

Productivity & Quality Enhancement- Steel Rolling Mill

FLUID ADVANTECH ON ROLL REGRINDERS

- **Customer:** Steel Manufacturer, Khopoli.
- **Application:** Roll regrinding
- **Grinder:** Churchill
- **No. Of machines:** 2 nos.
- **Material:** Forge Steel
- **Grinding wheel:** Conventional (width-100mm,600-700rpm)
- **Coolant:** Water based emulsion
- **Total flow rate:** 170 lpm



Previous Coolant Filtration System

- MAGNETIC SEPERATOR



Concerns

- Scratch marks and burn marks after roll regrinding
- Roll Geometry
- Grinding wheel life
- Coolant life
- Frequent tank cleaning





Stages of Fluid Advantech

Stage 1: Filtration

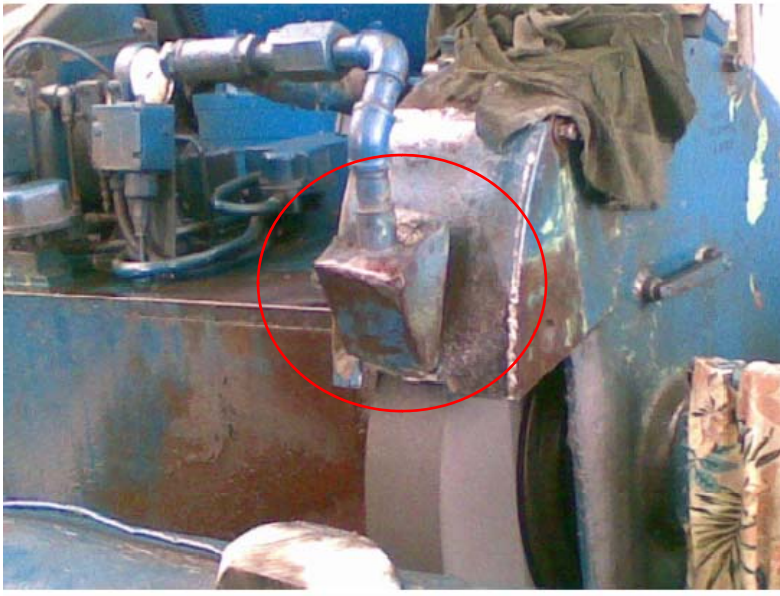
- Sovereign KBF 1002/1040 for fine coolant filtration.
- Application specific Lohmann filter media- Paraprint OL 50.



Stage 2: Coolant Delivery

Grindaix needle nozzle for efficient and high pressure coolant delivery at the point of grinding.

Previous



Now





STAGE 3: Coolant -proposed

HIGH PERFORMANCE EMULSION – r.rhenus TY 110 S



Salient Features

- Excellent Cooling Effect
- Efficient Corrosion Protection even at Low Concentrations
- Good Flushing of Grinding Wheel
- Low Foaming even at high Coolant Pressures
- Long Sump Life

Benefits Achieved after Implementation

SR. NO.	OBSERVED PARAMETERS	RESULTS
1	Roughness	With in desired range
2	Roundness	With in desired range
3	Surface finish	Consistent 0.2 μ Ra as desired.
4	Scratch marks	Considerably reduced
5	Burn marks	Considerably reduced
6	Grinding wheel life	Improved



Additional Benefits

Additional benefit observed:

- The coolant consumption reduced to 65 lpm after installing the nozzle on one system

Benefits envisaged by implementing all the three stages:

- Enhanced lubricity at the point of grinding
- Reduced grinding frequency of rollers
- Reduction in the power drawn by the grinder
- Reduced dressing frequency of the wheel
- Enhanced grinding wheel life
- Superior surface finish
- Optimum coolant consumption
- Overall reduction in coolant cost
- Low carbon footprint of operation and rollers



Thank you !!