

HYDROILTEK SYSTEMS OVERVIEW PRESENTATION

Dated : April 2021

Organization : HYDROILTEK SYSTEMS

HYDROILTEK SYSTEMS is a Kolkata based company engaged in the manufacturing of oil filtration equipment.

The first operation of building these equipment started at Surat in Gujarat under the name of WELTECH Enterprise in the year 2015.

The founders of **HYDROILTEK SYSTEMS** with graduation in Mechanical Engineering , has more than 25 years of work experience in Operations , Sales & Marketing of Industrial Products and Service Department of renowned organisation in India & overseas.

We provide Oil Cleanliness and Dehydration Services at Customer's premises for

- Hydraulic Oils
- Gear Oils
- Turbine Oils
- Compressor Oils

Foot Print : Domestic Market



Current Plant Location



Proposed Additional Plant Location



Engineering , Development & Testing Location

Some of Our Esteemed Customers



**AM/NS
INDIA**



WELSPUN



Main Industry Segment

Steel



Power



Heavy Engineering



Industrial Gear Box



Pulp & Paper



Foundries



Forgings



Metal Cutting MCs



Need of Filtration Equipment & Objective

Objective :

- ❖ Ensuring Cleanliness Level of Hydraulic Oil per requisite specification
- ❖ Lubricating Fluid with moisture content less than 500 ppm / specification

Insights:

- The Filters provided in the High Pressure and Return lines are not sufficient to keep the Oil Contamination level in the required limits of NAS 7 / below .
- The Oil reservoir over a period of time has accumulated contaminants also from environment
- Offline Filtration System , also called KIDNEY LOOP Filtration Systems are used; consisting of Pump , Motor & a Filter which forms the basic configuration as Independent Unit.
- A portion of Oil is sucked from the reservoir , filtered and returned to the reservoir
- KIDNEY LOOP Filtration Systems is not exposed to the Hydraulic System and all possible pressure variations, hence it is very efficient in removing Contaminations from fluid and holding without releasing it back to the fluid.
- The Offline System can operate 24x7 even when the Hydraulic or Oil Circulation System is not working . This remains as the Major Advantage of this system : Electrostatic System & Depth Filter System

Equipment to Control Contaminants /Moisture & Capable to measure NAS/ppm on LIVE Basis

Electrostatic Hydraulic Oil Cleaner



Removal of contamination from Hydraulic, Turbine, Compressor and Gear Oils

ELECTROKLEEN

Low Vacuum Dehydrator



Removal of moisture from Oils

NEEROKLEEN

Hydraulic Oil Depth Filter



Removal of moisture and contamination from oil.

MECHKLEEN

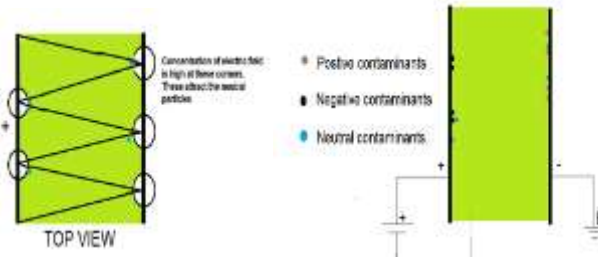
For getting **Optimum Performance** from Equipment , Oil Hygiene is very important and Industries are taking different measure to ensure **OIL IS CLEAN, DRY AND OPERATES AT OPTIMUM TEMPRATURE.**

Principle of Working of Oil Filtration Equipment & Requirement

Electrostatic Hydraulic Oil Cleaner

ELECTROKLEEN

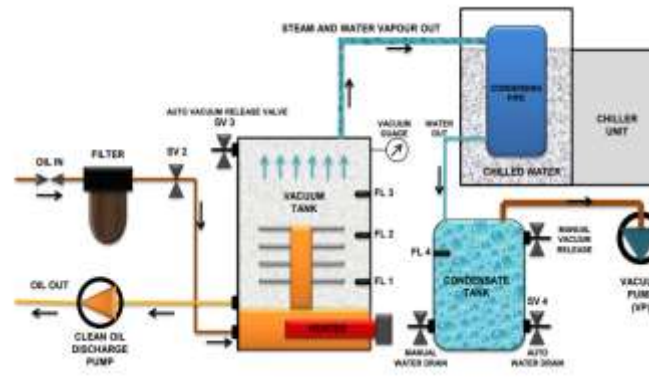
Suspended impurities are separated from the fluid getting **super clean fluid**
Below NAS 7



Low Vacuum Dehydrator

NEEROKLEEN

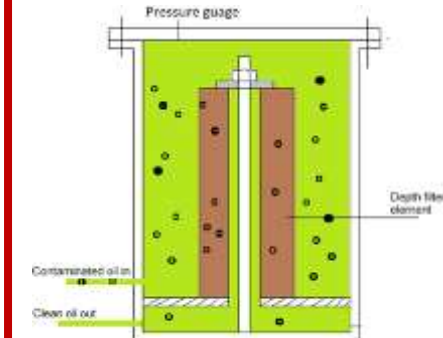
Guaranteed water reduction below 200 ppm



Hydraulic Oil Depth Filter

MECHKLEEN

Fast cleaning
80% of contaminants are removed in a single pass
UP to NAS 8



The 2 Major Parameters of the Oil which are kept under Control are :

- ✓ **Contamination Level** : MEASURED in ISO AND NAS Acceptable level : Below NAS 7 or ISO 18/16/13
- ✓ **Moisture Level** : MEASURED in ppm (parts per million) Acceptable level : Below 500 ppm (0.05%)

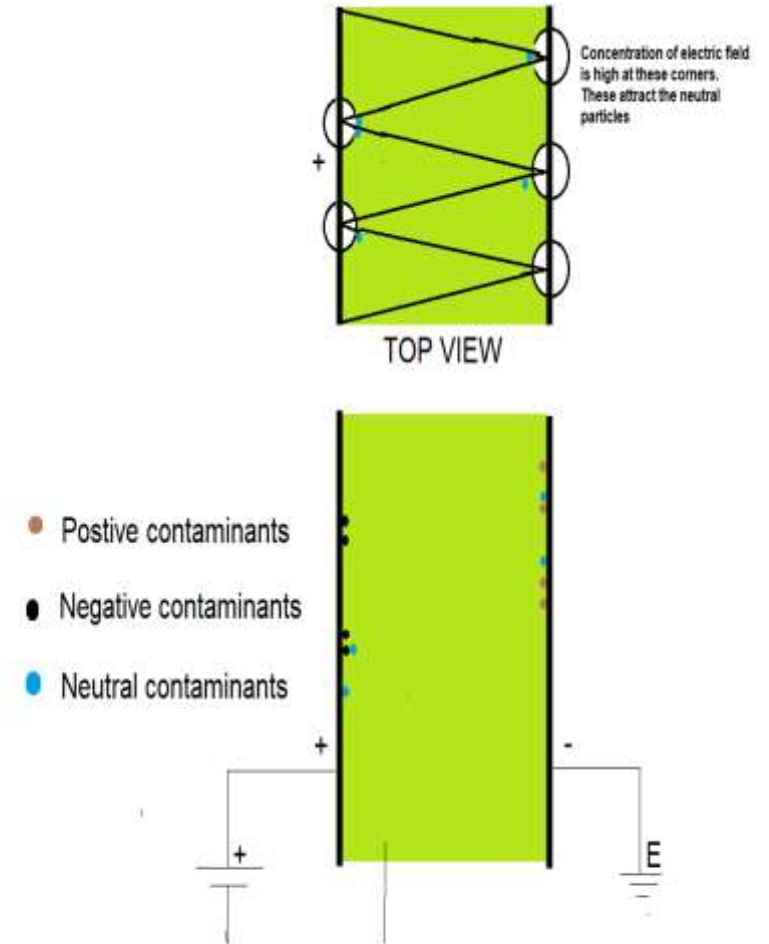
Electrostatic Oil Cleaning
Equipment :

ELECTROKLEEN



Electrostatic Oil Cleaner : Working Principle

- The Electric Field is created between two electrodes .
- Oil is passed between a set of electrodes between which a potential difference of 8 to 12 KV is created.
- Contaminants are attracted to the electrodes and stick to the special cellulosic papers (called collectors) placed over and between the electrodes.
- The result is an extremely clean oil and the clean oil is also able to flush out sticky sludge from the system
- Electrostatic Oil Cleaner has no influence on the additives of the oil.



Technical Specification for Electrostatic Oil Cleaner : ELECTROKLEEN

SPECIFICATIONS	ELECTROKLEEN 25	ELECTROKLEEN 50	ELECTROKLEEN 100
System flow rate	4 lpm	10-12 lpm	
Operating voltage	415 V 50 hz 3 Phase with neutral		
Control panel	4.3” Coloured touch screen-based HMI and I/O unit with 12 input and 10 outputs + 2 analogue inputs		
Rating	Continuous operation		
Power Source	300VA SMPS based Power Source with 220V input and 12 KV DC output.		
Oil inlet and outlet hoses	1 no. hydraulic hose with 3/8” BSP (F) end fittings and 1 nos. PVC hose with 3/8” BSP end fittings	1 no. hydraulic hose with 3/4” BSP (F) end fittings and 1 nos. PVC hose with 3/4” BSP end fittings	
Pump and motor	4 lpm PD pump with 0,25 HP 1440 rpm motor	10 lpm PD pump with 0.5 HP 1440 rpm motor	
Cleaning cell	25 litre tank tested for 3 bar operating pressure	50 litre tank tested for 3 bar operating pressure	100 litre tank tested for 3 bar operating pressure
Dimension(mm) (L x B x H)	770 x 480 x 525	800 x 515 x 715	1040 x 645 x 750
Approx. Weight	100 kg	150kg	200 kg



Vacuum Dehydrating Moisture
Removing Equipment

NEEROKLEEN



Technical Specification for Vacuum Dehydrator : NEEROKLEEN

	VD - 50	VD - 100
Suitable for tank capacities	Up to 2500 lit	Up to 5000 lit
Oil inlet and outlet hoses		3/4" BSP
Vacuum Pump with motor (belt driven)	100 LPM, 0.5 Hp	200 LPM, 0.5 Hp
Vacuum Chamber	50 lit	100 lit
Operation Vacuum	750 mm of Hg	750 mm of Hg
Discharge Pump with motor	50 LPM, 2 Hp	50 LPM, 2 Hp
Low watt density Heater	6 KW	8 KW
Chiller Unit	0.6 TR	0.6 TR
HMI with touch screen display	4.3" PLC with 8 I/O	4.3" PLC with 8 I/O
Water discharge	Automatic	Automatic
Approximate weight	250 Kg	300 Kg



Technical Aspects for Vacuum Dehydrator : NEEROKLEEN

- ❖ A Vacuum dehydrator works on the principle of heating oil under vacuum.
- ❖ Under vacuum water boils below 50 deg C and therefore can be vaporised and removed from the oil.
- ❖ Dissolved gases in the oil can also be removed in this way. As oil is heated only below 60 deg C, it does not deteriorate due to oxidation and additives are not depleted
- ❖ This technology is one of the most efficient and reliable ways to remove water contamination from the oil. It is more effective than Coalescer, water absorbing filter or solid liquid separator (Centrifuge).
- ❖ With the provided accessories it is able to reduce water contamination below 100 ppm.
- ❖ Phases of Water in Oil as shown * :
- ❖ Moisture level above 500 ppm is very harmful to oil and the equipment. So it is necessary that moisture level is kept below 500 ppm.



* Phases of water in Oil *



Free Water



Dissolved Water



Emulsified Water

Depth Filter Cleaning
Equipment :

MECHKLEEN



Technical Specification for DFT: MECHKLEEN

Model 27x1	MODEL	Model DFT 27x2
Gear pump 10 LPM with 0.5 HP motor	TRANSFER PUMP	Gear pump 10 LPM with 0.5 HP motor
1 Nos. filter inserts each of size	FILTER INSERTS	2 Nos. filter inserts each of size
270 mm x 270 mm		270 mm x 270 mm
BELOW 3 MICRON	FILTRATION CAPACITY	BELOW 3 MICRON
4 kgs	DIRT HOLDING CAPACITY	8 kgs
2 litres	WATER HOLDING CAPACITY	4 litres



Note: Water holding capacity is 50% of dirt holding capacity . It means that if 2 litres of water is absorbed then only 4 kg of dirt can be absorbed. Similarly if 4 kg of dirt is absorbed then only 2 litres of water can be absorbed

Technical Aspects for Depth Filter (DFT)Cleaner

This is a barrier filter system . Consists of special cellulosic filters which can absorb moisture and contaminants.

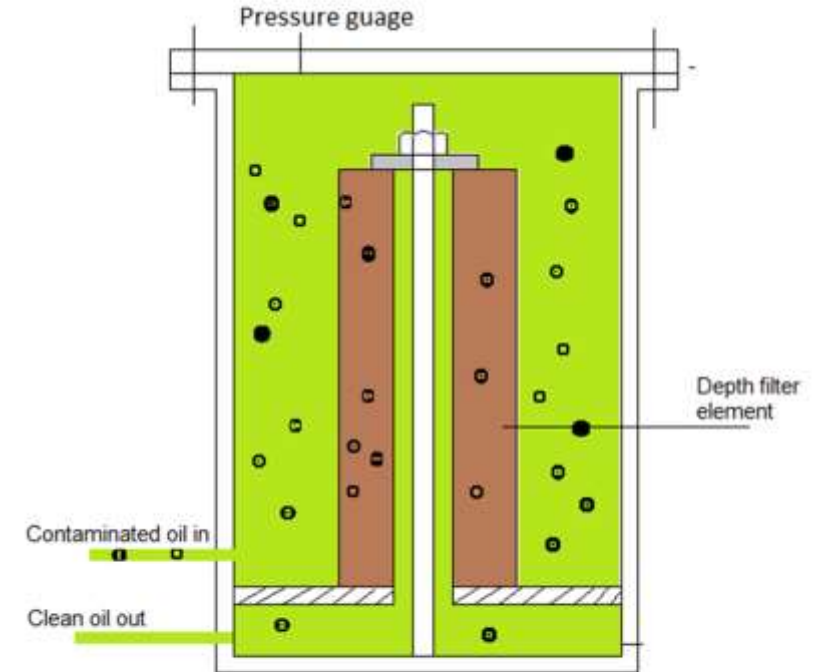
A single element can absorb upto 4 kg of contaminants of 2000 ml of water.

Around 80% contamination are removed in a single pass

Particles below 3 microns can be removed.

Can be used for filtration of the following oils

- ❖ Motor lubricating oils
- ❖ Hydraulic fluids
- ❖ Turbine lubricating oil
- ❖ Gear oils
- ❖ Honing oils
- ❖ Rolling oils



Salient Features for DFT: MECHKLEEN

- ❖ Fast cleaning
- ❖ 80% of contaminants are removed in a single pass ; getting upto NAS 8
- ❖ High surface area ensures higher flow
- ❖ Easy to operate.



Thanks for this Opportunity to Serve



Contact us for more Information

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