Lube Techno Solutions

Plot No. 640. Venkaramana Colony,
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Hyderabad - 500085, Telangana, INDIA
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GST No. 3611AAIFL4679E1Z1

TECHNICAL DETAILS OF LUBE & HYDRAULIC OIL FILTRATION DETAILS.

FROM
M/S. LUBE TECHNO SOLUTIONS
M; 9966323761




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Oil Testing + Oil filtraration
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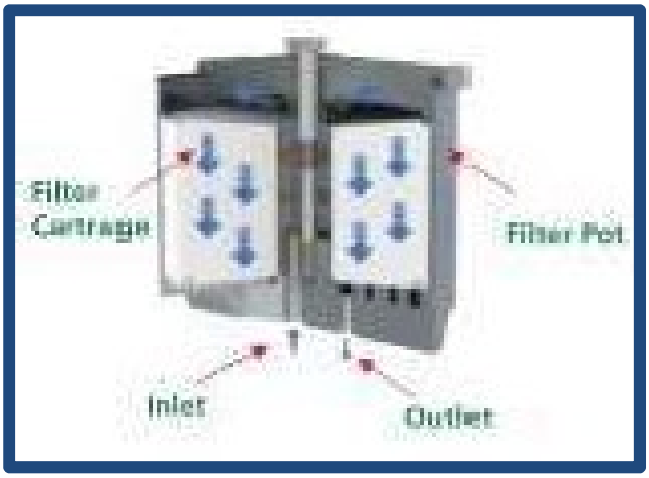
Operating Technology

Our filter cartridge based on depth media filter and acts by absorbing water and particles in a continuous filtration process. The special cellulose fibers absorb free and dissolved water from the oils. This is formed either through the combustion process or by condensation.

Larger oil molecules are forced to pass between the different layers of the cartridge which removes up to 99.9% of water and contaminations. As the oil passes through the cartridge, minute particles of carbon, wear metals, silicon, varnish and oxidation residues are extracted from the oil by adhering to then many layers of the filter cartridge.

Removing water and particle contamination by continues flirtation-results the ageing effect of such catalysts are minimized. This enables the oil life to be extended.



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Filtration Level

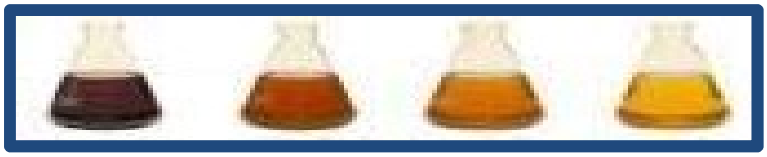
Our filter cartridge are designed for complete removal of particle contamination down to less than 1Micron & moisture below 500 PPM. With viscosity range from 10 CST up to 680 CST, at the NAS-1638 class 6 levels.

We removes Sludge, Water Solid Particles, from Hydraulic and Lube oils

Sludge:- Varnish formed due to oxidation process

Water:- Formed either through the combustion or condensation process

Solid Particles:- Enters from many ways in Hydraulic Systems



After a few hour of operation oil will become as like as new oil.

LTS Filtration System:- is a multi-purpose semi-automated oil filtration machine. This machine can be used to filter and maintain the industrial oils such as Hydraulic, Lube, Gear and Turbine oils and diesel type fuels. This machine can be permanently connected to large oil reservoirs and used as a mobile skid for small size oil tanks. With a wide range of filtration flow rates and viscosity from 10 CST upto 680 CST, it is suitable for various applications in different industries.

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Features

Lts Filtration System maintains the lube oil including hydraulic and turbine oils at NAS 6 or better.

Removes contaminations down to less then 1 Micron.

Maintains the rate of contamination removal higher than it is getting generated and is applicable to various viscosity grades upto 680 CST in different applications.

Prevents contamination related failures of bearing and servo valves.

This filtration system helps Extends oil life and maintained all oil properties.

Its retards regeneration of continuous wears and hence improves machine Reliability and Productivity.




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LIST OF SPARE PARTS & CONSUMABLES OF LTS FILTRATION MACHINE.

	LTS FILTER CONSUMABLES			
SL NO	**DESCRIPTION**	**MICRON SIZE**	**MATERIAL CODE**	**REMARKS**
1	CELUULOSE FIBRE FILTER ELEMENT	3 MICRON	LTS/M-100/003	MOISTURE ,CONTAMINATION & WEAR & TEAR.
2	CELUULOSE FIBRE FILTER ELEMENT	10 MICRON	LTS/M-100/010	MOISTURE ,CONTAMINATION & WEAR & TEAR.
3	WIREMESH FILTER ELEMENT	100 MICRON	LTS/MFSWM/100	CONTAMINATION & WEAR & TEAR.
4	FIBRE GLASS FILTER ELEMENT	1 MICRON	LTS/MFSGF/1001	CONTAMINATION & WEAR & TEAR.
5	OIL PUMP	20 LPM	LTS/MFS-20LPM/1002	FLOW PUMP . MAINTAIL FLOW CONSTANTLY.
6	MAGNETIC FILTER (HOUSING & MAGNET)	4500 GUAGE	LTS/MFS/NM70	FERROMAGNETIC MATERIAL.




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CASE STUDY

Name of Company :M/s.ONGC
Area: Dahej - Gujarat
Equipment Name: Turbine #3
Oil Grade: VG 46
Component: Journal Bearing
Problem Identified : Oil gets contaminated (NAS value >12) .
After filtration : NAS <6 .

Invisible contamination in turbine oils can be presented by highlighting the following key aspects:

1. Microscopic Particulate Matter: Even though contamination isn't visible to the naked eye, microscopic particles such as dust, metal wear debris, and sand can accumulate over time. These particles are typically in the sub-micron to 10-micron range, which requires advanced tools like particle counters or oil analysis to detect.
2. Water Contamination: Water can exist as dissolved or emulsified in turbine oils, leading to corrosion, oxidation, and oil degradation. Although it may not be visible, it can be measured using methods like Karl Fischer titration or visual patch testing.
3. Oxidation Products: Over time, turbine oils can form oxidation by-products like sludge and varnish, which are invisible in the early stages but have severe long-term effects. These by-products can be detected using varnish potential testing or membrane patch colorimetry.
4. Acidic Compounds: Oils can develop acidic compounds due to oxidation, leading to corrosion. The increase in total acid number (TAN) can be detected through laboratory testing, even though the contamination is not visible.
5. Dissolved Gases: Contamination by dissolved gases such as air or other reactive gases can accelerate oxidation or lead to cavitation. These can be measured through gas chromatography or similar techniques.
6. Additive Depletion: Over time, the additives in turbine oil that protect against oxidation, wear, and corrosion may deplete without any visible signs, making oil analysis critical to detect such changes.

Before & After Image

Used Filter




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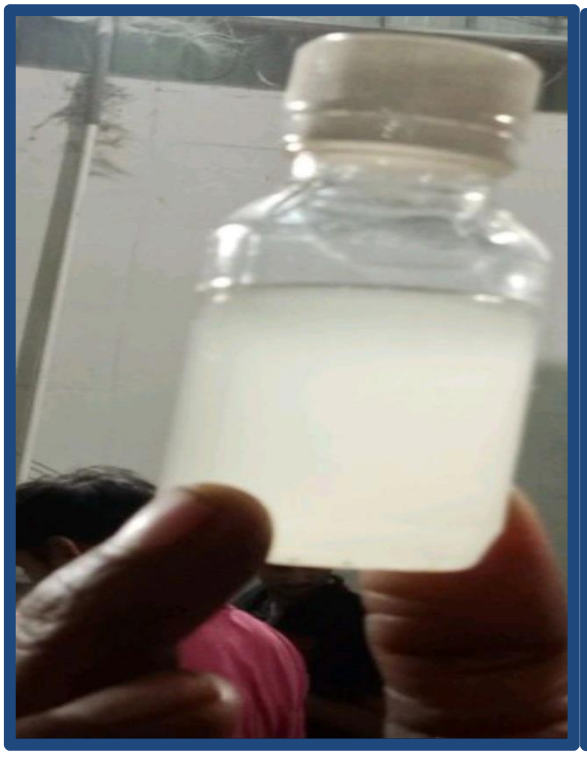
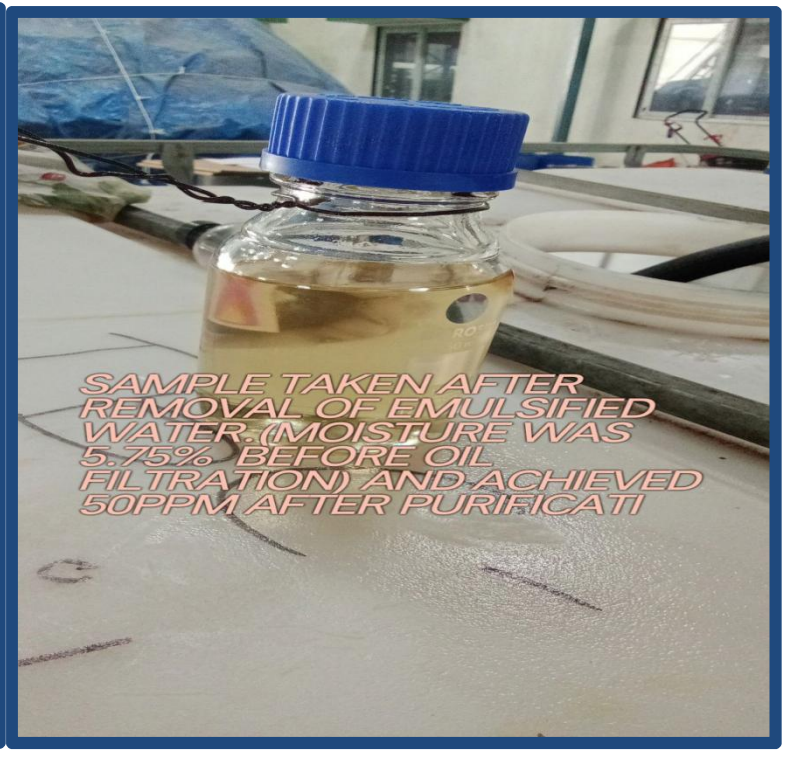
CASE STUDY

Name of Company :M/s.KLJ Petro Plast
Area: Jhagadia - Gujarat
Equipment Name: Hydraulic System.
Oil Grade: VG 68
Component: Hydraulic Cylinder.
Problem Identified : Oil & Water Mix
After filtration : NAS <6 .

M/s. KLJ client faced a significant issue with their entire 11KL oil becoming emulsified due to water contamination. They typically opted for frequent oil replacements when this occurred. We saw this as a challenge and took the opportunity to address the problem. After executing our solution, we finally achieved the desired results. Ultimately, they achieved a 90% savings with our solution, eliminating the unnecessary costs of frequent oil replacement.



Before purification



After Purification

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CASE STUDY

Name of Company :M/s.Vedanta (Meenakshi Power Plant)
Area: Muthukur - Nellore (AP).
Equipment Name: MOT
Oil Grade: VG 46
Component: JOurnal Bearing
Problem Identified : Contamination
After filtration : NAS >12

Case Study: Oil Purification & Filtration in a 4×250 MW Power Plant Project Overview A 4×250 MW power plant faced severe oil contamination in its turbine systems, with the following initial conditions: Cleanliness Level (NAS Class): 12 Moisture Content: 4,980 PPM The customer required: ✔ NAS Class 6 after purification ✔ Moisture below 100 PPM This was taken up as a challenging trial contract to demonstrate our capability. Solution Implementation 1. Step 1: LVDH System Installation Installed an LVDH (Low Vacuum Dehydration) system Operated 24×7 continuously Gradually reduced moisture to below 100 PPM 2. Step 2: Depth Media Filtration System (40 LPM) Installed 40 LPM filtration system using depth media technology Monitored performance for 4 days Replaced filters every 24 hours Achieved NAS Class 6 in 4 days Results & Customer Feedback ✔ Final Moisture Level: Below 100 PPM ✔ Final Cleanliness Level: NAS Class 6 ✔ Customer Satisfaction: Impressed with results and approved a 5-year service contract Key Benefits ✓ Extended Oil Life: Achieved high purity levels, reducing oil replacement costs ✓ Improved Equipment Reliability: Lower contamination prevents failures and downtime ✓ Efficient Maintenance: Depth media filtration ensures long-term oil cleanliness This successful trial proved the effectiveness of LVDH dehydration and depth media filtration for maintaining critical power plant systems, ensuring long-term operational efficiency.




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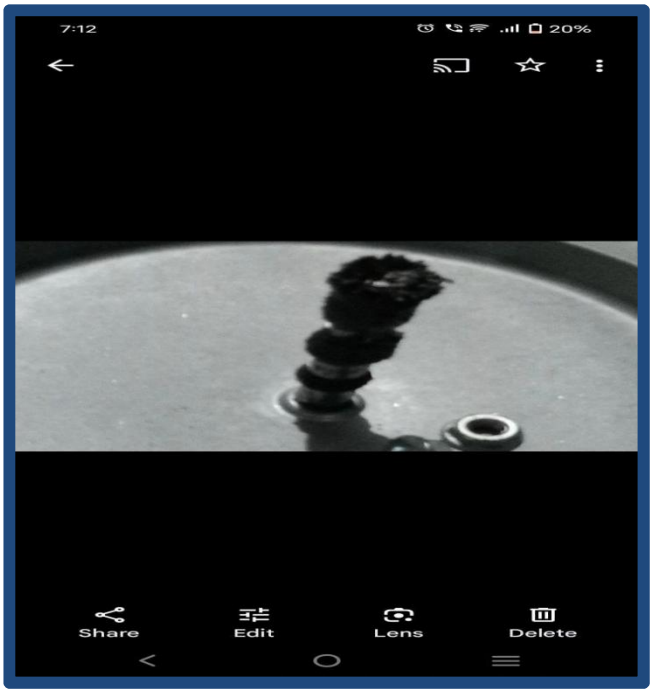
CASE STUDY

Name of Company :M/s.Ultratech Cement
Area: Sevagram
Equipment Name: Gearbox
Oil Grade: VG 320
Component: Bearing & Gear
Problem Identified : Debris generation.

Is Wear particle deterioration to the components?
Yes, wear particles can indeed cause deterioration to components. When wear particles are present in a system, they can accelerate the wear process by causing abrasion, leading to surface damage, reduced efficiency, and eventually failure of the components. Over time, these particles can create more wear particles, compounding the problem and significantly reducing the lifespan of the equipment. This is why monitoring and controlling wear particles through filtration and regular maintenance is crucial to maintaining the reliability and performance of machinery.






Why Choose LTS Filtration Systems?

• Proven results across leading industries (Power, Cement, Petrochemicals)
• NAS level reduction to <6 and moisture <100 ppm
• Customized depth media technology for each application
• Increases equipment reliability and reduces oil purchase cost
• Total Oil Management Solutions for long-term plant reliability

Applications of Our Filtration Technology

• Turbine oils
• Hydraulic systems
• Gearbox oils
• Transformer oils
• Compressor oils

Why Oil Analysis is Required?

• Identifies early signs of contamination, wear, or degradation
• Helps avoid unplanned shutdowns by predictive maintenance
• Determines the right time for filtration or replacement
• Validates the effectiveness of filtration systems
• Saves cost by extending oil life and reducing component wear