| HONDA MSI 4F |

Work Start Date: 29th June 2017

GIDC Vithlapur, AHEMADABAD, GUJRAT, INDIA.

Company is a Global player in manufacturing Automotive Vehicles.

Machine & Machine Elements:-

NKC Make SPC Paint Booth Ground Conveyor roller chain Located Ambient & high temperature Zone.

Particulars	Conveyor: SPC (1, 3)
Make	NKC
Type	Ground/Track& Rail Conveyor
Length	250 x 3 Metres = Total 750 Metres.
Atmospheric Condition	High & Ambient temperature.
Paint Make & Name	NEROLAC
Existing In Use Oil	Ester 250 PS
Working Shifts	Two
Customer Issue	Replacement Of Chain SPC 1 and SPC 3 due to bearing failure / breakings of Chain/ Corrosion Problem

Photo Conveyor: **(Before Starting the Shut down)**

Some clicks of Current Condition

DSL Recommendation:

Lubrilog France MAKE specially formulated ED Paint compatible High Temperature Wear & Corrosion resistant Chain Oil.

WHY' Lubrilog Ester 250 PS:

- Compatible With CED/TOP/PRIMER /SEALER Paint
- Temperature range –Up to +280Deg C Short
- Outstanding EP and anti-wear performance
- Long wet film life at high temperatures, which provides maximum Lubricant economy
- Does not form hard carbon deposits
- Can Be Used In Automatic Lubricator.
- Good Corrosion Protection.
- Very Low hydroscopic Nature

Ester 250 PS is synthetic ester oil containing several additives: Extreme-pressure, anti-wear, anti-oxidation, rust and corrosion inhibitor, it evaporates very slowly without coke faction up to 280°C.

Ester 250 PS has been specially formulated for the lubrication of the conveyor chains systems for the automotive industry. & many of Automotive (OEM) &their vendor who have Paint Shop are replaced OKS 352 oil with LUBRILOG Ester 250 PS for better performance.

Application/Trial Procedure:

We have to calculate & apply required Quantity of Lubrilog Chain oil to lubricate each Roller, Which should not drip from rollers; we have to measure & apply the same by twice.

Calculate the total Evaporation loss as per the Oven temperature /Oven cycle time & **Ester 250 PS** Oil evaporation & after the final observation & conclusion we have to manage re- lubrication scheduled accordingly.

(We have to Gradually Increase the Lubrication Interval)

Practice I: Attempt for 3 days (72 Hrs.) re-lubrication Interval.

Practice II: Attempt for One Week of re-lubrication Interval.

Practice III: Attempt for 15 days re-lubrication Interval.

Surface Preparation:

- Remove any residual rust and scale with a wire brush or other abrasive method.
- Clean the areas to be lubricated with a non-residue cleaner such as Lubrilog® Heavy Duty Cleaner and degreaser, and ensure the surface has completely dry before continuing.

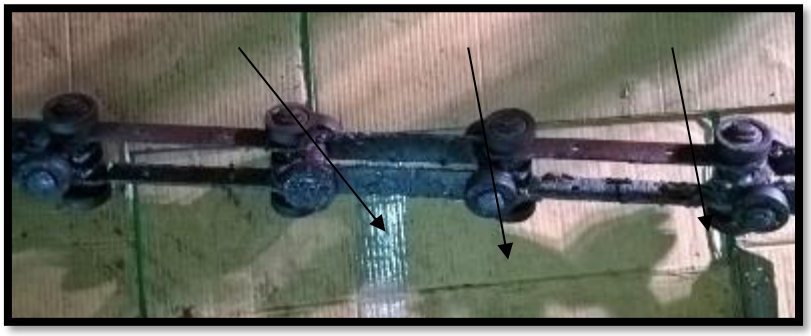
Lubrication Procedure:

1. Applied **Ester 250 PS** Oil on SPC-1, 2, 3 Oven conveyor Chain Roller/, oil applied manually by hand dispenser on Chain Rollers /Links, Approx. (3Ltr × 3conveyor) 9Ltr oil used for Lubrication**.**
2. We have to Observe & compare the Conveyors with previous condition for first 72 hrs. in (Practice I).
3. We have to monitor the **Ester 250 PS** performance for 1 Week
4. We have to monitor the **Ester 250 PS** performance for 15 Days.

Observation /Procedure :

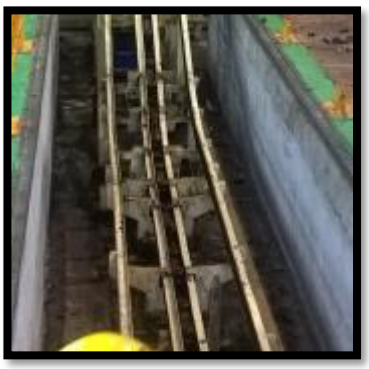
LUBRICANT STATUS &OBSERVATION CRITIRIA
LINK Joints & Inside Rollers Bushes are the Important Area Where continues lubrication (wet oil film)is required
We have to apply Oil only on Chain Links Joints. It penetrates inside the Rollers bushes, & also spread to Chain side links area.
Applied oil came on Rollers & Side link Plate which gets dry out first which is not responsible for Chain Elongation

*SIDE LINKS *ROLLER * **LINK-JOINTS (Actual Lubrication Area)**



PRACTICE- I

Ester 250 PS performance Monitoring for 72 Hrs.

		
SPC- 1 Observation after 72 hr of Lubrication LINK-JOINTS ,SIDE LINKS , ROLLER ARE FOUND WET CONDITION	SPC -2 Observation after 72 hr of Lubrication LINK-JOINTS ,SIDE LINKS , ROLLER ARE FOUND WET CONDITION	SPC -3 Observation after 72hr of Lubrication LINK-JOINTS ,SIDE LINKS , ROLLER ARE FOUND WET CONDITION

PRACTICE- II

Ester 250 PS performance Monitoring for One Week.

		
SPC -1 Observation after A WEEK of Lubrication LINK-JOINTS AND ROLLERS FOUND WET, SIDE LINKS FOUND DRY	SPC -2 Observation after A WEEK of Lubrication LINK-JOINTS AND ROLLERS FOUND WET, SIDE LINKS FOUND DRY .	SPC -3 Observation after A WEEK of Lubrication LINK-JOINTS FOUND GOOD WET, COMPARE TO ROLLERS AND SIDE LINKS FOUND DRY.

Accepted Benefits/Cost Savings:

- Performance of **Ester 250 PS** found very Superior as compared to OKS352.
- Excellent protection due to superior Hydrodynamic Lubricity
- Continuous Long term wet lubrication Film Observed.
- Chain link Found Wet Condition even after 15 day of Lubrication.
- No CarbonDeposition.
- No Condensation.
- Less Consumption than OKS352,due to low evaporation rate.
- Reliability of Oil on **Chain Links Joint**for longer period; and thus other losses Problems with lubrication can be eliminated.
- Evaporation Test conducted at Laboratory found much superior than OKS352 oil.

Hence, the product helps in reducing the time and the total cost of maintenance

Signed off By: HMSI 4F (Vithlapur)

- **Mr.Manish Mishra (Sr.OfficerMaint.)**
- **Mr.Yogesh Upreti (Line incharge)**

Signed off By: DSL MARKETING PVT LTD

- **Sachin Wadekar (Sr.Area Manager)**
- **Mr.Makarand Sangamwar (Engineer Technical Services)**
- **KuldeepGohil (Distributor)**

Case Study Completed by: MR.SACHIN WADEKAR

Cost Comparison

Parameters	**CHAINGUARD 230**	**OKS352**	**REMARK**
Price Per Ltr	**Rs.1189.00**	**700.00**	
Initial Lubricant Qty Per Lubrication	2Ltr	2Ltr	Initial Lubrication Quantity applied same
Lubrication Frequency Achieved	Considered (Actual Life 15Days)	Wetness Found till 72 Hrs/ Lubrication after 1 week only	Lubrication frequency Achieved after 72 hrs
Qty required for per Lubrication	2ltrs	4ltrs	Qty required (More Than twice Times) less compare to OKS 352
Per Lub Cost	Rs.2378	Rs.2800.00	Direct Cost Saving
Total Lubrication Intervals Per Month	2	4	Help to reduce Manpower cost required for lubrication
Oil Required Per Month	2 x 2 = 4Ltrs Per Conveyor	2X4 = 8Ltrs	Only 48Ltr oil Required as compare to OKS 352 required 192ltrs .
Cost Of oil Req. Per Month	4 x 1189 = 4756.00	8 x 700 = 5600.00	More than 16% Direct Cost Saving
Corrosion/Wear Problem	NO	YES	Due to corrosion & Wear Chain Failure, Breakdown Occurred in case of OKS 352 / In case of Chain Guard 230 production loss / Breakdown cost (100%) Eliminated

Hence, the ROCOL CHAINGURD 230helps in reducing the time and the total cost of maintenance.