



OIL CONTAMINATION CONTROL TECHNOLOGY

SEPTec



Innovatively Design in Bypass and Offline **"Oil Filtration Units"**

Oil Condition Sensor Integrated with Advance AI Technology For
"Sustainable Environmental Protection"



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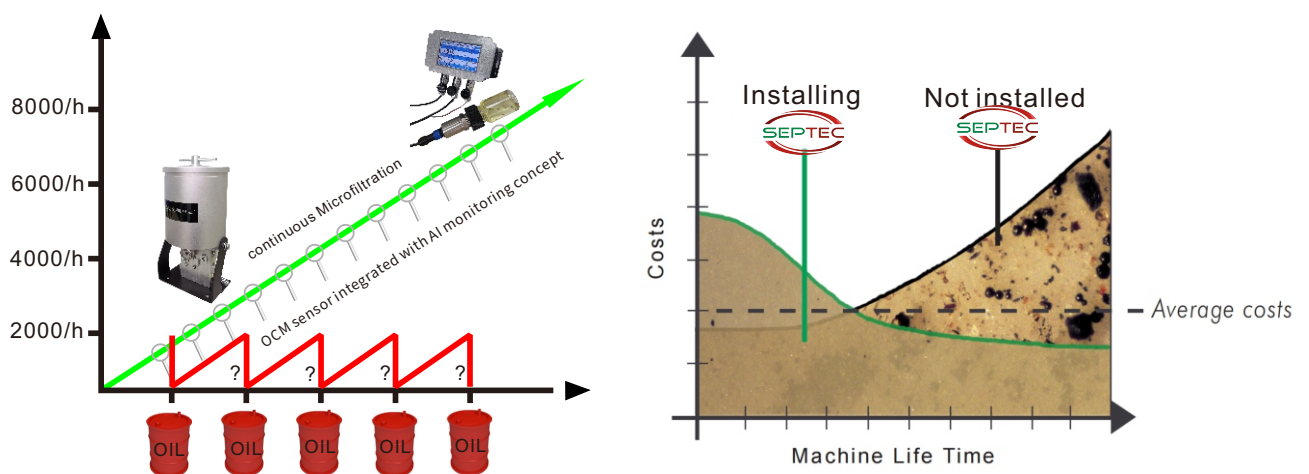
Mobile Maintenance and Filtration Service Van

GENERAL DESCRIPTION

With 80% of oil failures and breakdown are related to particle contamination and also 30% to 40% due to water in oil. Solid contaminants in fluid system vary in size, shape form and quantity as well. The most damaging contaminants in fluid system (both hydraulic and gearbox system) are normally between 6 and 14 micron and which cannot be seen by our naked eye.

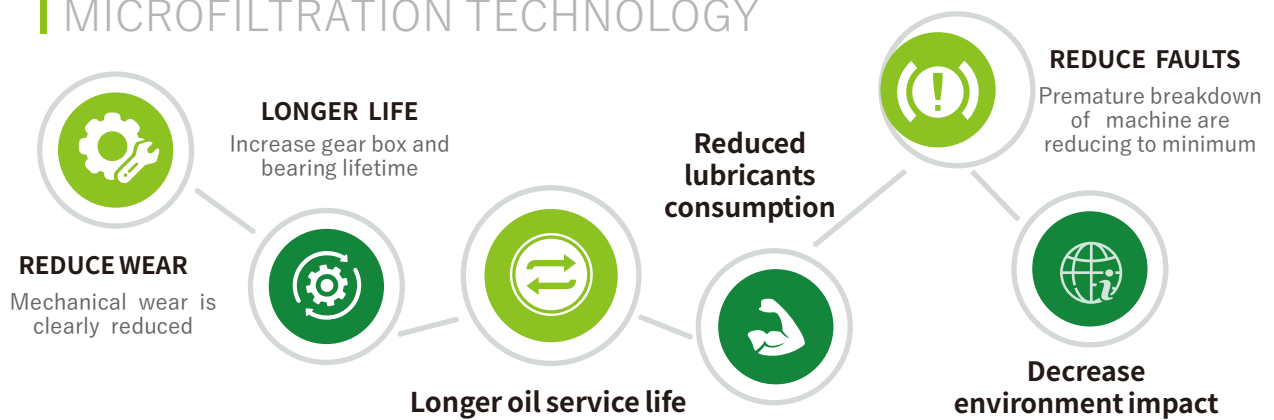
Furthermore, moisture in industrial oil can be particularly damaging. Not only impacting oil performance but also water will degrade additive and film strength, thus presenting the chance for mechanical wear and corrosion. Water content in oil can reach saturation point, forming free water. Free water can also increase the risk of cavitation which is the formation and collapse of air bubble in oil. Hydrolysis can also lead to an increase in acidity which leads to corrosion that damages both the oil and equipment.

By using our microfiltration technology can remove particles contaminants, oil degradation products as well as water and acidity from oil and fluid, the predicted life time of machine components and oil is expected to be extended by a factor of 2-10.





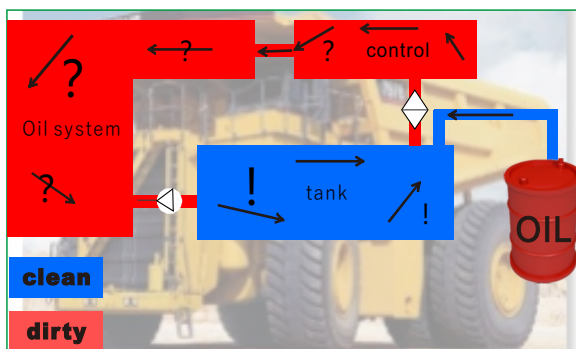
ADVANTAGE OF MICROFILTRATION TECHNOLOGY



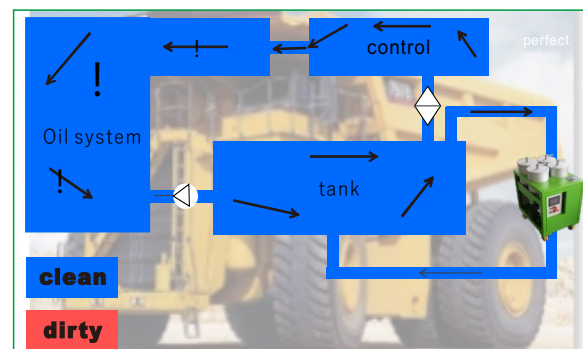
It is a wrong to believe that lubricants deliver by oil supplier are clean, as well as it is also wrong to assume that by oil change the contamination can be eliminated from the system. Keep in mind that 30% of old oil still remain in the systems after oil changed. Offline and By pass filtration is capable of maintaining oil in “cleaner than new” condition and also can keep system clean.

The operating cost of a machine is direct related to the contamination of used lubricants of pressure fluids. By installation of microfiltration units either by-pass or offline units will incurred additional cost, but with the advantages of installation microfiltration unit, the operation cost will be reduced and an overall cost saving can be achieved.

Partial success, after oil change hydraulic tank is clean but the system still have 30% of dirty oil



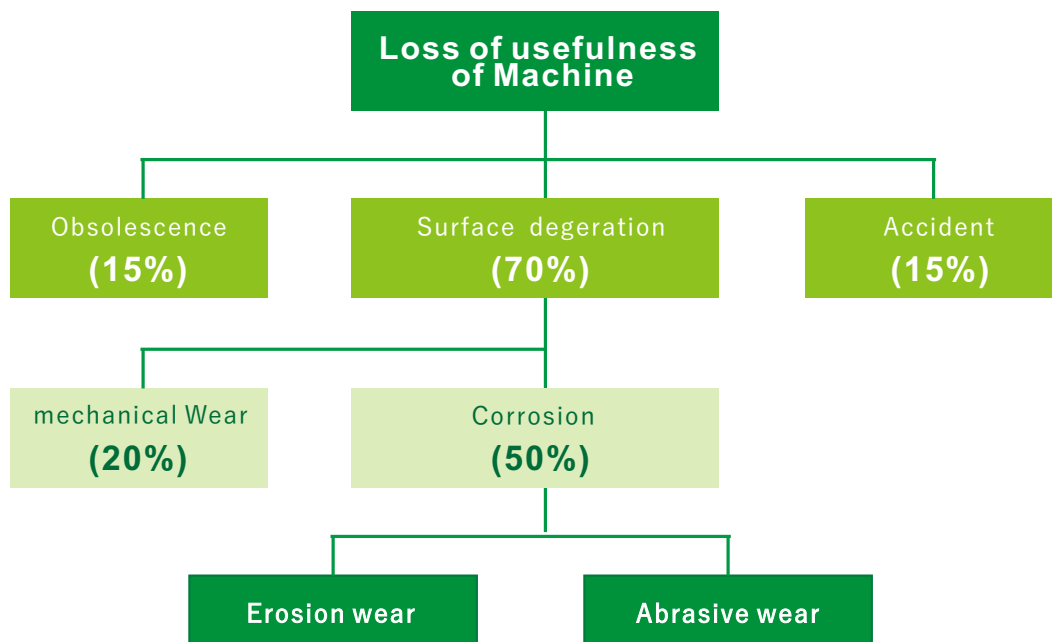
System cleaning by SEPTTEC filter unit achieve **Complete Success** 100% clean oil



Oil cleaning through microfiltration is the most effective and environmentally friendly way to **remove solid particles and water pollution** achieve best cleanliness class

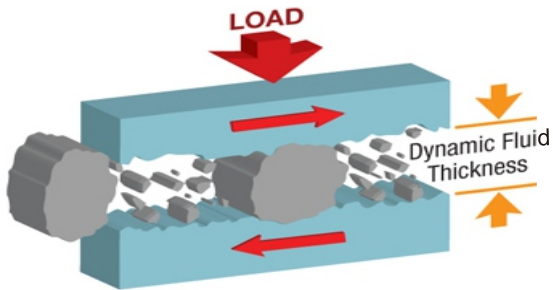
The Chain Reaction of **WEAR**

70% of equipment or machines “ Loss of usefulness ” is caused by either by **mechanical wear or corrosion**, in other word, most equipment fails because of small invisible-to-naked-eye debris , abrasive wear, adhesive wear, fatigue wear, corrosion and erosion wear. All mentioned wear will damage component, degrade lubricants and eventually cause machine breakdown.



According to renown University study in US, the maintenance cost incurred 4-5% of GNP in USA approximately USD\$ 820 billion. With the advance development in AI, IIOT and different type of sensors innovation together with successful application of microfiltration units is one of the most successful solution not only to improve machines performance but also reduce maintenance costs and at the same time improve company profit as well.

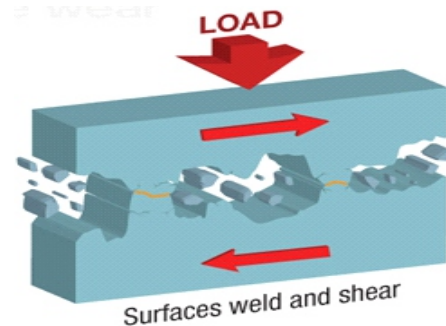
TYPE OF WEAR



Abrasive wear

Abrasive wear effects

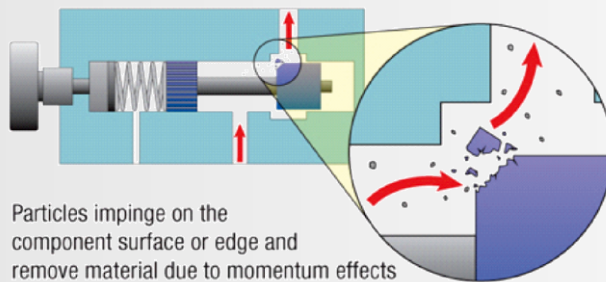
- Dimensional changes
- Leakage
- Lower efficiency
- Generated wear: more wear



Adhesive wear

Adhesive wear effects

- metal to metal contact
- Cold welding
- Adhesion and shearing



Erosive wear

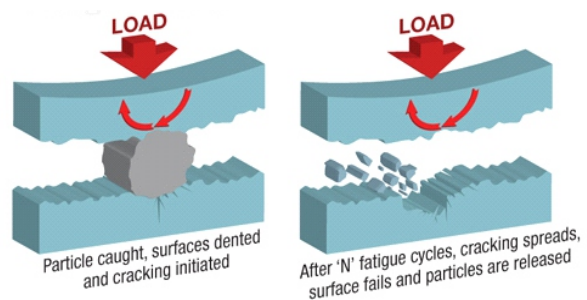
Erosive wear effects

- Slow response
- Spool jamming /stiction
- Surface erosion
- Solenoid burnout

Fatigue Wear

Fatigue Wear effects

- Leakage
- Deterioration of the surface finishing
- Cracks



Particles generated as a result for wear which is very hard and harder than the parent surface. If these particles are not remove instantaneously, they will recirculate and cause even more wear. This is a “Chain Reaction of Wear” effect, which is very damaging to the mechanical system. This is the reason “why filtration is so important”.

Understanding ISO Cleanliness Codes

Machine “Loss of Usefulness” is due to mechanical wear and approximately 80% of mechanical wear is caused by particle contamination in the oil.

When oil is kept clean, wear rate go downs and machine service life goes up.

This is the important reason that we need to understanding and interpret cleanliness codes. When we speak in terms of cleanliness, we often refer to the ISO particle count of the oil. According to the ISO 4406-1999 standard, the ISO particle count is a measure of number of particle great than 4, 6, and 14 micron in every millimeter of fluid. The number of particle is then converted to what is referred to as the ISO code or Range number.

EXAMPLE

**Fuel or oil with cleanliness
level of ISO 22 / 21 / 18
Using table this which indicate**

Particle size	Number of particle	Code number
≥ 4	$2,000,000 \leq 4,000,000$	22
≥ 6	$1,000,000 \leq 2,000,000$	21
≥ 14	$130,000 \leq 250,000$	18

The table shows the number of particles in 100ml of fluid that is specified against each number in the range.

ISO4406-99 Cleanliness Standards (number of particles per 100mL)

Code No.	More Than	Up to and including
1	1	2
2	2	4
3	4	8
4	8	16
5	16	32
6	32	64
7	64	130
8	130	250
9	250	500
10	500	1,000
11	1,000	2,000
12	2,000	4,000
13	4,000	8,000
14	8,000	26,000
15	26,000	32,000
16	32,000	64,000
17	64,000	130,000
18	130,000	250,000
19	250,000	500,000
20	500,000	1,000,000
21	1,000,000	2,000,000
22	2,000,000	4,000,000
23	4,000,000	8,000,000
24	8,000,000	18,000,000

Understanding Oil Cleanliness Level

ISO 4406-1999 and NAS1638 Comparison Table

ISO4406-99	NASA1683	5-15µm	15-25µm	25-50µm	50-100µm	>100µm	
13/11/08	2	1,000	178	32	6	1	Achievable result after microfiltration
14/12/09	3	2,000	356	63	11	2	
15/13/10	4	4,000	712	126	22	4	
16/14/09							
16/14/11	5	8,000	1,425	253	45	8	
17/15/09							
17/15/10							
17/15/12	6	16,000	2,850	506	90	16	
18/16/10							
18/16/11							
18/16/13	7	32,000	5,700	1,012	180	32	Minimum required cleanliness for high pressure servo valve for hydraulic system
19/17/11							
19/17/14	8	64,000	11,400	2,025	360	64	
20/18/12							
20/18/13							
20/18/15	9	128,000	22,800	4,050	720	128	
21/19/13							
21/19/16	10	256,000	45,600	8,100	1,440	256	
22/20/13							
22/20/17	11	512,000	91,000	16,200	2,880	512	very contaminated breakdown inescapable
23/21/14							
23/21/18	12	1,024,000	182,400	32,400	5,760	1,024	
24/22/15							
25/23/17							

According to ISO 4406 and NAS 1638
 100x magnification 1 scale mark = 10 micron



ISO 4406-1999 14/12/09
NAS 1683-1964 3



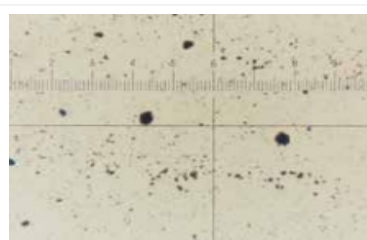
ISO 4406-1999 15/13/10
NAS 1683-1964 4



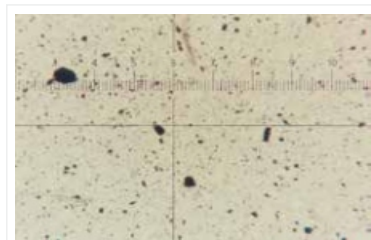
ISO 4406-1999 16/14/11
NAS 1683-1964 5



ISO 4406-1999 21/19/16
NAS 1683-1964 10



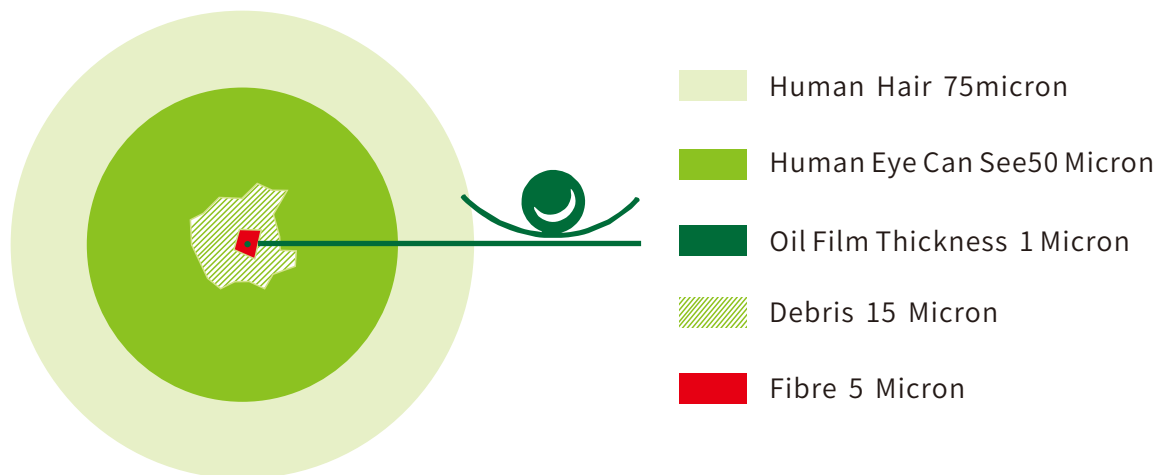
ISO 4406-1999 22/20/17
NAS 1683-1964 11



ISO 4406-1999 23/21/18
NAS 1683-1964 12

SIZE COMPARISON

Size ratio magnified **by factor of 1000**

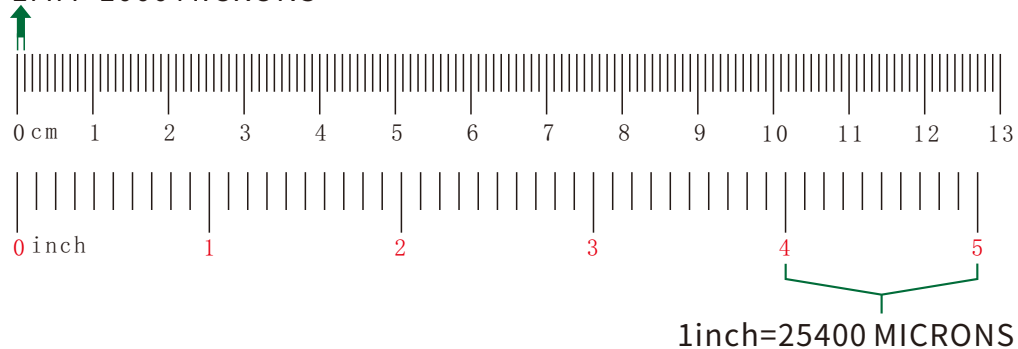


How small is a micron ?

- one micron is 1/1000mm or 1/25000 of an inch
- Generally speaking, the human eye can see debris and dust that are approximately 25-50micron in size.



1MM=1000 MICRONS





WATER CONTAMINATION

Even before being put into use, oils are at risk of water contamination during transportation and storage. When upright containers (particularly drums) are stored outside or during loading, water can collect on top of the container. As ambient temperatures rise and fall, moisture can be drawn into the barrel via the barrel caps.

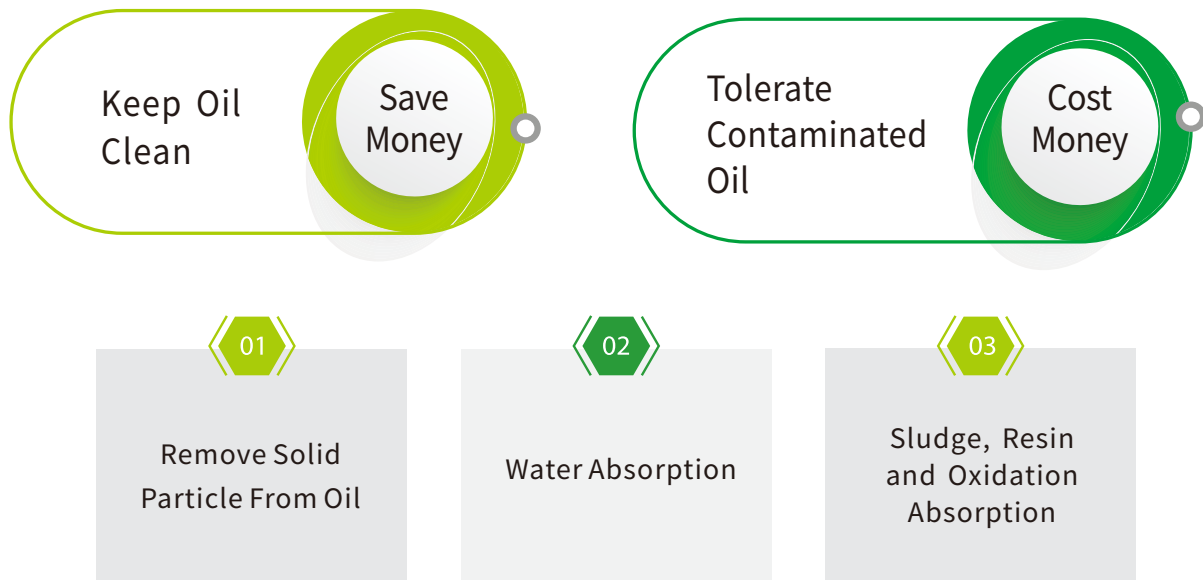
During operation water can get into the oil through opening on the tank, as condensation from the air or through worn cylinders and seals. Condensation is the more common cause of water ingress into oil during operation.

Especially in the case of mobile machinery operating outdoors water vapor can condense in the tank specially when the system cools down. If equipment is relatively static this often leads to rust and other corrosion problems, especially above the oil level Furthermore, if there is a higher amount of water in the oil, micro-organisms begin to grow. The result is the accumulation of sludge and a change in viscosity. The first signs of a problem are an unpleasant smell and a change in color (clouding of the oil).



Fluid Type	Water content in new oil (harmless)	Max. tolerable value (according to current norms)	Filtration recommended starting from
HLP HVLP	100-400ppm	500ppm	>400 ppm
HEES HETG HEPR	400-700ppm	1,000ppm	>900 ppm

Oil- Cleaning With Microfiltration



BENEFIT AND ADVANTAGES USING MICROFILTER

01	Removing of all solid contaminants	05	Reduce the cost on full flow filter
02	Removal water by absorption effect to less than 100ppm	06	Significant reduction of oil consumption and oil disposal cost
03	Eliminating resin and oxidation products	07	Environmental benefit
04	Extend component life	08	Provide significant economic payback
05	Removing ferrous particle from system and could also diagnostic the machine wear		



APPLICATION INDUSTRIES



Offshore and marine



Steel mills



Construction machinery



Wind power generation



Injection machineries



Hydraulic system



Coal mine



Chemical industrial



Automobile manufacturing



Paper mill



Aviation



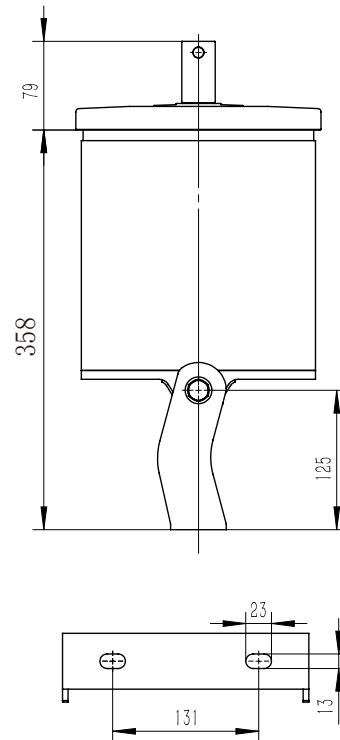
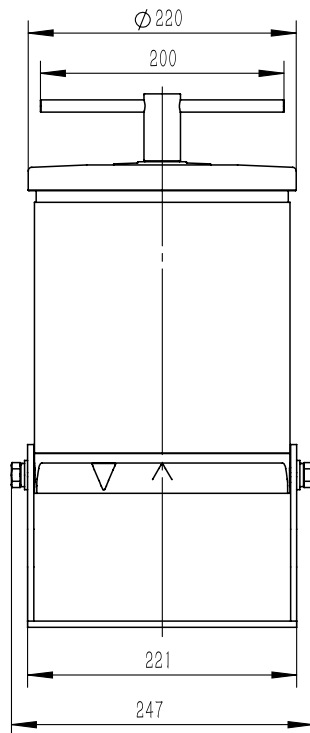
Power plant

SEP-HPF-10 By-pass Filter

Specification	SEP-HPF-10
Housing pressure test	180 psi / 12.5 bar
Port size (inlet/outlet)	G $\frac{3}{8}$ G $\frac{3}{8}$
Dimension	220 × 247 × 438 (Ø × W × H)
Weight	7.4kg
Flow Rate	2L/Min
Inlet Pressure	1.5-3bar
Recommended installation	By pass system only up to 1000L



INSTALLATION DIMENSION DIAGRAM



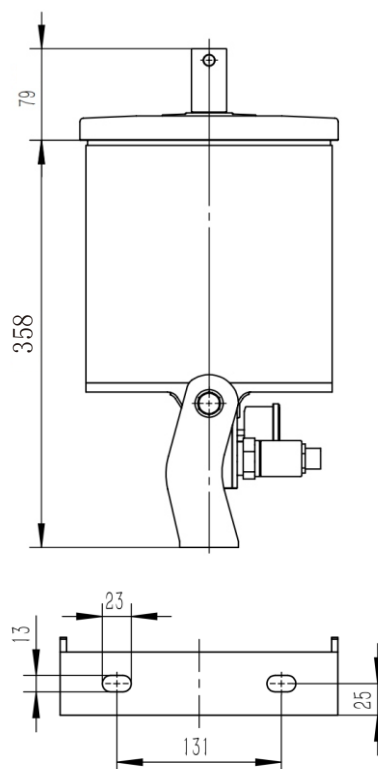
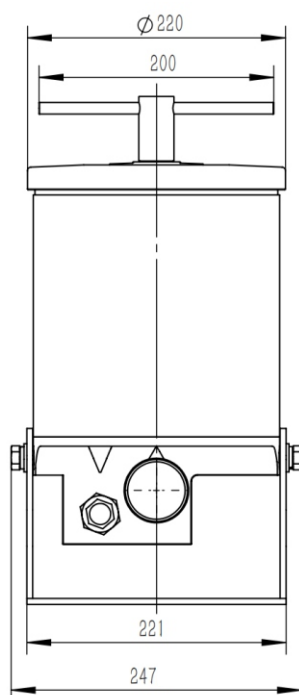


SEP-HPF-30 By-pass Filter

Specification	SEP-HPF-30
Housing pressure test	180 psi / 12.5 bar
Port size (inlet/outlet)	G $\frac{3}{8}$ G $\frac{3}{8}$
Dimension	220 x 247 x 438 (Ø x W x H)
Weight	8kg
Flow Rate	2L/Min
Inlet Pressure	2-350 bar
Recommended installation	By pass system only up to 1000L



INSTALLATION DIMENSION DIAGRAM

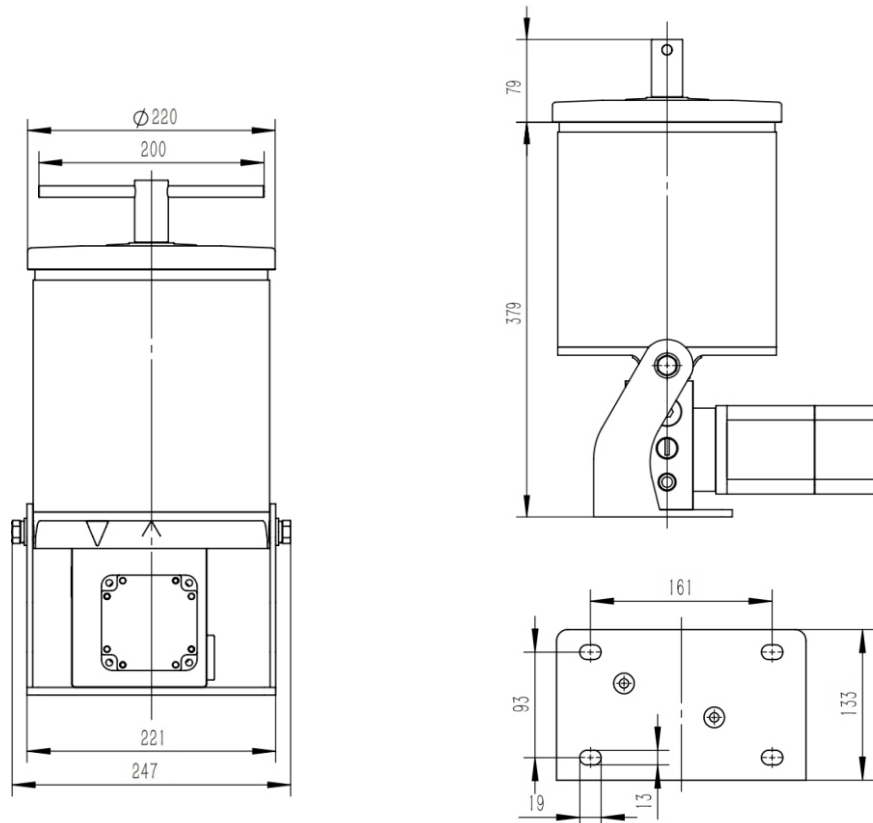


Oil Cleaning Microfilter with pump

Specification	SEP-HPF-10P
Housing pressuretested	180 psi /12.5 bar
Port size (inlet/outlet)	G ³ / ₈ G ³ / ₈
Dimension	220 × 247 × 458 (Ø × W × H)
Weight	7.4kg
Flow Rate	2L/Min
Voltage	24 volt with BLDC motor with pump
Pre-filter	Fine coarse filter and magnetic stick
Recommended installation	system below 1000L



INSTALLATION DIMENSION DIAGRAM



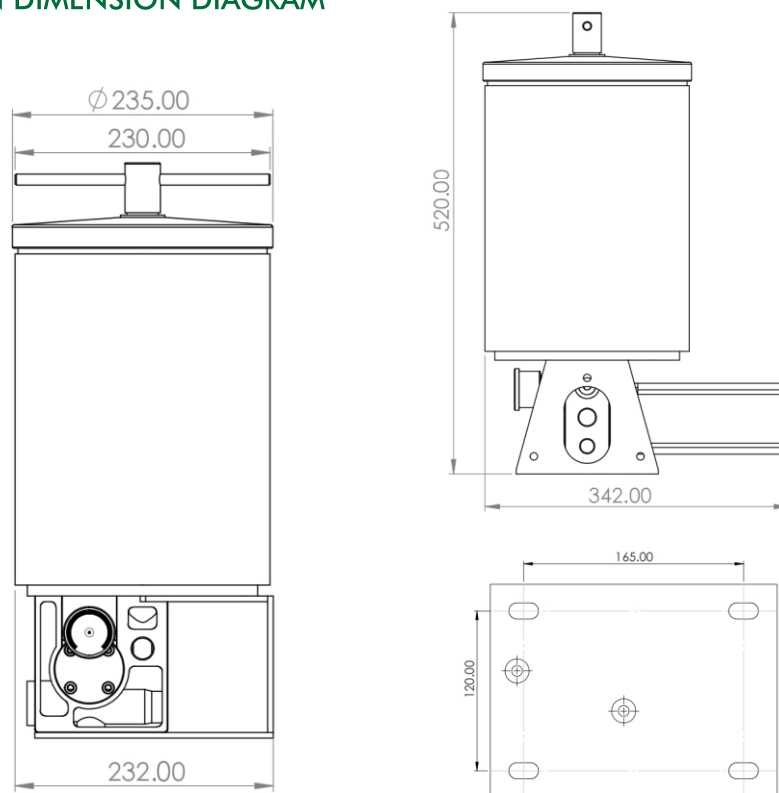


Oil Cleaning Microfilter with pump

Specification	SEP-HPDS-40P
Housing pressuretested	180 psi /12.5 bar
Port size (inlet/outlet)	G ¹ / ₄ G ³ / ₈
Dimension	235 × 232 × 520 (Ø × W × H)
Weight	14kg
Flow Rate	3l/ min (180L/Hrs)
Voltage	24 vole BLDC motor with pump
Pre-filter	Fine coarse prefilter with magnetic stick
Recommended installation	system below 1500L



INSTALLATION DIMENSION DIAGRAM



Offline Microfiltration Unit

All hydraulic or gear oil system are equipped with in-line filter. Typically in-line filter are ranges from 6-35 micron in size. The in-line filter designed to supply an adequate flow rate within the system in order to assure all system components to perform the best performance during operation. Many research study found out that majority of big particles are filtered out by inline filter only leaving in the system with approx. 10% of the particles bigger than 10 micron and also approx. 70%-80% of the particles are between 1-5 micron with these fine particles are most damaging to the systems. Furthermore, all in-line filter alone does not capable to keep the oil in the system clean and dry. This is the reason additional off-line microfiltration units are necessary to protect machine components. Our SEPTEC off-line filtration units are design to filter, clean and reclaim most type of oil, hydraulic and gear oil. With our offline filtration units, particles and moisture are removed leaving oil “cleaner than new and moisture in oil below 100ppm”, reducing downtime and components wear.

Portable Filtration Units



Specification	SEP-FU-1	SEP-FU-2
Port Size (inlet/outlet)	G $\frac{1}{2}$ G $\frac{1}{2}$	G $\frac{3}{4}$ G $\frac{3}{4}$
Dimension	450X520X730(DxWxL)	450x520x730 (DxWxL)
Prefilter	prefilter bags, fine coarse filter with magnetic stick	prefilter bags, fine coarse filter with magnetic stick
Control	PLC	PLC
Over pressure protection	yes	yes
Weight	70kg	110kg
Flow Rate	240L/Hrs	480L/Hrs



Offline Microfiltration Unit



Specification	SEP-FU-4	SEP-FU-6
Port Size (inlet/outlet)	G ³ / ₄ G ³ / ₄	G1" .G1"
Dimension	700x540x750 (DxWxL)	1000x540x750(DxWxL)
Prefilter	prefilter bags, fine coarse filter with magnetic stick	prefilter bags, fine coarse filter with magnetic stick
Control	PLC	PLC
Over pressure protection	yes	yes
Weight	150kg	180kg
Flow Rate	960L/Hrs	1450L/Hrs

New concept and economical solution for effective dewatering all type of oil SEP-DE- 240

SMAT- 240 with proven technology to remove all kind of water from hydraulic and lubrication fluid including gear oil and transformer oil. This technology is based on blowing cool air into warm oil in a special design vessel. The cooled air will expand once it mixed with warm oil. Due to the expansion of air bubbles, the water is effectively removed from the oil . The warm air passing through a condenser cooler. The condensation water from the air will discharge and collect in container.



SEP-DE- 240 with PLC control and the system integral with water sensor which continuous showing the moisture concentration in the oil.

Specification	SEP-DE 240
Flow Rate	240L/Hrs
Dimension	1100x560x1100 (DxWxL)
Port Size (inlet/outlet)	G $\frac{1}{2}$ G $\frac{1}{2}$
Pre-filter	fine coarse filter with magnetic stick
Voltage	220 Volt
Weight	250kg
Power Consumption	6.1KW



Miniature Vacuum Dehydration Unit SEP-VDU-240

This is a miniature, light weight and cost effective design vacuum dehydration unit. It can applied directly to various types of machines reservoirs. Ideally suited for small volume system between 1000L to 3000L of lubricants fluid. It dehydrate and cleans most types of oil such as lubricants fluid, hydraulic oil, transformer fluid, quenching oil and synthetic fluid. The system design is a fully automatic process through PLC control and only manual action is needed to emptying the condensate and waste water in the container.



Specification	SEP-VDU-240
Flow Rate	240L/Hrs
Dimension	1100x560x1100 (DxWxL)
Port Size (inlet/outlet)	G $\frac{1}{2}$ G $\frac{1}{2}$
Pre-filter	fine coarse filter with magnetic stick
Voltage	1-ph 220Volt or 3-ph 380volt (option)
Weight	250kg
Power Consumption	6.3kw

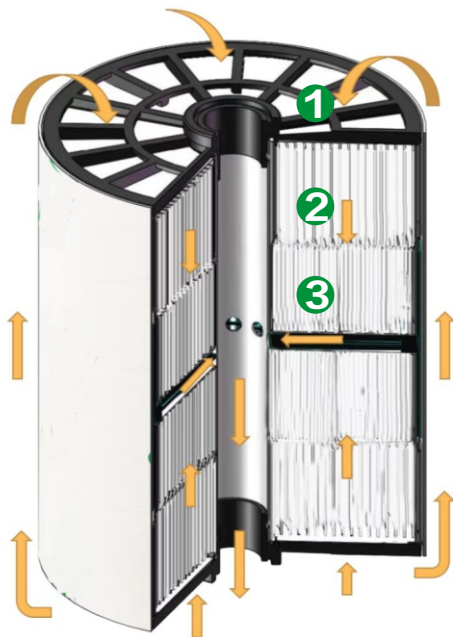
Description

Our filter element are patented with specially design in construction.

The filter element are made of long fibre cellulosus , polypropylene and polyster.

Its functioning is based on depth filtration theory. The oil is conducted axially through filter with low pressure and reduced flow rate process. The best filtration performance with pressure controlled between 1-3 bar with a 4 bar maximum. Our filter have high dirt and water absorption capability which is higher than average. The additives of the oil are not influenced after filtration. Our specially design and construction filter element can efficiently remove particles contaminants, oil degradation products, as well as moisture in oil and acidity from oil and fluids, the predicted life time of machines components and oil is expected to be extended by a factor of 2 to 10.

Both of our HPDS and HPF filter element design with three distinct stages of filtration and water absorption.



- The larger particles are retained on the top of the element (1),
- making for an excellent filtration process, smaller particles are trapped in the mid stages (2),
- and fine particles and dust are trapped in the lower and compressed part of the element (3).



Filter Element Technology and Design

Element change interval

Taking into consideration the high dirt and water retention capacity, the filter element change intervals can be individually determined with according to the contamination and the volume of the oil in the system.

Normally the element change frequency is around 500 operation hours or 6 months whichever comes first. On the contrary, in extreme condition, e.g. high quantity of water contamination or oil loaded with high amount of sludge, this can cause a filter element collapse (deformation). In this case, the filter elements have to be changed . Furthermore, such a extreme condition the change intervals have to be reduced.



SEP-FC

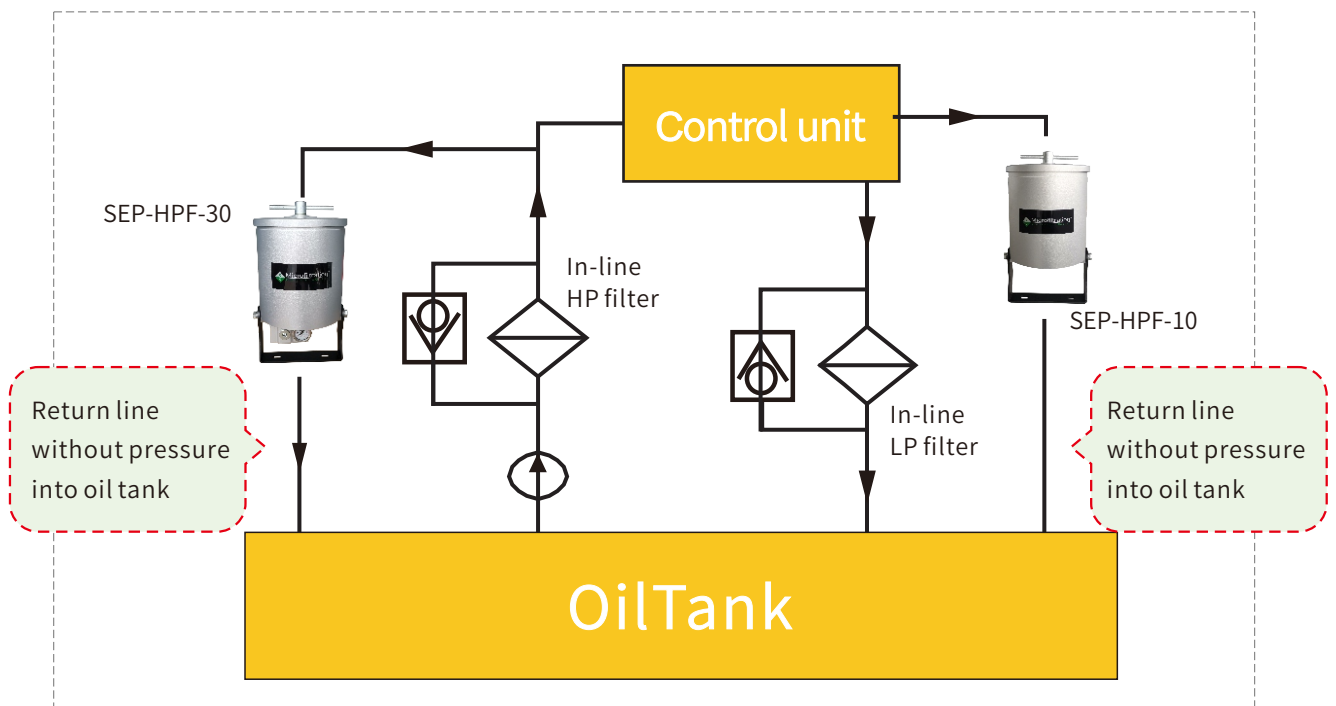


SEP-FC PLUS

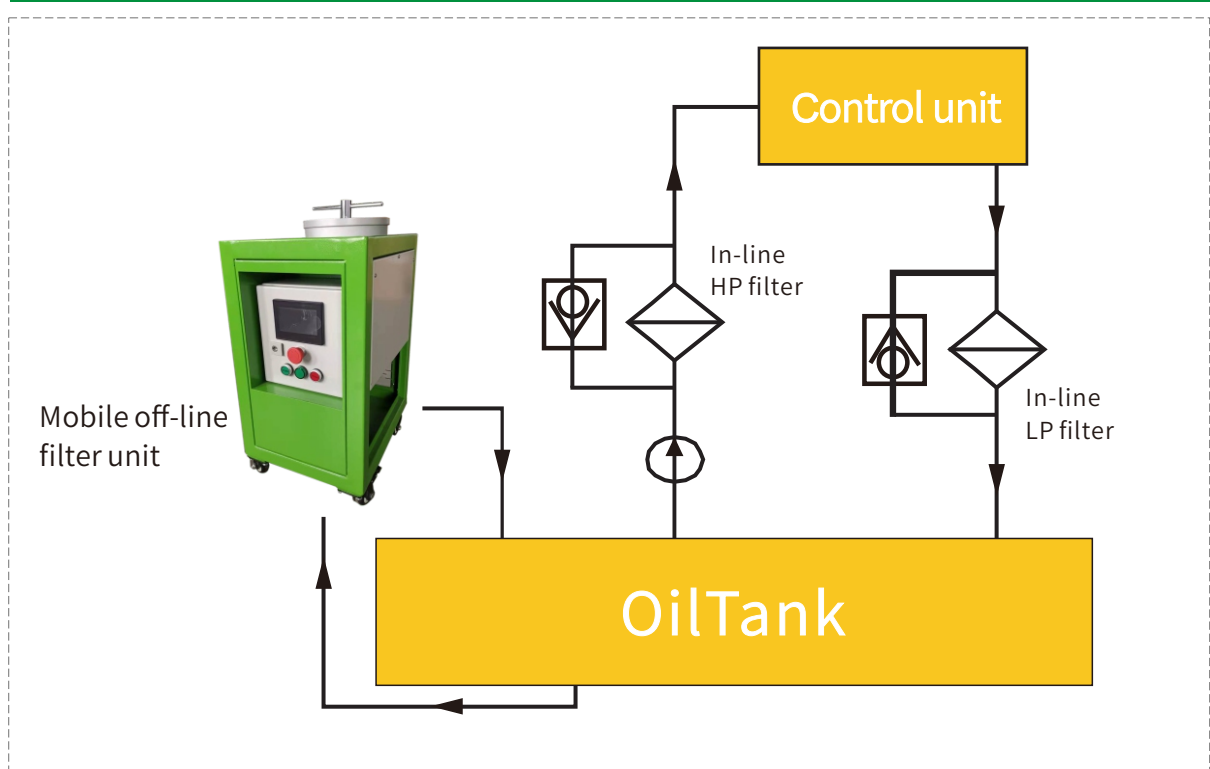
SPECIFICATION OF FILTER ELEMENTS

Type	Cleanliness class	Retention	HxD (mm)	Weight (gram)	Packing
SEP-FC	ISO 4406:1999 17/15/12	4000g/800ml	262x198	2560g	3
SEP-FC PLUS	ISO 4406:1999 17/15/12	3000g/600ml	200x198	1950g	3

Installation Diagram of Bypass Filter



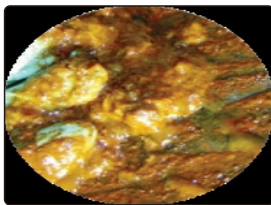
Installation diagram of mobile off-line filter unit



How to Outsmart Varnish and Avoid Costly Downtime

What is Varnish?

Varnish is a coating that adhere to internal surfaces, wear out equipment components, restricts performance and can ultimately cause failure. It is composed primarily of organic residue mixed with metals, inorganic salts and other contaminants. Varnish can take different forms, from sticky coating to a hard lacquer and ranges in color from grey to brown to amber. Varnish is very destructive and hard to remove.



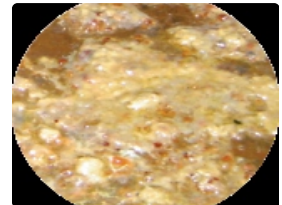
Varnish can be soft and gooey(sludge)



Varnish can be hard and brittle(Lacquer)



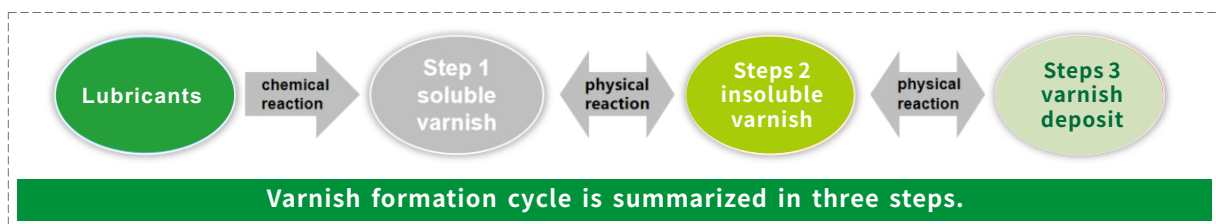
Varnish on reservoir ceiling (stalactites)



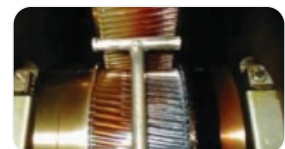
Varnish deposit on reservoir floor(plated)

Varnish Formation

Varnish begins its life as a soluble /dissolved degradation products in the process of oxidation before converting to particulate form and depositing on metal surfaces. The typical varnish formation cycle specially in a gas turbine involves the following three steps.



The paint film adheres to the surface different valve blocks and gears

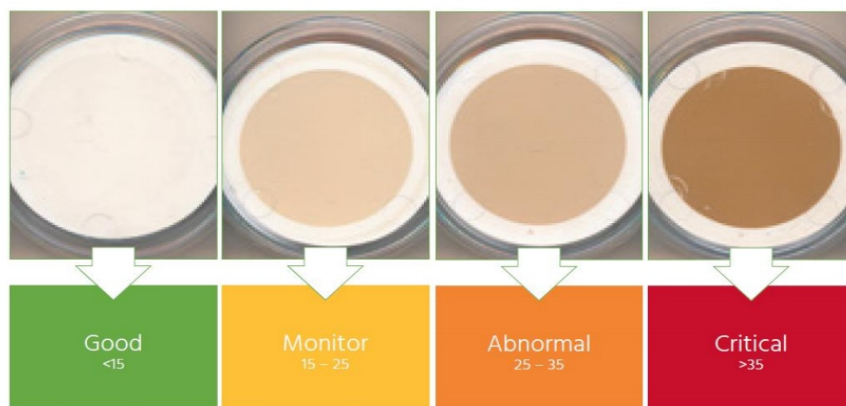


Consequence of Varnish

- Valve sticking- loss of control, resulting in turbine trips or fail to start.
- Filter blockage- restriction of oil flow, which increase oil temperature and wear
- Sandpaper surface- increase component wear
- Ineffective heat exchanges- increase oil temperature
- Lacquer baked onto bearing - flow restriction and increased wear and temperature.
- Frequent oil changes and system flushing

TESTING FOR VARNISH

Varnish potential testing also called MPC (Membrane Patch Colorimetry ASTM 7843) is recommended by ASTM to performed Regularly test or quarterly at a minimum test.



— MPC Scale —

Varnish Mitigation Technologies

Due to the high profiles and costly events associated with varnish in large frame gas turbines, the market for varnish mitigation has expended rapidly. Varnish mitigation technology can be categories into 3 different areas:

- 01 Low temperature +Depth media filtration
- 02 Electrostatic separator
- 03 Chemical filtration by means of resin exchange technology



Low Temperature Varnish Removal Unit SEP-VU-240

In the existing market normally have 3 different types of varnish removal technology. Our LT varnish removal unit are make use of low temperature technology to achieve varnish removal. Varnish will dissolve into lubricant fluid greater than 40°C and if cool down below 40°C, it will gradually precipitate as suspension state in the lubricants fluid. Our SEP-VU-240 make use of this phenomenon to cool down the oil below 40°C by chiller integrated in varnish removal unit. The cooled lubricant fluid then passing through HPDS depthmedia filtration unit to remove suspension varnish. But specially attention needs to be taken such that the filtration should not allow to increase temperature after collecting varnish material in the depth media filter element otherwise varnish will pull out and redissolve into lubricant fluid again.



Specification	SEP-VU -240
Flow Rate	240L/Hrs
Dimension	1100x560x1100 (DxWxL)
Port Size (inlet/outlet)	G½ G½
power consumption	6.2kw
Weight	150kg

Oil analysis and Real time oil condition monitoring

Oil change intervals always follow the recommendation by OEM or done by engineer's experience. If oil change too early and oil still in good quality, this cause unnecessary cost. If an oil changed is done too late, machines damages can occurs . With advancement in IIoT (Industrial Internet of Thing) and AI (Artificial Intelligence) and innovative sensor technologies, it disrupting traditional planned maintenance behavior which moving forward with condition based monitoring (CBM) concept. Using a sensor based, data driven approach enable to continuously monitoring fluid health and contaminants (cleanliness class). Our OCM oil condition monitoring concept together with portable onsite test kit has been designed for application areas of hydraulic, engine, gear oil ,turbine oil and transformer oil as well.

Portable Oil Analysis Test Kit (OTK)

(include patch test; water in oil test and viscosity comparator)



Oil analysis service are a proactive way to keep equipment operating reliably and avoid catastrophic failure. Our OTK are specially developed to enable technician and engineer to conduct immediate on-site oil analysis. Portable OTK contain patch test; water content in oil and viscosity comparator and infra red temperature gun checking oil temperature.



Portable Particle Counter

Fluid analysis is a crucial component for any oil management. Early detection of potential problem can prevent costly repairs and downtime. Our portable particle counter is capable of measuring both moisture in oil and cleanliness class with ISO 4406:1999 and NAS 1638. The portable particle counter is an innovative solution measuring the oil quality of any type of oil including hydraulic oil or gear oil in many different application from renewable energy , marine and offshore to manufacturing ,as well as mobile construction machinery , military and aerospace industrial segment.

It is compact, lightweight and robust design and it is simple, quick and easy to use portable equipment.



On-Site MPC Test Kit (ASTM D7843)



Oil varnish deposits cause major problems in turbines and other industrial equipment, from hurting system performance and reducing system life cycles to destroying key parts and causing costly, unplanned shutdowns. Membrane Patch Calorimetry (MPC) testing has already been globally adopted as most common methodology for testing the varnish potential for lubricant fluid. Our portable MPC test kit for varnish potential determination with according to the outlined procedure in ASTM D7843.



Oil Quality Sensor and display unit

Early detection of changes in oil and lubricants condition can provide greater insight into the actual condition of vital machines and equipment. SEPTEC oil quality sensor and display unit is a simple but powerful tool which allows you to read the oil quality, % of moisture saturation in oil, temperature of oil without connection to PC. After installation with SEPTEC Oil Quality Sensor, the indication on the display unit provide warning to the operator, if any abnormal condition developing in the machinery. In addition it indicate when an equipment oil or filter change is necessary or when an oil sample should be taken and dispatched to an approved laboratory for further oil analysis. Our patented sensor technology is 60 times more sensitive to oil degradation than any other type dielectric constant measuring sensor. It is suitable for use with diesel engine, gas turbine, gear boxes, hydraulic system, compressor, generator, truck and other oil filled plants.



Benefit with SEPTEC Oil Condition Sensor

- Optimize service interval
- Early detection of potential failure
- Insight into potential failure mode
- Reduce maintenance cost
- Extended oil change intervals
- Scheduled downtime intervals for increase productivity
- Minimize oil waste and disposal cost
- Improved equipment reliability
- Low investment cost for additional installation
- Reduce carbon footprint for sustainable environmental protection

Oil Quality Sensor and Display units is robust in design, resistant to high temperature -40°C to 120°C and resistant to fluid pressure up to 20 bar.



up to 20bar



-40°C to 120°C



simple



robust design

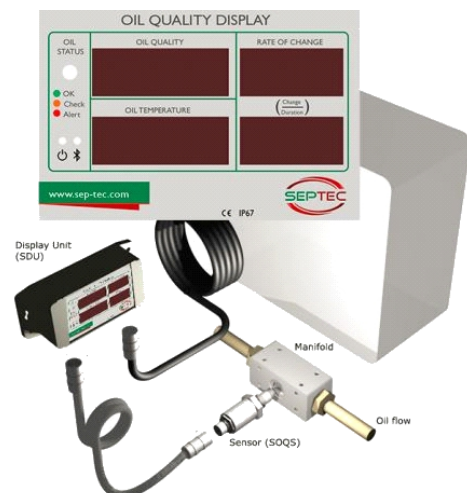
Septec Oil Condition Monitoring System(SOCM301)

SOCM301 is an online real-time monitoring system for oil status. The purpose of this system is to enable equipment operators to use the memory in Septec display unit to instantly understand the oil status and quality changes. It can minimize equipment failures prolong equipment life and improve productivity.

The system includes a sensor and display panel, pre configured software and installation guide, and is robust and easy to install. The sensor adopts patented technology and has extremely high sensitivity to any change of oil condition. It works by measuring the ability of the oil to store energy (capacitance) and conduct current (conductance). This is achieved by introducing high-frequency waveforms into the oil. By comparing the data of these two factors, the percentage based "loss factor" represents any change in fluid quality. Septec display panel can also conveniently provide simple traffic light style indication, green represents good, yellow represents early warning, and red represents alarm, which is which is convenient for observation and diagnosis.

SOCM301 includes

- Manifold
- Septec Oil Quality Sensor (SOQS)
- Cable (sensor to display)
- Septec Display Unit (SDU)
- Power cable



MOBILE OIL TEST KIT (MOT)

(The worlds most advanced portable test kit)

SEPTEC have developed easy to use software to enable engineer to get the remaining oil life from the oil in your system utilizing TANDELTA' S oil degradation sensor. The MOT software allows user to analysis an oils remaining life by comparing samples against an ever growing database of oils. If an oil is not on the database, custom profiles can be created by temperature cycling fresh oil. Tests can be carried out and categorized against a specific asset, with the latest software including advanced trending features to monitor how the oils life is changing overtime, so sudden fluctuations can be easily detected, alerting operators to potential early signs of components failure within a system.



SUITABLE FOR USE IN



Service
Centers



Ship Engine
Room



Mobile
Service
Teams

HOW IT WORK ?

- 1. Take sample — take a small sample of oil using one of the bottles provided.
- 2. Connect sensor — Connect sensor to a PC running the monitoring program & select oil types.
- 3. Attach sample — Screw sensor to the bottle & turn upside down so oil covers the sensor node.
- 4. Take reading — Oil condition statement in a clear easy to understand format.

Mobile Maintenance and Filtration Service Van

The objective to develop Mobile Service Van is to provide maintenance and filtration service to all equipment owners in order to increase equipment's efficiency, reduce cost, reduce maintenance, reduce oil consumption and also reduce disposal cost as well. It also have positive impact in our global environment achieving further reduction in CO2 emissions.

All our equipments are specially designed quick service at site



Our trained service engineers provide on-site:

- Particle count analysis
- On-site patch test
- On site oil sampling for oil analysis
- Provide require spare parts e.g. filter, new oil, seal and hydraulic pipe.
- Checking Remaining useful life of oil
- Filtration service and flushing



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