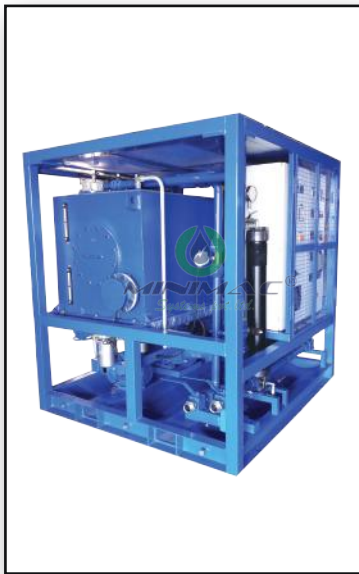


Oil Flushing System

- Lube Oil Flushing System
- Chemical Flushing System
- Hydraulic Flushing System

When to Flush a System

A newly fabricated system or one that is in-service requires different approaches for when and how to perform flushing. This is because of different procedural methods deployed, but more so because of practical limitations and overall requirements of individual machines. It is important to consider that flushing can become time-consuming, and it may be difficult to predict the time needed to do so. Often, due to system design constraints, as little as one-third of the total time is spent on the flushing activity itself. Two-thirds of the time is used to mobilize flushing equipment and workers, disassemble sensitive components, assemble by-pass lines, connect flushing hoses, pre-clean the flushing fluid, fill up the system and heat the flushing fluid and piping. Well-planned and well-performed flushing practices give considerable return on investment.



Lube Oil Flushing System



Chemical Flushing System



Hydraulic Flushing System

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Minimac Systems Pvt. Ltd.
GST No: 27AAICM4730E1ZL

☎ 1800 1209 003 ✉ enquiry@minimac.in
🌐 www.minimacsystems.com

Gat No 448/15, Success Industrial Park Nighoje, Khed, Chakan, Pune, Maharashtra 410501

Chemical Cleaning and Hot Oil Flushing

Each circuit should be connected to achieve the specified fluid velocity and Reynolds number, as well as the fluid pressure in all components, lines and fittings. Avoid flushing configurations that can lead to settling of particles in quiescent zones, dead legs, etc. The pressure and flow capacity of the cleaning/flushing rig must also be considered.

Hot Oil Flushing

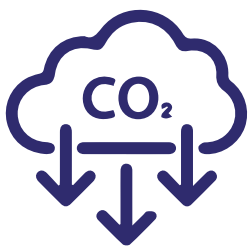
Generally speaking, the required cleanliness level to target during flushing is half the level during normal operation. For example, if the normal operation level is ISO 15/13/11, flush to an ISO 14/12/10. Requirements for cleanliness levels of both solid particles and moisture should be achieved.

Turbulent Flushing Flow

With a Reynolds number equal to or greater than 4,000, the fluid is certain to have turbulent flow. This is required to remove particles from the surface inside tubes. To also prevent remaining contaminants from becoming suspended during operation, it is required that: Re- flushing number is equal or greater than 1.2 x Re-in service, but always a minimum of 4,000

Application

- Power Generation
- Pipeline and pumps of the lube oil
- Water / diesel / acid solution of 10% - citric acid and alkaline solution of 10% ammonia
- Lube Oil Flushing, Hot Oil Flushing – ISO VG 32/46/68



REDUCE YOUR CARBON FOOTPRINT

Specifications

Minimac Model	FS- 500	FS - 2000	FS - 4000	FS - 5500
Skid Dimensions (mm)	2800 x 2200 x2200	3500 x 2200 x2200	5800 x 2200 x2200	5800 x 2200 x2200
Skid Tare Weight (Kg)	3000 Kg	4000 Kg	7500 Kg	8000 Kg
Pump Flow Rate	30 m ³ /hr	120 m ³ /hr	240 m ³ /hr	330 m ³ /hr
Electric Motor (Fixed Speed)	30 HP	100 HP	100 HP	100 HP
Supply Voltage	415 V, 3 Phase, 50 Hz			
Max Pump Pressure	50 m Head for water			
Tank (SS 304)	1000 L	2000 L	5000 L	5000 L
Tank Heater (SS 304 tubular)	40 KW	60 KW	80 KW	80 KW
In-Line Heater (SS 304 housing & tubes)	20 KW	20 KW	20 KW	20 KW
Stage-1 Strainer	Bucket Type, 150 mesh, 100% of SS 304 material			
Stage-1 Filter Cartridge Housing	Filter Housing of SS 304 material compatible to applied flow rate having appropriate no. Of filter cartridges for 99.98% Efficiency and High Life. Micron rating can be selected from 25 micron, 16 micron, 10 micron			
Stage-2 Filter Cartridge Housing	Filter Housing of SS 304 material compatible to applied flow rate having appropriate no. Of filter cartridges for 99.98% Efficiency and High Life. Micron rating can be selected from 6 micron, 3 micron			
Return Line Filter Strainer	Bucket Type, 60 micron, 100% of SS 304 material			
Oil Filling	High Pressure Pump for following functions			
Pressurising System	1. Tank Filling from external oil source or barrel 2. Pressurising oil for particle counter function.			
High Pressure Sampling Point for Particle Counter	Sampling point for Particle Counter to have provision of pressure regulation upto 20 bar in order to have minimal effect of air bubbles in NAS Analysis.			
Reverse Manifold System	Combination of Butterfly Valves to achieve easy 2-direction simultaneous flow in the pipeline segment being cleaned / flushed.			

Specifications

Single Point Drain	Appropriate manifold connecting all filters, strainers, other vessels for single point drain using air purging.
Electrical Controls	Industry Standard Automatic Control Panel to achieve following functions - <ol style="list-style-type: none"> 1. Motor Starting by Star Delta Starter System 2. Heater protection and control using Temperature Controller 3. Tank Level monitoring & subsequent interlocks 4. Motor Protections for OverLoad, Over Pressure, Dry Run 5. Flow Rate Display 6. Indication lamps, switches, fault display etc.
NAS / Contamination Analyser	Optional Kit based on client requirements - Option 1 – On board, slave type, Online Particle Counter Option 2 – Portable Online Particle Counter Option 3 – Portable Online cum Offline Particle Counter
Hoses & Electrical Cables	Optional accessory set. Not a part of Standard Supply.