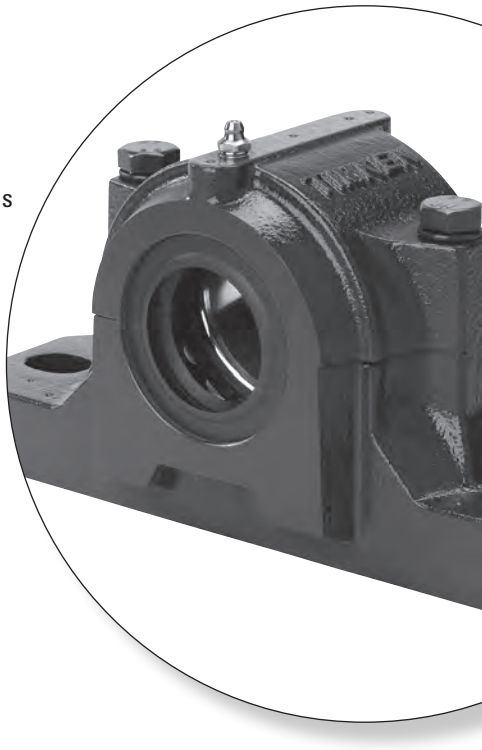
For higher speed applications (operating at 70 percent of the grease speed rating or more), a lighter base oil viscosity (ISO 100 – 150) can be considered. Conversely, for lower speed applications, a grease with a heavier base oil viscosity (ISO 320 – 460) can be considered. For lower speed applications operating at colder start-up temperatures (<-18° C [0° F]), consider a softer grease (NLGI grade 1) with an approved EP additive. The lighter grade will allow more grease flow into the bearing contact area and the EP additive will reduce wear during start-up. An ISO 460 base oil viscosity also can be considered.

When lower speed applications operate at higher temperatures (>149° C [300° F]), consult your Timken engineer.

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SNT SPHERICAL ROLLER BEARING PLUMMER BLOCKS PRODUCT DATA TABLES

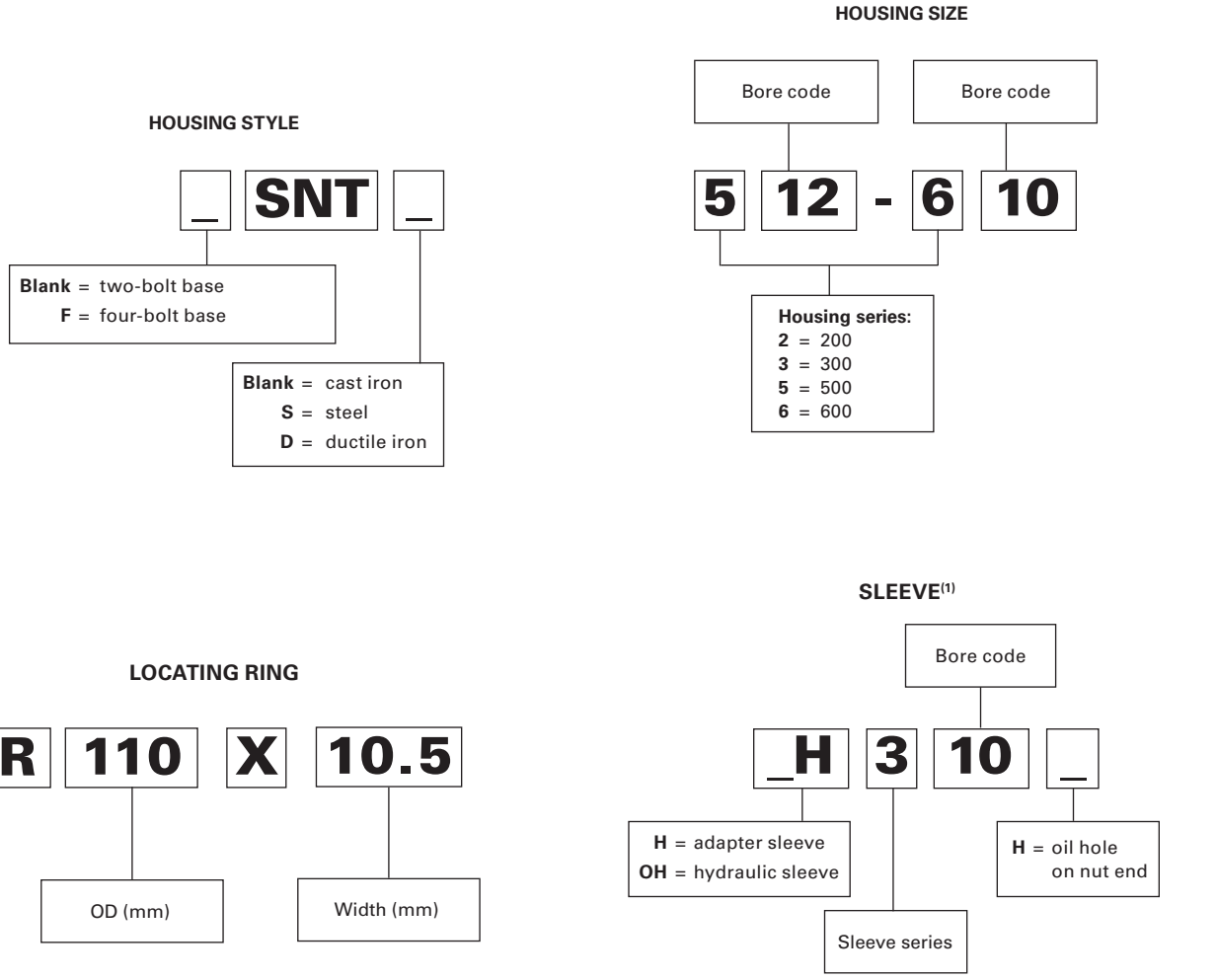


Spherical roller bearing plummer blocks combine rugged cast iron, ductile iron or steel housings with high-capacity bearings to meet the toughest demands of industry. Each plummer block contains an advanced-design spherical roller bearing with improved geometry and raceway finish for maximized load capacity and service life. Integrated housing and bearing features enhance unit lubrication characteristics. Multiple sealing options protect against contamination.

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NOMENCLATURE



(1)Sleeve assemblies contain adapter sleeve, locknut, and lockwasher

TABLE E-17. TAPERED BORE BEARING EXAMPLE FOR SNT 512-610

Bearing	21310K	22310K	22212K
Locating rings	SR110X10.5	SR110X4	SR110X10
Sleeve	H310	H2310	H312
SEAL OPTIONS			
Double-lip	TSNG610	TSNG610	TSNG512
LOR	LO610	LO610	LO512
V-ring	VR610	VR610	VR512
Taconite	TA610	TA610	TA512
End cover	EC512-610	EC512-610	EC512-610

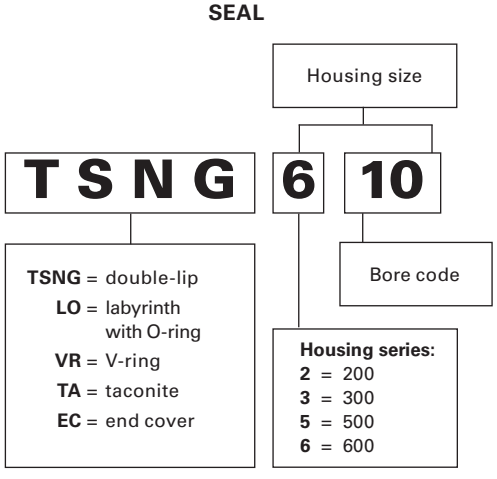


Fig. E-12. SNT plummer block nomenclature.

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INTRODUCTION

Timken's capabilities in engineering and manufacturing heavy-duty plummer blocks help ensure high performance from our products. In addition, Timken's worldwide sales organization is staffed with experienced engineers who are available for consultation on any plummer block or bearing application. If your design calls for shaft sizes or loads not listed in this catalog, contact your Timken engineer for information about availability of special units.

- **Sizes:** 20–400 mm shafts.
- **Applications:** Conveyors, ball mills, casters, rolling mills, heavy movable structures.
- **Features:** Split construction for convenient assembly and disassembly. These units include pry-tool slots and multiple alignment features to ease installation. There are center marks to simplify alignment and dimples for positioning pins and four-bolt mounting. Seal grooves allow for various sealing options.
- **Benefits:** Caps can be removed easily and quickly without damage to the bearing or housing. The design allows for simplified bearing inspection, service and replacement.

DESIGN AND CONSTRUCTION

Timken offers split plummer block housings that can be built with either tapered bore bearings with adapters for mounting on straight shafts or cylindrical bore bearings for assembly on shouldered shafts. Each offering includes all the accessories to meet a variety of needs.

Timken uses a system of doweling caps and bases together at an early stage of manufacturing, so that they remain a single unit during machining. They are not interchangeable as separate parts and become precisely mated components, helping to ensure a precise fit. Timken supplies plummer block housings for mounting with two or four bolts.

Standard caps and bases are made from high-grade, stress-relieved cast iron. They also are available in cast steel and ductile iron.

The illustration below (fig. E-13) shows all parts of a plummer block assembly that are described throughout this section.



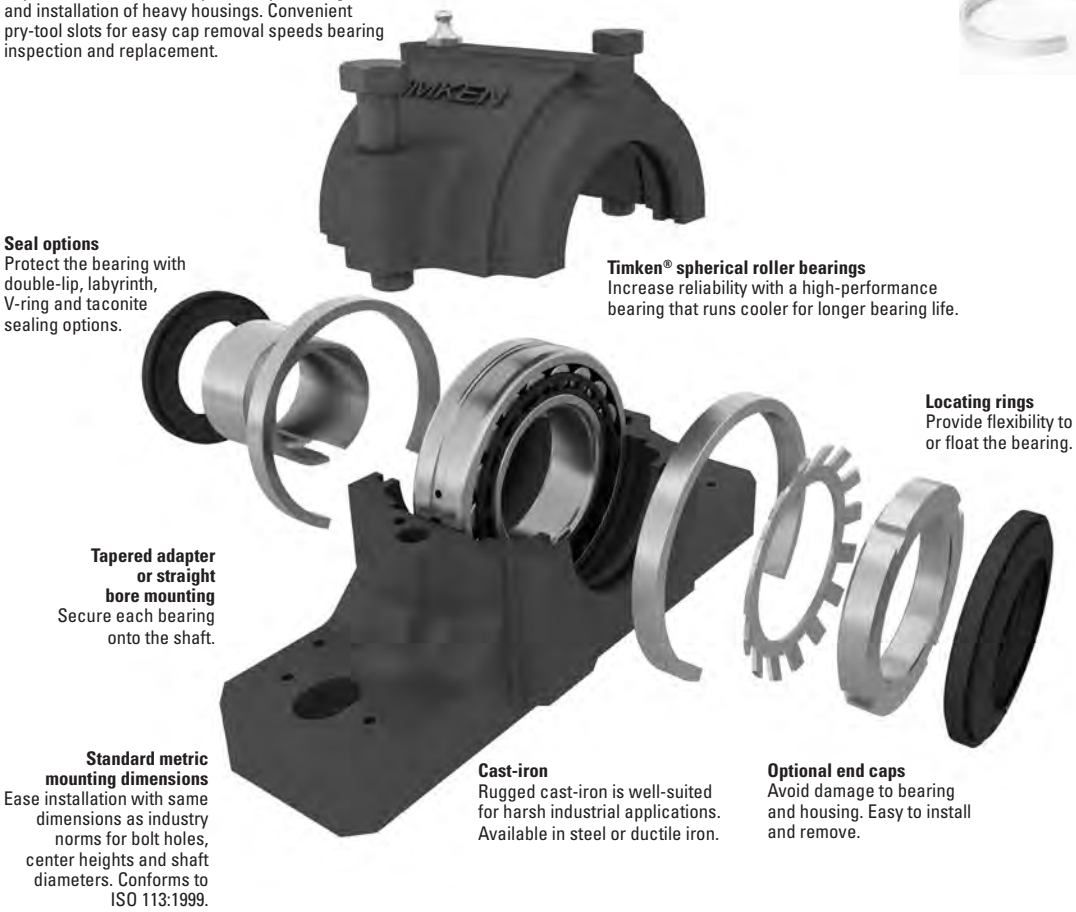


Fig. E-13. SNT plummer block components and features.

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MOUNTING

ADAPTER VERSUS STRAIGHT BORE

Typically, a spherical roller bearing plummer block assembly is mounted on a straight shaft using a tapered bore bearing and adapter assembly. Standard commercial shafting can be used without additional machining. (Suggested shaft diameters are shown in table E-20 on page E-68.) Adapter mount also permits maximum flexibility in the axial positioning of the bearing on the shaft and will accommodate light locational thrust loads. Timken plummer blocks for tapered bore and cylindrical bore are available.

Adapter-mounted spherical roller bearings require the correct removal of diametral clearance from the bearing to prevent relative rotation between inner race and sleeve or shaft. For proper shaft mounting of adapter-type spherical roller bearings, see page E-7.

When application conditions produce heavy thrust loads, or a need exists for exact axial location or a positive shaft interference fit, a direct straight bore mounting may be the best option. This requires a shouldered shaft, machined for proper fit, and a straight bore bearing. Timken plummer block housings for straight bore applications are available for use with series 213, 222, 223 and 232.

Suggested fits for shafts in cylindrical bore spherical roller bearings are shown in the engineering section of this catalog in table E-4 on page E-9. For applications involving heavy shock, vibration, unbalanced rotating loads or other non-standard conditions, consult your Timken engineer.

FIXED AND FLOAT PLUMMER BLOCKS

SNT split plummer block components include two to six locating rings allowing for installation at either fixed or float positions on the shaft. For the fixed position, two or more locating rings are used on one or both sides of the bearing.

CLOSED-END INSTALLATIONS

In some applications, the shaft end is designed to terminate inside the plummer block. For this design, positive fitting end-cap inserts are available to help seal out contaminants and retain lubricant. Timken heavy-duty end covers provide sealing for closed-end applications.

Designers and installers need to make sure the shaft end does not contact the closure. A minimum of 3 mm clearance at maximum thermal expansion is suggested between the end of the shaft and the closure. Dimension Y, in the spherical roller bearing tables (pages E-71 – E-77), defines the maximum permissible length of the shaft from the centerline of the plummer block housing.

NOTE

Failure to employ proper mounting procedures can cause reduced bearing performance.

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SNT LUBRICATION

Timken plummer block housings are designed for grease lubrication. They also can be modified to accommodate oil-bath and circulating oil- or oil/air-mist systems. Contact your Timken engineer for assistance. Please reference the installation guides on pages E-41 – E-45 for grease fill information.

Lubrication groove and holes may be provided in the bearing outer ring. This feature, designated by adding suffix W33 to the bearing number, should be specified whenever re-ordering bearings for pillow blocks. For bearings with lubrication groove and holes, it is suggested that the fresh lubricant is fed directly to the center of the bearing between the rows of rollers and distributed to the rest of the bearing. This helps ensure the used lubricant is purged from the bearing. Housed units feature multiple dimples that can be used to drill and tap for alternative grease fitting locations as needed.

SEALS

Timken® SNT plummer blocks are available with multiple sealing options. Each seal type incorporates specific features to meet your application needs. Table E-18 compares the various features of each seal type.

DOUBLE-LIP SEALS

Double-lip seals are the most common seal design used with SNT plummer blocks. These are general all purpose elastomer seals that can protect in moderately contaminated environments. The seal is split into two 180 degree halves for easy installation. The seal element runs against the shaft surface and should be used in grease lubricated blocks. *Contact your Timken engineer for double-lip seal availability when using cylindrical bore housings.*

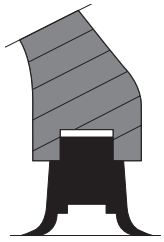


Fig. E-14. Double-lip seals.

V-RING SEALS

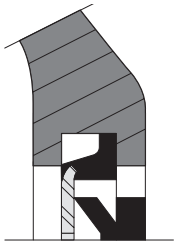


Fig. E-15. V-ring seals.

V-ring seals are a deflector type seal. They are made up of an elastomer V-ring seal element that rotates with the shaft and runs against the axial surface of a washer-type component that is retained in the block housing. As the V-ring element is a stretch fit onto the shaft, a rougher shaft surface is acceptable. This seal performs well in moderately contaminated environments with fine particulate.

LABYRINTH SEALS

Labyrinth seals are made up of a single metal ring component that interconnects with the grooves in the housing to form a labyrinth gap. The inside diameter of the metal ring contains an O-ring that creates an interference fit with the shaft so that the ring will rotate with the shaft. Labyrinth seals can be used on high-speed applications and in moderately contaminated environments.

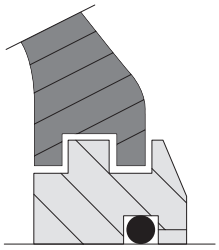


Fig. E-16. Labyrinth seals.

TACONITE SEALS

Taconite seals are a combination of both a labyrinth seal and V-ring seal. The labyrinth seal is made up of two separate metal ring components, inner and outer, that have interconnecting grooves that form a labyrinth gap. The outer metal ring component contains an O-ring on its outside diameter that provides an interference fit to the groove in the housing. The inside diameter of the inner metal ring component contains an O-ring that creates an interference fit with the shaft so that the ring will rotate with the shaft. This seal performs well in highly contaminated environments such as those seen in mining operations.

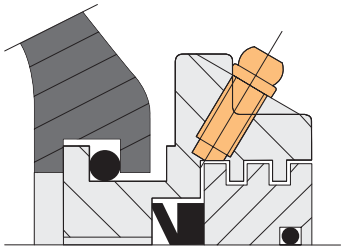


Fig. E-17. Taconite seals.

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TABLE E-18. SEAL SELECTION

Seal Selection	Double-Lip (TSNG)	V-Ring (VR)	Labyrinth (LO)	Taconite (TA)
Material	NBR	NBR rubber + mild steel plate	Steel + NBR O-ring	Steel + NBR O-ring and V-ring
Temperature	-40° to 100° C (-40° to 212° F)	-40° to 100° C (-40° to 212° F)	-40° to 120° C (-40° to 248° F)	-40° to 100° C (-40° to 212° F)
Maximum speed	8 m/s	7 m/s	Same as bearing	7 m/s
Grease relubrication	Excellent	Excellent	Good	Good
Oil lubrication[1]	Poor	Poor	Poor	Poor
Low friction	Good	Good	Excellent	Good
Resists dust/fine particles	Excellent	Excellent	Good	Excellent
Resists coarse particles	Good	Poor	Excellent	Good
Resists water	Good	Good	Fair	Good
Misalignment Shaft dia. ≤ 100 mm	1°	1.5°	0.3°	0.3°
Misalignment Shaft dia. > 100 mm	0.5°	1°	0.3°	0.3°

[1]If an application requires oil lubrication, please contact your Timken engineer.

LOAD RATINGS AND LIFE

Load ratings for the spherical roller bearings that are used in plummer blocks are found in the dimension tables on pages E-71 through E-77. Life calculation formulas are found in the Engineering Manual (order no. 10424) on page 48 available on www.timken.com.

In addition to individual bearing selection, the ability of the plummer block to carry the operating load should be considered.

It should be noted that the load rating figures supplied in this catalog are applicable only when the load direction is generally toward the base of the plummer block. If the plummer block must be mounted so the load can be applied in any other direction, consult your Timken engineer.

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INSTALLATION GUIDES

Following are installation guides for the SNT housings and the four seal types offered by Timken.

MOUNTING HOUSINGS WITH DOUBLE-LIP SEALS

Prior to starting installation, please read the following instructions. Contact a Timken engineer with any questions.

1. Clean the work area. Check the dimensional and form accuracy of the shaft seat. Note: The shaft roundness specification should be half of the O.D. tolerance. Ensure the shaft is free from burrs, gouges or other imperfections.
2. Ensure the surface roughness of the support surface Ra ≤ 12.5 µm. Ensure flatness is within 0.08 mm (base) and 0.125 mm aggregate (housing base and mounting surface).
3. Determine the position of the housing relative to the adapter sleeve on the shaft for bearings on adapter sleeves. For bearings that have to be relubricated from the side, the grease fitting in the housing cap should always face away from the locknut on the adapter sleeve. When housings are mounted on the end of a shaft, grease must be supplied at the end cover side. Make sure to position the base correctly because the cap only fits in one direction.
4. Position the housing on the support surface. Fit the attachment bolts but do not tighten them (fig. E-18a).
5. Insert one seal half in each of the grooves in the housing base. Fill the space between the two sealing lips with grease (fig. E-18b). If the housing is used on the end of a shaft, insert an end cover on one side instead of the seal half.
6. Mount the bearing on the shaft – either directly on a stepped shaft or using an adapter sleeve. Completely fill the bearing with grease. The remainder of the suggested grease quantity can be placed in the housing, equally distributed on each side of the bearing (See grease fill).
7. Install the shaft with bearing in the housing base (fig. E-19a).
8. Put one locating ring on each side of the bearing for locating bearing arrangements (fig. E-19b).
9. Carefully align the housing base. Use the vertical markings at the middle of the side faces and end faces of the housing base to help with this (fig. E-20a). Then lightly tighten the attachment bolts (fig. E-20b).
10. The remaining seal halves must be inserted in the seal grooves in the housing cap and the space between the sealing lips filled with grease.
11. Check the cap and base to see that they show the same identification. Install the cap onto the base (fig. E-21a) and tighten the cap bolts to the torque specified in the table.
12. Fully tighten the attachment bolts in the housing base (fig. E-21b). Suggested tightening torques are given in the table.

For torque table and grease fill information, please see page E-45.

Fig. E-18

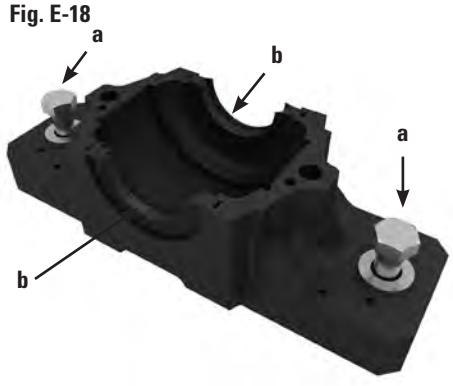


Fig. E-19

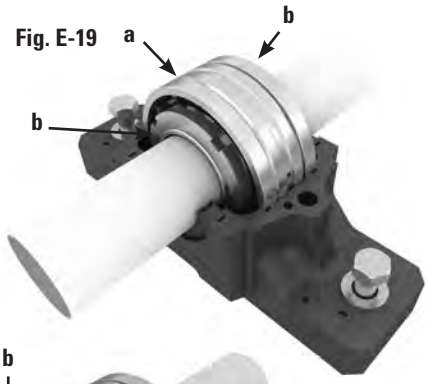
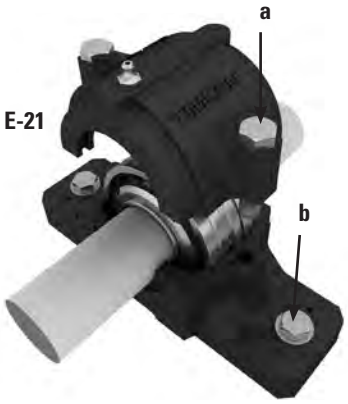


Fig. E-20



Fig. E-21



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MOUNTING HOUSINGS WITH LABYRINTH SEALS

Prior to starting installation, please read the following instructions. Contact a Timken engineer with any questions.

1. Clean the work area. Check the dimensional and form accuracy of the shaft seat. Note: The shaft roundness specification should be half of the O.D. tolerance. Ensure the shaft is free from burrs, gouges or other imperfections.
2. Ensure the surface roughness of the support surface Ra ≤ 12.5 µm. Ensure flatness is within 0.08 mm (base) and 0.125 mm aggregate (housing base and mounting surface).
3. For bearings on adapter sleeves, determine the position of the housing relative to the adapter sleeve on the shaft. For bearings that have to be relubricated from the side, the grease fitting in the housing cap should always face away from the locknut on the adapter sleeve. Grease should be supplied at the end cover side where housings are mounted on the end of a shaft. Be sure to position the base correctly since the cap only fits in one direction.
4. Position the housing on the support surface. Fit the attachment bolts but do not tighten them (fig. E-22).
5. Mount the labyrinth ring on the shaft (fig. E-23a).
6. Mount the bearing on the shaft – either directly on a stepped shaft or using an adapter sleeve (fig. E-23b). Completely fill the bearing with grease. The remainder of the suggested grease quantity can be placed in the housing, equally distributed on each side of the bearing (See grease fill).
7. Mount the second labyrinth ring on the shaft in the correct position (fig. E-23c). If the housing is to be used on the end of a shaft, omit the second labyrinth ring and insert an end cover in the housing base instead.
8. Install the shaft with bearing and labyrinth ring(s) in the housing base (fig. E-24a).
9. Place one locating ring on each side of the bearing for locating bearing arrangements (fig. E-24b).
10. Align the housing base. Use the vertical markings at the middle of the side faces and end faces of the housing base to help with this. Tighten the attachment bolts (fig. E-24c).
11. Check the cap and base to see that they have the same identification. Install the cap onto the base (fig. E-25a) and tighten the cap bolts to the torque specified in the table.
12. Fully tighten the attachment bolts in the housing base (fig. E-25b). Suggested tightening torques are given in the table.
13. Insert the hollow O-ring cord of synthetic rubber in the grooves in the labyrinth rings. Use a screwdriver while turning the shaft, take care not to damage the seal (fig. E-25c).

For torque table and grease fill information, please see page E-45.

Fig. E-22



Fig. E-23

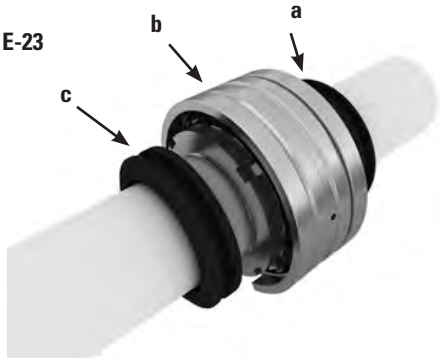


Fig. E-24

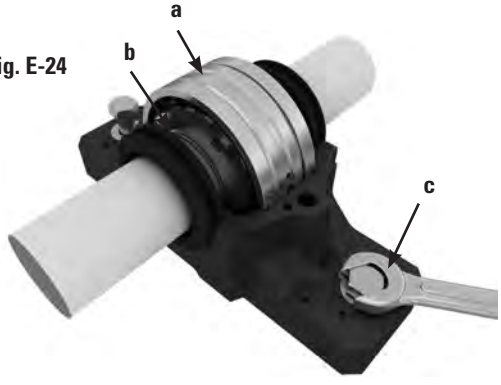


Fig. E-25



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MOUNTING HOUSINGS WITH V-RING SEALS

Prior to starting installation, please read the following instructions. Contact a Timken engineer with any questions.

1. Ensure the work area is clean. Check the dimensional and form accuracy of the shaft seat. Note: The shaft roundness specification should be half of the O.D. tolerance. Ensure the shaft is free from burrs, gouges or other imperfections.
2. Ensure the surface roughness of the support surface Ra ≤ 12.5 µm. Ensure flatness is within 0.08 mm (base) and 0.125 mm aggregate (housing base and mounting surface).
3. Determine the position of the housing relative to the adapter sleeve on the shaft for bearings on adapter sleeves. For bearings that have to be relubricated from the side, the grease fitting in the housing cap should always face away from the locknut on the adapter sleeve. Grease should be supplied at the end cover side where housings are mounted on the end of a shaft. Make sure to position the base correctly since the cap only fits in one direction.
4. Position the housing on the support surface. Fit the attachment bolts but do not tighten them (fig. E-26).
5. Arrange the one V-ring with sealing washer on the shaft. The V-ring should be furthest away from the bearing and seal against the washer, i.e. the lip should point inward the washer (fig. E-27a).
6. Mount the bearing on the shaft – either directly on a stepped shaft or using an adapter sleeve (fig. E-27b). Completely fill the bearing with grease. The remainder of the suggested grease quantity can be placed in the housing, equally distributed on each side of the bearing (See grease fill).
7. Arrange the second sealing washer and V-ring on the shaft at the other side of the bearing (fig. E-27c). If the housing is to be used on the end of a shaft, mount an end cover instead.
8. Install the shaft with bearing and sealing washers in the housing base (fig. E-28a).
9. Put one locating ring on each side of the bearing for locating bearing arrangements.
10. Align the housing base. Use the vertical markings at the middle of the side faces and end faces of the housing base to help with this. Lightly tighten the attachment bolts (fig. E-28b).
11. Check the cap and base to see that they bear the same identification. Install the cap onto the base and tighten the cap bolts to the torque marked in the table (fig. E-29a).
12. Tighten the attachment bolts in the housing base (fig. E-29b). Check the table for suggested tightening torques.
13. Coat the V-ring counterfaces on the sealing washers with grease (fig. E-29c).
14. Finally, push the V-ring seals into their correct position. This can be done using a punch or screwdriver to push the seal as the shaft is turned, take care not to damage the seal (fig. E-30).

For torque table and grease fill information, please see page E-45.

Fig. E-26



Fig. E-27

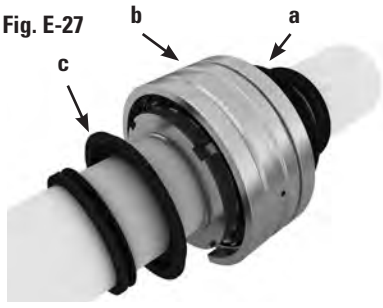


Fig. E-28



Fig. E-29



Fig. E-30



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MOUNTING HOUSINGS WITH TACONITE SEALS

Prior to starting installation, please read the following instructions. Contact a Timken engineer with any questions.

1. Ensure the work area is clean. Check the dimensional and form accuracy of the shaft seat. Note: The shaft roundness specification should be half of the O.D. tolerance. Ensure the shaft is free from burrs, gouges or other imperfections.
2. Ensure the surface roughness of the support surface Ra ≤ 12.5 µm (500 µin). Ensure flatness is within 0.08 mm (base) and 0.125 mm aggregate (housing base and mounting surface).
3. For bearings on adapter sleeves, determine the position of the housing relative to the adapter sleeve on the shaft. For bearings that have to be relubricated from the side, the grease fitting in the housing cap should always face away from the locknut on the adapter sleeve. Where housings are mounted on the end of a shaft, grease should be supplied at the end cover side. Be sure to position the base correctly since the cap only fits in one direction.
4. Position the housing on the support surface. Fit the attachment bolts but do not tighten them (fig. E-31).
5. Mount the first V-ring together with one labyrinth ring on the shaft in the correct position (fig. E-32a). The lip of the V-ring should point towards the bearing. Place the split ring parts over the V-ring and labyrinth ring and screw them together (fig. E-32b). The two parts of this split ring are not interchangeable. Check to see that they carry the same identification.
6. Mount the bearing on the shaft (fig. E-32c) – either directly on a stepped shaft or using an adapter sleeve. Fill the bearing with grease. The remainder of the suggested grease quantity can be placed in the housing, equally distributed on each side of the bearing (See grease fill).
7. Mount the second seal according to step 5 (fig. E-32d). If the housing is to be used on the end of a shaft, omit the second seal and insert an end cover in the housing base instead.
8. Use the hollow O-section cord to fix the labyrinth ring in position on the shaft (fig. E-32c). Use a screwdriver to fit the cords while rotating the shaft, taking care not to damage the cords. Mount the O-rings on the seal outer diameter.
9. Install the shaft with bearing and seals in the housing base (fig. E-33a) taking care that the hollow O-section cords are not damaged.
10. For locating bearing arrangements put one locating ring on each side of the bearing.
11. Carefully align the housing base. Use the vertical markings at the middle of the side faces and end faces of the housing base to help facilitate this (fig. E-33b). Tighten the attachment bolts (fig. E-33c).
12. Check the cap and base to make sure they have the same identification. Install the cap onto the base (fig. E-34a) and tighten the cap bolts to the torque specified in the table.
13. Fully tighten the attachment bolts in the housing base (fig. E-34b). Suggested tightening torques are given in the table.
14. Finally, before the first test run, rotate the shaft and supply grease via the fitting until it purges from the labyrinth rings (fig. E-34c). Use the same grease for the bearing and the labyrinth rings.

Fig. E-31



Fig. E-32

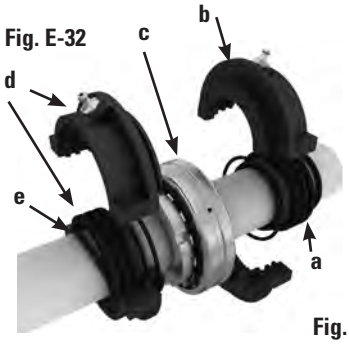


Fig. E-33



Fig. E-34



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GREASE FILL

- For normal industrial applications, fill bearing void to 100 percent and housing void to 40–60 percent.
- For low-speed applications (less than 20 RPM), fill bearing void to 100 percent and housing void to 60–100 percent.
- For high-speed applications (above 70 percent of the bearings thermal speed rating), fill bearing void to 100 percent and housing void to 30–40 percent.

Contact a Timken engineer with any questions.

ADDITIONAL REFERENCE FOR BEARING MOUNTING

Timken Industrial Maintenance Manual (order no. 10213), Timken Spherical Roller Bearing Catalog (order no. 10446), pages 14–41 or www.timken.com.

TABLE E-19. TIGHTENING TORQUE – CAP BOLTS AND ATTACHMENT BOLTS

	Cap Bolts		Attachment Bolts	
Housing SNT	Bolt Size	Torque	Bolt Size	Torque
		Nm		Nm
505, 205	M10x40	50	M12	80
505-605-206-305	M10x40	50	M12	80
507-606, 207	M10x50	50	M12	80
508-607, 208-307	M10x50	50	M12	80
509, 209	M10x50	50	M12	80
510-60, 208-307	M10x55	50	M12	80
511-609, 211	M12x60	80	M16	200
512-610, 212	M12x60	80	M16	200
513-611,213	M12x65	80	M16	200
515-612, 215	M12x65	80	M16	200
516-613, 216	M12x70	80	M20	385
517, 217	M12x80	80	M20	385
518-615, 218	M16x19	150	M20	385
519-616	M16x19	150	M20	385
520-617	M20x200	200	M24	665
522-619	M20x100	200	M24	665
524-620	M20x110	200	M24	665
526	M24x130	350	M24	665
528	M24x130	350	M30	1310
530	M24x130	350	M30	1310
532	M24x130	350	M30	1310

⚠ WARNING

Failure to observe the following warnings could create a risk of death or serious injury.

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

Overheated bearings can ignite explosive atmospheres. Special care must be taken to properly select, install, maintain, and lubricate housed unit bearings that are used in or near atmospheres that may contain explosive levels of combustible gases or accumulations of dust such as from grain, coal, or other combustible materials. Consult your equipment designer or supplier for installation and maintenance instructions.

⚠ CAUTION

Failure to follow these cautions could create a risk of injury.

If a hammer and bar are used for installation or removal of a part, use a mild steel bar (e.g., 1010 or 1020 grade). Mild steel bars are less likely to cause release of high speed fragments from the hammer or bar or the part being removed.

CAUTION

Failure to follow these cautions may result in property damage.

Do not use damaged housed units. The use of a damaged housed unit can result in equipment damage and/or injury.

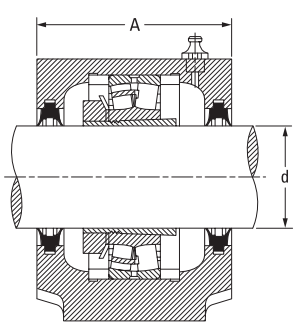
This information is not intended to substitute for the specific recommendations of your equipment suppliers.

Every reasonable effort has been made to ensure the accuracy of the information contained in this writing, but no liability is accepted for errors, omissions or for any other reason.

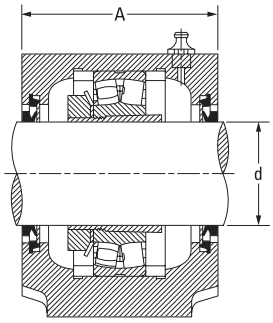
08-19-13 DRAFT

TWO-BOLT SNT HOUSINGS FOR TAPERED BORE BEARINGS

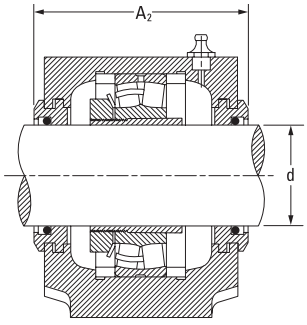
- The basic numbers for ordering plummer block housings and components are listed in the table below.
- Each housing includes the housing cap, base and cap bolts.
- Housings shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SNTS 518). If ductile iron is desired, add the letter D to the alpha prefix (e.g., SNTD 505).



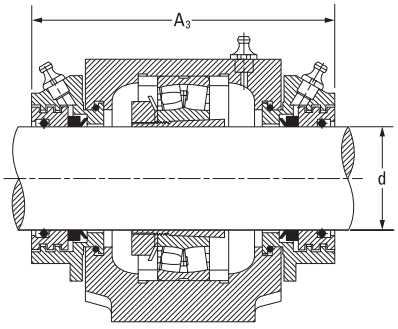
Double-Lip Seal



V-Ring Seal



Labyrinth Seal

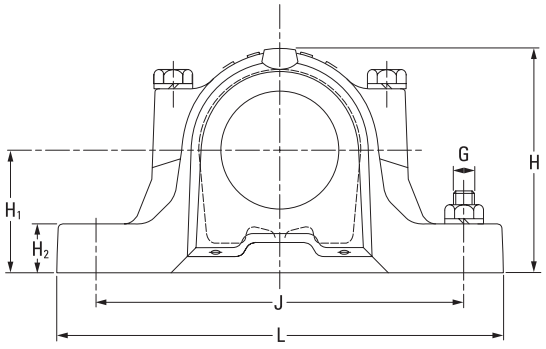


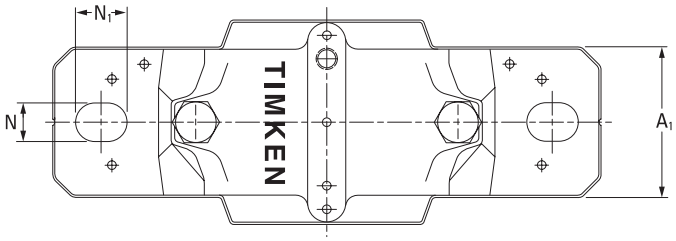
Taconite Seal

Shaft Dia. d	Housing	Bearing	Locating Rings[1] O.D. x Width	Adapter Sleeve[2]	Locknut[3]	Lockwasher[3]	Double-Lip Seal[4]	V-Ring Seal[4]	Labyrinth Seal[3]	Taconite Seal[3]	End Cover[3]
mm											
20	SNT 505 SNT 506-605	22205K 21305K	SR52X3.5 SR62X7.5	H305 H305	KM5 KM5	MB5 MB5	– TSNG605	VR505 VR605	LO505 LO605	TA505 TA605	EC505 EC506-605
25	SNT 506-605 SNT 507-606	22206K 21306K	SR62X6 SR72X7.5	H306 H306	KM6 KM6	MB6 MB6	– TSNG606	VR506 VR606	LO506 LO606	TA506 TA606	EC506-605 EC507-606
30	SNT 507-606 SNT 508-607	22207K 21307K	SR72X5.5 SR80X9	H307 H307	KM7 KM7	MB7 MB7	TSNG507 TSNG607	VR507 VR607	LO507 LO607	TA507 TA607	EC507-606 EC508-607
35	SNT 508-607 SNT 510-608 SNT 510-608	22208K 21308K 22308K	SR80X8 SR90X9 SR90X4	H308 H308 H2308	KM8 KM8 KM8	MB8 MB8 MB8	TSNG508 TSNG608 TSNG608	VR508 VR608 VR608	LO508 LO608 LO608	TA508 TA608 TA608	EC508-607 EC510-608 EC510-608
40	SNT 509 SNT 511-609 SNT 511-609	22209K 21309K 22309K	SR85X3.5 SR100X9.5 SR100X4	H309 H309 H2309	KM9 KM9 KM9	MB9 MB9 MB9	TSNG509 TSNG609 TSNG609	VR509 VR609 VR609	LO509 LO609 LO609	TA509 TA609 TA609	EC509 EC511-609 EC511-609
45	SNT 510-608 SNT 512-610 SNT 512-610	22210K 21310K 22310K	SR90X9 SR110X10.5 SR110X4	H310 H310 H2310	KM10 KM10 KM10	MB10 MB10 MB10	TSNG510 TSNG610 TSNG610	VR510 VR610 VR610	LO510 LO610 LO610	TA510 TA610 TA610	EC510-608 EC512-610 EC512-610
50	SNT 511-609 SNT 513-611 SNT 513-611	22211K 21311K 22311K	SR100X9.5 SR120X11 SR120X4	H311 H311 H2311	KM11 KM11 KM11	MB11 MB11 MB11	TSNG511 TSNG611 TSNG611	VR511 VR611 VR611	LO511 LO611 LO611	TA511 TA611 TA611	EC511-609 EC513-611 EC513-611

[1]Locating rings = minimum two required for fixed position, sold one piece per box.
[2]Adapter sleeve assembly includes one sleeve, one locknut and one lockwasher.
[3]Labyrinth, taconite seal, end cover, locknut, lockwasher, sold one piece per box.
[4]Double-lip and V-ring seals sold two pieces per box.

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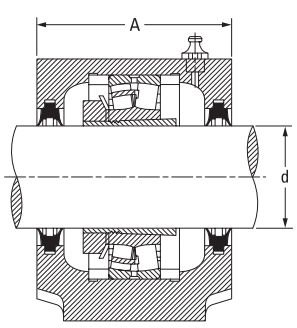
Housing Dimensions													2 Bolts Req'd	Housing Mass
A	A_1	A_2	A_3	H	H_1	H_2	J min	J	J max	L	N	N_1	G	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
67	46	80	130	74	40	19	123	130	137	165	15	20	12	1.5
77	52	89	135	89	50	22	143	150	157	185	15	20	12	2.0
77	52	89	135	89	50	22	143	150	157	185	15	20	12	2.0
82	52	94	140	93	50	22	143	150	157	185	15	20	12	2.2
82	52	94	140	93	50	22	143	150	157	185	15	20	12	2.2
85	60	97	145	108	60	25	165	170	175	205	15	20	12	2.9
85	60	97	145	108	60	25	165	170	175	205	15	20	12	2.9
90	60	102	150	113	60	25	165	170	175	205	15	20	12	3.2
90	60	102	150	113	60	25	165	170	175	205	15	20	12	3.2
85	60	97	150	109	60	25	165	170	175	205	15	20	12	2.9
95	70	107	155	128	70	28	205	210	215	255	18	24	16	4.5
95	70	107	155	128	70	28	205	210	215	255	18	24	16	4.5
90	60	102	150	113	60	25	165	170	175	205	15	20	12	3.2
105	70	117	165	134	70	30	205	210	215	255	18	24	16	5.3
105	70	117	165	134	70	30	205	210	215	255	18	24	16	5.3
95	70	107	155	128	70	28	205	210	215	255	18	24	16	4.5
110	80	122	170	150	80	30	224	230	236	275	18	24	16	6.6
110	80	122	170	150	80	30	224	230	236	275	18	24	16	6.6

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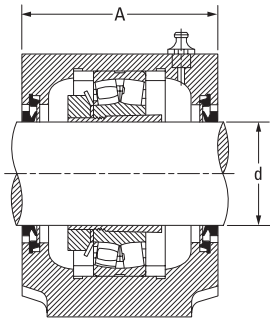
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TWO-BOLT SNT HOUSINGS FOR TAPERED BORE BEARINGS – *continued*

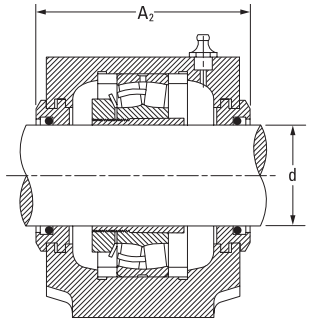
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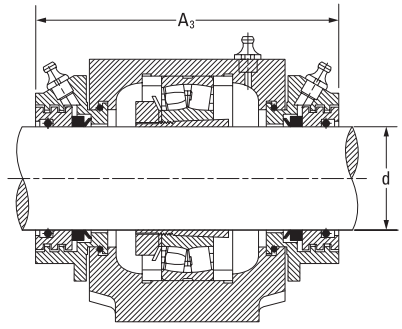
Double-Lip Seal



V-Ring Seal



Labyrinth Seal



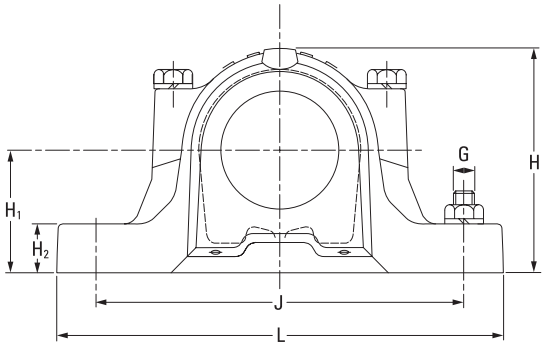
Taconite Seal

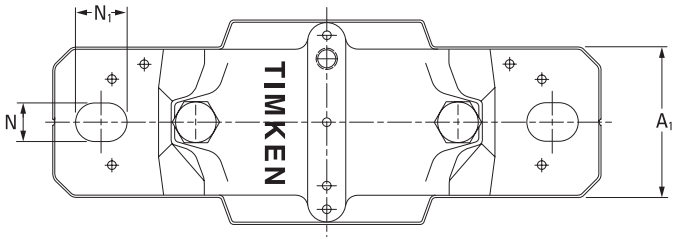
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Shaft Dia. d	Housing	Bearing	Locating Rings[1] O.D. x Width	Adapter Sleeve[2]	Locknut[3]	Lockwasher[3]	Double-Lip Seal[4]	V-Ring Seal[4]	Labyrinth Seal[3]	Taconite Seal[3]	End Cover[3]
mm											
55	SNT 512-610 SNT 515-612 SNT 515-612	22212K 21312K 22312K	SR110X10 SR130X12.5 SR130X5	H312 H312 H2312	KM12 KM12 KM12	MB12 MB12 MB12	TSNG512 TSNG612 TSNG612	VR512 VR612 VR612	LO512 LO612 LO612	TA512 TA612 TA612	EC512-610 EC515-612 EC515-612
60	SNT 513-611 SNT 516-613 SNT 516-613	22213K 21313K 22313K	SR120X10 SR140X12.5 SR140X5	H313 H313 H2313	KM13 KM13 KM13	MB13 MB13 MB13	TSNG513 TSNG613 TSNG613	VR513 VR613 VR613	LO513 LO613 LO613	TA513 TA613 TA613	EC513-611 EC516-613 EC516-613
65	SNT 515-612 SNT 518-615 SNT 518-615	22215K 21315K 22315K	SR130X12.5 SR160X14 SR160X5	H315 H315 H2315	KM15 KM15 KM15	MB15 MB15 MB15	TSNG515 TSNG615 TSNG615	VR515 VR615 VR615	LO515 LO615 LO615	TA515 TA615 TA615	EC515-612 EC518-615 EC518-615
70	SNT 516-613 SNT 519-616 SNT 519-616	22216K 21316K 22316K	SR140X12.5 SR170X14.5 SR170X5	H316 H316 H2316	KM16 KM16 KM16	MB16 MB16 MB16	TSNG516 TSNG616 TSNG616	VR516 VR616 VR616	LO516 LO616 LO616	TA516 TA616 TA616	EC516-613 EC519-616 EC519-616
75	SNT 517 SNT 520-617 SNT 520-617	22217K 21317K 22317K	SR150X12.5 SR180X14.5 SR180X5	H317 H317 H2317	KM17 KM17 KM17	MB17 MB17 MB17	TSNG517 TSNG617 TSNG617	VR517 VR617 VR617	LO517 LO617 LO617	TA517 TA617 TA617	EC517 EC520-617 EC520-617
80	SNT 518-615 SNT 518-615	22218K 23218K	SR160X12.5 SR160X6.25	H318 H2318	KM18 KM18	MB18 MB18	TSNG518 TSNG518	VR518 VR518	LO518 LO518	TA518 TA518	EC518-615 EC518-615
85	SNT 519-616 SNT 522-619 SNT 522-619	22219K 21319K 22319K	SR170X12.5 SR200X17.5 SR200X6.5	H319 H319 H2319	KM19 KM19 KM19	MB19 MB19 MB19	TSNG519 TSNG619 TSNG619	VR519 VR619 VR619	LO519 LO619 LO619	TA519 TA619 TA619	EC519-616 EC522-619 EC522-619

[1]Locating rings = minimum two required for fixed position, sold one piece per box.
[2]Adapter sleeve assembly includes one sleeve, one locknut and one lockwasher.
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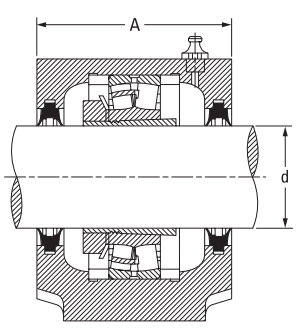
Housing Dimensions													2 Bolts Req'd	Housing Mass
A	A_1	A_2	A_3	H	H_1	H_2	J min	J	J max	L	N	N_1	G	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
105	70	117	165	134	70	30	205	210	215	255	18	24	16	5.3
115	80	127	175	156	80	30	222	230	238	280	18	24	16	6.9
115	80	127	175	156	80	30	222	230	238	280	18	24	16	6.9
110	80	122	170	150	80	30	224	230	236	275	18	24	16	6.6
120	90	138	180	177	95	32	252	260	268	315	22	28	20	9.7
120	90	138	180	177	95	32	252	260	268	315	22	28	20	9.7
115	80	127	175	156	80	30	222	230	238	280	18	24	16	6.9
140	100	158	225	194	100	35	285	290	295	345	22	28	20	13.1
140	100	158	225	194	100	35	285	290	295	345	22	28	20	13.1
120	90	138	180	177	95	32	252	260	268	315	22	28	20	9.7
145	100	163	220	212	112	35	285	290	295	345	22	28	20	14.0
145	100	163	220	212	112	35	285	290	295	345	22	28	20	14.0
125	90	143	210	183	95	32	252	260	268	320	22	28	20	10.4
160	110	178	235	218	112	40	314	320	326	380	26	32	24	17.6
160	110	178	235	218	112	40	314	320	326	380	26	32	24	17.6
140	100	158	225	194	100	35	285	290	295	345	22	28	20	13.1
140	100	158	225	194	100	35	285	290	295	345	22	28	20	13.1
145	100	163	220	212	112	35	285	290	295	345	22	28	20	14.0
175	120	191	250	242	125	45	356	344	350	410	32	26	24	22.3
175	120	191	250	242	125	45	344	350	356	410	26	32	24	22.3

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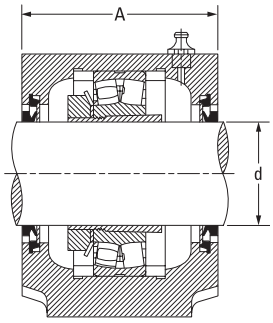
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TWO-BOLT SNT HOUSINGS FOR TAPERED BORE BEARINGS – *continued*

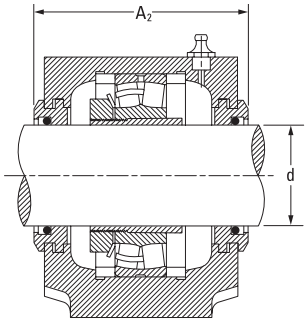
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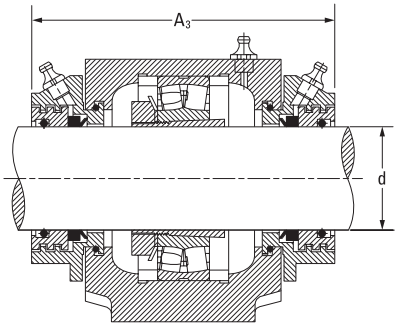
Double-Lip Seal



V-Ring Seal



Labyrinth Seal



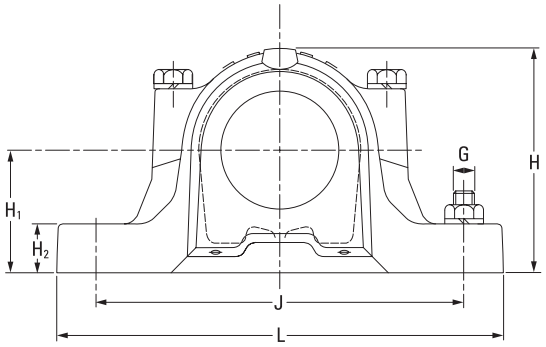
Taconite Seal

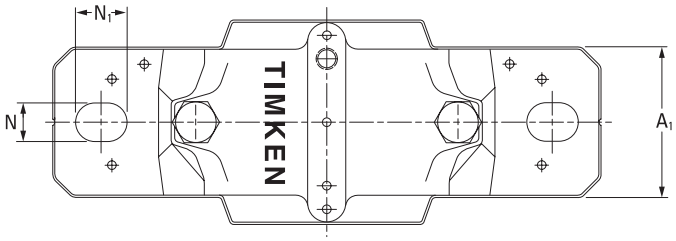
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Shaft Dia. d	Housing	Bearing	Locating Rings[1] O.D. x Width	Adapter Sleeve[2]	Locknut[3]	Lockwasher[3]	Double-Lip Seal[4]	V-Ring Seal[4]	Labyrinth Seal[3]	Taconite Seal[3]	End Cover[3]
mm											
90	SNT 520-617 SNT 520-617 SNT 524-620 SNT 524-620	22220K 23220K 21320K 22320K	SR180X12 SR180X4.85 SR215X19.5 SR215X6.5	H320 H2320 H2320 H2320	KM20 KM20 KM20 KM20	MB20 MB20 MB20 MB20	TSNG520 TSNG520 TSNG620 TSNG620	VR520 VR520 VR620 VR620	LO520 LO520 LO620 LO620	TA520 TA520 TA620 TA620	EC520-617 EC520-617 EC524-620 EC524-620
100	SNT 522-619 SNT 522-619	22222K 23222K	SR200X13.5 SR200X5.1	H322 H2322	KM22 KM22	MB22 MB22	TSNG522 TSNG522	VR522 VR522	LO522 LO522	TA522 TA522	EC522-619 EC522-619
110	SNT 524-620 SNT 524-620	22224K 23224K	SR215X14 SR215X5	H3124 H2324	KM24 KM24	MB24 MB24	TSNG524 TSNG524	VR524 VR524	LO524 LO524	TA524 TA524	EC524-620 EC524-620
115	SNT 526 SNT 526	22226K 23226K	SR230X13 SR230X5	H3126 H2326	KM26 KM26	MB26 MB26	TSNG526 TSNG526	VR526 VR526	LO526 LO526	TA526 TA526	EC526 EC526
125	SNT 528 SNT 528	22228K 23228K	SR250X15 SR250X5	H3128 H2328	KM28 KM28	MB28 MB28	TSNG528 TSNG528	VR528 VR528	LO528 LO528	TA528 TA528	EC528 EC528
135	SNT 530 SNT 530	22230K 23230K	SR270X16.5 SR270X5	H3130 H2330	KM30 KM30	MB30 MB30	TSNG530 TSNG530	VR530 VR530	LO530 LO530	TA530 TA530	EC530 EC530
140	SNT 532 SNT 532	22232K 23232K	SR290X17 SR290X5	H3132 H2332	KM32 KM32	MB32 MB32	TSNG532 TSNG532	VR532 VR532	LO532 LO532	TA532 TA532	EC532 EC532

[1]Locating rings = minimum two required for fixed position, sold one piece per box.
[2]Adapter sleeve assembly includes one sleeve, one locknut and one lockwasher.
[3]Labyrinth, taconite seal, end cover, locknut, lockwasher, sold one piece per box.
[4]Double-lip and V-ring seals sold two pieces per box.

08-19-13 DRAFT



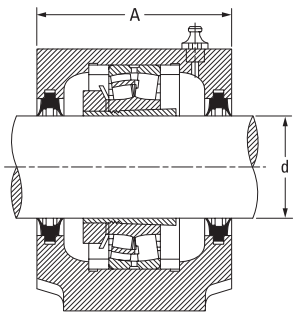


Housing Dimensions													2 Bolts Req'd	Housing Mass
A	A_1	A_2	A_3	H	H_1	H_2	J min	J	J max	L	N	N_1	G	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
160	110	178	235	218	112	40	314	320	326	380	26	32	24	17.6
160	110	178	235	218	112	40	314	320	326	380	26	32	24	17.6
185	120	199	260	271	140	45	344	350	356	410	26	32	24	26.5
185	120	199	260	271	140	45	344	350	356	410	26	32	24	26.5
175	120	191	250	242	125	45	344	350	356	410	26	32	24	22.3
175	120	191	250	242	125	45	344	350	356	410	26	32	24	22.3
185	120	199	260	271	140	45	344	350	356	410	26	32	24	26.5
185	120	199	260	271	140	45	344	350	356	410	26	32	24	26.5
190	130	208	265	290	150	50	373	380	387	445	28	35	24	34.0
190	130	208	265	290	150	50	373	380	387	445	28	35	24	34.0
205	150	223	285	302	150	50	413	420	427	500	35	42	30	39.0
205	150	223	285	302	150	50	413	420	427	500	35	42	30	39.0
220	160	241	295	323	160	60	443	450	457	530	35	42	30	48.0
220	160	241	295	323	160	60	443	450	457	530	35	42	30	48.0
235	160	254	315	344	170	60	463	470	477	550	35	42	30	54.5
235	160	254	315	344	170	60	463	470	477	550	35	42	30	54.5

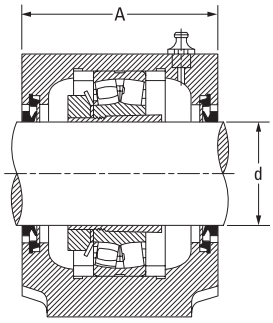
08-19-13 DRAFT

FOUR-BOLT FSNT HOUSINGS FOR TAPERED BORE BEARINGS

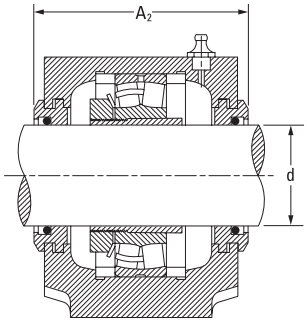
- The basic numbers for ordering plummer block housings and components are listed in the table below.
- Each housing includes the housing cap, base and cap bolts.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., FSNTS 518). If ductile iron is desired, add the letter D to the alpha prefix (e.g., FSNTD 505).



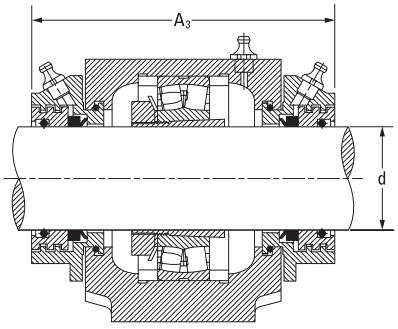
Double-Lip Seal



V-Ring Seal



Labyrinth Seal

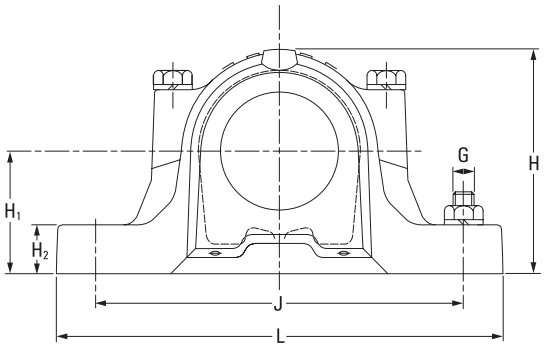


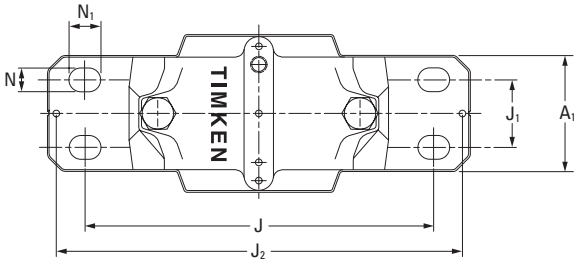
Taconite Seal

Shaft Dia. d	Housing	Bearing	Locating Rings[1] O.D. x Width	Adapter Sleeve[2]	Locknut[3]	Lockwasher[3]	Double-Lip Seal[4]	V-Ring Seal[4]	Labyrinth Seal[3]	Taconite Seal[3]	End Cover[3]
mm											
40	FSNT 511-609 FSNT 511-609	21309K 22309K	SR100X9.5 SR100X4	H309 H2309	KM9 KM9	MB9 MB9	TSNG609 TSNG609	VR609 VR609	LO609 LO609	TA609 TA609	EC511-609 EC511-609
45	FSNT 512-610 FSNT 512-610	21310K 22310K	SR110X10.5 SR110X4	H310 H2310	KM10 KM10	MB10 MB10	TSNG610 TSNG610	VR610 VR610	LO610 LO610	TA610 TA610	EC512-610 EC512-610
50	FSNT 511-609 FSNT 513-611 FSNT 513-611	22211K 21311K 22311K	SR100X9.5 SR120X11 SR120X4	H311 H311 H2311	KM11 KM11 KM11	MB11 MB11 MB11	TSNG511 TSNG611 TSNG611	VR511 VR611 VR611	LO511 LO611 LO611	TA511 TA611 TA611	EC511-609 EC513-611 EC513-611
55	FSNT 512-610 FSNT 515-612 FSNT 515-612	22212K 21312K 22312K	SR110X10 SR130X12.5 SR130X5	H312 H312 H2312	KM12 KM12 KM12	MB12 MB12 MB12	TSNG512 TSNG612 TSNG612	VR512 VR612 VR612	LO512 LO612 LO612	TA512 TA612 TA612	EC512-610 EC515-612 EC515-612
60	FSNT 513-611 FSNT 516-613 FSNT 516-613	22213K 21313K 22313K	SR120X10 SR140X12.5 SR140X5	H313 H313 H2313	KM13 KM13 KM13	MB13 MB13 MB13	TSNG513 TSNG613 TSNG613	VR513 VR613 VR613	LO513 LO613 LO613	TA513 TA613 TA613	EC513-611 EC516-613 EC516-613
65	FSNT 515-612 FSNT 518-615 FSNT 518-615	22215K 21315K 22315K	SR130X12.5 SR160X14 SR160X5	H315 H315 H2315	KM15 KM15 KM15	MB15 MB15 MB15	TSNG515 TSNG615 TSNG615	VR515 VR615 VR615	LO515 LO615 LO615	TA515 TA615 TA615	EC515-612 EC518-615 EC518-615
70	FSNT 516-613 FSNT 519-616 FSNT 519-616	22216K 21316K 22316K	SR140X12.5 SR170X14.5 SR170X5	H316 H316 H2316	KM16 KM16 KM16	MB16 MB16 MB16	TSNG516 TSNG616 TSNG616	VR516 VR616 VR616	LO516 LO616 LO616	TA516 TA616 TA616	EC516-613 EC519-616 EC519-616
75	FSNT 517 FSNT 520-617 FSNT 520-617	22217K 21317K 22317K	SR150X12.5 SR180X14.5 SR180X5	H317 H317 H2317	KM17 KM17 KM17	MB17 MB17 MB17	TSNG517 TSNG617 TSNG617	VR517 VR617 VR617	LO517 LO617 LO617	TA517 TA617 TA617	EC517 EC520-617 EC520-617

[1]Locating rings = minimum two required for fixed position, sold one piece per box.
[2]Adapter sleeve assembly includes one sleeve, one locknut and one lockwasher.
[3]Labyrinth, taconite seal, end cover, locknut, lockwasher, sold one piece per box.
[4]Double-lip and V-ring seals sold two pieces per box.

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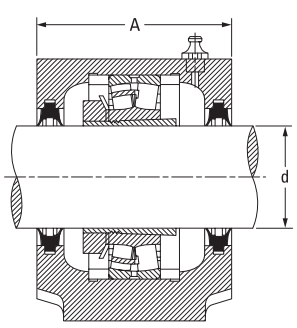
Housing Dimensions													4 Bolts Req'd	Housing Mass
A	A_1	A_2	A_3	H	H_1	H_2	J	J_1	J_2	L	N	N_1	G	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
95	70	107	155	128	70	28	210	35	234	255	15	20	12	4.5
95	70	107	155	128	70	28	210	35	234	255	15	20	12	4.5
105	70	117	165	134	70	30	210	35	234	255	15	20	12	5.3
105	70	117	165	134	70	30	210	35	234	255	15	20	12	5.3
95	70	107	155	128	70	28	210	35	234	255	15	20	12	4.5
110	80	122	170	150	80	30	230	40	252	275	15	20	12	6.6
110	80	122	170	150	80	30	230	40	252	275	15	20	12	6.6
105	70	117	165	134	70	30	210	35	234	255	15	20	12	5.3
115	80	127	175	156	80	30	230	40	257	280	15	20	12	6.9
115	80	127	175	156	80	30	230	40	257	280	15	20	12	6.9
110	80	122	170	150	80	30	230	40	252	275	15	20	12	6.6
120	90	138	180	177	95	32	260	50	288	315	18	24	16	9.7
120	90	138	180	177	95	32	260	50	288	315	18	24	16	9.7
115	80	127	175	156	80	30	230	40	257	280	15	20	12	6.9
140	100	158	225	194	100	35	290	50	317	345	18	24	16	13.1
140	100	158	225	194	100	35	290	50	317	345	18	24	16	13.1
120	90	138	180	177	95	32	260	50	288	315	18	24	16	9.7
145	100	163	220	212	112	35	290	50	317	345	18	24	16	14.0
145	100	163	220	212	112	35	290	50	317	345	18	24	16	14.0
125	90	143	210	183	95	32	260	50	292	320	18	24	16	10.4
160	110	178	235	218	112	40	320	60	348	380	18	24	16	17.6
160	110	178	235	218	112	40	320	60	348	380	18	24	16	17.6

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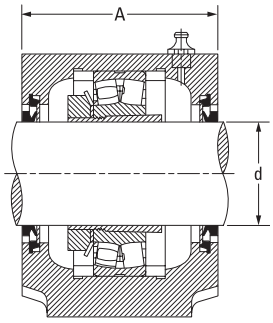
08-19-13 DRAFT

FOUR-BOLT FSNT HOUSINGS FOR TAPERED BORE BEARINGS – *continued*

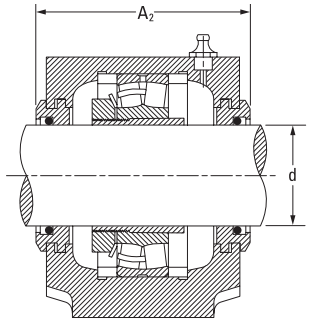
- The basic numbers for ordering plummer block housings and components are listed in the table below.
- Each housing includes the housing cap, base and cap bolts.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., FSNTS 518). If ductile iron is desired, add the letter D to the alpha prefix (e.g., FSNTD 505).



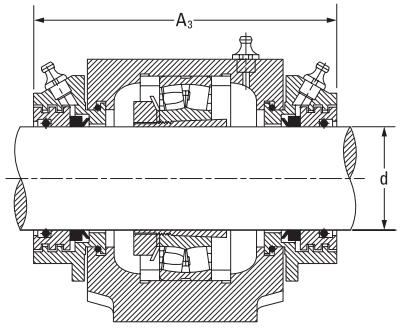
Double-Lip Seal



V-Ring Seal



Labyrinth Seal



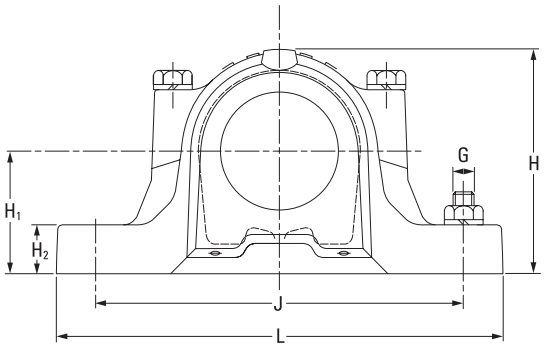
Taconite Seal

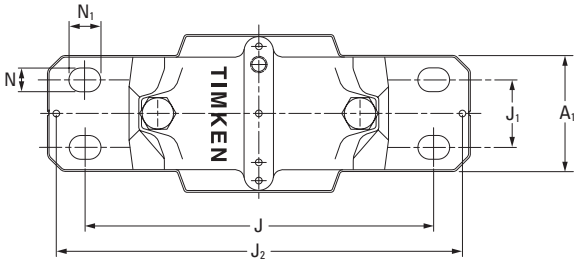
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Shaft Dia. d	Housing	Bearing	Locating Rings[1] O.D. x Width	Adapter Sleeve[2]	Locknut[3]	Lockwasher[3]	Double-Lip Seal[4]	V-Ring Seal[4]	Labyrinth Seal[3]	Taconite Seal[3]	End Cover[3]
mm											
80	FSNT 518-615 FSNT 518-615	22218K 23218K	SR160X12.5 SR160X6.25	H318 H2318	KM18 KM18	MB18 MB18	TSNG518 TSNG518	VR518 VR518	LO518 LO518	TA518 TA518	EC518-615 EC518-615
85	FSNT 519-616 FSNT 522-619 FSNT 522-619	22219K 21319K 22319K	SR170X12.5 SR200X17.5 SR200X6.5	H319 H319 H2319	KM19 KM19 KM19	MB19 MB19 MB19	TSNG519 TSNG619 TSNG619	VR519 VR619 VR619	LO519 LO619 LO619	TA519 TA619 TA619	EC519-616 EC522-619 EC522-619
90	FSNT 520-617 FSNT 520-617 FSNT 524-620 FSNT 524-620	22220K 23220K 21320K 22320K	SR180X12 SR180X4.85 SR215X19.5 SR215X6.5	H320 H2320 H320 H2320	KM20 KM20 KM20 KM20	MB20 MB20 MB20 MB20	TSNG520 TSNG520 TSNG620 TSNG620	VR520 VR520 VR620 VR620	LO520 LO520 LO620 LO620	TA520 TA520 TA620 TA620	EC520-617 EC520-617 EC524-620 EC524-620
100	FSNT 522-619 FSNT 522-619	22222K 23222K	SR200X13.5 SR200X5.1	H322 H2322	KM22 KM22	MB22 MB22	TSNG522 TSNG522	VR522 VR522	LO522 LO522	TA522 TA522	EC522-619 EC522-619
110	FSNT 524-620 FSNT 524-620	22224K 23224K	SR215X14 SR215X5	H3124 H2324	KM24 KM24	MB24 MB24	TSNG524 TSNG524	VR524 VR524	LO524 LO524	TA524 TA524	EC524-620 EC524-620
115	FSNT 526 FSNT 526	22226K 23226K	SR230X13 SR230X5	H3126 H2326	KM26 KM26	MB26 MB26	TSNG526 TSNG526	VR526 VR526	LO526 LO526	TA526 TA526	EC526 EC526
125	FSNT 528 FSNT 528	22228K 23228K	SR250X15 SR250X5	H3128 H2328	KM28 KM28	MB28 MB28	TSNG528 TSNG528	VR528 VR528	LO528 LO528	TA528 TA528	EC528 EC528
135	FSNT 530 FSNT 530	22230K 23230K	SR270X16.5 SR270X5	H3130 H2330	KM30 KM30	MB30 MB30	TSNG530 TSNG530	VR530 VR530	LO530 LO530	TA530 TA530	EC530 EC530
140	FSNT 532 FSNT 532	22232K 23232K	SR290X17 SR290X5	H3132 H2332	KM32 KM32	MB32 MB32	TSNG532 TSNG532	VR532 VR532	LO532 LO532	TA532 TA532	EC532 EC532

[1]Locating rings = minimum two required for fixed position, sold one piece per box.
[2]Adapter sleeve assembly includes one sleeve, one locknut and one lockwasher.
[3]Labyrinth, taconite seal, end cover, locknut, lockwasher, sold one piece per box.
[4]Double-lip and V-ring seals sold two pieces per box.

08-19-13 DRAFT



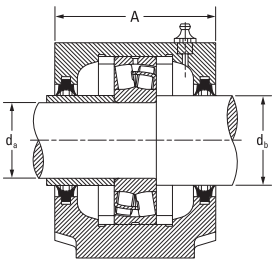


Housing Dimensions													4 Bolts Req'd	Housing Mass
A	A_1	A_2	A_3	H	H_1	H_2	J	J_1	J_2	L	N	N_1	G	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
140	100	158	225	194	100	35	290	50	317	345	18	24	16	13.1
140	100	158	225	194	100	35	290	50	317	345	18	24	16	13.1
145	100	163	220	212	112	35	290	50	317	345	18	24	16	14.0
175	120	191	250	242	125	45	350	70	378	410	18	24	16	22.3
175	120	191	250	242	125	45	350	70	378	410	18	24	16	22.3
160	110	178	235	218	112	40	320	60	348	380	18	24	16	17.6
160	110	178	235	218	112	40	320	60	348	380	18	24	16	17.6
185	120	199	260	271	140	45	350	70	378	410	18	24	16	26.5
185	120	199	260	271	140	45	350	70	378	410	18	24	16	26.5
175	120	191	250	242	125	45	350	70	378	410	18	24	16	22.3
175	120	191	250	242	125	45	350	70	378	410	18	24	16	22.3
185	120	199	260	271	140	45	350	70	378	410	18	24	16	26.5
185	120	199	260	271	140	45	350	70	378	410	18	24	16	26.5
190	130	208	265	290	150	50	380	70	414	445	22	28	20	34.0
190	130	208	265	290	150	50	380	70	414	445	22	28	20	34.0
205	150	223	285	302	150	50	420	80	458	500	26	32	24	39.0
205	150	223	285	302	150	50	420	80	458	500	26	32	24	39.0
220	160	241	295	323	160	60	450	90	486	530	26	32	24	48.0
220	160	241	295	323	160	60	450	90	486	530	26	32	24	48.0
235	160	254	315	344	170	60	470	90	506	550	26	32	24	54.5
235	160	254	315	344	170	60	470	90	506	550	26	32	24	54.5

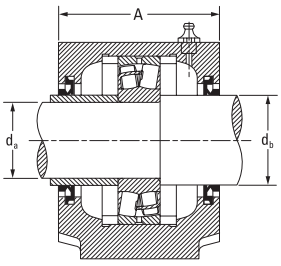
08-19-13 DRAFT

TWO-BOLT SNT HOUSINGS FOR CYLINDRICAL BORE BEARINGS

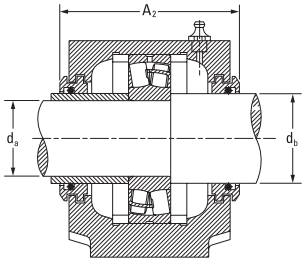
- The basic numbers for ordering plummer block housings and components are listed in the table below.
- Each housing includes the housing cap, base and cap bolts.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SNTS 518). If ductile iron is desired, add the letter D to the alpha prefix (e.g., SNTD 505).
- Seal sleeve for d_a shaft to be supplied by customer and should have same O.D. as d_b.



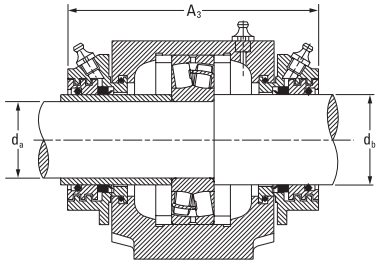
Double-Lip Seal



V-Ring Seal



Labyrinth Seal

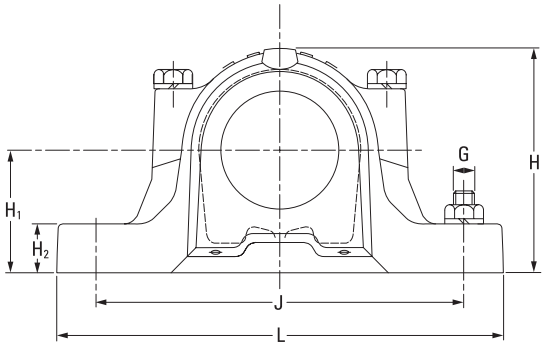


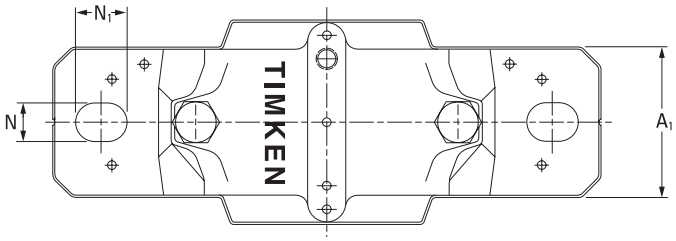
Taconite Seal

Shaft Dia.		Housing	Bearing	Locating Rings[1]	Double-Lip Seal[2]	V-Ring Seal[2]	Labyrinth Seal[3]	Taconite Seal[3]	End Cover[3]
d_a	d_b			O.D. x Width					
mm	mm								
25	30	SNT 205 SNT 206-305	22205 21305	SR52X3.5 SR62X7.5	TSNG205 TSNG305	– VR305	LO205 LO305	TA205 TA305	EC506-605 EC507-606
30	35	SNT 206-305 SNT 507-606	22206 21306	SR62X6 SR72X7.5	TSNG206 TSNG306	VR206 VR306	LO206 LO306	TA206 TA306	EC507-606 EC507-606
35	45	SNT 207 SNT 208-307	22207 21307	SR72X5.5 SR80X9	TSNG207 TSNG307	VR207 VR307	LO207 LO307	TA207 TA307	EC509 EC510-608
40	50	SNT 208-307 SNT 510-608 SNT 510-608	22208 21308 22308	SR80X8 SR90X9 SR90X4	TSNG208 TSNG308 TSNG308	VR208 VR308 VR308	LO208 LO308 LO308	TA208 TA308 TA308	EC510-608 EC510-608 EC510-608
45	55	SNT 209 SNT 511-609 SNT 511-609	22209 21309 22309	SR85X3.5 SR100X9.5 SR100X4	TSNG209 TSNG309 TSNG309	VR209 VR309 VR309	LO209 LO309 LO309	TA209 TA309 TA309	EC511-609 EC511-609 EC511-609
50	60	SNT 210 SNT 512-610 SNT 512-610	22210 21310 22310	SR90X9 SR110X10.5 SR110X4	TSNG210 TSNG310 TSNG310	VR210 VR310 VR310	LO210 LO310 LO310	TA210 TA310 TA310	EC512-610 EC512-610 EC512-610
55	65	SNT 211 SNT 513-611 SNT 513-611	22211 21311 22311	SR100X9.5 SR120X11 SR120X4	TSNG211 TSNG311 TSNG311	VR211 VR311 VR311	LO211 LO311 LO311	TA211 TA311 TA311	EC513-611 EC513-611 EC513-611
60	70	SNT 212 SNT 515-612 SNT 515-612	22212 21312 22312	SR110X10 SR130X12.5 SR130X5	TSNG212 TSNG312 TSNG312	VR212 VR312 VR312	LO212 LO312 LO312	TA212 TA312 TA312	EC515-612 EC515-612 EC515-612
65	75	SNT 213 SNT 516-613 SNT 516-613	22213 21313 22313	SR120X10 SR140X12.5 SR140X5	TSNG213 TSNG313 TSNG313	VR213 VR313 VR313	LO213 LO313 LO313	TA213 TA313 TA313	EC516-613 EC516-613 EC516-613
70	80	SNT 517 SNT 517	22314 21314	SR150X5 SR150X13	TSNG314 TSNG314	VR314 VR314	LO314 LO314	TA314 TA314	EC517 EC517

[1]Locating rings = minimum two required for fixed position, sold one piece per box.
[2]Double-lip and V-ring seals sold two pieces per box. Consult your Timken engineer for double-lip seal availability.
[3]Labyrinth, taconite seal and end cover, sold one piece per box.

08-19-13 DRAFT





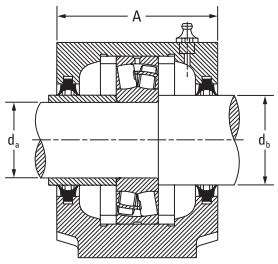
Housing Dimensions													2 Bolts Req'd	Housing Mass
A	A_1	A_2	A_3	H	H_1	H_2	J min	J	J max	L	N	N_1	G	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
67	46	90	140	74	40	19	123	130	137	165	15	20	12	1.5
77	52	89	150	89	50	22	143	150	157	185	15	20	12	2.0
77	52	89	150	89	50	22	143	150	157	185	15	20	12	2.0
82	52	94	140	93	50	22	143	150	157	185	15	20	12	2.2
82	52	96	155	93	50	22	143	150	157	185	15	20	12	2.2
85	60	99	160	108	60	25	165	170	175	205	15	20	12	2.9
85	60	99	160	108	60	25	165	170	175	205	15	20	12	2.9
90	60	102	150	113	60	25	165	170	175	205	15	20	12	3.2
90	60	102	150	113	60	25	165	170	175	205	15	20	12	3.2
85	60	97	160	109	60	25	165	170	175	205	15	20	12	2.9
95	70	107	155	128	70	28	205	210	215	255	18	24	16	4.5
95	70	107	155	128	70	28	205	210	215	255	18	24	16	4.5
90	60	102	165	113	60	25	165	170	175	205	15	20	12	3.2
105	70	117	165	134	70	30	205	210	215	255	18	24	16	5.3
105	70	117	165	134	70	30	205	210	215	255	18	24	16	5.3
95	70	107	170	128	70	28	205	210	215	255	18	24	16	4.5
110	80	122	170	150	80	30	224	230	236	275	18	24	16	6.6
110	80	122	170	150	80	30	224	230	236	275	18	24	16	6.6
105	70	117	180	134	70	30	205	210	215	255	18	24	16	5.2
115	80	127	175	156	80	30	222	230	238	280	18	24	16	6.9
115	80	127	175	156	80	30	222	230	238	280	18	24	16	6.9
110	80	128	190	149	80	30	222	230	238	275	18	24	16	6.6
120	90	138	180	177	95	32	252	260	268	315	22	28	20	9.7
120	90	138	180	177	95	32	252	260	268	315	22	28	20	9.7
125	90	143	210	183	95	32	252	260	268	320	22	28	20	10.4
125	90	143	210	183	95	32	252	260	268	320	22	28	20	10.4

Continued on next page.

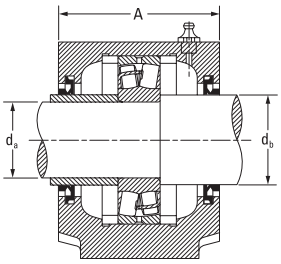
08-19-13 DRAFT

TWO-BOLT SNT HOUSINGS FOR CYLINDRICAL BORE BEARINGS – *continued*

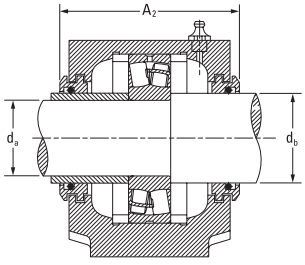
- The basic numbers for ordering plummer block housings and components are listed in the table below.
- Each housing includes the housing cap, base and cap bolts.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SNTS 518). If ductile iron is desired, add the letter D to the alpha prefix (e.g., SNTD 505).
- Seal sleeve for d_a shaft to be supplied by customer and should have same O.D. as d_b.



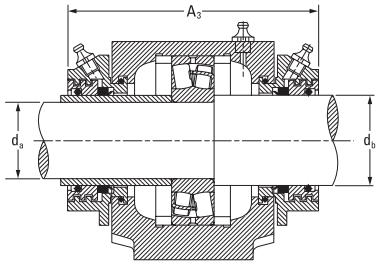
Double-Lip Seal



V-Ring Seal



Labyrinth Seal



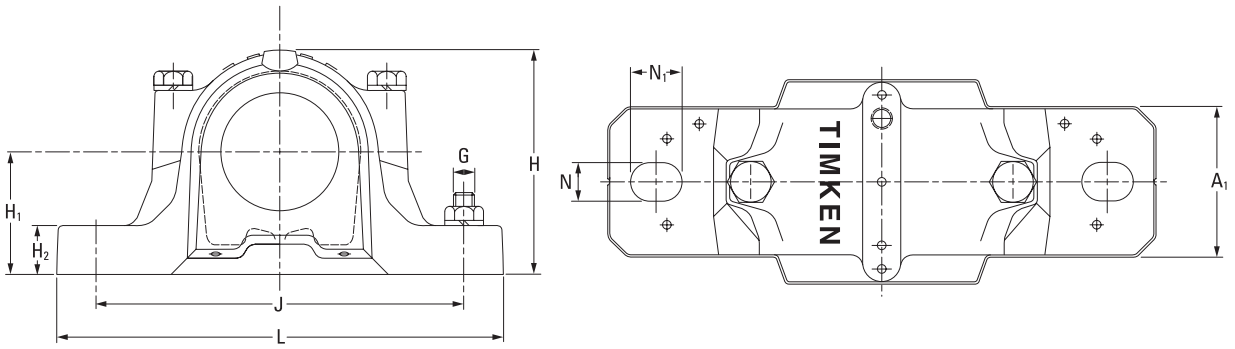
Taconite Seal

Continued from previous page.

Shaft Dia.		Housing	Bearing	Locating Rings[1]	Double-Lip Seal[2]	V-Ring Seal[2]	Labyrinth Seal[3]	Taconite Seal[3]	End Cover[3]
d_a	d_b			O.D. x Width					
mm	mm								
75	85	SNT 215 SNT 518-615 SNT 518-615	22215 21315 22315	SR130X12.5 SR160X14 SR160X5	TSNG215 TSNG315 TSNG315	VR215 VR315 VR315	LO215 LO315 LO315	TA215 TA315 TA315	EC518-615 EC518-615 EC518-615
80	90	SNT 216 SNT 519-616 SNT 519-616	22216 21316 22316	SR140X10 SR170X14.5 SR170X5	TSNG216 TSNG316 TSNG316	VR216 VR316 VR316	LO216 LO316 LO316	TA216 TA316 TA316	EC216 EC519-616 EC519-616
85	95	SNT 217 SNT 520-617 SNT 520-617	22217 21317 22317	SR150X12.5 SR180X14.5 SR180X5	TSNG217 TSNG317 TSNG317	VR217 VR317 VR317	LO217 LO317 LO317	TA217 TA317 TA317	EC217 EC520-617 EC520-617
90	100	SNT 218 SNT 218	22218 23218	SR160X12.5 SR160X6.25	TSNG218 TSNG218	VR218 VR218	LO218 LO218	TA218 TA218	EC218 EC218
95	110	SNT 522-619 SNT 522-619	21319 22319	SR200X17.5 SR200X6.5	TSNG319 TSNG319	VR319 VR319	LO319 LO319	TA319 TA319	EC522-619 EC522-619
100	115	SNT 520-617 SNT 520-617 SNT 524-620 SNT 524-620	22220 23220 21320 22320	SR180X12 SR180X4.85 SR215X19.5 SR215X6.5	TSNG220 TSNG220 TSNG320 TSNG320	VR220 VR220 VR320 VR320	LO220 LO220 LO320 LO320	TA220 TA220 TA320 TA320	EC520-617 EC520-617 EC524-620 EC524-620
110	125	SNT 522-619 SNT 522-619	22222 23222	SR200X13.5 SR200X5.1	TSNG222 TSNG222	VR222 VR222	LO222 LO222	TA222 TA222	EC522-619 EC522-619
120	135	SNT 524-620 SNT 524-620	22224 23224	SR215X14 SR215X5	TSNG224 TSNG224	VR224 VR224	LO224 LO224	TA224 TA224	EC 524-620 EC 524-620
130	145	SNT 526 SNT 526	22226 23226	SR230X13 SR230X5	TSNG226 TSNG226	VR226 VR226	LO226 LO226	TA226 TA226	EC526 EC526
140	155	SNT 528 SNT 528	22228 23228	SR250X15 SR250X5	TSNG228 TSNG228	VR228 VR228	LO228 LO228	TA228 TA228	EC528 EC528
150	165	SNT 530 SNT 530	22230 23230	SR270X16.5 SR270X5	TSNG230 TSNG230	VR230 VR230	LO230 LO230	TA230 TA230	EC530 EC530
160	175	SNT 532 SNT 532	22232 23232	SR290X17 SR290X5	TSNG232 TSNG232	VR232 VR232	LO232 LO232	TA232 TA232	EC532 EC532

[1]Locating rings = minimum two required for fixed position, sold one piece per box.
[2]Double-lip and V-ring seals sold two pieces per box. Consult your Timken engineer for double-lip seal availability.
[3]Labyrinth, taconite seal and end cover, sold one piece per box.

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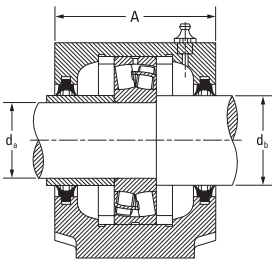


Housing Dimensions													2 Bolts Req'd	Housing Mass
A	A_1	A_2	A_3	H	H_1	H_2	J min	J	J max	L	N	N_1	G	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
115	80	133	195	155	80	30	222	230	238	280	18	24	16	6.9
140	100	158	225	194	100	35	285	290	295	345	22	28	20	13.1
140	100	158	225	194	100	35	285	290	295	345	22	28	20	13.1
120	90	138	200	177	95	32	252	260	268	315	22	28	20	9.7
145	100	163	220	212	112	35	285	290	295	345	22	28	20	14.0
145	100	163	220	212	112	35	285	290	295	345	22	28	20	14.0
125	90	143	205	183	95	32	252	260	268	320	22	28	20	10.4
160	110	178	235	218	112	40	314	320	326	380	26	32	24	17.6
160	110	178	235	218	112	40	314	320	326	380	26	32	24	17.6
140	100	158	220	194	100	35	285	290	295	345	22	28	20	13.1
140	100	158	220	194	100	35	285	290	295	345	22	28	20	13.1
175	120	191	250	242	125	45	344	350	356	410	26	32	24	22.3
175	120	191	250	242	125	45	344	350	356	410	26	32	24	22.3
160	110	178	235	218	112	40	314	320	326	380	26	32	24	17.6
160	110	178	235	218	112	40	314	320	326	380	26	32	24	17.6
185	120	199	260	271	140	45	344	350	356	410	26	32	24	26.5
185	120	199	260	271	140	45	344	350	356	410	26	32	24	26.5
175	120	191	250	242	125	45	344	350	356	410	26	32	24	22.3
175	120	191	250	242	125	45	344	350	356	410	26	32	24	22.3
185	120	199	260	271	140	45	344	350	356	410	26	32	24	26.5
185	120	199	260	271	140	45	344	350	356	410	26	32	24	26.5
190	130	208	265	290	150	50	373	380	387	445	28	35	24	34.0
190	130	208	265	290	150	50	373	380	387	445	28	35	24	34.0
205	150	223	285	302	150	50	413	420	427	500	35	42	30	39.0
205	150	223	285	302	150	50	413	420	427	500	35	42	30	39.0
220	160	241	295	323	160	60	443	450	457	530	35	42	30	48.0
220	160	241	295	323	160	60	443	450	457	530	35	42	30	48.0
235	160	254	315	344	170	60	463	470	477	550	35	42	30	54.5
235	160	254	315	344	170	60	463	470	477	550	35	42	30	54.5

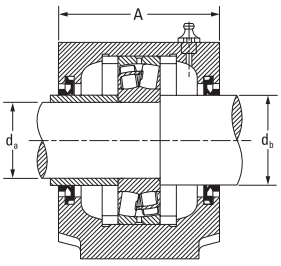
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FOUR-BOLT FSNT HOUSINGS FOR CYLINDRICAL BORE BEARINGS

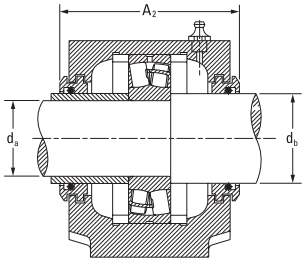
- The basic numbers for ordering plummer block housings and components are listed in the table below.
- Each housing includes the housing cap, base and cap bolts.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., FSNTS 518). If ductile iron is desired, add the letter D to the alpha prefix (e.g., FSNTD 505).
- Seal sleeve for d_a shaft to be supplied by customer and should have same O.D. as d_b.



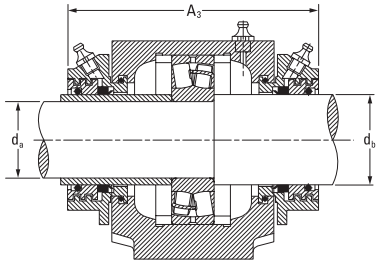
Double-Lip Seal



V-Ring Seal



Labyrinth Seal

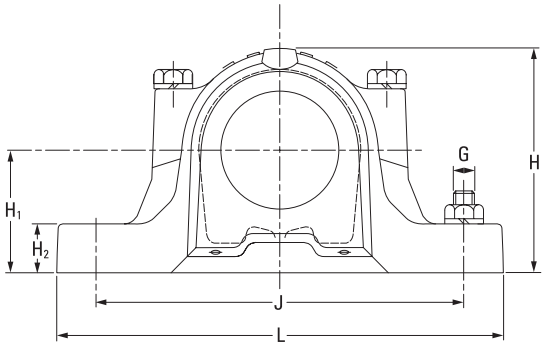


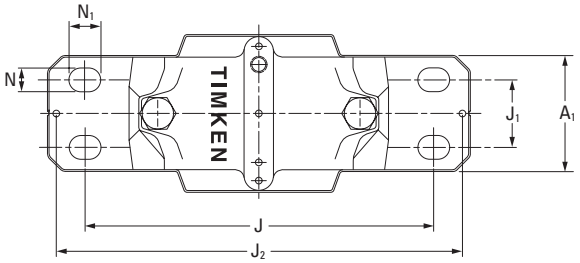
Taconite Seal

Shaft Dia.		Housing	Bearing	Locating Rings[1]	Double-Lip Seal[2]	V-Ring Seal[2]	Labyrinth Seal[3]	Taconite Seal[3]	End Cover[3]
d_a	d_b			O.D. x Width					
mm	mm								
35	45	FSNT 208-307	21307	SR80X9	TSNG307	VR307	LO307	TA307	EC510-608
40	50	FSNT 208-307 FSNT 510-608 FSNT 510-608	22208 21308 22308	SR80X8 SR90X9 SR90X4	TSNG208 TSNG308 TSNG308	VR208 VR308 VR308	LO208 LO308 LO308	TA208 TA308 TA308	EC510-608 EC510-608 EC510-608
45	55	FSNT 209 FSNT 511-609 FSNT 511-609	22209 21309 22309	SR85X3.5 SR100X9.5 SR100X4	TSNG209 TSNG309 TSNG309	VR209 VR309 VR309	LO209 LO309 LO309	TA209 TA309 TA309	EC511-609 EC511-609 EC511-609
50	60	FSNT 210 FSNT 512-610 FSNT 512-610	22210 21310 22310	SR90X9 SR110X10.5 SR110X 4	TSNG210 TSNG310 TSNG310	VR210 VR310 VR310	LO210 LO310 LO310	TA210 TA310 TA310	EC512-610 EC512-610 EC512-610
55	65	FSNT 211 FSNT 513-611 FSNT 513-611	22211 21311 22311	SR100X9.5 SR120X11 SR120X4	TSNG211 TSNG311 TSNG311	VR211 VR311 VR311	LO211 LO311 LO311	TA211 TA311 TA311	EC513-611 EC513-611 EC513-611
60	70	FSNT 212 FSNT 515-612 FSNT 515-612	22212 21312 22312	SR110X10 SR130X12.5 SR130X5	TSNG212 TSNG312 TSNG312	VR212 VR312 VR312	LO212 LO312 LO312	TA212 TA312 TA312	EC515-612 EC515-612 EC515-612
65	75	FSNT 213 FSNT 516-613 FSNT 516-613	22213 21313 22313	SR120X10 SR140X12.5 SR140X5	TSNG213 TSNG313 TSNG313	VR213 VR313 VR313	LO213 LO313 LO313	TA213 TA313 TA313	EC516-613 EC516-613 EC516-613
70	80	FSNT 517 FSNT 517	22314 21314	SR150X5 SR150X13	TSNG314 TSNG314	VR314 VR314	LO314 LO314	TA314 TA314	EC517 EC517
75	85	FSNT 215 FSNT 518-615 FSNT 518-615	22215 21315 22315	SR130X12.5 SR160X14 SR160X5	TSNG215 TSNG315 TSNG315	VR215 VR315 VR315	LO215 LO315 LO315	TA215 TA315 TA315	EC518-615 EC518-615 EC518-615
80	90	FSNT 216 FSNT 519-616 FSNT 519-616	22216 21316 22316	SR140X10 SR170X14.5 SR170X5	TSNG216 TSNG316 TSNG316	VR216 VR316 VR316	LO216 LO316 LO316	TA216 TA316 TA316	EC216 EC519-616 EC519-616

[1]Locating rings = minimum two required for fixed position, sold one piece per box.
[2]Double-lip and V-ring seal sold two pieces per box. Consult with your Timken engineer for double-lip seal availability.
[3]Labyrinth, taconite seal and end cover, sold one piece per box.

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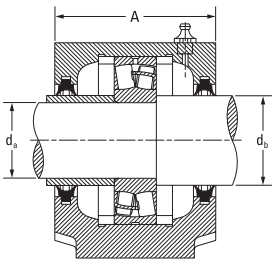
Housing Dimensions													4 Bolts Req'd	Housing Mass
A	A_1	A_2	A_3	H	H_1	H_2	J	J_1	J_2	L	N	N_1	G	
mm	mm	mm	mm	mm	mm	mm	mm	mm		mm	mm	mm	mm	kg
85	60	99	160	108	60	25	160	34	–	205	11	–	12	2.9
85	60	99	160	108	60	25	160	34	–	205	11	–	12	2.9
90	60	102	150	113	60	25	160	34	–	205	–	11	12	3.2
90	60	102	150	113	60	25	160	34	–	205	–	11	12	3.2
85	60	97	160	109	60	25	160	34	–	205	11	–	12	2.9
95	70	107	155	128	70	28	210	35	–	255	15	20	16	4.5
95	70	107	155	128	70	28	210	35	–	255	15	20	16	4.5
90	60	102	165	113	60	25	160	34	–	205	11	–	12	3.2
105	70	117	165	134	70	30	210	35	–	255	15	20	16	5.3
105	70	117	165	134	70	30	210	35	–	255	15	20	16	5.3
95	70	107	170	128	70	28	200	40	–	255	14	–	16	4.5
110	80	122	170	150	80	30	230	40	–	275	15	20	16	6.6
110	80	122	170	150	80	30	230	40	–	275	15	20	16	6.6
105	70	117	180	134	70	30	200	40	–	255	14	–	16	5.2
115	80	127	175	156	80	30	230	40	–	280	15	20	16	6.9
115	80	127	175	156	80	30	230	40	–	280	15	20	16	6.9
110	80	128	190	149	80	30	220	48	–	275	14	–	16	6.6
120	90	138	180	177	95	32	260	50	–	315	18	24	20	9.7
120	90	138	180	177	95	32	260	50	–	315	18	24	20	9.7
125	90	143	210	183	95	32	260	50	–	320	18	24	20	10.4
125	90	143	210	183	95	32	260	50	–	320	18	24	20	10.4
115	80	133	195	155	80	30	220	48	–	280	14	–	16	6.9
140	100	158	225	194	100	35	290	50	–	345	18	24	20	13.1
140	100	158	225	194	100	35	290	50	–	345	18	24	20	13.1
120	90	138	200	177	95	32	252	52	–	315	18	–	20	9.7
145	100	163	220	212	112	35	290	50	–	345	18	24	20	14.0
145	100	163	220	212	112	35	290	50	–	345	18	24	20	14.0

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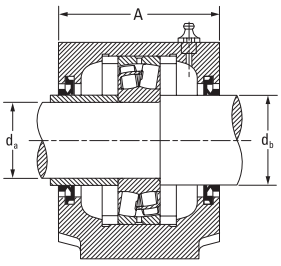
08-19-13 DRAFT

FOUR-BOLT FSNT HOUSINGS FOR CYLINDRICAL BORE BEARINGS – *continued*

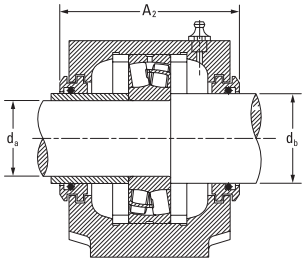
- The basic numbers for ordering plummer block housings and components are listed in the table below.
- Each housing includes the housing cap, base and cap bolts.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., FSNTS 518). If ductile iron is desired, add the letter D to the alpha prefix (e.g., FSNTD 505).
- Seal sleeve for d_a shaft to be supplied by customer and should have same O.D. as d_b.



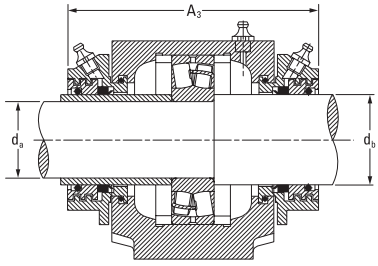
Double-Lip Seal



V-Ring Seal



Labyrinth Seal



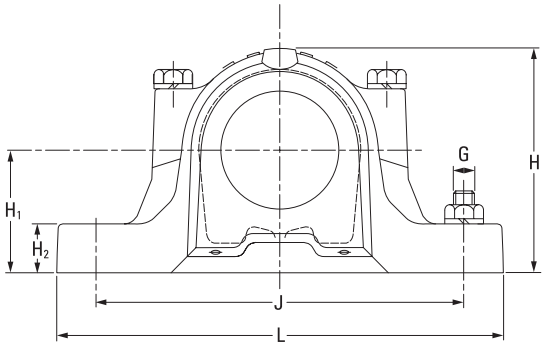
Taconite Seal

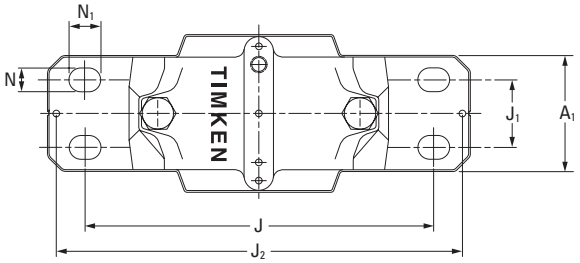
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Shaft Dia.		Housing	Bearing	Locating Rings[1]	Double-Lip Seal[2]	V-Ring Seal[2]	Labyrinth Seal[3]	Taconite Seal[3]	End Cover[3]
d_a	d_b			O.D. x Width					
mm	mm								
85	95	FSNT 217 FSNT 520-617 FSNT 520-617	22217 21317 22317	SR150X12.5 SR180X14.5 SR180X5	TSNG217 TSNG317 TSNG317	VR217 VR317 VR317	LO217 LO317 LO317	TA217 TA317 TA317	EC217 EC520-617 EC520-617
90	100	FSNT 218 FSNT 218	22218 23218	SR160X12.5 SR160X6.25	TSNG218 TSNG218	VR218 VR218	LO218 LO218	TA218 TA218	EC218 EC218
95	110	FSNT 522-619 FSNT 522-619	21319 22319	SR200X17.5 SR200X6.5	TSNG319 TSNG319	VR219 VR219	LO319 LO319	TA319 TA319	EC522-619 EC522-619
100	115	FSNT 520-617 FSNT 520-617 FSNT 524-620 FSNT 524-620	22220 23220 21320 22320	SR180X12 SR180X4.85 SR215X19.5 SR215X6.5	TSNG220 TSNG220 TSNG320 TSNG320	VR220 VR220 VR320 VR320	LO220 LO220 LO320 LO320	TA220 TA220 TA320 TA320	EC520-617 EC520-617 EC524-620 EC524-620
110	125	FSNT 522-619 FSNT 522-619	22222 23222	SR200X13.5 SR200X5.1	TSNG222 TSNG222	VR222 VR222	LO222 LO222	TA222 TA222	EC522-619 EC522-619
120	135	FSNT 524-620 FSNT 524-620	22224 23224	SR215X14 SR215X5	TSNG224 TSNG224	VR224 VR224	LO224 LO224	TA224 TA224	EC 524-620 EC 524-620
130	145	FSNT 526 FSNT 526	22226 23226	SR230X13 SR230X5	TSNG226 TSNG226	VR226 VR226	LO226 LO226	TA226 TA226	EC526 EC526
140	155	FSNT 528 FSNT 528	22228 23228	SR250X15 SR250X5	TSNG228 TSNG228	VR228 VR228	LO228 LO228	TA228 TA228	EC528 EC528
150	165	FSNT 530 FSNT 530	22230 23230	SR270X16.5 SR270X5	TSNG230 TSNG230	VR230 VR230	LO230 LO230	TA230 TA230	EC530 EC530
160	175	FSNT 532 FSNT 532	22232 23232	SR290X17 SR290X5	TSNG232 TSNG232	VR232 VR232	LO232 LO232	TA232 TA232	EC532 EC532

[1]Locating rings = minimum two required for fixed position, sold one piece per box.
[2]Double-lip and V-ring seal sold two pieces per box. Consult with your Timken engineer for double-lip seal availability.
[3]Labyrinth, taconite seal and end cover, sold one piece per box.

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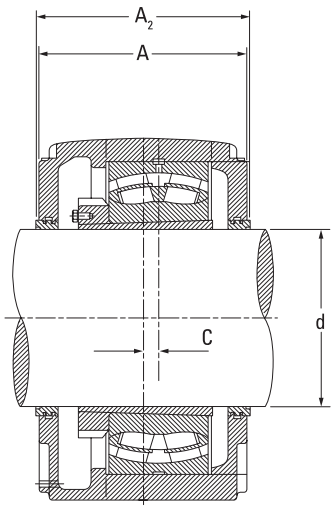


Housing Dimensions													4 Bolts Req'd	Housing Mass
A	A_1	A_2	A_3	H	H_1	H_2	J	J_1	J_2	L	N	N_1	G	
mm	mm	mm	mm	mm	mm	mm	mm	mm		mm	mm	mm	mm	kg
125	90	143	205	183	95	32	252	52	–	320	18	–	20	10.4
160	110	178	235	218	112	40	320	60	–	380	18	24	24	17.6
160	110	178	235	218	112	40	320	60	–	380	18	24	24	17.6
140	100	158	220	194	100	35	280	58	–	345	18	–	20	13.1
140	100	158	220	194	100	35	280	58	–	345	18	–	20	13.1
175	120	191	250	242	125	45	350	70	–	410	18	24	24	22.3
175	120	191	250	242	125	45	350	70	–	410	18	24	24	22.3
160	110	178	235	218	112	40	320	60	–	380	18	24	24	17.6
160	110	178	235	218	112	40	320	60	–	380	18	24	24	17.6
185	120	199	260	271	140	45	350	70	–	410	18	24	24	26.5
185	120	199	260	271	140	45	350	70	–	410	18	24	24	26.5
175	120	191	250	242	125	45	350	70	–	410	18	24	24	22.3
175	120	191	250	242	125	45	350	70	–	410	18	24	24	22.3
185	120	199	260	271	140	45	350	70	–	410	18	24	24	26.5
185	120	199	260	271	140	45	350	70	–	410	18	24	24	26.5
190	130	208	265	290	150	50	380	70	–	445	22	28	24	34.0
190	130	208	265	290	150	50	380	70	–	445	22	28	24	34.0
205	150	223	285	302	150	50	420	80	–	500	26	32	30	39.0
205	150	223	285	302	150	50	420	80	–	500	26	32	30	39.0
220	160	241	295	323	160	60	450	90	–	530	26	32	30	48.0
220	160	241	295	323	160	60	450	90	–	530	26	32	30	48.0
235	160	254	315	344	170	60	470	90	–	550	26	32	30	54.5
235	160	254	315	344	170	60	470	90	–	550	26	32	30	54.5

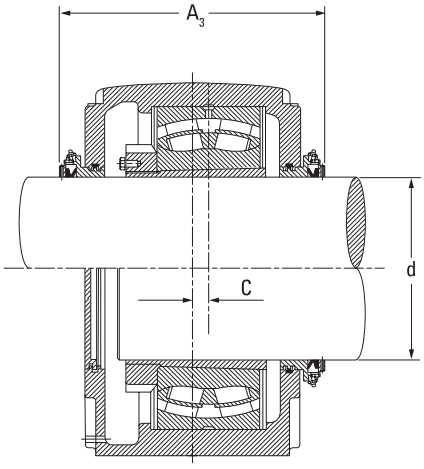
08-19-13 DRAFT

LARGE PLUMMER BLOCK HOUSINGS – 3000 AND 3100 SERIES

- The basic numbers for ordering plummer block housings and components are listed in the table below.
- Each housing includes the housing cap, base and cap bolts.
- Housings shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SNTS 518). If ductile iron is desired, add the letter D to the alpha prefix (e.g., SNTD 505).
- Housings with the F suffix are manufactured for fixed bearings. Those with the L suffix are float position housings.



Labyrinth Seal

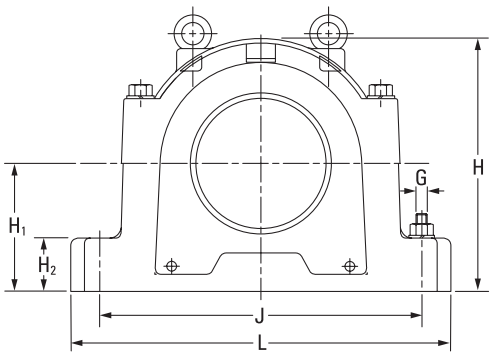


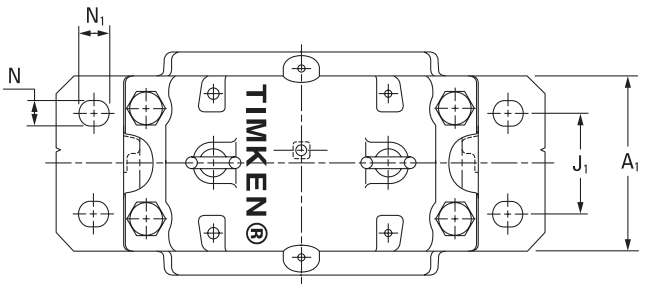
Taconite Seal

Shaft Dia. d	Housing	Bearing	Locating Rings[1] O.D. x Width	Quantity (Typically required for this bearing/housing configuration)	Adapter Sleeve[2]	Locknut[3]	Lockwasher[3]	Labyrinth Seal[3]	Taconite Seal[3]	End Cover[3]
mm										
150	SNT 3134	23134K	SR280X10	2	H3134	KM34	MB34	LO34	TA34	EC34
160	SNT 3036 SNT 3136	23036K 23136K	SR280X17 SR300X10	2 2	H3036 H3136	KM36 KM36	MB36 MB36	LO36 LO36	TA36 TA36	EC36 EC36
170	SNT 3038 SNT 3138	23038K 23138K	SR290X10 SR320X10	4 2	H3038 H3138	KML38 KM38	MBL38 MB38	LO38 LO38	TA38 TA38	EC38 EC38
180	SNT 3040 SNT 3140	23040K 23140K	SR310X10 SR340X10	4 2	H3040 H3140	KM40 KM40	MB40 MB40	LO40 LO40	TA40 TA40	EC40 EC40
200	SNT 3044 SNT 3144	23044K 23144K	SR340X10 SR370X10	4 2	OH3044H OH3144H	HM3044 HM44T	MS3044 MB44	LO44 LO44	TA44 TA44	EC44 EC44
220	SNT 3048 SNT 3148	23048K 23148K	SR360X12 SR400X10	4 2	OH3048H OH3148H	HM3048 HM48T	MS3048 MB48	LO48 LO48	TA48 TA48	EC48 EC48
240	SNT 3052 SNT 3152	23052K 23152K	SR400X22 SR440X10	2 2	OH3052H OH3152H	HM3052 HM52T	MS3052 MB52	LO52 LO52	TA52 TA52	EC52 EC52
260	SNT 3056 SNT 3156	23056K 23156K	SR420X10 SR460X10	6 2	OH3056H OH3156H	HM3056 HM56T	MS3056 MB56	LO56 LO56	TA56 TA56	EC56 EC56
280	SNT 3060 SNT 3160	23060K 23160K	SR460X25 SR500X10	2 2	OH3060H OH3160H	HM3060 HM3160	MS3060 MS3160	LO60 LO60	TA60 TA60	EC60 EC60
300	SNT 3064 SNT 3164	23064K 23164K	SR480X10 SR540X10	6 2	OH3064H OH3164H	HM3064 HM3164	MS3064 MS3164	LO64 LO64	TA64 TA64	EC64 EC64
320	SNT 3068 SNT 3168F SNT 3168L	23068K 23168K 23168K	SR520X16 FIXED HOUSING FLOAT HOUSING	4 – –	OH3068H OH3168H OH3168H	HM3068 HM3168 HM3168	MS3068 MS3168 MS3168	LO68 LO68 LO68	TA68 TA68 TA68	EC68 EC68 EC68
340	SNT 3072 SNT 3172F SNT 3172L	23172K 23172K 23172K	SR540X16 FIXED HOUSING FLOAT HOUSING	4 – –	OH3072H OH3172H OH3172H	HM3072 HM3172 HM3172	MS3072 MS3172 MS3172	LO72 LO72 LO72	TA72 TA72 TA72	EC72 EC72 EC72

[1]Locating rings = minimum two required for fixed position, sold one piece per box.
[2]Adapter sleeve assembly includes one sleeve, one locknut and one lockwasher.
[3]Labyrinth, taconite seal, end cover, locknut, lockwasher, sold one piece per box.

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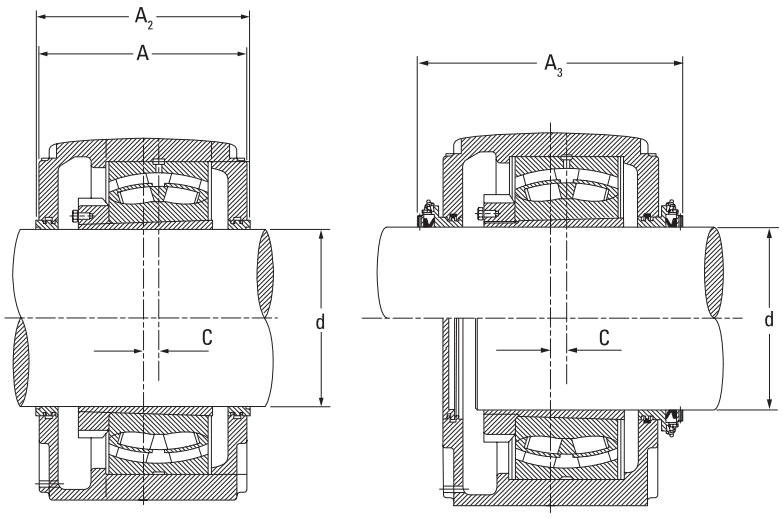
Housing Dimensions													4 Bolts Req'd	Housing Mass
A	A_1	A_2	A_3	C	H	H_1	H_2	J	J_1	L	N	N_1	G	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
230	180	240	300	14	333	170	70	430	100	510	28	34	24	75
230 240	180 190	240 250	310 315	14 15	333 353	170 180	70 75	430 450	100 110	510 530	28 28	34 34	24 24	72 92
240 260	190 210	250 270	315 335	15 10	353 375	180 190	75 80	450 480	110 120	530 560	28 28	34 34	24 24	81 112
260 280	210 230	270 290	335 355	10 10	375 411	190 210	80 85	480 510	120 130	560 610	28 35	34 42	24 30	110 130
280 290	230 240	290 300	355 365	10 12	411 434	210 220	85 90	510 540	130 140	610 640	35 35	42 42	30 30	118 140
290 310	240 260	300 315	385 400	12 12	434 474	220 240	90 95	540 600	140 150	640 700	35 35	42 42	30 30	138 193
310 320	260 280	315 330	400 415	12 13	474 516	240 260	95 100	600 650	150 160	700 770	35 42	42 50	30 36	189 235
320 320	280 280	330 330	415 415	13 16	516 551	260 280	100 105	650 670	160 160	770 790	42 42	50 50	36 36	254 260
320 350	280 310	330 360	415 445	16 22	551 591	280 300	105 110	670 710	160 190	790 830	42 42	50 50	36 36	260 310
350 370	310 330	360 380	445 462	22 23	591 631	300 320	110 115	710 750	190 200	830 880	42 42	50 50	36 36	300 346
370 400 400	330 360 360	380 410 410	465 492 492	23 24 24	631 675 675	320 340 340	115 120 120	750 810 810	200 220 220	880 950 950	42 42 42	50 50 50	36 36 36	339 432.5 429.5
370 400 400	330 360 360	380 410 410	465 492 492	23 30 30	631 695 695	320 350 350	115 120 120	750 840 840	200 220 220	950 1000 1000	42 42 42	50 50 50	36 36 36	342 458 454

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LARGE PLUMMER BLOCK HOUSINGS – 3000 AND 3100 SERIES – continued

- The basic numbers for ordering plummer block housings and components are listed in the table below.
- Each housing includes the housing cap, base and cap bolts.
- Housings shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SNTS 518). If ductile iron is desired, add the letter D to the alpha prefix (e.g., SNTD 505).
- Housings with the F suffix are manufactured for fixed bearings. Those with the L suffix are float position housings.

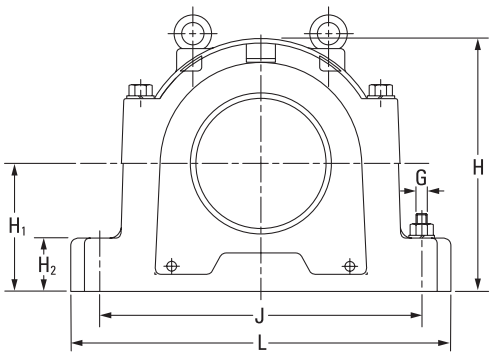


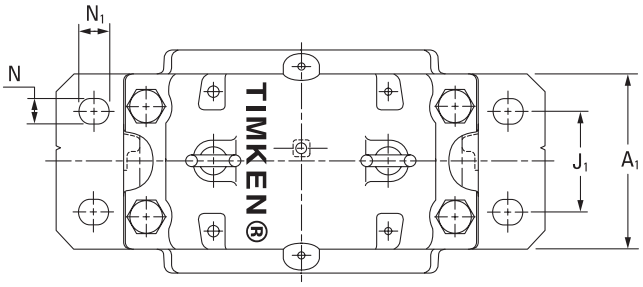
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Shaft Dia. d	Housing	Bearing	Locating Rings[1] O.D. x Width	Quantity (Typically required for this bearing/housing configuration)	Adapter Sleeve[2]	Locknut[3]	Lockwasher[3]	Labyrinth Seal[3]	Taconite Seal[3]	End Cover[3]
mm										
360	SNT 3076F SNT 3076L SNT 3176F SNT 3176L	23076K 23076K 23176K 23176K	FIXED HOUSING FLOAT HOUSING FIXED HOUSING FLOAT HOUSING	–	OH3076H OH3076H OH3176H OH3176H	HM3076 HM3076 HM3176 HM3176	MS3076 MS3076 MS3176 MS3176	LO76 LO76 LO76 LO76	TA76 TA76 TA76 TA76	EC76 EC76 EC76 EC76
380	SNT 3080F SNT 3080L SNT 3180F SNT 3180L	23080K 23080K 23180K 23180K	FIXED HOUSING FLOAT HOUSING FIXED HOUSING FLOAT HOUSING	–	OH3080H OH3080H OH3180H OH3180H	HM3080 HM3080 HM3180 HM3180	MS3080 MS3080 MS3180 MS3180	LO80 LO80 LO80 LO80	TA80 TA80 TA80 TA80	EC80 EC80 EC80 EC80
400	SNT 3084F SNT 3084L	23084K 23084K	FIXED HOUSING FLOAT HOUSING	–	OH3084H OH3084H	HM3084 HM3084	MS3084 MS3084	LO84 LO84	TA84 TA84	EC84 EC84

[1]Locating rings = minimum two required for fixed position, sold one piece per box.
[2]Adapter sleeve assembly includes one sleeve, one locknut and one lockwasher.
[3]Labyrinth, taconite seal, end cover, locknut, lockwasher, sold one piece per box.

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Housing Dimensions													4 Bolts Req'd	Housing Mass
A	A_1	A_2	A_3	C	H	H_1	H_2	J	J_1	L	N	N_1	G	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
400	360	410	495	24	675	340	120	810	220	1000	42	50	36	430
400	360	410	495	24	675	340	120	810	220	1000	42	50	36	427
400	360	410	492	30	715	360	120	870	220	1040	42	50	36	487
400	360	410	492	30	715	360	120	870	220	1040	42	50	36	484
400	360	410	495	30	695	350	120	840	220	1040	42	50	36	454
400	360	410	495	30	695	350	120	840	220	1040	42	50	36	450
430	390	440	522	30	775	380	125	950	240	1120	48	60	42	595
430	390	440	522	30	775	380	125	950	240	1120	48	60	42	595
400	360	410	495	30	715	360	120	870	220	1120	42	50	36	483
400	360	410	495	30	715	360	120	870	220	1120	42	50	36	480

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METRIC SHAFT DIAMETERS

TABLE E-20. SUGGESTED METRIC SHAFT DIAMETERS FOR USE WITH ADAPTER SLEEVES (MM)

Shaft O.D.	Max.	Min.	Shaft O.D.	Max.	Min.
20	20.000	19.925	190	190.000	189.875
25	25.000	24.925	200	200.000	199.875
30	30.000	29.925	210	210.000	209.850
35	35.000	34.925	220	220.000	219.850
40	40.000	39.925	230	230.000	229.850
45	45.000	44.925	240	240.000	239.850
50	50.000	49.925	250	250.000	249.850
55	55.000	54.900	260	260.000	259.850
60	60.000	59.900	270	270.000	269.825
65	65.000	64.900	280	280.000	279.825
70	70.000	69.900	290	290.000	289.825
75	75.000	74.900	300	300.000	299.825
80	80.000	79.900	310	310.000	309.825
85	85.000	84.900	320	320.000	319.800
90	90.000	89.900	330	330.000	329.800
95	95.000	94.900	340	340.000	339.800
100	100.000	99.900	350	350.000	349.800
105	105.000	104.875	360	360.000	359.800
110	110.000	109.875	370	370.000	369.800
115	115.000	114.875	380	380.000	379.800
120	120.000	119.875	390	390.000	389.800
125	125.000	124.875	400	400.000	399.800
130	130.000	129.875	410	410.000	409.800
135	135.000	134.875	420	420.000	419.800
140	140.000	139.875	430	430.000	429.800
145	145.000	144.875	440	440.000	439.800
150	150.000	149.875	450	450.000	449.800
160	160.000	159.875	460	460.000	459.800
170	170.000	169.875	470	470.000	469.800
180	180.000	179.875	480	480.000	479.800

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SPHERICAL ROLLER BEARING PRODUCT DATA TABLES

Timken® spherical roller bearings feature all of the characteristics that have made Timken renowned – superior design, reliable performance and comprehensive technical support. Spherical roller bearings are designed to manage high radial loads and perform consistently, even when misalignment, marginal lubrication, contamination, extreme speeds and critical application stresses are present.

Nomenclature. E-70
Spherical Roller Bearing Product Data Tables E-71



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SPHERICAL ROLLER BEARING NOMENCLATURE

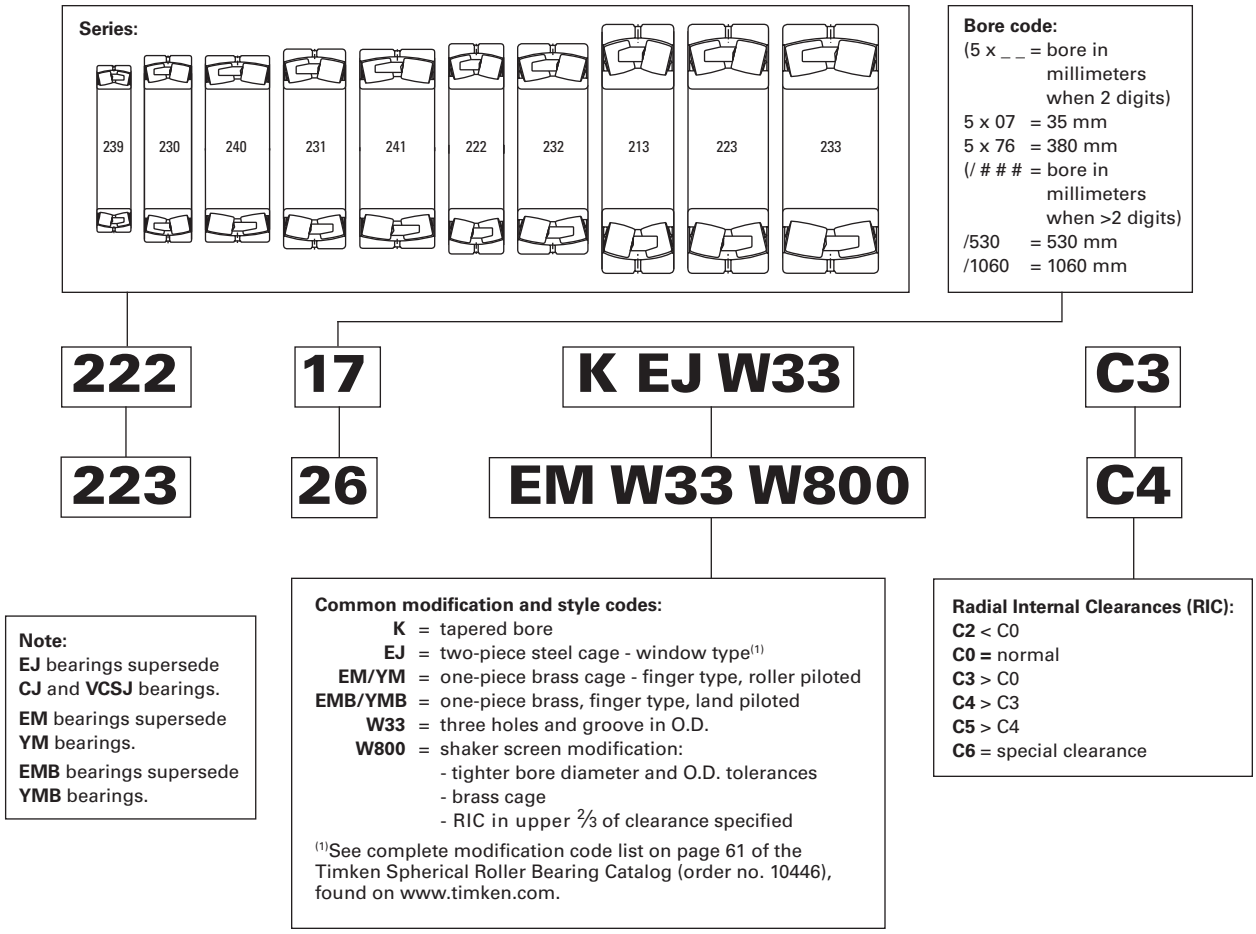
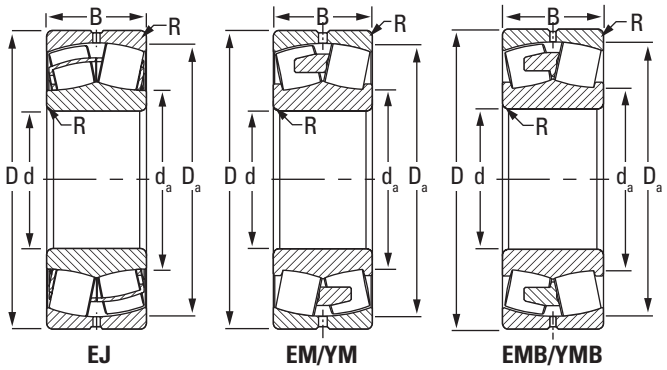


Fig. E-35. Timken® spherical roller bearing nomenclature.

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213 SERIES (200, 300, 500, 600 SERIES SNT, FSNT)

- Bearings are available with a tapered bore for adapter-type mounting. To order, add the suffix K to bearing number (e.g., 23120K).
- Consult your Timken engineer and www.timken.com for up-to-date information about the availability of the bearings you have selected.
- This section lists spherical roller bearings pertinent to Timken SNT plummer blocks. For a wider selection, consult www.timken.com or the Timken® Spherical Roller Bearing catalog (order no. 10446).



EJ EM/YM EMB/YMB

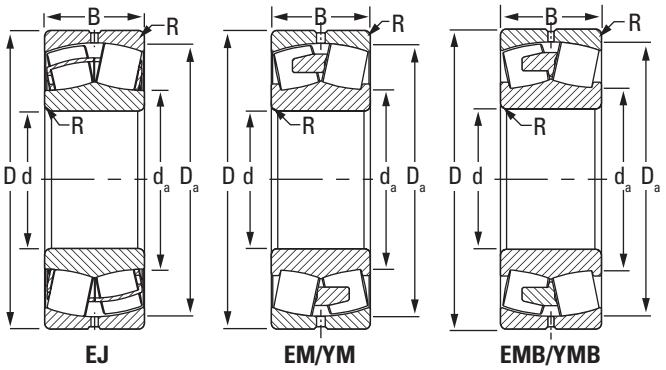
Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
							Fillet[1] (Max.)	Backing Dia.		Dynamic			Static		Oil	Grease	
	Bore d	O.D. D	Width B	Dynamic C	Static C_o		R	Shaft d_a	Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0	C_g			
	mm in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.		**mm** in.	**mm** in.	**mm** in.						RPM	RPM	**kg** lbs.
21305	**25** 0.9843	**62** 2.4409	**17** 0.6693	**55.5** 12500	**44.3** 9970	EJ	**1** 0.04	**35** 1.4	**55** 2.1	0.27	2.48	3.7	2.43	0.037	10000	8100	**0.3** 0.7
21306	**30** 1.1811	**72** 2.8346	**19** 0.748	**70.3** 15800	**56.5** 12700	EJ	**1** 0.04	**41** 1.6	**64** 2.5	0.26	2.6	3.87	2.54	0.041	8900	7200	**0.4** 0.9
21307	**35** 1.378	**80** 3.1496	**21** 0.8268	**90.2** 20300	**77.8** 17500	EJ	**1.5** 0.06	**47** 1.9	**71** 2.8	0.26	2.56	3.81	2.5	0.044	7900	6400	**0.5** 1.1
21308	**40** 1.5748	**90** 3.5433	**23** 0.9055	**113** 25400	**102** 22900	EJ	**1.5** 0.06	**54** 2.1	**80** 3.2	0.26	2.64	3.93	2.58	0.048	7100	5800	**0.7** 1.5
21309	**45** 1.7717	**100** 3.937	**25** 0.9843	**138** 31000	**125** 28200	EJ	**1.5** 0.06	**60** 2.4	**90** 3.5	0.25	2.75	4.09	2.69	0.052	6500	5300	**1.0** 2.2
21310	**50** 1.9685	**110** 4.3307	**27** 1.063	**163** 36700	**151** 33800	EJ	**2** 0.08	**67** 2.6	**99** 3.9	0.24	2.83	4.21	2.76	0.055	5900	4900	**1.2** 2.6
21311	**55** 2.1654	**120** 4.7244	**29** 1.1417	**188** 42400	**176** 39500	EJ	**2** 0.08	**73** 2.9	**108** 4.2	0.24	2.81	4.18	2.75	0.058	5500	4500	**1.6** 3.5
21312	**60** 2.3622	**130** 5.1181	**31** 1.2205	**225** 50500	**219** 49200	EJ	**2** 0.08	**80** 3.2	**116** 4.6	0.23	2.91	4.33	2.84	0.062	5100	4200	**2.0** 4.4
21313	**65** 2.5591	**140** 5.5118	**33** 1.2992	**259** 58200	**254** 57100	EJ	**2** 0.08	**86** 3.4	**126** 5	0.23	2.94	4.37	2.87	0.065	4800	3900	**2.4** 5.3
21314	**70** 2.7559	**150** 5.9055	**35** 1.378	**292** 65600	**289** 65000	EJ	**2** 0.08	**93** 3.7	**135** 5.3	0.23	2.97	4.42	2.9	0.068	4500	3700	**3.0** 6.6
21315	**75** 2.9528	**160** 6.2992	**37** 1.4567	**322** 72400	**321** 72200	EJ	**2** 0.08	**99** 3.9	**144** 5.7	0.23	2.98	4.43	2.91	0.071	4300	3600	**3.5** 7.7
21316	**80** 3.1496	**170** 6.6929	**39** 1.5354	**363** 81700	**363** 81700	EJ	**2** 0.08	**105** 4.1	**153** 6	0.22	3.01	4.47	2.94	0.073	4100	3400	**4.2** 9.2
21317	**85** 3.3465	**180** 7.0866	**41** 1.6142	**403** 90600	**407** 91500	EJ	**2.5** 0.1	**112** 4.4	**162** 6.4	0.22	3.04	4.53	2.97	0.076	3900	3200	**4.9** 10.8
21318	**90** 3.5433	**190** 7.4803	**43** 1.6929	**442** 99400	**449** 101000	EJ	**2.5** 0.1	**118** 4.7	**171** 6.7	0.22	3.05	4.55	2.99	0.079	3700	3100	**5.8** 12.8

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See engineering section for instructions on use.
[3]Geometry constant for Lubrication Life Factor a_{3l} is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Where EJ and EM/EMB have different load ratings, the more conservative one was taken to use for both assemblies.
NOTE: Tolerance and shaft diameters are shown in tables E-2 and E-3 on pages E-5 and E-6 as variances from nominal bearing bore.

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222 SERIES (200, 500 SERIES SNT, FSNT)

- Bearings are available with a tapered bore for adapter-type mounting. To order, add the suffix K to bearing number (e.g., 23120K).
- Consult your Timken engineer and www.timken.com for up-to-date information about the availability of the bearings you have selected.
- This section lists spherical roller bearings pertinent to Timken SNT plummer blocks. For a wider selection, consult www.timken.com or the Timken® Spherical Roller Bearing catalog (order no. 10446).

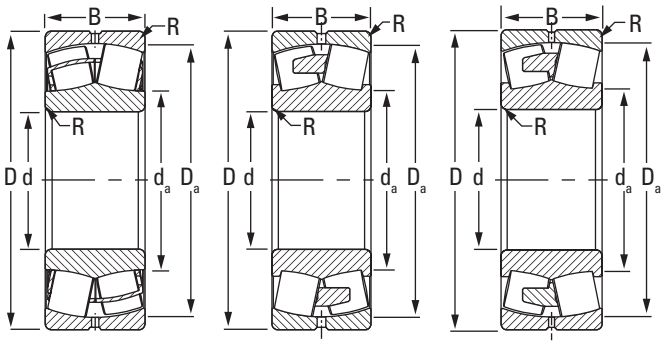


Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
											Dynamic		Static				
	Bore d	O.D. D	Width B	Dynamic C	Static C_o		Fillet[1] (Max.) R	Backing Dia. Shaft d_a	Backing Dia. Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0	C_g	Oil	Grease	
	mm in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.		**mm** in.	**mm** in.	**mm** in.						RPM	RPM	**kg** lbs.
22205	**25** 0.9843	**52** 2.0472	**18** 0.7087	**50.6** 11400	**43.1** 9690	EJ	**1** 0.04	**30** 1.2	**47** 1.9	0.34	2	2.98	1.96	0.032	12000	9200	**0.2** 0.4
22206	**30** 1.1811	**62** 2.4409	**20** 0.7874	**67.4** 15200	**60.8** 13700	EJ	**1** 0.04	**38** 1.5	**56** 2.2	0.31	2.15	3.2	2.1	0.037	9700	7800	**0.3** 0.7
22207	**35** 1.378	**72** 2.8346	**23** 0.9055	**90.5** 20300	**88** 19700	EJ	**1** 0.04	**45** 1.8	**65** 2.6	0.31	2.21	3.29	2.16	0.041	8600	6900	**0.5** 1.1
22208	**40** 1.5748	**80** 3.1496	**23** 0.9055	**104** 23400	**99.7** 22400	EJ/EM	**1** 0.04	**50** 2	**73** 2.9	0.27	2.47	3.67	2.41	0.044	7500	6000	**0.6** 1.3
22209	**45** 1.7717	**85** 3.3465	**23** 0.9055	**104** 23500	**101** 22800	EJ/EM	**1** 0.04	**55** 2.2	**77** 3	0.26	2.64	3.93	2.58	0.046	6800	5500	**0.6** 1.3
22210	**50** 1.9685	**90** 3.5433	**23** 0.9055	**112** 25200	**112** 25100	EJ/EM	**1** 0.04	**59** 2.3	**82** 3.2	0.24	2.84	4.23	2.78	0.049	6200	5000	**0.6** 1.3
22211	**55** 2.1654	**100** 3.937	**25** 0.9843	**134** 30100	**134** 30100	EJ/EM	**1.5** 0.06	**66** 2.6	**91** 3.6	0.23	2.95	4.4	2.89	0.052	5800	4700	**0.9** 2.0
22212	**60** 2.3622	**110** 4.3307	**28** 1.1024	**163** 36600	**164** 36900	EJ/EM	**1.5** 0.06	**72** 2.8	**100** 4	0.24	2.84	4.23	2.78	0.055	5500	4400	**1.2** 2.6
22213	**65** 2.5591	**120** 4.7244	**31** 1.2205	**198** 44600	**204** 45900	EJ/EM	**1.5** 0.06	**78** 3.1	**109** 4.3	0.24	2.79	4.15	2.73	0.058	5100	4200	**1.6** 3.5
22214	**70** 2.7559	**125** 4.9213	**31** 1.2205	**205** 46000	**219** 49200	EJ/EM	**1.5** 0.06	**84** 3.3	**114** 4.5	0.23	2.9	4.32	2.84	0.063	4800	3900	**1.6** 3.5
22215	**75** 2.9528	**130** 5.1181	**31** 1.2205	**222** 49900	**240** 54100	EJ	**1.5** 0.06	**88** 3.5	**120** 4.7	0.22	3.14	4.67	3.07	0.062	4600	3700	**1.7** 3.7
22216	**80** 3.1496	**140** 5.5118	**33** 1.2992	**254** 57200	**278** 62500	EJ/EM	**2** 0.08	**95** 3.7	**129** 5.1	0.22	3.14	4.67	3.07	0.065	4300	3500	**2.2** 4.8

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See Timken Engineering Manual (order no. 10424) for instructions on use.
[3]Geometry constant for Lubrication Life Factor a_{31} is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Where EJ and EM/EMB have different load ratings, the more conservative one was taken to use for both assemblies.
NOTE: Tolerance and shaft diameters are shown in tables E-2 and E-3 on pages E-5 and E-6 as variances from nominal bearing bore.

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EJ EM/YM EMB/YMB

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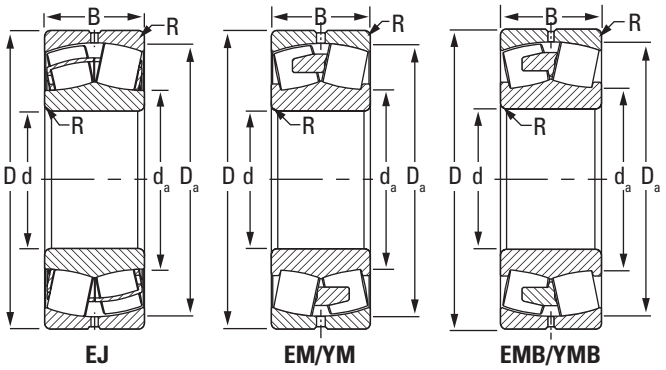
Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
							Fillet[1] (Max.)	Backing Dia.		Dynamic			Static				
	Bore d	O.D. D	Width B	Dynamic C	Static C_o		R	Shaft d_a	Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0	C_g	Oil	Grease	
	mm in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.		**mm** in.	**mm** in.	**mm** in.						RPM	RPM	**kg** lbs.
22217	**85** 3.3465	**150** 5.9055	**36** 1.4173	**286** 64200	**302** 67900	EJ/EM	**2** 0.08	**101** 4	**139** 5.5	0.22	3.07	4.57	3	0.068	4200	3400	**2.7** 5.9
22218	**90** 3.5433	**160** 6.2992	**40** 1.5748	**355** 79700	**388** 87200	EJ/EM	**2** 0.08	**105** 4.2	**146** 5.8	0.23	2.9	4.31	2.83	0.07	4000	3300	**3.5** 7.7
22219	**95** 3.7402	**170** 6.6929	**43** 1.6929	**385** 86600	**441** 99000	EJ/EM	**2** 0.08	**114** 4.5	**155** 6.1	0.23	2.88	4.29	2.82	0.076	3900	3200	**4.2** 9.2
22220	**100** 3.937	**180** 7.0866	**46** 1.811	**435** 97700	**502** 113000	EJ/EM	**2** 0.08	**120** 4.7	**163** 6.4	0.24	2.85	4.24	2.78	0.079	3800	3100	**5.0** 11.0
22222	**110** 4.3307	**200** 7.874	**53** 2.0866	**555** 125000	**653** 147000	EJ/EM	**2** 0.08	**133** 5.2	**182** 7.2	0.25	2.73	4.06	2.67	0.084	3500	2900	**7.2** 15.8
22224	**120** 4.7244	**215** 8.4646	**58** 2.2835	**647** 145000	**772** 174000	EJ/EM	**2** 0.08	**143** 5.6	**196** 7.7	0.25	2.7	4.02	2.64	0.081	3200	2600	**9.0** 19.8
22226	**130** 5.1181	**230** 9.0551	**64** 2.5197	**757** 170000	**945** 212000	EJ/EM	**2.5** 0.1	**155** 6.1	**210** 8.3	0.26	2.62	3.9	2.56	0.079	2900	2400	**11.3** 24.9
22228	**140** 5.5118	**250** 9.8425	**68** 2.6772	**863** 194000	**1060** 237000	EJ/EM	**2.5** 0.1	**167** 6.6	**228** 9	0.25	2.67	3.98	2.61	0.082	2600	2200	**14.2** 31.2
22230	**150** 5.9055	**270** 10.6299	**73** 2.874	**1000** 225000	**1230** 276000	EJ/EM	**2.5** 0.1	**179** 7	**246** 9.7	0.25	2.69	4	2.63	0.087	2400	2000	**17.8** 39.2
22232	**160** 6.2992	**290** 11.4173	**80** 3.1496	**1170** 263000	**1450** 326000	EJ/EM	**2.5** 0.1	**192** 7.5	**264** 10.4	0.26	2.62	3.91	2.57	0.09	2200	1800	**23.0** 50.6

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See engineering section for instructions on use.
[3]Geometry constant for Lubrication Life Factor a_{31} is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Where EJ and EM/EMB have different load ratings, the more conservative one was taken to use for both assemblies.
NOTE: Tolerance and shaft diameters are shown in tables E-2 and E-3 on pages E-5 and E-6 as variances from nominal bearing bore.

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223 SERIES (500, 600 SERIES SNT, FSNT)

- Bearings are available with a tapered bore for adapter-type mounting. To order, add the suffix K to bearing number (e.g., 23120K).
- Consult your Timken engineer and www.timken.com for up-to-date information about the availability of the bearings you have selected.
- This section lists spherical roller bearings pertinent to Timken SNT plummer blocks. For a wider selection, consult www.timken.com or the Timken® Spherical Roller Bearing catalog (order no. 10446).



EJ EM/YM EMB/YMB

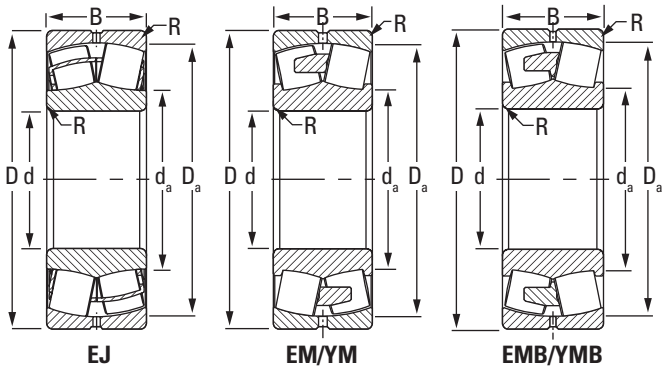
Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
											Dynamic		Static				
	Bore d	O.D. D	Width B	Dynamic C	Static C_o		Fillet[1] (Max.) R	Backing Dia. Shaft d_a	Backing Dia. Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0	C_g	Oil	Grease	
	mm in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.		**mm** in.	**mm** in.	**mm** in.						RPM	RPM	**kg** lbs.
22308	**40** 1.5748	**90** 3.5433	**33** 1.2992	**155** 34900	**147** 33100	EJ/EM	**1.5** 0.06	**53** 2.1	**81** 3.2	0.36	1.87	2.79	1.83	0.046	6700	5600	**1.0** 2.2
22309	**45** 1.7717	**100** 3.937	**36** 1.4173	**190** 42700	**182** 40800	EJ/EM	**1.5** 0.06	**58** 2.3	**90** 3.5	0.36	1.9	2.83	1.86	0.049	6100	5100	**1.3** 2.9
22310	**50** 1.9685	**110** 4.3307	**40** 1.5748	**238** 53500	**241** 54200	EJ/EM	**2** 0.08	**65** 2.6	**98** 3.9	0.36	1.89	2.81	1.85	0.055	5500	4600	**1.9** 4.2
22311	**55** 2.1654	**120** 4.7244	**43** 1.6929	**279** 62800	**284** 63800	EJ/EM	**2** 0.08	**69** 2.7	**106** 4.2	0.36	1.89	2.81	1.84	0.057	5100	4300	**2.4** 5.3
22312	**60** 2.3622	**130** 5.1181	**46** 1.811	**321** 72200	**329** 73900	EJ/EM	**2** 0.08	**77** 3	**117** 4.6	0.34	1.98	2.94	1.93	0.061	4700	4000	**3.0** 6.6
22313	**65** 2.5591	**140** 5.5118	**48** 1.8898	**361** 81300	**371** 83300	EJ/EM	**2** 0.08	**84** 3.3	**127** 5	0.33	2.05	3.05	2	0.064	4400	3800	**3.6** 7.9
22314	**70** 2.7559	**150** 5.9055	**51** 2.0079	**395** 88800	**414** 93100	EJ/EM	**2** 0.08	**91** 3.6	**135** 5.3	0.33	2.07	3.08	2.02	0.067	4200	3600	**4.4** 9.7
22315	**75** 2.9528	**160** 6.2992	**55** 2.1654	**450** 101000	**478** 107000	EJ/EM	**2** 0.08	**97** 3.8	**144** 5.7	0.33	2.04	3.04	2	0.071	3900	3300	**5.4** 11.9
22316	**80** 3.1496	**170** 6.6929	**58** 2.2835	**499** 112000	**534** 120000	EJ/EM	**2** 0.08	**103** 4.1	**153** 6	0.33	2.06	3.06	2.01	0.073	3700	3200	**6.4** 14.1
22317	**85** 3.3465	**180** 7.0866	**60** 2.3622	**569** 128000	**623** 140000	EJ/EM	**2.5** 0.1	**110** 4.3	**162** 6.4	0.32	2.11	3.14	2.06	0.076	3500	3000	**7.5** 16.5
22318	**90** 3.5433	**190** 7.4803	**64** 2.5197	**634** 143000	**703** 158000	EJ/EM	**2.5** 0.1	**116** 4.6	**171** 6.7	0.32	2.09	3.11	2.04	0.079	3300	2800	**8.8** 19.4
22319	**95** 3.7402	**200** 7.874	**67** 2.6378	**694** 156000	**774** 174000	EJ/EM	**2.5** 0.1	**122** 4.8	**180** 7.1	0.32	2.1	3.13	2.05	0.082	3000	2600	**10.2** 22.4
22320	**100** 3.937	**215** 8.4646	**73** 2.874	**779** 175000	**856** 193000	EJ/EM	**2.5** 0.1	**130** 5.1	**193** 7.6	0.33	2.06	3.07	2.02	0.072	2800	2400	**12.8** 28.2

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See engineering section for instructions on use.
[3]Geometry constant for Lubrication Life Factor a_{31} is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Where EJ and EM/EMB have different load ratings, the more conservative one was taken to use for both assemblies.
NOTE: Tolerance and shaft diameters are shown in tables E-2 and E-3 on pages E-5 and E-6 as variances from nominal bearing bore.

08-19-13 DRAFT

230 SERIES (3000 SERIES SNT, FSNT)

- Bearings are available with a tapered bore for adapter-type mounting. To order, add the suffix K to bearing number (e.g., 23120K).
- Consult your Timken engineer and www.timken.com for up-to-date information about the availability of the bearings you have selected.
- This section lists spherical roller bearings pertinent to Timken SNT plummer blocks. For a wider selection, consult www.timken.com or the Timken® Spherical Roller Bearing catalog (order no. 10446).



EJ EM/YM EMB/YMB

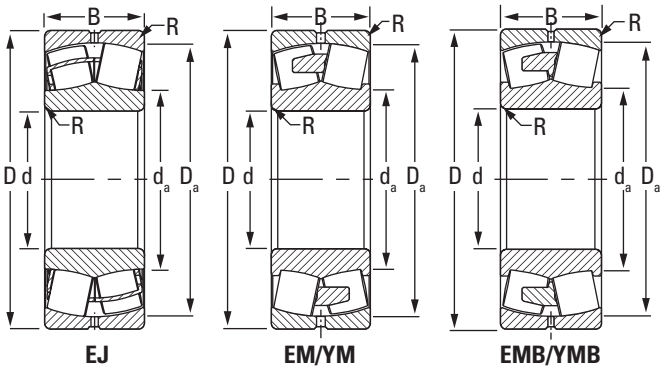
Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
							Fillet[1] (Max.)	Backing Dia.		Dynamic			Static				
	Bore d	O.D. D	Width B	Dynamic C	Static C_o		R	Shaft d_a	Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0	C_g	Oil	Grease	
	mm in.	mm in.	mm in.	kN lbf.	kN lbf.		mm in.	mm in.	mm in.						RPM	RPM	kg lbs.
23036	**180** 7.0866	**280** 11.0236	**74** 2.9134	**1020** 229000	**1480** 332000	EJ/EM	**2** 0.08	**204** 8	**260** 10.2	0.23	2.91	4.34	2.85	0.093	2000	1700	**16.8** 37.0
23038	**190** 7.4803	**290** 11.4173	**75** 2.9528	**1060** 239000	**1580** 355000	EJ/EM	**2** 0.08	**214** 8.4	**270** 10.6	0.23	3	4.47	2.93	0.096	1900	1600	**17.8** 39.2
23040	**200** 7.874	**310** 12.2047	**82** 3.2283	**1230** 276000	**1760** 395000	EJ/EM	**2** 0.08	**225** 8.9	**289** 11.4	0.23	2.95	4.4	2.89	0.095	1800	1500	**22.6** 49.7
23044	**220** 8.6614	**340** 13.3858	**90** 3.5433	**1340** 300000	**1970** 443000	EJ/EM	**2.5** 0.1	**247** 9.7	**313** 12.3	0.24	2.77	4.13	2.71	0.105	1700	1400	**29.8** 65.6
23048	**240** 9.4488	**360** 14.1732	**92** 3.622	**1400** 315000	**2140** 480000	EJ/EM	**2.5** 0.1	**267** 10.5	**334** 13.1	0.23	2.91	4.34	2.85	0.111	1500	1300	**31.9** 70.2
23052	**260** 10.2362	**400** 15.748	**104** 4.0945	**1820** 409000	**2740** 617000	EJ/EMB	**3** 0.12	**291** 11.5	**369** 14.5	0.24	2.85	4.24	2.78	0.078	1300	1100	**47.6** 104.7
23056	**280** 11.024	**420** 16.535	**106** 4.173	**1660** 373000	**2790** 627000	EMB	**3** 0.12	**312** 12.3	**389** 15.3	0.23	2.92	4.35	2.86	0.088	1100	930	**51.0** 112.2
23060	**300** 11.811	**460** 18.11	**118** 4.646	**2120** 477000	**3540** 796000	EMB	**3** 0.12	**336** 13.2	**425** 16.8	0.24	2.87	4.27	2.8	0.093	980	830	**71.0** 156.2
23064	**320** 12.598	**480** 18.898	**121** 4.764	**2200** 494000	**3850** 867000	EMB	**3** 0.12	**357** 14.1	**444** 17.5	0.23	2.93	4.36	2.86	0.096	910	780	**77.4** 170.3
23068	**340** 13.386	**520** 20.472	**133** 5.236	**2640** 593000	**4620** 1040000	EMB	**4** 0.16	**384** 15.1	**481** 18.9	0.23	2.96	4.4	2.89	0.101	830	710	**102.7** 225.9
23072	**360** 14.173	**540** 21.26	**134** 5.276	**2590** 583000	**4600** 1030000	EMB	**4** 0.16	**403** 15.9	**499** 19.7	0.23	2.94	4.38	2.88	0.102	800	680	**108.3** 238.3
23076	**380** 14.961	**560** 22.047	**135** 5.315	**2800** 630000	**5090** 1140000	EMB	**4** 0.16	**422** 16.6	**520** 20.5	0.22	3.08	4.58	3.01	0.105	740	630	**114.2** 251.2
23080	**400** 15.748	**600** 23.622	**148** 5.827	**3310** 744000	**5950** 1340000	EMB	**4** 0.16	**447** 17.6	**555** 21.9	0.23	2.98	4.44	2.92	0.111	690	590	**148.7** 327.1
23084	**420** 16.535	**620** 24.409	**150** 5.906	**3450** 774000	**6360** 1430000	YMB	**4** 0.16	**467** 18.4	**576** 22.7	0.22	3.05	4.54	2.98	0.114	650	560	**156.0** 343.2

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See engineering section for instructions on use.
[3]Geometry constant for Lubrication Life Factor a_{31} is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Where EJ and EM/EMB have different load ratings, the more conservative one was taken to use for both assemblies.
NOTE: Tolerance and shaft diameters are shown in tables E-2 and E-3 on pages E-5 and E-6 as variances from nominal bearing bore.

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231 SERIES (300, 3100 SERIES SNT, FSNT)

- Bearings are available with a tapered bore for adapter-type mounting. To order, add the suffix K to bearing number (e.g., 23120K).
- Consult your Timken engineer and www.timken.com for up-to-date information about the availability of the bearings you have selected.
- This section lists spherical roller bearings pertinent to Timken SNT plummer blocks. For a wider selection, consult www.timken.com or the Timken® Spherical Roller Bearing catalog (order no. 10446).



EJ EM/YM EMB/YMB

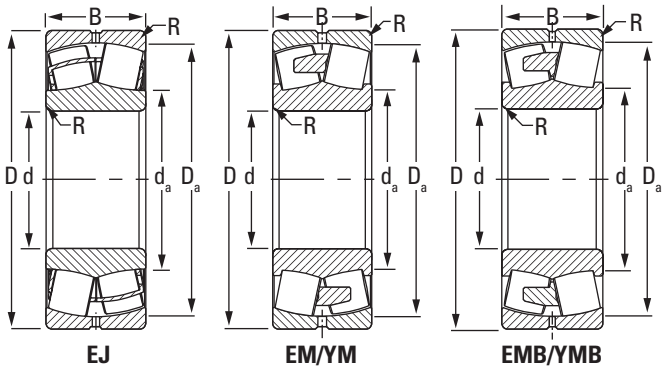
Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
							Fillet[1] (Max.)	Backing Dia.		Dynamic			Static				
	Bore d	O.D. D	Width B	Dynamic C	Static C_o		R	Shaft d_a	Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0	C_g	Oil	Grease	
	mm in.	mm in.	mm in.	kN lbf.	kN lbf.		mm in.	mm in.	mm in.						RPM	RPM	kg lbs.
23134	**170** 6.6929	**280** 11.0236	**88** 3.4646	**1220** 274000	**1710** 384000	EJ/EM	**2** 0.08	**195** 7.7	**258** 10.1	0.28	2.39	3.55	2.33	0.091	1600	1400	**21.7** 47.7
23136	**180** 7.0866	**300** 11.811	**96** 3.7795	**1410** 317000	**2000** 449000	EJ/EM	**2.5** 0.1	**208** 8.2	**275** 10.8	0.29	2.32	3.45	2.27	0.095	1500	1300	**27.6** 60.7
23138	**190** 7.4803	**320** 12.5984	**104** 4.0945	**1630** 365000	**2340** 525000	EJ/EM	**2.5** 0.1	**221** 8.7	**293** 11.5	0.3	2.26	3.36	2.21	0.099	1400	1200	**34.7** 76.3
23140	**200** 7.874	**340** 13.3858	**112** 4.4094	**1720** 386000	**2400** 540000	EM/EMB	**2.5** 0.1	**230** 9	**308** 12.1	0.31	2.15	3.2	2.1	0.101	1300	1200	**41.1** 90.4
23144	**220** 8.6614	**370** 14.5669	**120** 4.7244	**1940** 436000	**2740** 616000	EJ/EMB	**3** 0.12	**252** 9.9	**336** 13.2	0.31	2.17	3.24	2.12	0.107	1200	1000	**52.8** 116.2
23148	**240** 9.4488	**400** 15.748	**128** 5.0394	**2280** 512000	**3330** 748000	EM/EMB	**3** 0.12	**276** 10.9	**364** 14.3	0.3	2.28	3.4	2.23	0.073	1100	930	**64.9** 142.8
23152	**260** 10.236	**440** 17.323	**144** 5.669	**2440** 549000	**3910** 879000	EMB	**3** 0.12	**302** 11.9	**400** 15.7	0.30	2.23	3.31	2.18	0.086	870	760	**90.0** 198.0
23156	**280** 11.024	**460** 18.11	**146** 5.748	**2530** 570000	**4140** 930000	EMB	**4** 0.16	**320** 12.6	**419** 16.5	0.30	2.26	3.36	2.21	0.09	800	710	**94.5** 207.9
23160	**300** 11.811	**500** 19.685	**160** 6.299	**3070** 691000	**5110** 1150000	EMB	**4** 0.16	**345** 13.6	**453** 17.8	0.30	2.25	3.35	2.20	0.093	710	630	**128.7** 283.1
23164	**320** 12.598	**540** 21.26	**176** 6.929	**3650** 819000	**5930** 1330000	EMB	**4** 0.16	**367** 14.4	**490** 19.3	0.31	2.14	3.19	2.10	0.099	650	580	**167.2** 367.8
23168	**340** 13.386	**580** 22.835	**190** 7.48	**4110** 924000	**6830** 1540000	EMB	**4** 0.16	**397** 15.6	**526** 20.7	0.30	2.22	3.30	2.17	0.103	590	530	**210.3** 462.7
23172	**360** 14.173	**600** 23.622	**192** 7.559	**4250** 956000	**7280** 1640000	EMB	**4** 0.16	**419** 16.5	**546** 21.5	0.29	2.29	3.42	2.24	0.106	560	500	**222.1** 488.6
23176	**380** 14.961	**620** 24.409	**194** 7.638	**4490** 1010000	**7580** 1700000	EMB	**4** 0.16	**431** 17	**566** 22.3	0.30	2.28	3.39	2.23	0.109	530	470	**232.6** 511.7
23180	**400** 15.748	**650** 25.591	**200** 7.874	**4770** 1070000	**8110** 1820000	EMB	**5** 0.2	**454** 17.9	**594** 23.4	0.29	2.32	3.46	2.27	0.11	500	450	**261.6** 575.5

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See engineering section for instructions on use.
[3]Geometry constant for Lubrication Life Factor a31 is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Where EJ and EM/EMB have different load ratings, the more conservative one was taken to use for both assemblies.
NOTE: Tolerance and shaft diameters are shown in tables E-2 and E-3 on pages E-5 and E-6 as variances from nominal bearing bore.

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232 SERIES (500, 600 SERIES SNT, FSNT)

- Bearings are available with a tapered bore for adapter-type mounting. To order, add the suffix K to bearing number (e.g., 23120K).
- Consult your Timken engineer and www.timken.com for up-to-date information about the availability of the bearings you have selected.
- This section lists spherical roller bearings pertinent to Timken SNT plummer blocks. For a wider selection, consult www.timken.com or the Timken® Spherical Roller Bearing catalog (order no. 10446).



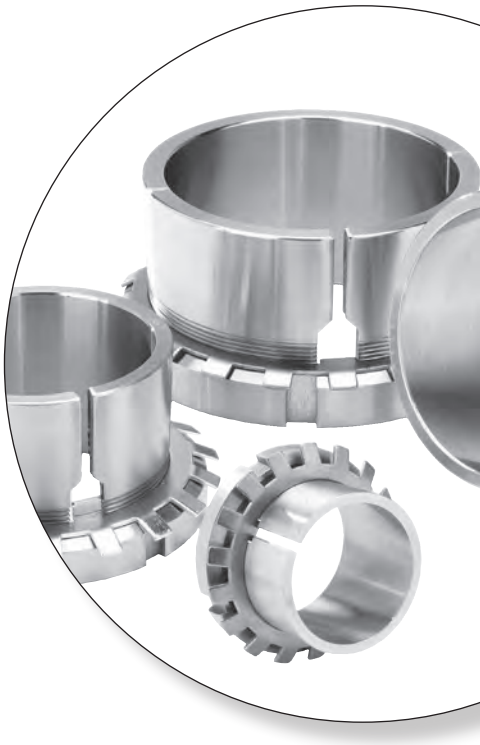
EJ EM/YM EMB/YMB

Bearing Part No.	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors[2]				Geometry Factor[3]	Thermal Speed Ratings[4]		Wt.
											Dynamic		Static				
	Bore d	O.D. D	Width B	Dynamic C	Static C_o		Fillet[1] (Max.) R	Backing Dia. Shaft d_a	Backing Dia. Housing D_a	e	$\frac{F_a}{F_r} \le e$ X = 1 Y	$\frac{F_a}{F_r} > e$ X = 0.67 Y	In All Cases Y_0	C_g	Oil	Grease	
	mm in.	mm in.	mm in.	kN lbf.	kN lbf.		mm in.	mm in.	mm in.						RPM	RPM	kg lbs.
23218	**90** 3.5433	**160** 6.2992	**52.4** 2.063	**436** 98000	**521** 117000	EJ/EM	**2** 0.08	**107** 4.2	**147** 5.8	0.3	2.28	3.4	2.23	0.074	3000	2600	**4.5** 9.9
23220	**100** 3.937	**180** 7.0866	**60.3** 2.374	**554** 124000	**678** 152000	EJ/EM	**2** 0.08	**119** 4.7	**164** 6.5	0.3	2.22	3.3	2.17	0.079	2700	2300	**6.6** 14.5
23222	**110** 4.3307	**200** 7.874	**69.8** 2.748	**710** 160000	**887** 199000	EJ/EM	**2** 0.08	**131** 5.2	**182** 7.2	0.32	2.11	3.14	2.06	0.085	2300	2000	**9.6** 21.1
23224	**120** 4.7244	**215** 8.4646	**76** 2.9921	**824** 185000	**1040** 234000	EJ/EM	**2** 0.08	**142** 5.6	**197** 7.7	0.32	2.1	3.13	2.05	0.075	2100	1800	**11.8** 26.0
23226	**130** 5.1181	**230** 9.0551	**80** 3.1496	**915** 206000	**1170** 262000	EJ/EM	**2.5** 0.1	**153** 6	**211** 8.3	0.32	2.14	3.19	2.09	0.079	1900	1700	**14.0** 30.8
23228	**140** 5.5118	**250** 9.8425	**88** 3.4646	**1090** 246000	**1410** 317000	EJ/EM	**2.5** 0.1	**165** 6.5	**229** 9	0.32	2.11	3.13	2.06	0.083	1700	1500	**18.5** 40.7
23230	**150** 5.9055	**270** 10.6299	**96** 3.7795	**1270** 286000	**1660** 372000	EJ/EM	**2.5** 0.1	**178** 7	**247** 9.7	0.32	2.08	3.1	2.04	0.087	1500	1400	**23.8** 52.4
23232	**160** 6.2992	**290** 11.4173	**104** 4.0945	**1470** 330000	**1940** 435000	EJ/EM	**2.5** 0.1	**190** 7.5	**264** 10.4	0.33	2.06	3.06	2.01	0.091	1400	1200	**30.0** 66.0
23234	**170** 6.6929	**310** 12.2047	**110** 4.3307	**1660** 373000	**2200** 494000	EM	**3** 0.12	**202** 8	**281** 11.1	0.33	2.08	3.09	2.03	0.094	1200	1100	**36.6** 80.5

[1]Maximum shaft or housing fillet radius that bearing corners will clear.
[2]These factors apply for both inch and metric calculations. See engineering section for instructions on use.
[3]Geometry constant for Lubrication Life Factor a_{31} is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).
[4]See thermal speed ratings in the Engineering Manual (order no. 10424).
NOTE: Where EJ and EM/EMB have different load ratings, the more conservative one was taken to use for both assemblies.
NOTE: Tolerance and shaft diameters are shown in tables E-2 and E-3 on pages E-5 and E-6 as variances from nominal bearing bore.

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SNT SPHERICAL ROLLER BEARING METRIC ACCESSORIES

Spherical roller bearing accessories are manufactured to the same quality standards as our bearings, ensuring a secure fit to both straight and stepped shafts.

- **Sizes**: Accessories are available for metric and inch shaft sizes from 20 mm to 400 mm.
- **Features**: Extensive product range, including hydraulic assist, for integration into a full range of industrial applications.
- **Benefits**: Supports full range of installation and removal needs, minimizing the chance for damage to the bearing.

Nomenclature E-80
Accessories Prefixes and Suffixes E-81
Metric Accessories Index E-82
Metric H Adapter Sleeves E-86
Metric OH Hydraulic Adapter Sleeves E-90
Metric Locknuts E-94
Metric Lockwashers E-99
Metric Lockplates E-101

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NOMENCLATURE

Timken provides accessories for your every need. To complement our line of Timken® spherical roller bearings, we offer bearing sleeves and locking devices in a wide range of sizes. These accessories are manufactured to the same quality standards as our bearings, ensuring a secure fit to straight and stepped shafts. Available in sizes up to 1000 mm, bearing sleeves are available in two distinct designs: assembled adapter sleeves and withdrawal sleeves. Reference the Timken Spherical Roller Bearing Catalog (order no. 10446) for the full listing of accessories.

ADAPTER SLEEVES

Timken adapter sleeves are used in conjunction with a nut and locking device to mount a tapered bore bearing onto a straight shaft using a pull-type fit. Smaller size assemblies (20 mm–200 mm shaft) commonly use simple nuts, whereas larger assemblies (sizes >200 mm) may use HMV hydraulic nuts to assist in mounting. Tables E-21 and E-22 outline our part number nomenclature, which is consistent with world standards for adapter sleeves.

TABLE E-21. METRIC ADAPTER SLEEVES (H, OH) FOR METRIC SHAFT SIZES ARE SUPPLIED WITH CORRESPONDING LOCKNUT AND LOCKING DEVICE

Sleeve	Locknut	Locking Device
H standard metric/OH hydraulic assist	KM, KML, HM	MB, MBL, MS

TABLE E-22. METRIC ADAPTER SLEEVES (HA, HE) FOR INCH SHAFT SIZES ARE SUPPLIED WITH CORRESPONDING LOCKNUT AND LOCKING DEVICE

Sleeve	Locknut	Locking Device
HE standard inch (English Standard) HA standard inch (American Standard)	KM, KML	MB, MBL

WITHDRAWAL SLEEVES

Withdrawal sleeves feature a push-type mounting arrangement and a locking device (i.e., locknut or lockplate) to secure a bearing to a shaft. This design is not as widely used as the adapter sleeve assembly, and it does require the use of a specially designed dismounting nut. The Timken part number nomenclature for withdrawal sleeves also conforms to industry-accepted standards. Nuts are not supplied with the withdrawal sleeve and must be ordered separately. The dismounting of large assemblies can be eased by using a hydraulic nut (HMV).

TABLE E-23. METRIC WITHDRAWAL SLEEVE FOR METRIC SHAFT SIZES

Sleeve	Dismounting Nut	Hydraulic Nut
AH standard metric/AOH hydraulic assist	KM, HM	HMV

LOCKING DEVICE

Timken offers a wide range of locknuts to locate bearing assemblies on application shafts. Sometimes referred to as shaft or withdrawal nuts, they are used to secure the assembly onto, and sometimes aid with the removal from the shaft.

LOCKWASHERS (MB, MBL AND W)

Locking washers are designed to secure the relative movement of a properly positioned locknut, so that a bearing and adapter sleeve remain tightly fitted to a shaft or a bearing remains secure against a shaft shoulder. The tab in the bore of the washer engages a keyway in the shaft or slot in the adapter sleeve. There are tabs on the O.D. of the washer that can be bent over into slots on the circumference of the locknut. Locking washers are used with locknuts in the KM and KML series.

LOCKPLATES (MS)

Lockplates are bolted onto the outboard face of the locknut and fit into a keyway machined in the shaft or a slot in the adapter sleeve.

- MS series are mounted on metric shafts sizes with HM locknuts.

To learn more about our spherical roller bearing accessories, contact your Timken engineer. Standard suffixes and prefixes are found on page E-81.

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ACCESSORIES PREFIXES AND SUFFIXES

Prefix	Suffix	Part Description	Full Description
AH		Withdrawal sleeve	Withdrawal sleeve
AHX		Withdrawal sleeve	Withdrawal sleeve – modified
AOH		Withdrawal sleeve – hydraulic	Withdrawal sleeve with oil hole on nut end
AOHX		Withdrawal sleeve – hydraulic	Withdrawal sleeve – modified with oil hole on nut end
H		Adapter sleeve – metric	Adapter sleeve
HA		Adapter sleeve metric – inch shaft	Metric adapter sleeves for shafts with inch dimensions (American Standards)
HE		Adapter sleeve metric – inch shaft	Metric adapter sleeves for shafts with inch dimensions (English Standards)
KM		Locknut	Locknut
KML		Locknut	Locknut – light; smaller outside diameter
HM		Locknut	Locknut/removal nut
HML		Locknut	Locknut/removal nut – light
HME		Locknut	Locknut/removal nut – with locking screw
HM….T		Locknut	Locknut/removal nut
HML….T		Locknut	Locknut/removal nut – light
HMLL… .T		Locknut	Locknut/removal nut – super light
MB		Lockwasher	Lockwasher
MBL		Lockwasher	Lockwasher – light
MS		Lock clip	Locking clip
	G	Sleeve	Thread pitch diameter changed to ISO standard
	H	Locknut	Additional threaded holes on locknut for locking screws (no screws)
	HS	Locknut	Additional threaded holes on locknut for locking screws and screws
OH		Adapter sleeve – hydraulic	Adapter sleeve with oil hole on large end (opposite to the threaded end)
OH..	H	Adapter sleeve – hydraulic	Adapter sleeve with oil hole on nut end – standard design
OH..	HB	Adapter sleeve – hydraulic	Adapter sleeve with grooves and oil hole or two holes for bigger sizes on nut end
OH..	B	Adapter sleeve – hydraulic	Adapter sleeve with grooves and oil hole or two holes for bigger sizes on large end (opposite to the threaded end)
OH..	S	Adapter sleeve – hydraulic	Adapter sleeve with oil hole on large end (opposite to the threaded end) plus nut with eight threaded holes
OH..	BS	Adapter sleeve – hydraulic	Adapter sleeve with grooves and oil hole or two holes for bigger sizes on large end (opposite to the threaded end) plus nut with eight threaded holes

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METRIC ACCESSORIES INDEX

Bearing Bore	Bearing Part No.	Adapter Sleeve		Withdrawal Sleeve	
mm		Metric Shaft	Hydraulic Metric Shaft	Metric Shaft	Hydraulic Metric Shaft
25	22205K	H305			
30	22206K	H306			
35	22207K	H307			
40	21308K	H308		AH308	
40	22208K	H308		AH308	
40	22308K	H2308		AH2308	
45	21309K	H309		AH309	
45	22209K	H309		AH309	
45	22309K	H2309		AH2309	
50	21310K	H310		AHX310	
50	22210K	H310		AHX310	
50	22310K	H2310		AHX2310	
55	21311K	H311		AHX311	
55	22211K	H311		AHX311	
55	22311K	H2311		AHX2311	
60	21312K	H312		AHX312	
60	22212K	H312		AHX312	
60	22312K	H2312		AHX2312	
65	21313K	H313		AH313G	
65	22213K	H313		AH313G	
65	22313K	H2313		AH2313G	
70	21314K	H314		AH314G	
70	22214K	H314		AH314G	
70	22314K	H2314		AHX2314G	
75	21315K	H315		AH315G	
75	22215K	H315		AH315G	
75	22315K	H2315		AHX2315G	
80	21316K	H316		AH316	
80	22216K	H316		AH316	
80	22316K	H2316		AHX2316	
85	21317K	H317		AHX317	
85	22217K	H317		AHX317	
85	22317K	H2317		AHX2317	
90	21318K	H318		AHX318	
90	22218K	H318		AHX318	
90	22318K	H2318		AHX2318	
90	23218K	H2318		AHX3218	
95	22219K	H319		AHX319	
95	22319K	H2319		AHX2319	
100	22220K	H320		AHX320	
100	22320K	H2320		AHX2320	
100	23120K	H3120		AHX3120	
100	23220K	H2320		AHX3220	
105	23221K	H2321			
110	22222K	H322		AHX3122	
110	22322K	H2322		AHX2322G	
110	23022K	H322		AHX322	
110	23122K	H3122		AHX3122	

Continued on next page.

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Continued from previous page.

Bearing Bore	Bearing Part No.	Adapter Sleeve		Withdrawal Sleeve	
mm		Metric Shaft	Hydraulic Metric Shaft	Metric Shaft	Hydraulic Metric Shaft
110	23222K	H2322		AHX3222G	
110	24122K			AH24122	
120	22224K	H3124		AHX3124	
120	22324K	H2324		AHX2324G	
120	23024K	H3024		AHX3024	
120	23124K	H3124		AHX3124	
120	23224K	H2324		AHX3224G	
120	24024K			AH24024	
120	24124K			AH24124	
130	22226K	H3126		AHX3126	
130	22326K	H2326		AHX2326G	
130	23026K	H3026		AHX3026	
130	23126K	H3126		AHX3126	
130	23226K	H2326		AHX3226G	
130	23926K	H3926			
130	24026K			AH24026	
130	24126K			AH24126	
140	22228K	H3128		AHX3128	
140	22328K	H2328		AHX2328G	
140	23028K	H3028		AHX3028	
140	23128K	H3128		AHX3128	
140	23228K	H2328		AHX3228G	
140	23928K	H3928			
140	24028K			AH24028	
140	24128K			AH24128	
150	22230K	H3130		AHX3130G	
150	22330K	H2330		AHX2330G	
150	23030K	H3030		AHX3030	
150	23130K	H3130		AHX3130G	
150	23230K	H2330		AHX3230G	
150	23930K	H3930			
150	24030K			AH24030	
150	24130K			AH24130	
160	22232K	H3132	OH3132H	AH3132G	AOH3132G
160	22332K	H2332	OH2332H	AH2332G	AOH2332G
160	23032K	H3032	OH3032H	AH3032	
160	23132K	H3132	OH3132H	AH3132G	AOH3132G
160	23232K	H2332	OH2332H	AH3232G	AOH3232G
160	23932K	H3932	OH3932H		
160	24032K			AH24032	
160	24132K			AH24132	
170	22234K	H3134	OH3134H	AH3134G	AOH3134G
170	22334K	H2334	OH2334H	AH2334G	AOH2334G
170	23034K	H3034	OH3034H	AH3034	
170	23134K	H3134	OH3134H	AH3134G	AOH3134G
170	23234K	H2334	OH2334H	AH3234G	AOH3234G
170	23934K	H3934	OH3934H	AH3934	AOH3934
170	24034K			AH24034	

Continued on next page.

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METRIC ACCESSORIES INDEX – *continued*

Bearing Bore	Bearing Part No.	Adapter Sleeve		Withdrawal Sleeve	
mm		Metric Shaft	Hydraulic Metric Shaft	Metric Shaft	Hydraulic Metric Shaft
170	24134K			AH24134	
180	22236K	H3136	OH3136H	AH2236G	AOH2236G
180	22336K	H2336	OH2336H	AH2336G	AOH2336G
180	23036K	H3036	OH3036H	AH3036	AOH3036
180	23136K	H3136	OH3136H	AH3136G	AOH3136G
180	23236K	H2336	OH2336H	AH3236G	AOH3236G
180	23936K	H3936	OH3936H	AH3936	AOH3936
180	24036K			AH24036	
180	24136K			AH24136	
190	22238K	H3138	OH3138H	AH2238G	AOH2238G
190	22338K	H2338	OH2338H	AH2338G	AOH2338G
190	23038K	H3038	OH3038H	AH3038G	AOH3038G
190	23138K	H3138	OH3138H	AH3138G	AOH3138G
190	23238K	H2338	OH2338H	AH3238G	AOH3238G
190	23938K	H3938	OH3938H	AH3938	AOH3938
190	24038K			AH24038	
190	24138K			AH24138	
200	22240K	H3140	OH3140H	AH2240	AOH2240
200	22340K	H2340	OH2340H	AH2340	AOH2340
200	23040K	H3040	OH3040H	AH3040G	AOH3040G
200	23140K	H3140	OH3140H	AH3140	AOH3140
200	23240K	H2340	OH2340H	AH3240	AOH3240
200	23940K	H3940	OH3940H	AH3940	AOH3940
200	24040K			AH24040	
200	24140K			AH24140	
220	22244K	H3144	OH3144H	AH2244	AOH2244
220	22344K	H2344	OH2344H	AH2344	AOH2344
220	23044K	H3044	OH3044H	AH3044G	AOH3044G
220	23144K	H3144	OH3144H	AH3144	AOH3144
220	23244K	H2344	OH2344H	AH2344	AOH2344
220	23944K	H3944	OH3944H	AH3944	AOH3944
220	24044K			AH24044	AOH24044
220	24144K			AH24144	AOH24144
240	22248K	H3148	OH3148H	AH2248	AOH2248
240	22348K	H2348	OH2348H	AH2348	AOH2348
240	23048K	H3048	OH3048H	AH3048	AOH3048
240	23148K	H3148	OH3148H	AH3148	AOH3148
240	23248K	H2348	OH2348H	AH2348	AOH2348
240	23948K	H3948	OH3948H	AH3948	AOH3948
240	24048K			AH24048	AOH24048
240	24148K			AH24148	AOH24148
260	22252K	H3152	OH3152H	AH2252G	AOH2252G
260	22352K	H2352	OH2352H	AH2352G	AOH2352G
260	23052K	H3052	OH3052H	AH3052	AOH3052
260	23152K	H3152	OH3152H	AH3152G	AOH3152G
260	23252K	H2352	OH2352H	AH2352G	AOH2352G
260	23952K	H3952	OH3952H	AH3952	AOH3952
260	24052K				AOH24052G

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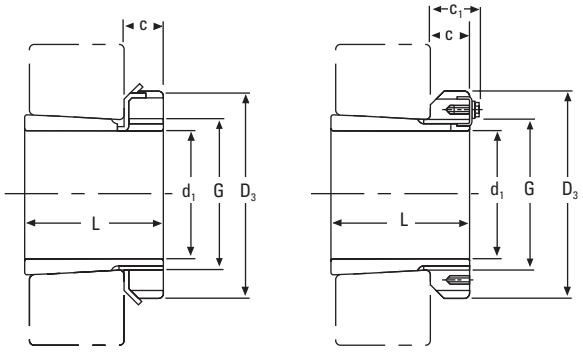
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Bearing Bore	Bearing Part No.	Adapter Sleeve		Withdrawal Sleeve	
mm		Metric Shaft	Hydraulic Metric Shaft	Metric Shaft	Hydraulic Metric Shaft
260	24152K			AH24152	AOH24152
280	22256K	H3156	OH3156H	AH2256G	AOH2256G
280	22356K	H2356	OH2356H	AH2356G	AOH2356G
280	23056K	H3056	OH3056H	AH3056	AOH3056
280	23156K	H3156	OH3156H	AH3156G	AOH3156G
280	23256K	H2356	OH2356H	AH2356G	AOH2356G
280	23956K	H3956	OH3956H	AH3956	AOH3956
280	24056K				AOH24056G
280	24156K			AH24156	AOH24156
300	22260K	H3160	OH3160H	AH2260G	AOH2260G
300	23060K	H3060	OH3060H	AH3060	AOH3060
300	23160K	H3160	OH3160H	AH3160G	AOH3160G
300	23260K	H3260	OH3260H	AH3260G	AOH3260G
300	23960K	H3960	OH3960H	AH3960	AOH3960
300	24060K				AOH24060G
300	24160K			AH24160	AOH24160
320	22264K	H3164	OH3164H	AH2264G	AOH2264G
320	23064K	H3064	OH3064H	AH3064G	AOH3064G
320	23164K	H3164	OH3164H	AH3164G	AOH3164G
320	23264K	H3264	OH3264H	AH3264G	AOH3264G
320	23964K	H3964	OH3964H	AH3964	AOH3964
320	24064K				AOH24064G
320	24164K			AH24164	AOH24164
340	23068K	H3068	OH3068H	AH3068G	AOH3068G
340	23168K	H3168	OH3168H	AH3168G	AOH3168G
340	23268K	H3268	OH3268H	AH3268G	AOH3268G
340	23968K	H3968	OH3968H	AH3968	AOH3968
340	24068K			AH24068	AOH24068
340	24168K			AH24168	AOH24168
360	23072K	H3072	OH3072H	AH3072G	AOH3072G
360	23172K	H3172	OH3172H	AH3172G	AOH3172G
360	23272K	H3272	OH3272H	AH3272G	AOH3272G
360	23972K	H3972	OH3972H	AH3972	AOH3972
360	24072K			AH24072	AOH24072
360	24172K			AH24172	AOH24172
380	23076K	H3076	OH3076H	AH3076G	AOH3076G
380	23176K	H3176	OH3176H	AH3176G	AOH3176G
380	23276K	H3276	OH3276H	AH3276G	AOH3276G
380	23976K	H3976	OH3976H	AH3976	AOH3976
380	24076K			AH24076	AOH24076
380	24176K			AH24176	AOH24176
400	22380K	H3280	OH3280H	AH3280G	AOH3280G
400	23080K	H3080	OH3080H	AH3080G	AOH3080G
400	23180K	H3180	OH3180H	AH3180G	AOH3180G
400	23280K	H3280	OH3280H	AH3280G	AOH3280G
400	23980K	H3980	OH3980H	AH3980	AOH3980
400	24080K			AH24080	AOH24080
400	24180K			AH24180	AOH24180

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METRIC H ADAPTER SLEEVES

- Effective tapered bore bearing assembly.
- Includes mounting sleeve, locknut and lockwasher or lockplate.
- Other dimensions may be available, consult your Timken engineer.



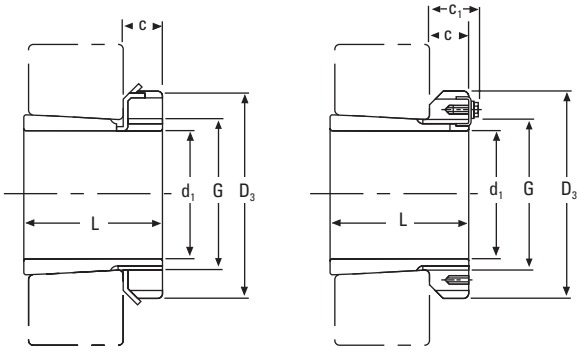
$d_1 \leq$ 180 mm **$d_1 \geq$ 200 mm**

d_1	Sleeve Part No.[1]	L	C	Thread[2] G	D_3	C_1	Weight	Locknuts	Lockwasher and Lockplates	Appropriate Hydraulic Nut
mm		mm	mm	mm	mm	mm	kg			
20	H305	29	8	M 25x1.5	38	–	0.17	KM5	MB5	–
25	H306	31	8	M 30x1.5	45	–	0.24	KM6	MB6	–
30	H307	35	9	M 35x1.5	52	–	0.31	KM7	MB7	–
35	H308	36	10	M 40x1.5	58	–	0.42	KM8	MB8	–
35	H2308	46	10	M 40x1.5	58	–	0.22	KM8	MB8	–
40	H309	39	11	M 45x1.5	65	–	0.55	KM9	MB9	–
40	H2309	50	11	M 45x1.5	65	–	0.28	KM9	MB9	–
45	H310	42	12	M 50x1.5	70	–	0.67	KM10	MB10	HMV10
45	H2310	55	12	M 50x1.5	70	–	0.36	KM10	MB10	HMV10
50	H311	45	12	M 55x2	75	–	0.76	KM11	MB11	HMV11
50	H2311	59	12	M 55x2	75	–	0.42	KM11	MB11	HMV11
55	H312	47	13	M 60x2	80	–	0.87	KM12	MB12	HMV12
55	H2312	62	13	M 60x2	80	–	0.48	KM12	MB12	HMV12
60	H313	50	14	M 65x2	85	–	1.01	KM13	MB13	HMV13
60	H314	52	14	M 70x2	92	–	1.59	KM14	MB14	HMV14
60	H2313	65	14	M 65x2	85	–	0.56	KM13	MB13	HMV13
60	H2314	68	14	M 70x2	92	–	0.90	KM14	MB14	HMV14
65	H315	55	15	M 75x2	98	–	1.83	KM15	MB15	HMV15
65	H2315	73	15	M 75x2	98	–	1.05	KM15	MB15	HMV15
70	H316	59	17	M 80x2	105	–	2.27	KM16	MB16	HMV16
70	H2316	78	17	M 80x2	105	–	1.28	KM16	MB16	HMV16
75	H317	63	18	M 85x2	110	–	2.60	KM17	MB17	HMV17
75	H2317	82	18	M 85x2	110	–	1.45	KM17	MB17	HMV17
80	H318	65	18	M 90x2	120	–	3.02	KM18	MB18	HMV18
80	H2318	86	18	M 90x2	120	–	1.69	KM18	MB18	HMV18
85	H319	68	19	M 95x2	125	–	3.44	KM19	MB19	HMV19
85	H2319	90	19	M 95x2	125	–	1.92	KM19	MB19	HMV19
90	H320	71	20	M 100x2	130	–	3.73	KM20	MB20	HMV20
90	H3120	76	20	M 100x2	130	–	1.80	KM20	MB20	HMV20
90	H2320	97	20	M 100x2	130	–	2.15	KM20	MB20	HMV20

[1]Adapter sleeves are supplied complete with locknuts and lockwasher or lockplates.
[2]M means metric thread and the digits are major diameter of thread and pitch.
NOTE: Sleeves are not sold separately.

Continued on next page.

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$d_1 \leq$ 180 mm $d_1 \geq$ 200 mm

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d_1	Sleeve Part No.[1]	L	C	Thread[2] G	D_3	C_1	Weight	Locknuts	Lockwasher and Lockplates	Appropriate Hydraulic Nut
mm		**mm**	**mm**	**mm**	**mm**	**mm**	**kg**			
95	H321	**74**	**20**	**M 105x2**	**140**	–	**4.30**	KM 21	MB21	HMV21
95	H2321	**101**	**20**	**M 105x2**	**140**	–	**2.46**	KM21	MB21	HMV21
100	H322	**77**	**21**	**M 110x2**	**145**	–	**4.81**	KM22	MB22	HMV22
100	H3122	**81**	**21**	**M 110x2**	**145**	–	**2.25**	KM22	MB22	HMV22
100	H2322	**105**	**21**	**M 110x2**	**145**	–	**2.74**	KM22	MB22	HMV22
110	H3024	**72**	**22**	**M 120x2**	**145**	–	**1.93**	KML24	MBL24	HMV24
110	H3124	**88**	**22**	**M 120x2**	**155**	–	**2.64**	KM24	MB24	HMV24
110	H2324	**112**	**22**	**M 120x2**	**155**	–	**3.19**	KM24	MB24	HMV24
115	H3926	**65**	**23**	**M 130x2**	**155**	–	**2.40**	KML26	MBL26	HMV26
115	H3026	**80**	**23**	**M 130x2**	**155**	–	**2.85**	KML26	MBL26	HMV26
115	H3126	**92**	**23**	**M 130x2**	**165**	–	**3.66**	KM26	MB26	HMV26
115	H2326	**121**	**23**	**M 130x2**	**165**	–	**4.60**	KM26	MB26	HMV26
125	H3928	**66**	**24**	**M 140x2**	**165**	–	**2.70**	KML28	MBL28	HMV28
125	H3028	**82**	**24**	**M 140x2**	**165**	–	**3.16**	KML28	MBL28	HMV28
125	H3128	**97**	**24**	**M 140x2**	**180**	–	**4.34**	KM28	MB28	HMV28
125	H2328	**131**	**24**	**M 140x2**	**180**	–	**5.55**	KM28	MB28	HMV28
135	H3930	**76**	**26**	**M 150x2**	**180**	–	**3.60**	KML30	MBL30	HMV30
135	H3030	**87**	**26**	**M 150x2**	**180**	–	**3.89**	KML30	MBL30	HMV30
135	H3130	**111**	**26**	**M 150x2**	**195**	–	**5.52**	KM30	MB30	HMV30
135	H2330	**139**	**26**	**M 150x2**	**195**	–	**6.63**	KM30	MB30	HMV30
140	H3932	**78**	**27.5**	**M 160x3**	**190**	–	**4.60**	KML32	MBL32	HMV32
140	H3032	**93**	**27.5**	**M 160x3**	**190**	–	**5.21**	KML32	MBL32	HMV32
140	H3132	**119**	**28**	**M 160x3**	**210**	–	**7.67**	KM32	MB32	HMV32
140	H2332	**147**	**28**	**M 160x3**	**210**	–	**9.14**	KM32	MB32	HMV32
150	H3934	**79**	**27.5**	**M 170x3**	**200**	–	**5.00**	KML34	MBL34	HMV34
150	H3034	**101**	**28.5**	**M 170x3**	**200**	–	**5.99**	KML34	MBL34	HMV34
150	H3134	**122**	**29**	**M 170x3**	**220**	–	**8.38**	KM34	MB34	HMV34
150	H2334	**154**	**29**	**M 170x3**	**220**	–	**10.20**	KM34	MB34	HMV34

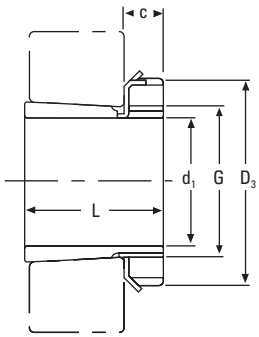
[1]Adapter sleeves are supplied complete with locknuts and lockwasher or lockplates.
[2]M means metric thread and the digits are major diameter of thread and pitch.
NOTE: Sleeves are not sold separately.

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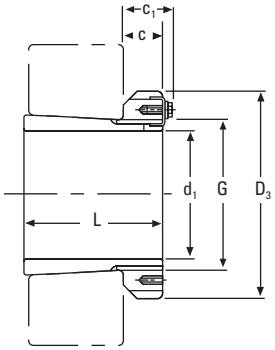
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METRIC H ADAPTER SLEEVES – *continued*

- Effective tapered bore bearing assembly.
- Includes mounting sleeve, locknut and lockwasher or lockplate.
- Other dimensions may be available, consult your Timken engineer.



$d_1 \leq$ 180 mm



$d_1 \geq$ 200 mm

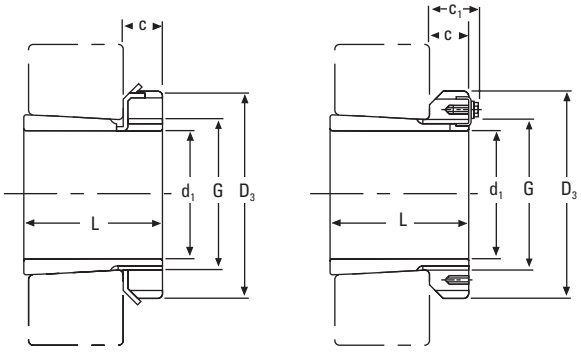
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d_1	Sleeve Part No.[1]	L	C	Thread[2][3] G	D_3	C_1	Weight	Locknuts	Lockwasher and Lockplates	Appropriate Hydraulic Nut
mm		mm	mm	mm	mm	mm	kg			
160	H3936	87	29.5	M 180x3	210	–	5.70	KML36	MBL36	HMV36
160	H3036	109	29.5	M 180x3	210	–	6.83	KML36	MBL36	HMV36
160	H3136	131	30	M 180x3	230	–	9.50	KM36	MB36	HMV36
160	H2336	161	30	M 180x3	230	–	11.30	KM36	MB36	HMV36
170	H3938	89	30.5	M 190x3	220	–	6.19	KML38	MBL38	HMV38
170	H3038	112	30.5	M 190x3	220	–	7.45	KML38	MBL38	HMV38
170	H3138	141	31	M 190x3	240	–	10.80	KM38	MB38	HMV38
170	H2338	169	31	M 190x3	240	–	12.60	KM38	MB38	HMV38
180	H3940	98	31.5	M 200x3	240	–	7.89	KML40	MBL40	HMV40
180	H3040	120	31.5	M 200x3	240	–	9.19	KML40	MBL40	HMV40
180	H3140	150	32	M 200x3	250	–	12.10	KM40	MB40	HMV40
180	H2340	176	32	M 200x3	250	–	13.90	KM40	MB40	HMV40
200	H3944	96	30	Tr 220x4	260	41	8.16	HM3044	MS3044	HMV44
200	H3044	126	30	Tr 220x4	260	41	10.30	HM3044	MS3044	HMV44
200	H3144	161	35	Tr 220x4	280	–	15.10	HM44T	MB44	HMV44
200	H2344	186	35	Tr 220x4	280	–	17.00	HM44T	MB44	HMV44
220	H3948	101	34	Tr 240x4	290	46	11.00	HM3048	MS3048	HMV48
220	H3048	133	34	Tr 240x4	290	46	13.20	HM3048	MS3048	HMV48
220	H3148	172	37	Tr 240x4	300	–	17.60	HM48T	MS48	HMV48
220	H2348	199	37	Tr 240x4	300	–	20.00	HM48T	MS48	HMV48
240	H3952	116	34	Tr 260x4	310	46	12.80	HM3052	MS3052	HMV52
240	H3052	145	34	Tr 260x4	310	46	15.30	HM3052	MS3052	HMV52
240	H3152	190	39	Tr 260x4	330	–	22.30	HM52T	MB52	HMV52
240	H2352	211	39	Tr 260x4	330	–	24.50	HM52T	MB52	HMV52
260	H3956	121	38	Tr 280x4	330	50	15.30	HM3056	MS3056	HMV56
260	H3056	152	38	Tr 280x4	330	50	17.70	HM3056	MS3056	HMV56
260	H3156	195	41	Tr 280x4	350	–	25.10	HM56T	MB56	HMV56
260	H2356	224	41	Tr 280x4	350	–	28.40	HM56T	MB56	HMV56
280	H3960	140	42	Tr 300x4	360	54	20.00	HM3060	MS3060	HMV60
280	H3060	168	42	Tr 300x4	360	54	22.80	HM3060	MS3060	HMV60
280	H3160	208	40	Tr 300x4	380	53	30.20	HM3160	MS3160	HMV60
280	H3260	240	40	Tr 300x4	380	53	34.10	HM3160	MS3160	HMV60
300	H3964	140	42	Tr 320x5	380	55	21.50	HM3064	MS3064	HMV64
300	H3064	171	42	Tr 320x5	380	55	24.60	HM3064	MS3064	HMV64
300	H3164	226	42	Tr 320x5	400	56	34.90	HM3164	MS3164	HMV64
300	H3264	258	42	Tr 320x5	400	56	39.30	HM3164	MS3164	HMV64

[1]Adapter sleeves are supplied complete with locknuts and lockwasher or lockplates.
[2]M means metric thread and the digits are major diameter of thread and pitch.
[3]Tr means 30°. Trapezoid thread and the digits are outside diameter of thread and pitch.
NOTE: Sleeves are not sold separately.

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$d_1 \leq$ 180 mm $d_1 \geq$ 200 mm

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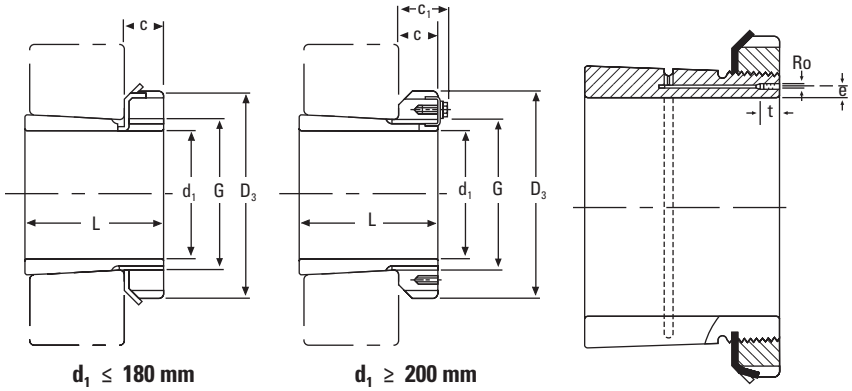
d_1	Sleeve Part No.[1]	L	C	Thread[2] G	D_3	C_1	Weight	Locknuts	Lockwasher and Lockplates	Appropriate Hydraulic Nut
mm		mm	mm	mm	mm	mm	kg			
320	H3968	144	45	Tr 340x5	400	58	24.50	HM3068	MS3068	HMV68
320	H3068	187	45	Tr 340x5	400	58	28.70	HM3068	MS3068	HMV68
320	H3168	254	55	Tr 340x5	440	72	50.00	HM3168	MS3168	HMV68
320	H3268	288	55	Tr 340x5	440	72	54.60	HM3168	MS3168	HMV68
340	H3972	144	45	Tr 360x5	420	58	25.20	HM3072	MS3072	HMV72
340	H3072	188	45	Tr 360x5	420	58	30.50	HM3072	MS3072	HMV72
340	H3172	259	58	Tr 360x5	460	75	56.00	HM3172	MS3172	HMV72
340	H3272	299	58	Tr 360x5	460	75	60.60	HM3172	MS3172	HMV72
360	H3976	164	48	Tr 380x5	450	62	31.50	HM3076	MS3076	HMV76
360	H3076	193	48	Tr 380x5	450	62	35.80	HM3076	MS3076	HMV76
360	H3176	264	60	Tr 380x5	490	77	61.70	HM3176	MS3176	HMV76
360	H3276	310	60	Tr 380x5	490	77	69.60	HM3176	MS3176	HMV76
380	H3980	168	52	Tr 400x5	470	66	35.00	HM3080	MS3080	HMV80
380	H3080	210	52	Tr 400x5	470	66	41.30	HM3080	MS3080	HMV80
380	H3180	272	62	Tr 400x5	520	82	73.00	HM3180	MS3180	HMV80
380	H3280	328	62	Tr 400x5	520	82	81.00	HM3180	MS3180	HMV80
400	H3984	168	52	Tr 420x5	490	66	36.60	HM3084	MS3084	HMV84
400	H3084	212	52	Tr 420x5	490	66	43.70	HM3084	MS3084	HMV84
400	H3184	304	70	Tr 420x5	540	90	84.20	HM3184	MS3184	HMV84
400	H3284	352	70	Tr 420x5	540	90	96.00	HM3184	MS3184	HMV84
410	H3988	189	60	Tr 440x5	520	77	58.00	HM3088	MS3088	HMV88
410	H3088	228	60	Tr 440x5	520	77	65.20	HM3088	MS3088	HMV88
410	H3188	307	70	Tr 440x5	560	90	104.00	HM3188	MS3188	HMV88
410	H3288	361	70	Tr 440x5	560	90	118.00	HM3188	MS3188	HMV88
430	H3992	189	60	Tr 460x5	540	77	60.00	HM3092	MS3092	HMV92
430	H3192	326	75	Tr 460x5	580	95	116.00	HM3192	MS3192	HMV92
430	H3292	382	75	Tr 460x5	580	95	134.00	HM3192	MS3192	HMC92
450	H3996	200	60	Tr 480x5	560	77	66.00	HM3096	MS3096	HMV96
450	H3296	397	75	Tr 480x5	620	95	153.00	HM3196	MS3196	HMV96

[1]Adapter sleeves are supplied complete with locknuts and lockwasher or lockplates.
[2]Tr means 30°. Trapezoid thread and the digits are outside diameter of thread and pitch.
NOTE: Sleeves are not sold separately.

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METRIC OH HYDRAULIC ADAPTER SLEEVES

- Includes sleeve, nut and lockwasher or lockplate.
- Hydraulic assistance facilitates mounting of large bearing. Oil pump required to inject pressurized oil.
- Other dimensions may be available, consult your Timken engineer.



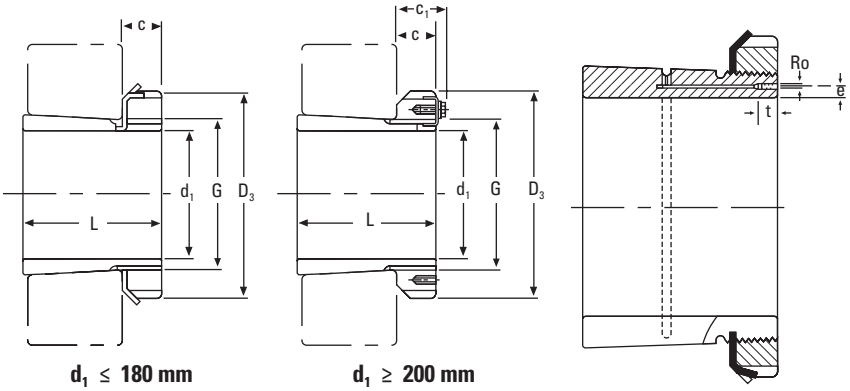
$d_1 \leq 180$ mm $\quad$ $d_1 \geq 200$ mm

d_1	Sleeve Part No.[1]	L	C	Thread[2][3] G	D_3	C_1[4]	Ro	e	t	Weight	Locknuts	Lockwasher and Lockplate	Appropriate Hydraulic Nut
mm		mm	mm	mm	mm	mm		mm	mm	kg			
140	OH3032H	93	27.5	M 160x3	190	–		4	7	5.21	KML32	MBL32	HMV32
140	OH3132H	119	28	M 160x3	210	–		4	7	7.67	KM32	MB32	HMV32
150	OH3034H	101	28.5	M 170x3	200	–		4	7	5.99	KML34	MBL34	HMV34
150	OH3134H	122	29	M 170x3	220	–		4	7	8.38	KM34	MB34	HMV34
160	OH3936H	87	29.5	M 180x3	210	–		4	7	5.70	KML36	MBL36	HMV36
160	OH3036H	109	29.5	M 180x3	210	–		4	7	6.83	KML36	MBL36	HMV36
160	OH3136H	131	30	M 180x3	230	–		4	7	9.50	KM36	MB36	HMV36
170	OH3938H	89	30.5	M 190x3	220	–		4	7	6.19	KML38	MBL38	HMV38
170	OH3038H	112	30.5	M 190x3	220	–		4	7	7.45	KML38	MBL38	HMV38
170	OH3138H	141	31	M 190x3	240	–		4	7	10.80	KM38	MB38	HMV38
170	OH2338H	169	31	M 190x3	240	–		4	7	12.60	KM38	MB38	HMV38
180	OH3940H	98	31.5	M 200x3	240	–		4	7	7.89	KML40	MBL40	HMV40
180	OH3040H	120	31.5	M 200x3	240	–		4	7	9.19	KML40	MBL40	HMV40
180	OH3140H	150	32	M 200x3	250	–		4	7	12.10	KM40	MB40	HMV40
180	OH2340H	176	32	M 200x3	250	–		4	7	13.90	KM40	MB40	HMV40
200	OH3944H	96	30	Tr 220x4	260	41	M6	4	7	8.16	HM3044	MS3044	HMV44
200	OH3044H	126	30	Tr 220x4	260	41	M6	4	7	10.30	HM3044	MS3044	HMV44
200	OH3144H	161	35	Tr 220x4	280	–	M6	4	7	15.10	HM44T	MB44	HMV44
200	OH2344H	186	35	Tr 220x4	280	–	M6	4	7	17.00	HM44T	MB44	HMV44
220	OH3948H	101	34	Tr 240x4	290	46	M6	4	7	11.00	HM3048	MS3048	HMV48
220	OH3048H	133	34	Tr 240x4	290	46	M6	4	7	13.20	HM3048	MS3048	HMV48
220	OH3148H	172	37	Tr 240x4	300	–	M6	4	7	17.60	HM48T	MB48	HMV48
220	OH2348H	199	37	Tr 240x4	300	–	M6	4	7	20.00	HM48T	MB48	HMV48
240	OH3952H	116	34	Tr 260x4	310	46	M6	4	7	12.80	HM3052	MS3052	HMV52
240	OH3052H	145	34	Tr 260x4	310	46	M6	4	7	15.30	HM3052	MS3052	HMV52
240	OH3152H	190	39	Tr 260x4	330	–	M6	4	7	22.30	HM52T	MB52	HMV52
240	OH2352H	211	39	Tr 260x4	330	–	M6	4	7	24.50	HM52T	MB52	HMV52

[1]Hydraulic adapter sleeves are supplied complete with locknuts and lockwasher or lockplates.
[2]M means metric thread and the digits are major diameter of thread and pitch.
[3]Tr means 30°. Trapezoid thread and the digits are outside diameter of thread and pitch.
[4]Adapters with dimensions C_1 have a locking device as shown in the illustration.

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$d_1 \leq 180$ mm **$d_1 \geq 200$ mm**

d_1	Sleeve Part No.[1]	L	C	Thread[2] G	D_3	C_1[3]	Ro	e	t	Weight	Locknuts	Lockwasher and Lockplate	Appropriate Hydraulic Nut
mm		mm	mm	mm	mm	mm		mm	mm	kg			
260	OH3956H	121	38	Tr 280x4	330	50	M6	4	7	15.30	HM3056	MS3056	HMV56
260	OH3056H	152	38	Tr 280x4	330	50	M6	4	7	17.70	HM3056	MS3056	HMV56
260	OH3156H	195	41	Tr 280x4	350	–	M6	4	7	25.10	HM56T	MB56	HMV56
260	OH2356H	224	41	Tr 280x4	350	–	M6	4	7	28.40	HM56T	MB56	HMV56
280	OH3960H	140	42	Tr 300x4	360	54	M6	4	7	20.00	HM3060	MS3060	HMV60
280	OH3060H	168	42	Tr 300x4	360	54	M6	4	7	22.80	HM3060	MS3060	HMV60
280	OH3160H	208	40	Tr 300x4	380	53	M6	4	7	30.20	HM3160	MS3160	HMV60
280	OH3260H	240	40	Tr 300x4	380	53	M6	4	7	34.10	HM3160	MS3160	HMV60
300	OH3964H	140	42	Tr 320x5	380	55	M6	3.5	7	21.50	HM3064	MS3064	HMV64
300	OH3064H	171	42	Tr 320x5	380	55	M6	3.5	7	24.60	HM3064	MS3064	HMV64
300	OH3164H	226	42	Tr 320x5	400	56	M6	3.5	7	34.90	HM3164	MS3164	HMV64
300	OH3264H	258	42	Tr 320x54	400	56	M6	3.5	7	39.30	HM3164	MS3164	HMV64
320	OH3968H	144	45	Tr 340x5	400	58	M6	3.5	7	24.50	HM3068	MS3068	HMV68
320	OH3068H	187	45	Tr 340x5	400	58	M6	3.5	7	28.70	HM3068	MS3068	HMV68
320	OH3168H	254	55	Tr 340x5	440	72	M6	3.5	7	50.00	HM3168	MS3168	HMV68
320	OH3268H	288	55	Tr 340x5	440	72	M6	3.5	7	54.60	HM3168	MS3168	HMV68
340	OH3972H	144	45	Tr 360x5	420	58	M6	3.5	7	25.20	HM3072	MS3072	HMV72
340	OH3072H	188	45	Tr 360x5	420	58	M6	3.5	7	30.50	HM3072	MS3072	HMV72
340	OH3172H	259	58	Tr 360x5	460	75	M6	3.5	7	56.00	HM3172	MS3172	HMV72
340	OH3272H	299	58	Tr 360x5	460	75	M6	3.5	7	60.60	HM3172	MS3172	HMV72
360	OH3976H	164	48	Tr 380x5	450	62	M6	3.5	7	31.50	HM3076	MS3076	HMV76
360	OH3076H	193	48	Tr 380x5	450	62	M6	3.5	7	35.80	HM3076	MS3076	HMV76
360	OH3176H	264	60	Tr 380x5	490	77	M6	3.5	7	61.70	HM3176	MS3176	HMV76
360	OH3276H	310	60	Tr 380x5	490	77	M6	3.5	7	69.60	HM3176	MS3176	HMV76
380	OH3980H	168	52	Tr 400x5	470	66	M6	3.5	7	35.00	HM3080	MS3080	HMV80
380	OH3080H	210	52	Tr 400x5	470	66	M6	3.5	7	41.30	HM3080	MS3080	HMV80
380	OH3180H	272	62	Tr 400x5	520	82	M6	3.5	7	73.00	HM3180	MS3180	HMV80
380	OH3280H	328	62	Tr 400x5	520	82	M6	3.5	7	81.00	HM3180	MS3180	HMV80

[1]Hydraulic adapter sleeves are supplied complete with locknuts and lockwasher or lockplates.
[2]Tr means 30°. Trapezoid thread and the digits are outside diameter of thread and pitch.
[3]Adapters with dimensions C_1 have a locking device as shown in the illustration.

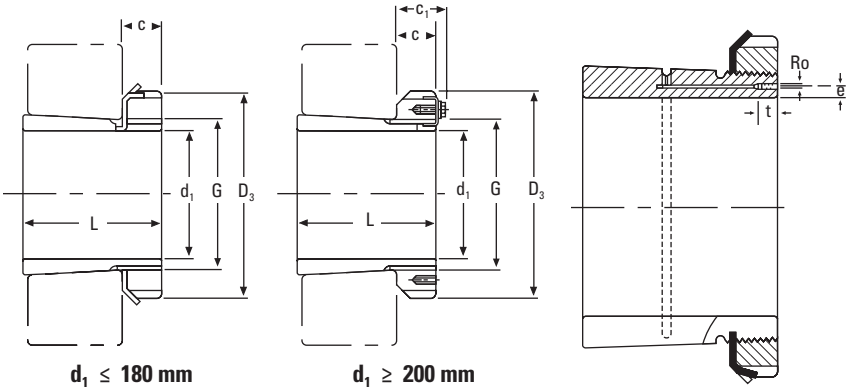
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METRIC OH HYDRAULIC ADAPTER SLEEVES – *continued*

- Includes sleeve, nut and lockwasher or lockplate.
- Hydraulic assistance facilitates mounting of large bearing. Oil pump required to inject pressurized oil.
- Other dimensions may be available, consult your Timken engineer.

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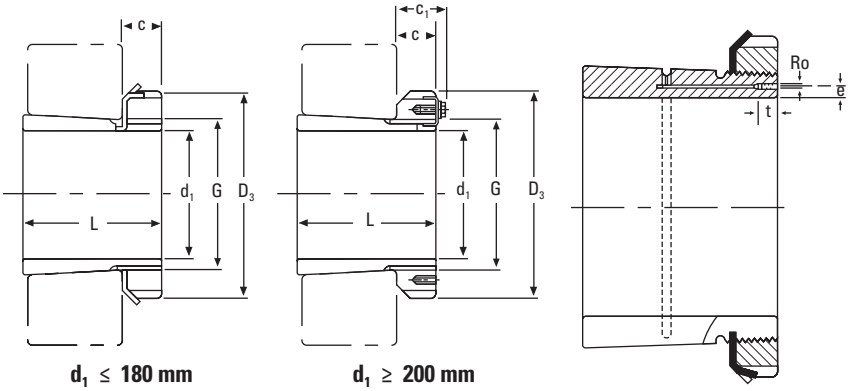
$d_1 \leq$ 180 mm **$d_1 \geq$ 200 mm**

d_1	Sleeve Part No.[1]	L	C	Thread[2] G	D_3	C_1[3]	Ro	e	t	Weight	Locknuts	Lockwasher and Lockplate	Appropriate Hydraulic Nut
mm		mm	mm	mm	mm	mm		mm	mm	kg			
400	OH3984H	168	52	Tr 420x5	490	66	M6	3.5	7	36.60	HM3084	MS3084	HMV84
400	OH3084H	212	52	Tr 420x5	490	66	M6	3.5	7	43.70	HM3084	MS3084	HMV84
400	OH3184H	304	70	Tr 420x5	540	90	M6	3.5	7	84.20	HM3184	MS3184	HMV84
400	OH3284H	352	70	Tr 420x5	540	90	M6	3.5	7	96.00	HM3184	MS3184	HMV84
410	OH3988H	189	60	Tr 440x5	520	77	M8	6.5	12	58.00	HM3088	MS3088	HMV88
410	OH3088H	228	60	Tr 440x5	520	77	M8	6.5	12	65.20	HM3088	MS3088	HMV88
410	OH3188H	307	70	Tr 440x5	560	90	M8	6.5	12	104.00	HM3188	MS3188	HMV88
410	OH3288H	361	70	Tr 440x5	560	90	M8	6.5	12	118.00	HM3188	MS3188	HMV88
430	OH3992H	189	60	Tr 460x5	540	77	M8	6.5	12	60.00	HM3092	MS3092	HMV92
430	OH3092H	234	60	Tr 460x5	540	77	M8	6.5	12	71.00	HM3092	MS3092	HMV92
430	OH3192H	326	75	Tr 460x5	580	95	M8	6.5	12	116.00	HM3192	MS3192	HMV92
430	OH3292H	382	75	Tr 460x5	580	95	M8	6.5	12	134.00	HM3192	MS3192	HMV92
450	OH3996H	200	60	Tr 480x5	560	77	M8	6.5	12	66.00	HM3096	MS30/96	HMV96
450	OH3096H	237	60	Tr 480x5	560	77	M8	6.5	12	75.00	HM3096	MS30/96	HMV96
450	OH3196H	335	75	Tr 480x5	620	95	M8	6.5	12	135.00	HM3196	MS3196	HMV96
450	OH3296H	397	75	Tr 480x5	620	95	M8	6.5	12	153.00	HM3196	MS3196	HMV96
470	OH39/500H	208	68	Tr 500x5	580	85	M8	6.5	12	74.30	HM30/500	MS30/500	HMV100
470	OH31/500H	356	80	Tr 500x5	630	100	M8	6.5	12	145.00	HM31/500	MS31/500	HMV100
470	OH32/500H	428	80	Tr 500x5	630	100	M8	6.5	12	166.00	HM31/500	MS31/500	HMV100
500	OH39/530H	216	68	Tr 530x6	630	90	M8	6	12	87.90	HM30/530	MS30/530	HMV106
500	OH31/530H	364	80	Tr 530x6	670	105	M8	6	12	161.00	HM31/530	MS31/530	HMV106
500	OH32/530H	447	80	Tr 530x6	670	105	M8	6	12	192.00	HM31/530	MS31/530	HMV106
530	OH39/560H	227	75	Tr 560x6	650	97	M8	6	12	95.00	HM30/560	MS30/560	HMV112
530	OH31/560H	377	85	Tr 560x6	710	110	M8	6	12	185.00	HM31/560	MS31/560	HMV112
530	OH32/560H	462	85	Tr 560x6	710	110	M8	6	12	219.00	HM31/560	MS31/560	HMV112
560	OH39/600H	239	75	Tr 600x6	700	97	G1/8	8	13	127.00	HM30/600	MS30/600	HMV120
560	OH30/600H	289	75	Tr 600x6	700	97	G1/8	8	13	147.00	HM30/600	MS30/600	HMV120
560	OH31/600H	399	85	Tr 600x6	750	110	G1/8	8	13	234.00	HM31/600	MS31/600	HMV120
560	OH32/600H	487	85	Tr 600x6	750	110	G1/8	8	13	278.00	HM31/600	MS31/600	HMV120
600	OH39/630H	254	75	Tr 630x6	730	97	M8	6	12	124.00	HM30/630	MS30/630	HMV126
600	OH30/630H	301	75	Tr 630x6	730	97	M8	6	12	138.00	HM30/630	MS30/630	HMV126
600	OH31/630H	424	95	Tr 630x6	800	120	M8	6	12	254.00	HM31/630	MS31/630	HMV126
600	OH32/630H	521	95	Tr 630x6	800	120	M8	6	12	300.00	HM 31/630	MS31/630	HMV126

[1]Hydraulic adapter sleeves are supplied complete with locknuts and lockwasher or lockplates.
[2]Tr means 30°. Trapezoid thread and the digits are outside diameter of thread and pitch.
[3]Adapters with dimensions C_1 have a locking device as shown in the illustration.

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$d_1 \leq 180$ mm

$d_1 \geq 200$ mm

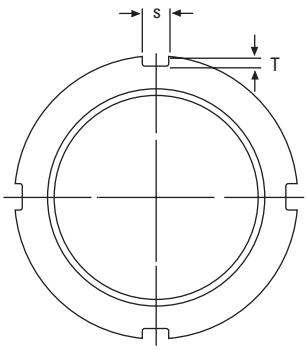
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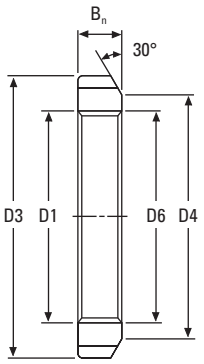
d_1	Sleeve Part No.[1]	L	C	Thread[2] G	D_3	C_1[3]	Ro	e	t	Weight	Locknuts	Lockwasher and Lockplate	Appropriate Hydraulic Nut
mm		mm	mm	mm	mm	mm		mm	mm	kg			
630	OH39/670H	264	80	Tr 670x6	780	102	G1/8	8	13	162.00	HM30/670	MS30/670	HMV134
630	OH30/670H	324	80	Tr 670x6	780	102	G1/8	8	13	190.00	HM30/670	MS30/670	HMV134
630	OH31/670H	456	106	Tr 670x6	850	131	G1/8	8	13	340.00	HM31/670	MS31/670	HMV134
630	OH32/670H	558	106	Tr 670x6	850	131	G1/8	8	13	401.00	HM31/670	MS31/670	HMV134
670	OH39/710H	286	90	Tr 710x7	830	112	G1/8	8	13	183.00	HM30/710	MS30/710	HMV142
670	OH30/710H	342	90	Tr 710x7	830	112	G1/8	8	13	228.00	HM30/710	MS30/710	HMV142
670	OH31/710H	467	106	Tr 710x7	900	135	G1/8	8	13	392.00	HM31/710	MS31/710	HMV142
670	OH32/710H	572	106	Tr 710x7	900	135	G1/8	8	13	459.00	HM31/710	MS31/710	HMV142
710	OH39/750H	291	90	Tr 750x7	870	112	G1/8	8	13	211.00	HM30/750	MS30/750	HMV150
710	OH30/750H	356	90	Tr 750x7	870	112	G1/8	8	13	246.00	HM30/750	MS30/750	HMV150
710	OH31/750H	493	112	Tr 750x7	950	141	G1/8	8	13	451.00	HM31/750	MS31/750	HMV150
710	OH32/750H	603	112	Tr 750x7	950	141	G1/8	8	13	526.00	HM31/750	MS31/750	HMV150
750	OH39/800H	303	90	Tr 800x7	920	112	G1/8	10	13	259.00	HM30/800	MS30/800	HMV160
750	OH31/800H	505	112	Tr 800x7	1000	141	G1/8	10	13	535.00	HM31/800	MS31/800	HMV160
750	OH32/800H	618	112	Tr 800x7	1000	141	G1/8	10	13	629.00	HM31/800	MS31/800	HMV160
800	OH39/850H	308	90	Tr 850x7	980	115	G1/8	10	13	288.00	HM30/850	MS30/850	HMV170
800	OH31/850H	536	118	Tr 850x7	1060	147	G1/8	10	13	616.00	HM31/850	MS31/850	HMV170
800	OH32/850H	651	118	Tr 850x7	1060	147	G1/8	10	13	722.00	HM31/850	MS31/850	HMV170
850	OH39/900H	326	100	Tr 900x7	1030	125	G1/8	10	13	330.00	HM30/900	MS30/900	HMV180
850	OH31/900H	557	125	Tr 900x7	1120	154	G1/8	10	13	677.00	HM31/900	MS31/900	HMV180
850	OH32/900H	660	125	Tr 900x7	1120	154	G1/8	10	13	776.00	HM31/900	MS31/900	HMV180
900	OH39/950H	344	100	Tr 950x8	1080	125	G1/8	10	13	362.00	HM30/950	MS30/950	HMV190
900	OH31/950H	583	125	Tr 950x8	1170	154	G1/8	10	13	738.00	HM31/950	MS31/950	HMV190
900	OH32/950H	675	125	Tr 950x8	1170	154	G1/8	10	13	834.00	HM31/950	MS31/950	HMV190
950	OH39/1000H	358	100	Tr 1000x8	1140	125	G1/8	10	13	407.00	HM30/1000	MS30/1000	HMV200
950	OH31/1000H	609	125	Tr 1000x8	1240	154	G1/8	10	13	842.00	HM31/1000	MS31/1000	HMV200
950	OH32/1000H	707	125	Tr 1000x8	1240	154	G1/8	10	13	952.00	HM31/1000	MS31/1000	HMV200
1000	OH39/1060H	372	100	Tr 1060x8	1200	125	G1/8	12	15	490.00	HM30/1060	MS30/1000	HMV212
1000	OH30/1060H	447	100	Tr 1060x8	1200	125	G1/8	12	15	571.00	HM30/1060	MS30/1000	HMV212
1000	OH31/1060H	622	125	Tr 1060x8	1300	154	G1/8	12	15	984.00	HM31/1060	MS31/1000	HMV212

[1]Hydraulic adapter sleeves are supplied complete with locknuts and lockwasher or lockplates.
[2]Tr means 30°. Trapezoid thread and the digits are outside diameter of thread and pitch.
[3]Adapters with dimensions C_1 have a locking device as shown in the illustration.

08-19-13 DRAFT

METRIC LOCKNUTS



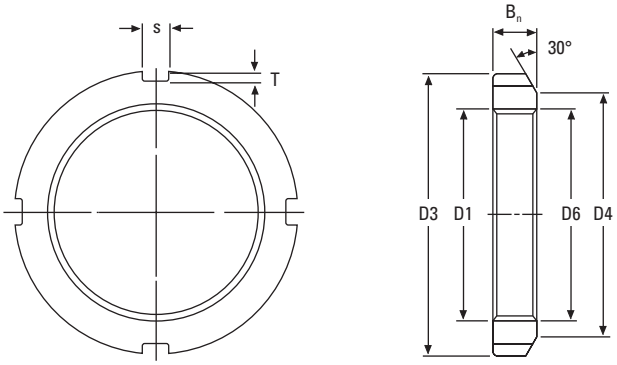


Locknut No.[1]	Thread[2] D_1	D_3	D_4	B_n	s	T	D_6	Weight	Lockwasher No.
	mm	mm	mm	mm	mm	mm	mm	kg	
KM0	M 10 X 0.75	18	13	4	3	2	10.5	0.01	MB00
KM1	M 12 X 1.0	22	17	4	3	2	12.5	0.01	MB01
KM2	M 15 X 1.0	25	21	5	4	2	15.5	0.01	MB02
KM3	M 17 X 1.0	28	24	5	4	2	17.5	0.01	MB03
KM4	M 20 X 1.0	32	26	6	4	2	20.5	0.02	MB04
KM5	M 25 X 1.5	38	32	7	5	2	25.8	0.03	MB05
KM6	M 30 X 1.5	45	38	7	5	2	30.8	0.04	MB06
KM7	M 35 X 1.5	52	44	8	5	2	35.8	0.05	MB07
KM8	M 40 X 1.5	58	50	9	6	2.5	40.8	0.09	MB08
KM9	M 45 X 1.5	65	56	10	6	2.5	45.8	0.12	MB09
KM10	M 50 X 1.5	70	61	11	6	2.5	50.8	0.15	MB10
KM11	M 55 X 2.0	75	67	11	7	3	56.0	0.16	MB11
KM12	M 60 X 2.0	80	73	11	7	3	61.0	0.17	MB12
KM13	M 65 X 2.0	85	79	12	7	3	66.0	0.20	MB13
KM14	M 70 X 2.0	92	85	12	8	3.5	71.0	0.24	MB14
KM15	M 75 X 2.0	98	90	13	8	3.5	76.0	0.29	MB15
KM16	M 80 X 2.0	105	95	15	8	3.5	81.0	0.40	MB16
KM17	M 85 X 2.0	110	102	16	8	3.5	86.0	0.45	MB17
KM18	M 90 X 2.0	120	108	16	10	4	91.0	0.56	MB18
KM19	M 95 X 2.0	125	113	17	10	4	96.0	0.66	MB19
KM20	M 100 X 2.0	130	120	18	10	4	101.0	0.70	MB20
KM21	M 105 X 2.0	140	126	18	12	5	106.0	0.85	MB21
KM22	M 110 X 2.0	145	133	19	12	5	111.0	0.97	MB22
KM23	M 115 X 2.0	150	137	19	12	5	116.0	1.01	MB23
KM24	M 120 X 2.0	160	148	21	12	5	126.0	1.80	MB24
KM25	M 125 X 2.0	160	148	21	12	5	126.0	1.19	MB25
KM26	M 130 X 2.0	165	149	21	12	5	131.0	1.25	MB26
KM27	M 135 X 2.0	175	160	22	14	6	136.0	1.55	MB27
KM28	M 140 X 2.0	180	160	22	14	6	141.0	1.56	MB28
KM29	M145 X 2.0	190	172	24	14	6	146.0	2.00	MB29

[1]No. KM0-KM40 also available in 304 stainless steel.
[2]M means metric thread and the digits are major diameter of thread and pitch.

Continued on next page.

08-19-13 DRAFT



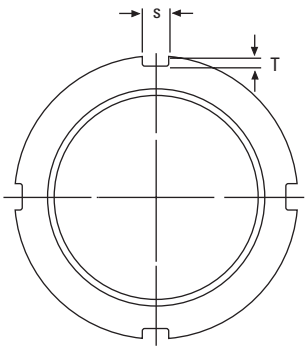
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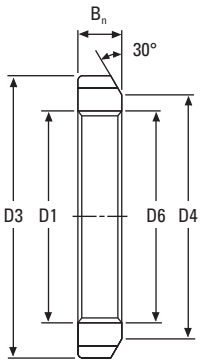
Locknut No.[1]	Thread[2] D_1	D_3	D_4	B_n	s	T	D_6	Weight	Lockwasher No.
	mm	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**kg**	
KM30	**M150 X 2.0**	**195**	**171**	**24**	**14**	**6**	**151.0**	**2.03**	MB30
KM31	**M155 X 3.0**	**200**	**182**	**25**	**16**	**7**	**156.5**	**2.21**	MB31
KM32	**M160 X 3.0**	**210**	**182**	**25**	**16**	**7**	**161.5**	**2.59**	MB32
KM33	**M165 X 3.0**	**210**	**193**	**26**	**16**	**7**	**166.5**	**2.43**	MB33
KM34	**M170 X 3.0**	**220**	**193**	**26**	**16**	**7**	**171.5**	**2.80**	MB34
KM36	**M180 X 3.0**	**230**	**203**	**27**	**18**	**8**	**181.5**	**3.07**	MB36
KM38	**M190 X 3.0**	**240**	**214**	**28**	**18**	**8**	**191.5**	**3.39**	MB38
KM40	**M200 X 3.0**	**250**	**226**	**29**	**18**	**8**	**201.5**	**3.69**	MB40

[1]No. KM0 - KM40 also available in 304 stainless steel.
[2]M means metric thread and the digits are major diameter of thread and pitch.

08-19-13 DRAFT

METRIC LOCKNUTS – *continued*

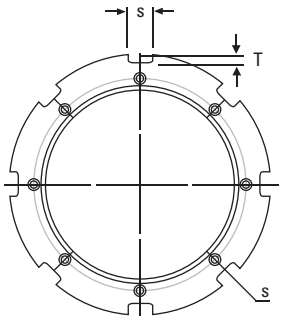


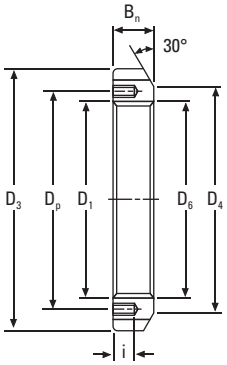


Locknut No.	Thread[1] D_1	D_3	D_4	B_n	s	T	D_6	Weight
	mm	mm	mm	mm	mm	mm	mm	kg
HM42	Tr 210 x 4	270	238	30	20	10	212	4.75
HM44	Tr 220 x 4	280	250	32	20	10	222	5.35
HM46	Tr 230 x 4	290	260	34	20	10	232	5.80
HM48	Tr 240 x 4	300	270	34	20	10	242	6.20
HM50	Tr 250 x 4	320	290	36	20	10	252	7.00
HM52	Tr 260 x 4	330	300	36	24	12	262	8.55
HM54	Tr 270 x 4	340	310	38	24	12	272	9.20
HM56	Tr 280 x 4	350	320	38	24	12	282	10.00
HM58	Tr 290 x 4	370	330	40	24	12	292	11.80
HM60	Tr 300 x 4	380	340	40	24	12	302	12.00
HM62	Tr 310 x 5	390	350	42	24	12	312.5	13.40
HM64	Tr 320 x 5	400	360	42	24	12	322.5	13.50
HM66	Tr 330 x 5	420	380	52	28	15	332.5	20.40
HM68	Tr 340 x 5	440	400	55	28	15	342.5	24.50
HM70	Tr 350 x 5	450	410	55	28	15	352.5	25.20
HM72	Tr 360 x 5	460	420	58	28	15	362.5	27.50
HM74	Tr 370 x 5	470	430	58	28	15	372.5	28.20
HM76	Tr 380 x 5	490	450	60	32	18	382.5	33.50
HM80	Tr 400 x 5	520	470	62	32	18	402.5	40.00

[1]Tr means 30°; trapezoid thread and the digits are major diameter of thread and pitch.

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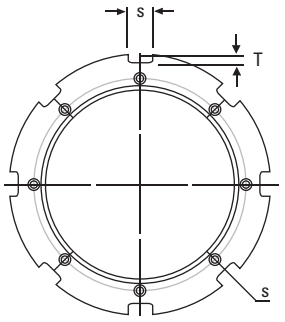


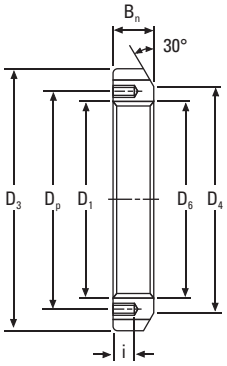
Locknut No.	Thread[1] D_1	D_3	D_4	s	T	D_6	B_n	i	Tapped Hole Threads	D_p	Appropriate Lockplate No.	Weight
	mm	mm	mm	mm	mm	mm	mm	mm		mm		kg
HM3044	**Tr 220 x 4**	**260**	**242**	**20**	**9**	**222**	**30**	**12**	M 6 x 1	**229**	MS3044	**3.09**
HM3048	**Tr 240 x 4**	**290**	**270**	**20**	**10**	**242**	**34**	**15**	M 8 x 1.25	**253**	MS3048	**5.16**
HM3052	**Tr 260 x 4**	**310**	**290**	**20**	**10**	**262**	**34**	**15**	M 8 x 1.25	**273**	MS3052	**5.67**
HM3056	**Tr 280 x 4**	**330**	**310**	**24**	**10**	**282**	**38**	**15**	M 8 x 1.25	**293**	MS3056	**6.78**
HM3060	**Tr 300 x 4**	**360**	**336**	**24**	**12**	**302**	**42**	**15**	M 8 x 1.25	**316**	MS3060	**9.62**
HM3064	**Tr 320 x 5**	**380**	**356**	**24**	**12**	**322.5**	**42**	**15**	M 8 x 1.25	**335**	MS3064	**9.94**
HM3068	**Tr 340 x 5**	**400**	**376**	**24**	**12**	**342.5**	**45**	**15**	M 8 x 1.25	**355**	MS3068	**11.70**
HM3072	**Tr 360 x 5**	**420**	**394**	**28**	**13**	**362.5**	**45**	**15**	M 8 x 1.25	**374**	MS3072	**12.00**
HM3076	**Tr 380 x 5**	**450**	**422**	**28**	**14**	**382.5**	**48**	**18**	M 10 x 1.5	**398**	MS3076	**14.90**
HM3080	**Tr 400 x 5**	**470**	**442**	**28**	**14**	**402.5**	**52**	**18**	M 10 x 1.5	**418**	MS3080	**16.90**
HM3084	**Tr 420 x 5**	**490**	**462**	**32**	**14**	**422.5**	**52**	**18**	M 10 x 1.5	**438**	MS3084	**17.40**
HM3088	**Tr 440 x 5**	**520**	**490**	**32**	**15**	**442.5**	**60**	**21**	M 12 x 1.75	**462**	MS3088	**26.20**
HM3092	**Tr 460 x 5**	**540**	**510**	**32**	**15**	**462.5**	**60**	**21**	M 12 x 1.75	**482**	MS3092	**29.60**
HM3096	**Tr 480 x 5**	**560**	**530**	**36**	**15**	**482.5**	**60**	**21**	M 12 x 1.75	**502**	MS3096	**28.30**
HM30/500	**Tr 500 x 5**	**580**	**550**	**36**	**15**	**502.5**	**68**	**21**	M 12 x 1.75	**522**	MS30/500	**33.60**

[1]Tr means 30°; trapezoid thread and the digits are major diameter of thread and pitch.

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METRIC LOCKNUTS – *continued*



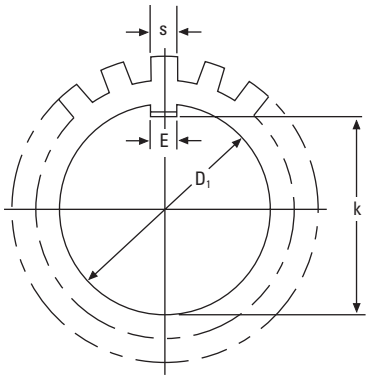


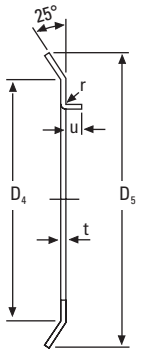
Locknut No.	Thread[1] D_1	D_3	D_4	s	T	D_6	B_n	i	Tapped Hole Threads	D_p	Appropriate Lockplate No.	Weight
	mm	mm	mm	mm	mm	mm	mm	mm		mm		kg
HM3144	**Tr 220 x 4**	**280**	**250**	**20**	**10**	**222**	**32**	**15**	M 8 x 1.25	**238**	MS3144	**5.20**
HM3148	**Tr 240 x 4**	**300**	**270**	**20**	**10**	**242**	**34**	**15**	M 8 x 1.25	**258**	MS3148	**5.95**
HM3152	**Tr 260 x 4**	**330**	**300**	**24**	**12**	**262**	**36**	**18**	M 10 x 1.5	**281**	MS3152	**8.05**
HM3156	**Tr 280 x 4**	**350**	**320**	**24**	**12**	**282**	**38**	**18**	M 10 x 1.5	**301**	MS3156	**9.05**
HM3160	**Tr 300 x 4**	**380**	**340**	**24**	**12**	**302**	**40**	**18**	M 10 x 1.5	**326**	MS3160	**11.80**
HM3164	**Tr 320 x 5**	**400**	**360**	**24**	**12**	**322.5**	**42**	**18**	M 10 x 1.5	**345**	MS3164	**13.10**
HM3168	**Tr 340 x 5**	**440**	**400**	**28**	**15**	**342.5**	**55**	**21**	M 12 x 1.75	**372**	MS3168	**23.10**
HM3172	**Tr 360 x 5**	**460**	**420**	**28**	**15**	**362.5**	**58**	**21**	M 12 x 1.75	**392**	MS3172	**25.10**
HM3176	**Tr 380 x 5**	**490**	**450**	**32**	**18**	**382.5**	**60**	**21**	M 12 x 1.75	**414**	MS3176	**30.90**
HM3180	**Tr 400 x 5**	**520**	**470**	**32**	**18**	**402.5**	**62**	**27**	M 16 x 2	**439**	MS3180	**36.90**
HM3184	**Tr 420 x 5**	**540**	**490**	**32**	**18**	**422.5**	**70**	**27**	M 16 x 2	**459**	MS3184	**43.50**
HM3188	**Tr 440 x 5**	**560**	**510**	**36**	**20**	**442.5**	**70**	**27**	M 16 x 2	**477**	MS3188	**45.30**
HM3192	**Tr 460 x 5**	**580**	**540**	**36**	**20**	**462.5**	**75**	**27**	M 16 x 2	**497**	MS3192	**50.40**
HM3196	**Tr 480 x 5**	**620**	**560**	**36**	**20**	**482.5**	**75**	**27**	M 16 x 2	**527**	MS3196	**62.20**
HM31/500	**Tr 500 x 5**	**630**	**580**	**40**	**23**	**502.5**	**80**	**27**	M 16 x 2	**539**	MS31/500	**63.30**

[1]Tr means 30°; trapezoid thread and the digits are major diameter of thread and pitch.

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METRIC LOCKWASHERS





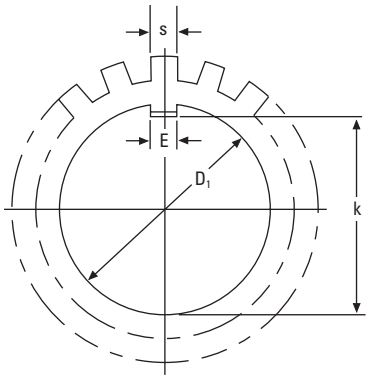
Lockwasher[1] No.	Thread D_1	k	E	t	S	D_4	D_5	r[2]	u[2]	No. of Tangs	Weight per 100 pieces	Locknut No.
	mm	mm	mm	mm	mm	mm	mm	mm	mm		kg	
MB0	10	8.5	3	1	3	13	21	0.5	2	9	0.13	KM00
MB1	12	10.5	3	1	3	17	25	0.5	2	9	0.19	KM01
MB2	15	13.5	4	1	4	21	28	1	2.5	13	0.25	KM02
MB3	17	15.5	4	1	4	24	32	1	2.5	13	0.31	KM03
MB4	20	18.5	4	1	4	26	36	1	2.5	13	0.35	KM04
MB5	25	23	5	1.2	5	32	42	1	2.5	13	0.64	KM05
MB6	30	27.5	5	1.2	5	38	49	1	2.5	13	0.78	KM06
MB7	35	32.5	6	1.2	5	44	57	1	2.5	15	1.04	KM07
MB8	40	37.5	6	1.2	6	50	62	1	2.5	15	1.23	KM08
MB9	45	42.5	6	1.2	6	56	69	1	2.5	17	1.52	KM09
MB10	50	47.5	6	1.2	6	61	74	1	2.5	17	1.60	KM10
MB11	55	52.5	8	1.2	7	67	81	1	4	17	1.96	KM11
MB12	60	57.5	8	1.5	7	73	86	1.2	4	17	2.53	KM12
MB13	65	62.5	8	1.5	7	79	92	1.2	4	19	2.90	KM13
MB14	70	66.5	8	1.5	8	85	98	1.2	4	19	3.34	KM14
MB15	75	71.5	8	1.5	8	90	104	1.2	4	19	3.56	KM15
MB16	80	76.5	10	1.8	8	95	112	1.2	4	19	4.64	KM16
MB17	85	81.5	10	1.8	8	102	119	1.2	4	19	5.24	KM17
MB18	90	86.5	10	1.8	10	108	126	1.2	4	19	6.23	KM18
MB19	95	91.5	10	1.8	10	113	133	1.2	4	19	6.70	KM19
MB20	100	96.5	12	1.8	10	120	142	1.2	6	19	7.65	KM20
MB21	105	100.5	12	1.8	12	126	145	1.2	6	19	8.26	KM21
MB22	110	105.5	12	1.8	12	133	154	1.2	6	19	9.40	KM22
MB23	115	110.5	12	2	12	137	159	1.5	6	19	10.80	KM23
MB24	120	115	14	2	12	138	164	1.5	6	19	10.50	KM24
MB25	125	120	14	2	12	148	170	1.5	6	19	11.80	KM25
MB26	130	125	14	2	12	149	175	1.5	6	19	11.30	KM26
MB27	135	130	14	2	14	160	185	1.5	6	19	14.40	KM27
MB28	140	135	16	2	14	160	192	1.5	8	19	14.20	KM28
MB29	145	140	16	2	14	171	202	1.5	8	19	16.80	KM29

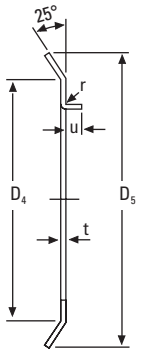
[1]No. MB0-MB40 also available in 304 stainless steel.
[2]Straight tangs when t ≥ 3 mm.

Continued on next page.

08-19-13 DRAFT

METRIC LOCKWASHERS – continued





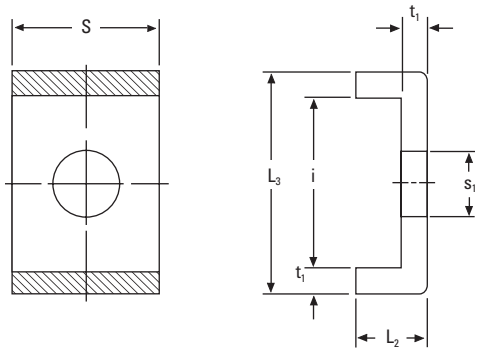
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Lockwasher[1] No.	Thread D_1	k	E	t	S	D_4	D_5	r[2]	u[2]	No. of Tangs	Weight per 100 pieces	Locknut No.
	mm	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**		**kg**	
MB30	**150**	**145**	**16**	**2**	**14**	**171**	**205**	**1.5**	**8**	19	**15.50**	KM30
MB31	**155**	**147.5**	**16**	**2.5**	**16**	**182**	**212**	**1.5**	**8**	19	**20.90**	KM31
MB32	**160**	**154**	**18**	**2.5**	**18**	**182**	**217**	**1.5**	**8**	19	**22.20**	KM32
MB33	**165**	**157.5**	**18**	**2.5**	**16**	**193**	**222**	**1.5**	**8**	19	**24.10**	KM33
MB34	**170**	**164**	**18**	**2.5**	**16**	**193**	**232**	**1.5**	**8**	19	**24.70**	KM34
MB36	**180**	**174**	**20**	**2.5**	**18**	**203**	**242**	**1.5**	**8**	19	**26.80**	KM36
MB38	**190**	**184**	**20**	**2.5**	**18**	**214**	**252**	**1.5**	**8**	19	**27.80**	KM38
MB40	**200**	**194**	**20**	**2.5**	**18**	**226**	**262**	**1.5**	**8**	19	**29.30**	KM40
MB44	**220**	**213**	**24**	**3.0**	**20**	**250**	**292**	–	–	19	**48.30**	HM3144
MB48	**240**	**233**	**24**	**3.0**	**20**	**270**	**312**	–	–	19	**50.20**	HM3148
MB52	**260**	**253**	**28**	**3.0**	**24**	**300**	**342**	–	–	23	**72.90**	HM3152
MB56	**280**	**273**	**28**	**3.0**	**24**	**320**	**362**	–	–	23	**75.90**	HM3156

[1]No. MB0-MB40 also available in 304 stainless steel.
[2]Straight tangs when t ≥ 3 mm.

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METRIC LOCKPLATES



Lockplate No.	t_1	S	L_2	S_1	i	L_3	Appropriate Locknut No.	Weight per 100 pieces
	mm	mm	mm	mm	mm	mm		kg
MS3144	4	20	12	9	22.5	30.5	HM3144	2.60
MS3148	4	20	12	9	22.5	30.5	HM3148	2.60
MS3152	4	24	12	12	25.5	33.5	HM3152	3.39
MS3156	4	24	12	12	25.5	33.5	HM3156	3.39
MS3160	4	24	12	12	30.5	38.5	HM3160	3.79
MS3164	5	24	15	12	31	41	HM3164	5.35
MS3168	5	28	15	14	38	48	HM3168	6.65
MS3172	5	28	15	14	38	48	HM3172	6.65
MS3176	5	32	15	14	40	50	HM3176	7.96
MS3180	5	32	15	18	45	55	HM3180	8.20
MS3184	5	32	15	18	45	55	HM3184	8.20
MS3188	5	36	15	18	43	53	HM3188	9.00
MS3192	5	36	15	18	43	53	HM3192	9.00
MS3196	5	36	15	18	53	63	HM3196	10.40
MS31/500	5	40	15	18	45	55	HM31/500	10.50
MS3044	4	20	12	7	13.5	21.5	HM3044	2.12
MS3048	4	20	12	9	17.5	25.5	HM3048	2.29
MS3052	4	20	12	9	17.5	25.5	HM3052	2.29
MS3056	4	24	12	9	17.5	25.5	HM3056	2.92
MS3060	4	24	12	9	20.5	28.5	HM3060	3.16
MS3064	5	24	15	9	21	31	HM3064	4.56
MS3068	5	24	15	9	21	31	HM3068	4.56
MS3072	5	28	15	9	20	30	HM3072	5.03
MS3076	5	28	15	12	24	34	HM3076	5.28
MS3080	5	28	15	12	24	34	HM3080	5.28
MS3084	5	32	15	12	24	34	HM3084	6.11
MS3088	5	32	15	14	28	38	HM3088	6.45
MS3092	5	32	15	14	28	38	HM3092	6.45
MS3096	5	36	15	14	28	38	HM3096	7.29
MS30/500	5	36	15	14	28	38	HM30/500	7.29

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QUICK REFERENCE GUIDE

If part number looks similar to this:	Refer to this product index:
DVP22K315SET QAP13A215ST QMP18J308ST QVFL19V303ST	Spherical Roller Bearing Solid Block
E-4BF-TRB-2 E-P4B-TRB-3 E-PF-TRB-2 E-TU-TRB-45MM	Type E
SAF 22510 SAF 22517 X 3 SDAF 22528 P 60	SAF
YAK1 SGT RCJ 25 VCJT2 G1100KRRB	Ball
SNT 509 FSNT 524-620 SR100X9.5 LO609	SNT

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