



TRANSFORMER OIL FILTRATION AND DEHYDRATION PLANTS



We have different types of plants for the purification / regeneration of mineral Transformer Oil to standard specifications. These plants cover the entire range of low, high and extra high voltage equipment such as Transformers. These plants are designed and manufactured to suit specific requirement of customers. The plants are available in various designs and capacities to carry out following operations:

- Removal of all suspended particles such as dust, rust, scales, colloidal carbon, oxidation sludge etc up to < 1 micron.
- Degassing and Dehumidification of Transformer Oil under vacuum.
- Circulation of heated Oil and Filling of treated oil in Transformer tank.
- De-acidification by evaporation and absorption method.

SR NO	PARAMETERS	BEFORE FILTRATION	AFTER FILTRATION
1	Break Down voltage with 2.5mm Electrode Gap.	25 K.V.	50-70 K.V.
2	Moisture Removal	50-100 ppm.	Up to < 5 ppm.
3	Neutralization Value	0.5 mg of KOH/gm of oil	< 0.1 mg of KOH/gm of oil
4	Particle size (Filter Fineness)	Visible to naked eye	Up to < 1 micron.
5	Gas Content	< 10% by volume	< 0.1% by volume

Our single stage plants are capable of attaining following oil parameters:

OIL TRANSFER & CIRCULATING SYSTEM: Mainly consists of Inlet Pump (Gear type positive displacement), Outlet Pump (Positive displacement Gear type or Multistage Centrifugal) and necessary valves & piping to ensure easy operation and maintenance. Complete system is vacuum tight to have a leak-proof operation.

HEATING SYSTEM: is capable of heating the oil from 25 deg C to 80 deg C. It contains Insulated heat exchanger with indirect low watt density (less than 2W/cm²) bobbin type electric heaters. Oil temperature is controlled with thermostat. Suitable oil distribution system is provided to ensure uniform flow of oil over heaters.



FILTRATION SYSTEM: Is suitable for removing suspended particles such as colloidal carbon, oxidation sludge, dirt, rust, scales up to < 1 micron. It consists of PRE FILTER and FINE FILTER.

- **PRE FILTER:** is a metallic strainer with magnet. It removes magnetic and coarse suspended particles and to protect inlet pump from damage due to abrasion.
- **FINE FILTER:** removes all suspended particles up to < 1 micron. Filter Elements are either non-hygroscopic molded cellulose cartridges or cleanable (with reverse airflow) edge type filter candles. Filter cartridges are easily replaceable. Additional Intermediate filter can be provided to increase life of fine filter.

DEGASSING & DEHYDRATION CHAMBER: Is designed to remove large portion of dissolved impurities (Including Moisture) from oil. Raschig ring trays and oil dispersing system are provided to have sufficient exposure of oil to vacuum during filtration. Oil level is controlled with float switch.

VACUUM SYSTEM: Rotary oil-sealed vacuum pump or combination of Mechanical Booster Pump and Rotary oil-sealed pump is provided to get proper working vacuum during filtration. Necessary valves for easy operation and maintenance of the plant.

CONTROL PANEL: Centralized control panel with necessary contactors, overload relays, fuses, push buttons, indicating lamps, main switch etc for easy and safe operation of the plant.

OPTIONALS:

- Ionic Reaction Column for acidity removal.
- Transformer Evacuation System.
- Filter press as an intermediate filter to increase the cartridge life.
- Additional Instrumentation such as Temperature Indicating Controller, Flow Meter, On-line Oil Testing Equipment.

TRANSFORMER OIL FILTRATION & DEHYDRATION (SINGLE STAGE):

These plants are designed for filtration and dehydration of Power and Distribution Transformers and oil in tanks. These plants can also be used for hot oil circulation in transformers and transformer drying. They are available in **Series S (Stationery Units)**, **Series P (Units on Castors)** and **Series M (Units on Trailer)**.



TECHNICAL SPECIFICATIONS:

Technical Specifications	1-V-060	1-V-120	1-V-240	1-V-450	1-V-600
Flow Rate-LPH	600	1200	2400	4500	6000
Heater Capacity-K.W.	6	18	45	63	81
Single Stage Rotary Oil sealed vacuum pump	100 LPM	300 LPM	500 LPM	1000 LPM	2000 LPM
Total Power Required	7.5 K.W.	20 K.W.	50 K.W.	70 K.W.	96 K.W.
Fine Filter Elements moulded Cellulose	2	4	9	18	27
Filter Fineness	3/0.5 μ				
Dimensions	In Metres				
Stationery Unit, W/L/H	0.6/0.9/1.4	0.8/1.2/1.5	1.0/1.8/1.6	1.2/2.0/1.7	1.2/2.4/1.8
Unit on Castors, W/L/H	0.6/0.9/1.6	0.8/1.2/1.7	1.0/1.8/1.9	1.2/2.0/2.0	1.2/2.4/2.1
Unit on Trailer, W/L/H	1.2/1.4/2.1	1.4/1.7/2.2	1.6/2.2/2.4	1.8/2.4/2.6	1.8/2.8/2.6
Max Oil Content in Transformer-Ltrs	1000	2500	7500	20000	35000
Prices	On request				

Single flow pass plants with Two Stage Degassing Systems are also available. Plants with Edge Filters can also be offered.

