



**MINIMAC®**  
Systems Pvt. Ltd.

Clean  
**OIL**  
Healthy  
Machines!



# MINIMAC® Oil Purification Systems

WE PURIFY OIL **PURER** THAN **PUREST**



ONE STOP SOLUTION FOR OIL FLUSHING  
AND PURIFICATION NEEDS



MANUFACTURERS, EXPORTERS  
AND TECHNICAL CONSULTANTS

Oil Flushing & Chemical Cleaning Skids | Oil Purification Systems  
Oil Monitoring Equipment | Filters & Strainers



[www.minimacsyste.ms.com](http://www.minimacsyste.ms.com)



# “ ABOUT MINIMAC®

Minimac Systems Pvt Ltd, incorporated in 2012, is a leading manufacturer, exporter and technical consultancy company having its origin in India. We offer world-class Equipment for High-Velocity Oil Flushing, Chemical Cleaning, Oil Purification and Oil Monitoring. The products and services have key applicability in Operation & Maintenance of Rotary Equipment, Hydraulic Machinery under the Efficient Reliability Programme and TPM. During Project Stage, Pre-Commissioning and Pipeline & Process Services are major milestones which require equipment and services offered by us.

Minimac is quite active in Energy Sector (Oil & Gas, Power, Mining). We have established a strong brand and market presence in Asia, Middle East & Caspian, North Africa, Africa, South-East Asia, Australia. A regular growth in revenue, market reach, field experience and technical learning curve helps us prop as a market leader in many products that we offer.

## ADVANTAGE MINIMAC®



Apart from being just an OEM of Chemical Cleaning, Oil Flushing and Purification skids, we work closely with EPC Companies, PPS Contractors, Service Providers. We regularly offer Equipment Rentals, Technical Consultancy and Manpower Support.

Minimac Team has worked closely with clients at various project sites of Middle East, Africa, Asia and Asia Pacific. This has helped us gain immense field experience and customer feedback to improve our products on a regular basis.

Minimac Team keeps itself updated from reference documents of ISO and API and Industry Manuals like ASTM Standard D6439-99, GE Flushing Manual - GEK81515D and Solar Turbine Specs ES 2184.





# OIL FLUSHING

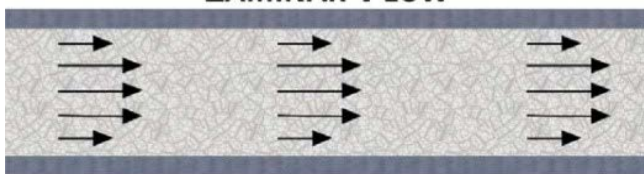


## WHAT IS OIL FLUSHING ?

- As a pre-commissioning activity, circulation of High Velocity, High Flow oil through a lube oil / hydraulic system / cooler tubes / compressor and turbine lube oil systems.
- Flushing is to remove impurities sitting on the inside of the pipe systems
- Oil flushing NOT just connecting the systems, starting up and circulating the oil through the system filter.



### LAMINAR FLOW



### TURBULENT FLOW



## PARAMETERS OF SUCCESSFUL FLUSHING:

- Flushing Flow Rate & Velocity – High Flushing Flow Rate ensures Turbulent flow. (Reynolds No.  $Re > 4000$ )
- Flushing Filters – To arrest efficiently all debris at the downstream of flushed pipe/component
- Viscosity – As low as possible
- Thermal Shocks or Sudden Oil Temperature variations allow loosening of deposited debris
- Duration of Flushing – Until desired oil cleanliness at downstream is achieved
- Oil Flushing Parameters – NAS Class 5-6 (NAS 1638) or ISO 17/15/12 (ISO 4406)

# FLUSHING SKIDS OFFERED



## CHEMICAL CLEANING AND LUBE OIL FLUSHING SKIDS

- Flow Rate Capacity : 500 LPM, 2000 LPM, 4000 LPM, 8000 LPM, 12000 LPM
- Flow Control : Fixed Flow or Variable Flow (VFD) options available
- Maximum Pressure : 10 - 12 bar
- Performance: NAS 4-5, ISO 17/15/12 or better
- Certifications (Optional) : ATEX, DNV 2.7-1
- Fluid Compatibility : Lube Oil, Light Acids and Alkaline Solutions



## STAND-ALONE FILTRATION SKIDS

- Flow Rate Capacity : 500 LPM, 2000 LPM, 4000 LPM, 8000 LPM, 12000 LPM
- Maximum Pressure : 10 - 12 bar
- Filtration : upto 3 micron or above
- Certifications (Optional) : ATEX, DNV 2.7-1
- Fluid Compatibility : Lube Oil, Light Acids and Alkaline Solutions



## HYDRAULIC FLUSHING SKIDS

- Flow Rate Capacity : 100 LPM, 200 LPM, 500 LPM, 1000 LPM, 2000 LPM
- Flow Control : Fixed Flow or Variable Flow (VFD) options available
- Pressure : Low Pressure (upto 20 bar), Medium Pressure (upto 60 bar), High Pressure (upto 320 bar), Very High Pressure (upto 600 bar)
- Performance: NAS 4-5, ISO 17/15/12 or better
- Certifications (Optional) : ATEX, DNV 2.7-1
- Fluid Compatibility : Hydraulic Oil, Water Glycol, Synthetic Fluids



# OIL PURIFICATION PRODUCTS

## OIL FILTRATION TROLLEY

(Model FS-x Series)



FILTRATION  
SIMPLIFIED

- Multi Stage Oil Filtration (Efficiency 99.98%)
- Upto NAS Level 2-3 Guaranteed
- Particulate Removal upto 1 micron (ISO 16889 Certified)
- Filter stages selected from 25, 16, 10, 6, 3, 1 micron
- Filter media available in SS, Paper and Imported Fibre Glass
- Filtration Capacity – 5 LPM to 500 LPM and above
- Moisture Removal filter cartridges available

## VACUUM DEHYDRATION MACHINE

(Model MLC-LVDH-x Series)



MOISTURE IN OIL IS  
YOUR WORST ENEMY

- 100% Dehydration (Moisture Removal) Machine
- All 3 forms of moisture removed – Free, Emulsified, Dissolved
- Comes with optional arrangement of Filters as well
- Capacity – 10 LPM to 200 LPM and above
- Works on high vacuum dehydration technique

## ELECTROSTATIC OIL CLEANERS

(Model MELC-x Series)



ELCS RE-DEFINED

- Japanese High Voltage (18 kV) Electrostatic Charge Technology
- Remove solid particles upto 0.01 micron, upto NAS 2-3
- No Tripping upto 2000 ppm moisture in oil
- Charge Frequency is 80,000 Hz as compared to 50 Hz in competitive products
- Higher Efficiency, Versatility and Performance
- Only system to remove Sludge and Varnish effect from oil
- Comes in Online-Dedicated type installation (with almost NIL Power consumption)

## SYNTHETIC OIL PURIFIERS

(Model MLC-FRF Series)



ALL-ROUND  
CONDITIONING

- Specially designed for Synthetic fluids
- Four-way Purification: Filtration + Dehydration + Acid Reduction + Nitrogen Blanketing
- Capacity: upto 200 LPM
- Stainless Steel construction
- Teflon Seals Compatibility

## MANUAL OIL TESTING KITS

- Patch Testing Kit : Tests Oil Contamination
- Viscage : Tests Oil Viscosity
- Hydrogauge : Tests Moisture in Oil



## AUTOMATIC OIL TESTING INSTRUMENTS

- Online Laser Particle Counter : Online NAS Analysis
- Portable Laser Particle Counter : Online-Offline NAS Analysis
- Moisture Sensor : Online/Offline moisture analysis



## REPLACEMENT OIL FILTERS



- Replacement for almost all OEMs of hydraulic filter elements
- Popular equivalents for PALL, Hydac, Parker, Eaton, Rexroth, Klarol, Ferrocare, etc.
- 100% guaranteed efficiency and performance



## OUR CLIENTS (ENERGY SECTOR)

## OUR GLOBAL FOOTPRINT



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