

Transformer Oil Filtration Machine

Transformer plays an important role in power generation. Present transformer oil requires high quality and high purity of insulating oil to get the performance of the transformer to its peak level. The transformer oil filtration plant works on the principle of filter out the impurities through stage-wise filtration, water, dissolved gasses, acetylene, hydrogen, and other gasses through vacuum extraction and acid removal through the ion exchange principle. Additionally transformer oil filtration plant equipment with an evacuation system to dry out the system in maintenance time.

The systems are capable of removing water contamination from the oil more than 5% to less than 0.01% in a short time. The system is well designed with stage-wise filtration arrangement which can ensure contamination level under control.



TOFM-600-Single



TOFM-3000-Double

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[Product Details](#)

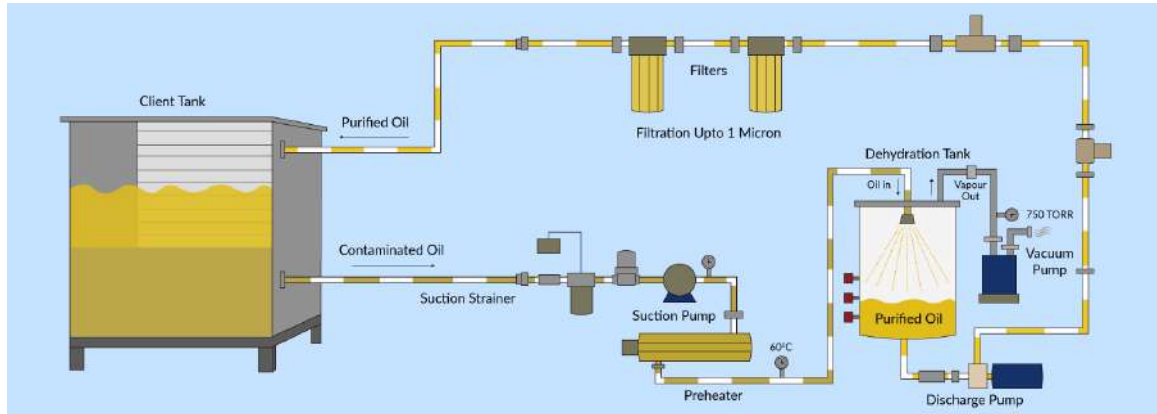
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Minimac Systems Pvt. Ltd.
GST No: 27AAICM4730E1ZL

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

Technology- Low Vacuum Dehydration



This technique is used for removal of moisture content from the oil which is present in three forms:

- 1) Dissolved
- 2) Emulsified
- 3) Free form

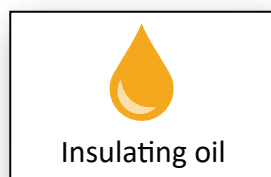
The technology evolves around the fact that the water boiling point is 100°C, when the vapor pressure above the water surface is atmospheric pressure. But when we reduce the vapor pressure to a vacuum condition, say 750 torr, it's evident that the boiling point of water reduces from 100°C to 60°C.

Under this technique, there is a vacuumized chamber and a shower arrangement for the oil (mixed with moisture). There is a heater arrangement which heats up the oil under controlled temperature settings of maximum 60°C, when the heated oil is showered inside the vacuum chamber which is controlled at 750 torr vacuum, moisture particles would be evaporated or vaporized under the vacuumized conditions thereby separating the moisture from the oil. Clean oil is collected at the bottom of the chamber and delivered into the system using a delivery power.

This technique is quite popular and it is the latest. It's better than the previous techniques of centrifuging, coalescing and moisture absorption because of the very reason that:

- (i) it removes all three forms of moisture
- (ii) it does not involve any consumables or costly spares because of rotating parts

Types of fluid which can be cleaned



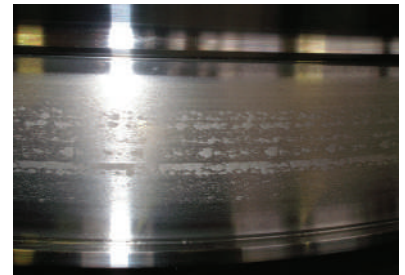
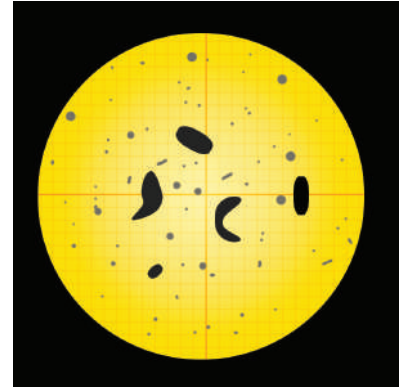
Why Oil Purification Important

A lubrication system generates metallic wear particles (of < 5-micron size) during its operations.

Metallic wear particles are highly abrasive in nature. Increase of wear particles is highly damaging to machine components. Wear particles typically cause 50% of all failures. These multiply due to wear and tear on the surfaces of machine components. The most harmful particles are trapped in the dynamic tolerance, like bearings.

Another critical issue is the presence of free, emulsified, and dissolved water in lube oils which is detrimental to the overall performance of the lubricating system. This causes Oil oxidation and breakdown, Sludge formation, Seal Deterioration and leakages, Metal etching through Corrosion, etc.

- It removes the moisture and impurities from the oil
- It keeps the breakdown voltage of the transformer oil within the permissible limit
- It increases the life of transformer oil as well as transformer
- It can be operated while the transformer is in charged condition
- It can protect the transformer from unplanned shutdown and heavy monetary losses



Nomenclature - Model No. TOFM -

T1

T2

T1	Pump Flow Rate (LPH)	Filtration Capacity (LPH)
600 LPH	600 LPH	600 LPH
1200 LPH	1200 LPH	1200 LPH
2000 LPH	2000 LPH	2000 LPH
2400 LPH	2400 LPH	2400 LPH
3000 LPH	3000 LPH	3000 LPH
4000 LPH	4000 LPH	4000 LPH
6000 LPH	6000 LPH	6000 LPH
10000 LPH	10000 LPH	10000 LPH
12000 LPH	12000 LPH	12000 LPH

T2	No. of Filtration Stages Present
1S	1 stage filtration
2S	2 stage filtration

For customizations please contact Minimac® Sales Representative. All specifications and configurations are indicative and should be verified with Minimac® Sales Office prior to ordering

Specifications

Type of Design	High Vacuum, Low Temp
Capacity of Plant	As per your requirement
Maximum Power	Depends on capacity
Plant Operation	Depends on capacity
Quality of Conditioned Oil	After filtration
BDV	up to 70 KV
Suspended Impurity	Less than 1 micron
Gas content	up to 0.1% by volume
Moisture Content	Less than 5 PPM
Neutralization Value	≤ 0.03 mg KOH/g
Inlet Pump	
Rating	Depends on capacity
Type	Monoblock Centrifugal / Positive Displacement
Seal	Oil Seal
Capacity of Pump	Depends on capacity
Head	Depends on capacity
Non Return Valve	Will be provided to prevent flooding
Outlet Pump	
Rating	Depends on capacity
Type	Monoblock Centrifugal / Positive Displacement
Seal	Oil Seal
Capacity of Pump	Depends on capacity
Head	Depends on capacity
Non Return Valve	Will be provided to prevent flooding
Mounting Available	Castor Wheels
	Pneumatic Wheels
	Vehicle Mounted
	Trolley Mounted

Specifications

Vacuum Pumping System	
Pumping speed	Depends on capacity
Model & stage	As per Mfrs. Standard/ Single Stage
Motor Rating	Depends on capacity
NRV	Will be mounted
Mounting Available	Castor Wheels
	Pneumatic Wheels
	Vehicle Mounted
	Trolley Mounted

Application



Power Generation
Plants



Power Utility
Plants



Power
Substations



Metallurgical
Fields



Railway
Sector



Oil & gas Industries
CPP Plants



Steel
Plants



Coal &
Metal Mines



Chemical
Sector



Automobile
Manufacturing



Industries with an
On-site Transformer

Credentials

Clients	City	Country	Capacity
Aarti Green Tech Ltd	Rohtak	India	20 LPM
Abdulla Fouad Energy Company (AFESCO)	Dammam	Saudi Arabia	5000 LPM
Art Exim Pvt Ltd	Mumbai	India	100 LPM
Bharat Petroleum Corporation Ltd - Wadilube Plant	Mumbai	India	18000 LPH
Central Coalfields Ltd	Ramgarh	India	500 LPH
Central Railway - Bhusawal	Jalgaon	India	2000 LPH
Durgapur Steel Plant	Durgapur	India	2400 LPH
East Coast Railway	Angul	India	500 LPH
Farakka Super Thermal Power Station (NTPC)	Nabarun Mushibad	India	2000 LPH
Hindalco Industries Ltd - Hirakud-FRP Plant	Sambalpur	India	8000 LPH
Hiranmaye Energy Pvt Ltd	Kolkata	India	500 LPH
Koldam Hydroelectric Power Plant (NTPC)	Bilaspur	India	2000 LPH
Lara Super Thermal Power Station (NTPC)	Raigarh	India	2400 LPH
M S Electrical Save Volt Upkram	Pune	India	2000 LPH
M&E Trading & Construction Company Ltd	Nkana East	Zambia	3000 LPH
Madhepura Electric Locomotive Pvt Ltd	1) Nagpur 2) Saharanpur	India	1) 500LPH 2) 500 LPH
Mahanadi Coalfields Ltd	Sundergarh	India	5000 LPH
Malhotra Enterprises	Kathmandu	Nepal	1) 4000 LPH 2) 1200 LPH
Meghalaya Cements Ltd	Lumshnong	India	6000 LPH
National Mineral Development Corporation Ltd	Bellary	India	1000 LPH
Nishant Enterprises	Raigad	India	1200 LPH
North Eastern Electric Power Corporation Ltd	Dibrugarh	India	1) 1200 LPH 2) 6000 LPH
Northern Coalfields Ltd	Singrauli	India	2400 LPH
Power Grid Corporation Of India Ltd	Budgam	India	3000 LPH
Purnima Power & Control	Kolkata	India	600 LPH

Credentials

Clients	City	Country	Capacity
Purvanchal Vidyut Vitaran Nigam Ltd	Pratapgarh	India	5000 LPH
Ramagundam Super Thermal Power Station (NTPC)	Peddapalli	India	600 LPH
SCC Nigeria Ltd	Lagos	Nigeria	3000 LPH
Shah Sponge & Power Ltd	East Singbhum	India	2000 LPH
Simhadri Super Thermal Power Station (NTPC)	Vishakhapatnam	India	20 LPM
Sonapur Minerals and Oil Pvt Ltd	Kathmandu	Nepal	2000 LPH
Tamil Nadu Generation and Distribution Corporation Ltd	Salem	India	3000 LPH
Topcem India	Kamrup Rural	India	1200 LPH
Torrent Power Ltd	Agra	India	3000 LPH
Venlon Enterprises Ltd	Mysuru	India	1200 LPH
Voltmech Electromagnetics Llp	Thane	India	1600 LPH
Western Railways Headquarters	Ahmedabad	India	1000 LPH