

IN USE WORLDWIDE



KLEENOIL FILTRATION INDIA PVT LTD

KLEENOIL[®]

www.kleenoilindia.com

OIL CLEANING MACHINES

BY-PASS HYDRAULIC OIL FILTERS

MAGNETIC FILTRATION

COOLANT PURIFICATION MACHINE

CHIP/SLUDGE REMOVAL MACHINES

OIL ANALYSIS EQUIPMENT



Before
KLEENOIL Filtration



After
KLEENOIL Filtration



FILTERS & BY-PASS FILTRATION SYSTEM

KLEENOIL BY-PASS FILTER

The Kleenoil "High Pressure" oil filter can be fitted on the "by-pass" basis to any hydraulic systems, engine or any equipment with oil at pressure up to 3000psi / 200bar.

The flow through the Kleenoil filter is controlled to approximately 4 LPM at 40psi. A flow rate which is low enough to have negligible effect on most "system pressures", yet high enough to ensure that oil is being kept in "as new" condition 24/7.

At a slow speed, it is possible to remove particles down to 1 micron(3 absolute), remove 99.95% of all water, greatly reducing engine/machine and component wear.

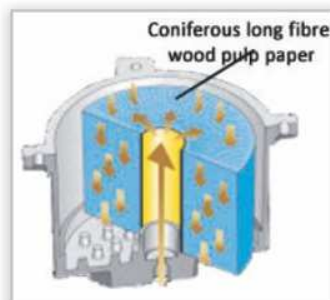
OPERATING PRINCIPLE

The Kleenoil Filter Cartridges are made of densely wound pure coniferous long fiber wood pulp paper and manufactured by Kleenoil UK itself. The filter cartridge acts both by "**Absorption and Adsorption**" in a continuous recycling process.

The long fibre of the paper attracts the water formed either through the combustion process or by condensation and absorb it like a sponge, at the same time rejecting the larger oil molecules, which are forced to pass between the tight windings of the cartridge.

As the oil passes through the cartridge, minute carbon, wear metals and silicon are extracted from the oil by adhering to any of the surfaces of the filter - A process known as **adsorption**.

The filter cartridge has an additional "**Polypropylene disc**" at the bottom to remove any particle that may pass through - offering a second stage of filtration.



Hydraulic by-pass fitment
on hydraulic lift



Hydraulic by-pass filter fitment
on earth moving equipment



Hydraulic by-pass filter fitment on
plastic injection moulding machine



Hydraulic by-pass filter fitment
on H.P. Power Pack

FILTRATION LEVELS:

Particulate contamination in accordance with

- BS5540 Part4:1981
- ISO/DIS 4406 ISO 16/14/11, equivalent to NAS Class 5
(Hydraulic oil specification)

UNIT DESIGN

- Aluminium pressure die casting unit available in a variety of sizes appropriate to its use
- Casting subjected to batch and individual testing
- Constructed of Aluminium BS1490 LM6 (M)



MODEL OF FILTER UNIT WITH CARTRIDGE	SUITABLE FOR TANK CAPACITY UPTO		DIMENSIONS				WATER RETENTION <0.025%
			UNIT		CARTRIDGE		
	ENGINE	HYDRAULIC SYSTEM	H	Dia	H	Dia	
HDU9778KU50 / HDFC1878KF50	40 ltrs	500 ltrs	165 mm	150 mm	100 mm	145 mm	0.56 ltr
KU65 / KF65	65 ltrs	1000 ltrs	165 mm	180 mm	100 mm	175 mm	0.95 ltr
SDU9788KU85 / SDFC1888KF85	80 ltrs	1500 ltrs	165 mm	220 mm	100 mm	200 mm	1.20 ltr
*SDPC2088 Polypropylene Cartridge suitable for SDU9788KU85 *Suitable for Water Glycol and water emulsified fluids	—	—	—	—	100 mm	195 mm	—

KLEENOIL MICRON FILTRATION SYSTEM™

The Kleenoil Micron Filtration Systems can be used for the following applications :

- Hydraulic Oil Filtration
- Luboil Filtration
- Gear Oil Filtration
- Turbine Oil Filtration
- Water Glycol Filtration
- Neat Oil Filtration
- Fuel Filtration
- Industrial Oils
- Fluid cleaning



MODEL: COMPACT MFS 1XKU65
(for dedicated filtration)

Electrical Motor:
0.37kw/0.5HP/415v
3 phase 1450 rpm
Flow Rate: 200LPH
Dimensions : 625x500x500 (mm)
Weight: Approx. 30 kg



MODEL: SMFS 1XSDU9788
Electric Motor :
0.37kw/0.5HP/415V
3 Phase 1450rpm
Flow rate : 300LPH
Dimensions : 790x405x635 (mm)
Weight : Approx. 50 kg



MODEL: SMFS 2XSDU9788
Electrical Motor:
0.37kw/0.5HP/415V
3 Phase 1450rpm
Flow Rate: 600LPH
Dimensions: 990x460x635 (mm)
Weight: Approx. 100 kgs



MODEL: MFS 1XSDU+KM
Electrical Motor:
0.37kw/0.5HP/415V
3 Phase 1450rpm
Flow Rate: 300LPH
Dimensions: 700x600x1100 (mm)
Weight: Approx. 120kgs
*Additional Magnetic Filter



MODEL: MFS 2XSDU+KM
Electrical Motor:
Up to 220 cSt | Up to 680 cSt
0.37kw/0.5HP/415kv | 0.75kw/1HP/415V
3 Phase 1450rpm | 3 Phase 960rpm
Flow Rate: 600LPH | Flow Rate: 1500LPH
Dimensions: 700x700x1100 (mm)
Weight: Approx. 140 kg
*Additional Magnetic Filter



MODEL: MFS 4XSDU
Electrical Motor:
Up to 220 cSt | Up to 680 cSt
0.75kw/1HP/415V | 0.9kw/1HP/415V
3 Phase 1450rpm | 3 Phase 960rpm
Flow Rate: 900LPH | Flow Rate: 2100LPH
Dimensions: 950x700x1100 (mm)
Weight: Approx. 180kgs



MODEL: MFS6XSDU 9788
Electrical Motor:
0.75kw/1HP/415V
3 Phase 1450rpm
Flow Rate: 1200LPH
Dimensions: 1200x700x1100 (mm)
Weight: Approx. 220 kg



MODEL: MFS 8XSDU 9788
Electrical Motor:
0.9kw/1HP/415V
3 phase 960rpm
Flow Rate: 2100LPH
Dimensions: 1450x700x1100 (mm)
Weight : Approx. 250 kg

*Dimensions are LxWxH (mm)

All models are also available with an additional On-Line Particle Counter PC9001 for Real time analysis of fluid cleanliness

SALIENT FEATURES

- The Kleenoil filter removes contaminant particles down to less than 0.5 microns
- It removes water up to capacity of cartridge through "Absorption process"
- The Kleenoil machine is a 3-in-1 filtration system which is able to attract moisture, ferrous as well as contamination
- There is no storage tank and oil is cleaned instantly
- The only consumables are the filter cartridges which can be changed within minutes
- All properties of oil being cleaned are maintained
- Each filter housing, in all the machines, have magnetic rods of 4,500 gauss

*Flow Rate: It is impossible to state an exact rate because it is dependent upon many factors such as viscosity, temperature, degree of contamination of fluid, pump pressure and degree of contamination of cartridge. As an approximate guide, the Flow rate of hydraulic oil at room temperature through Kleenoil cartridges has been given above.



FILTERS & BY-PASS FILTRATION SYSTEM

KLEENOIL LOW VACUUM DEHYDRATION (LVDH) MACHINE

With machine is most suitable in situations where large amounts of water get emulsified into the oil.

APPLICATIONS:

- Filtering Hydraulic Systems
- Steam Turbine Lube Systems
- Purifying Transformer Oil

ADVANTAGES of the KLEENOIL LVDH:

- Easy to operate for an efficient method for continuous removal of water from oil.
- No damage to oil and the unit offers dry, dehydrated oil.
- Significantly reduced residence time with fast and efficient heat transfer
- Reduced pressure drop
- High evaporation ratios (> 95%)
- Easy to clean/maintain equipment
- Ability to process materials that are sensitive to thermal degradation or prone to fouling and ability to process high-viscosity and high-solids materials



Form of Water	Free Water	Emulsified Water	Dissolved Water
Description	Water content well above fluid saturation point. Water exists in the form of a completely separate layer	Water content above fluid saturation point. Water is emulsified with the oil, forming a cloudy mixture.	Water content below fluid saturation point. Water is solubilized in the oil, resulting in a clean and normal looking lubricant.
Impact	Severe Rusting Lube oil degradation	Rusting Clogged Filters Improper lubrication Lube oil degradation	Additive depletion Lube Oil degradation
Method of Separation	Draining via gravity Centrifuge Coalescers Cellulose Media Vacuum Dehydrator	Offline Filtration (Centrifuge, Cellulose Media, Vacuum Dehydrator)	Offline Filtration (Vacuum Dehydrator)

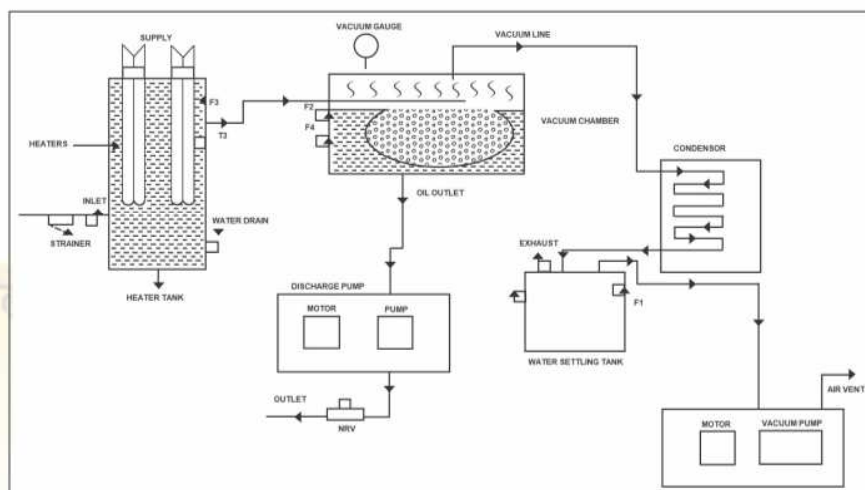
Our Low Vacuum De-Hydration Systems are recommended for use on the following applications:

- Turbine Lube Oils
- Paper Machine Lube Oils
- Gearbox Oils (ISO 150 to 680)
- Transformer Oils (Mineral Based)
- Silicon Oils
- Refrigerant Oils
- Compressor Oils
- EHC Fluids (Fyrquel)

VALUE PACKED STANDARD FEATURES:

- Achieve particle counts as low as 14/12/9 Cleanliness Level
- Process flow rates from 3 to 100 LPM
- No other utilities other than electricity are required (no costly water consumption)
- Dry Running Claw Vacuum Pump – Pulls deeper vacuum than conventional vacuum pumps, dramatically increasing water extraction rates.
- Requires virtually no maintenance – no vanes to wear out and no lubricating oil to become contaminated by a wet air stream

SCHEMATIC DRAWING THE LVDH MACHINE



Before

After

Hence the Kleenoil LVDH:

- Removes water and dissolved gases from oil
- No oil quality damaged since temperature ranges between 45 to 60 degrees
- Plug and Play
- Run both offline and online



ECLIPSE MAGNETICS®

FOR APPLICATIONS INVOLVING METAL RESIDUE

MANUAL RANGE

Magnetic filtration can be used to :

- Remove ferrous contamination from all industrial fluids where ferrous and para-magnetic contamination of a liquid is a problem
- Improve surface finish and increase tool life
- Increase component accuracy and reduce wear on machinery
- Sub micron filtration

Magnetic filters are used effectively in following application :

- Super Finishing
- Lapping, Honing, Grinding, Shaving
- Wire & EDM processing
- Induction Hardening
- Polishing, Wash System
- Gun Drilling

In the following industry : Automotive, Bearings, Gear Manufacturing, Cutting Tools, Machine tools, Steel Rolling, CNC machinery, Pump protection and Pre-filtration, Quenching operations.

MICROMAG FILTER

The Micromag compact magnetic filter can be easily installed on new or existing equipment. With a high intensity magnetic core and patented fluid flow path, the Micromag ensures removal of almost 100% of ferrous contamination. It also removes abrasives and non-magnetic material by means of entrapment.



Using the supplied cleaning tool a fully contaminated core can be cleaned in under 30 seconds



Fitment of Micromag MM10 on a Centerless Grinding machine

PRODUCT DATA

Product number	Flow rate ltrs/min.	Contamination capacity kgs	Max. operating pressure bar	Connection 'BSP	Temperature range °C	Construction	Dimensions (mm)	
							H	W
MM5	70	1	12	1	5 – 50	SAN housing, aluminum lid	190	95
MM10	100	2	12	1	5 – 50		315	100
MM20	150	4	12	1½	5 – 50		605	100
MM5/HP/50	70	1	50	1	0 – 140	Full aluminum construction	247	116
MM10/HP/50	100	2	50	1	0 – 140		365	116
MM20/HP/50	150	4	50	1½	0 – 140		625	116
MM5/HP/80	70	1	80	1	0 – 140	Full stainless steel construction	247	116
MM10/HP/80	100	2	80	1	0 – 140		365	116
MM20/HP/80	150	4	80	1½	0 – 140		625	116

FILTRAMAG FILTER

Filtramag+ magnetic filter with its' high intensity magnetic cores make it 100% effective for use with materials which have lower magnetic permeability such as tungsten carbide and cast iron. With a stainless steel construction, Filtramag + is ideal for use in harsh chemical environments and wash systems.



Filtramag FM 2.0+ fitted on a Roller Grinder Machine

PRODUCT DATA

Product number	Max. flow rate ltrs/min	Contamination capacity kgs	Max. operating pressure bar	Connection PN 16 flange	Dimensions mm				
					A	B	C	D	E
FM1.5+/E	250	3	10	1½"	355	255	90	180	57
FM 2.0+/E	500	6	10	2"	355	330	90	250	57

Cutting Coolant Purification Equipment - BEST-1

Specializes in improving oil-water separation and problems involving bad odor in the coolants

- Filters suspended debris, to avoid backwash
- Removes slide oil & foreign body oil on surface to achieve oil-water separation
- Effectively kills bacteria which causes coolant to deteriorate
- Does not change the clarity of the coolant
- Save on cost of waste oil recycling treatment
- Extend life of coolant as well as tool life
- Improve bad odour working conditions causing harm to human body



BEST-1 MINI

BEST-1

PRODUCT DATA

Product	Dimensions	Net Weight	Capacity	Power Supply	Power Consumption	Filter Specs	Pump Flow	Pump Caliber	Ozone Valve
Best-1	520x410x880 mm	45 kg's	30 ltrs	Single Phase 220V/AC 50Hz	1Kw/24 hrs	0.4 mm (Max Particle)	10-30 ltrs/min (Max Amount)	3/8"	500 mg/hr
Best-MINI	520x370x770 mm	33 kg's	10 ltrs	Single Phase 220V/AC 50Hz	1Kw/24 hrs	0.4 mm (Max Particle)	10 ltrs/min (Max Amount)	3/8"	500 mg/hr

Chip / Sludge Removal Machine - FOODIE

- Used for water -based, oil -based cutting fluids, metal cuttings, aluminium powders and non-magnetic metal particles
- No downtime and one can easily solve problems of sludge deposition
- Surface floating debris & sediments at the bottom can be processed and recycled
- The double-filtration system (optional - precision type) grinding powder can be easily recycled
- On-line filtration system - no need to remove the coolant from tank
- Only one user required for operation - complete mobile solution



FOODIE

PRODUCT DATA

Model	Dimensions	Net Weight	Capacity	Max. Processing Cap.	Filtration Accuracy	Filter Material
Standard Type	56 x 42 x 100 cm	63 kg's	15 ltrs	120-180 ltrs/min	190 μ m	304 SS

FUEL ANALYSIS EQUIPMENT

Kleenoil brings you the latest technology for contamination control. The particle counter comes with archiving and trending software providing a cost-effective analysis solution and a must have for service engineers

LASER PARTICLE COUNTER - PC9001



DIMENSIONS :

89mm x 107mm x 89mm (WDXH)

AFFORDABLE ACCURATE ANALYSIS

FEATURES

- Particle Counter with LED readout
- Computer Software for archiving data & trends
- Can be installed on all our filtration systems
- Cost effective contamination control
- Accuracy is +/- 0.5 of an ISO code
- Also available as a portable system in the Particle Pal



The PC9001 installed on the KLEENOIL Filtration System Model : MFS4XSDU9788

PORTABLE OIL AND FUEL DIAGNOSIS - PARTICLE PAL FS9V2



Portable oil and fuel cleanliness just got better. Whether on - site or in the laboratory, the Particle Pal will provide instant cleanliness readings to allow you to fully understand the condition of your oils fuels.

A self contained system, complete with integral pump and controlled flow rate. Portable Oil and Fuel Diagnosis FS9V2 Particle Pal will provide instant cleanliness. Add a High Pressure System to use FS9V2 series online up to 350 Bar

THE PARTICLE PAL FS9V2 FAMILY OF PRODUCTS ARE SUITABLE FOR A WIDE RANGE OF APPLICATIONS.

FS9V2 Particle Pal

Live ISO/NAS/SAE particulate readings for Oils & Diesel Fuels

FS9V2 - RH Particle Pal

Live Particulate and % RH (Parts Per Million) Water content (diesel fuel only)

FEATURES:

- Single LCD Display showing all sensors connected
- Diesel fuel testing, Laser counter
- Improved fluid flow, pump feature set
- Trending Software, Internal memory
- Water sensors

KLEENOIL ON-LINE / PORTABLE LASER PARTICLE COUNTER WITH PRINTER



FEATURES:

- Particle counting with LED readout USB
- Attached Printer and Digital Screen for real-time reading
- Computer software for archiving data and trends
- Can be installed on all your Fuel or Oil Polishing Units
- Cost effective contamination control
- Accuracy is +/- 0.5 of an ISO code
- Test points for easy connection.

OIL SKIMMERS - LESTOPREX

lestol
SERIES F



- Belt Skimmer
- High-quality aluminium case
- Oil-feeding special belt
- Construction requires little space
- Low priced system
- Simple and low-cost operation

Case Dimensions:

Length / with outlet	: 155 / 190 mm
Width	: 85 mm
Height	: 148 mm
Weight	: 1.8 kg
Execution	: Standard

Model	Lt leakage oil/h	Type of belt	Length	Width	Immersion Depth	Electric Motor	Cable
F40	ca.4	Standard	Original 800 mm Maximum 3300mm	40mm	Maximum 1500 mm	220V/ 50 Hz	Yes

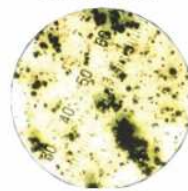
CONTAMINATION OIL PATCH TESTING KIT



Contents of Kit:

1. Vacuum pump with flexible pipe
2. Conical Flask.
3. Funnel
4. Mixing Cylinder
5. Membrane holder
6. Clamp
7. Benzene bottle
8. Cellulose Membrane filter packet 100 no's, 47mm Dia
9. Electric hot plate for testing water contamination
10. Tweezer
11. Microscope (Optional)

Patch Test:



Before
NAS Value 12
ISO 21/18



After
NAS Value 4
ISO 13/10

NAS GRADE TABLE

NAS GRADE (National Aerospace Standard 1638) is a widely adopted standard to measure the contamination degree of hydraulic oil.

NAS GRADE (nos. in 100 ml.)

Particle Size (μ)	1	2	3	4	5	6	7	8	9	10	11	12
5-15	500	1000	2000	4000	8000	16000	32000	64000	128000	256000	512000	1024000
15-25	89	178	356	712	1425	2850	5700	11400	22800	45600	91000	182000
25-50	16	32	63	126	253	506	1012	2025	4050	8100	16200	32400
50-100	3	6	11	22	45	90	180	360	720	1440	2880	5760
>100	1	1	2	4	8	16	32	64	128	256	512	1024

K KLENOIL PURIFIED OIL > K NEW HYDRAULIC OIL >

A FEW OF OUR ESTEEMED CUSTOMERS



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