Accurate Designing & Production
About Us

Accurate designing and production are two most essential factors that make any company the jack of all trades in the domain of Vacuum Plants and Machinery. We, Deepak Vacuum Technologies Pvt. Ltd. (ISO 9001:2008 Certified Company), boast of being one such company. As a dependable manufacturer, supplier and exporter in this field of work, we are providing quality assured Transformer oil Filter Machines, Vacuum Pressure Impregnation Plants, Epoxy Mixing and Casting Plant, Capacitor Oil Impregnation Plant, Transformer Evacuation System, and similar products.

All the products are manufactured and checked, under the guidelines of Quality Assurance Program (QAP), followed in our company. To sustain the high quality, we emphasize on conducting researches. Here, the guidance of Mr. Shivraj Shirsage (Managing Director), with his 30 years of experience, we are able to find the exact new development, which could improve product's quality and hence, enhance the credibility of company.

Our modern infrastructure is developed across a wide area and integrates all the necessary facilities for development and quality testing of all these plants and machines.

The manufacturing facility is well equipped with the latest machines including Laser Cutting, CNC's, VMC's radial drilling and horizontal boring machines, Plano miller, plate rolling machine, air compressors, MIG & Arc welding rectifiers and various other types of welding machines, and hand tools like drills, grinders, sanders, etc.
OUR PRODUCTS

TRANSFORMER OIL FILTER PLANTS
TRANSFORMER EVACUATION SYSTEM
VACUUM IMPREGNATION PLANT
EPOXY MIXING CUM CASTING PLANT
CAPACITOR OIL IMPREGNATION PLANT
AUTOMATIC PRESSURE GELATION SYSTEM
VACUUM OIL FILLING SYSTEM
VACUUM DRYING PLANT
Deepak Vacuum Technologies Pvt. Ltd.
(Formerly Shree Guru Enterprises)

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High Vacuum, Low Temperature. Old technology of heating the oil at maximum temp. To remove water contact from oil was a big failure. In a research it was observed that heating the oil above 60 degree Celsius, started degrading the Cellulose of the oil. For efficient dry out, vacuum in excess of the equilibrium values is required. The drying operation occurs when the oil-cellulose equilibrium condition is disturbed favourably. We strongly recommend our customers for Recirculation of oil through the filter machine. The reason stays simple; the dry oil will be contaminated by the wet windings as they seek equilibrium condition, repeating this cycle many times can correct the situation.

Technology used

Optional Features

- Digital Flow meters.
- In-line moisture in oil digital meter.
- Ionic Reaction column to regulate acid content in oil.
- Fully Automatic, PLC control panel.
- Audio (Buzzer) / Visual warnings and process annunciation systems.
- Mobile (Outdoor) type or Vehicle Mounting.

Peculiar Features

- Sophisticated design. Easy to operate.
- Capacity ranging from 100 LPH to 25000 LPH.
- Imported High quality Filters for best results.
- Negligible Maintenance.
- Easy to replace Filters/heaters
- Digital Temperature monitoring and controlling.
- Can be completely customized as per the requirement of customers, which makes it user friendly.

Transformer Oil Filter Plants

Technology used

- Transformer oil filter machine.
- Single Stage
  - Indoor mobile / Skid Mounting type
  - Outdoor Mobile type
  - Vehicle Mounting type
- Multi Stage
  - Indoor Mobile / Skid mounting type
  - Outdoor Mobile type
  - Vehicle Mounting type.
The Single Stage Transformer Oil Filter Machine is meticulously designed and developed according to the set International standards. Single Stage Transformer Oil Filter Machine will include single stage degassing.

**Capacity Range:**
50 LPH to 3000 LPH

**General Model Name:**
XS-Li Series

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Before Filtration</th>
<th>After Filtration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown Voltage (BDV), kV</td>
<td>10-30 kV</td>
<td>Better than 70 kV</td>
</tr>
<tr>
<td>Moisture content in Oil, PPM</td>
<td>50-100 ppm</td>
<td>Less than 5 PPM</td>
</tr>
<tr>
<td>Gas Content, % Vol</td>
<td>10%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Particle size</td>
<td>100 Micron</td>
<td>1 micron</td>
</tr>
<tr>
<td>Visible Colour of oil</td>
<td>Dark brown with particles</td>
<td>Clear, Light yellow</td>
</tr>
</tbody>
</table>
The Multi Stage Transformer Oil Filter Machine is designed and developed to get Optimum results and fulfill the Set international standards. The Multi Stage Transformer Oil Filter Machine will have multiple stage degassing.

**Capacity Range:**
2400 LPH to 25000 LPH

### General Model Name:
XDV-S Series

### Parameters Before Filtration | After Filtration
--- | ---
Breakdown Voltage (BDV), kV | 10-30 kV | Better than 70 kV
Moisture content in Oil, PPM | 50-100 ppm | Less than 5 PPM
Gas Content, % Vol | 10% | 0.1%
Particle size | 100 Micron | 1 micron
Neutralization value (Acidity), mgKOH/g of oil | 0.5 mgKOH/g | 0.01 mgKOH/g
Visible Colour of oil | Dark brown with particles | Clear, Light yellow
TRANSFORMER EVACUATION SYSTEM

Transformers are evacuated and vacuum is drawn to remove moisture and gases (nitrogen is evacuated during initial erection phases of the transformer), before new oil filling or oil alteration in transformers. Evacuation systems comprising adequate capacity of vacuum pumps and condenser units backed by cold water circulation to extract moisture are customized to requirements. The systems can be mobile or combined in oil filter machines.
VACUUM IMPREGNATION PLANT

Technology used:
Vacuum Pressure Impregnation (VPI) is a process that uses vacuum and pressure to seal porous materials with varnish or resin. Industrial electromechanical equipment is designed for durability to provide reliable function and increased longevity, but age, temperature, and environmental factors can degrade porous metals over time. The process of impregnation seals porous materials with varnish, epoxy resin, Pu, Silicon, improving the function and longevity of equipment.

We use High performance vacuum pumps, controls, sensors, traps in our modern systems. For more reliable and homogeneous results, our state of the art VPI plants can also be made completely automatic, providing a stable environment for the impregnation process to take place.

Manual Vacuum Pressure Impregnation Plant
Manual Vacuum Impregnation plant includes, manual lid clamping arrangement, manual operated ball valves and all other process to be operated manually.

Semi Automatic Vacuum Pressure Impregnation Plant
Semi Automatic Vacuum Pressure Impregnation plants are designed as per customer’s requirement. A combination of automation and manual operation can be routed as per requirement. We believe in customer satisfaction, and therefore we customize as per customer’s needs.

Automatic Vacuum Pressure Impregnation Plant
Automatic Vacuum Pressure Impregnation Plant includes Automatic Bayonet Lid clamping arrangement, Hydraulic lid up-down assembly, pneumatically operated valves (solenoid Valves) and the whole process is carried out automatically through PLC system.
Benefits of Vacuum Pressure Impregnation:

- Motor, coils etc after impregnation become a monolithic and homogenous structure.
- Higher Dielectric Strength.
- greater thermal inductivity
- superior protection against the ingress of water, chemical and containments.

Optional Accessories:

- Temperature recorder.
- Heating/cooling arrangement.
- Mixing arrangement.
- Digital Vacuum Gauge.
- Air compressor.
- Annunciation system.
EPOXY MIXING CUM CASTING PLANT

Technology Used:

Resin casting is a method of casting where a mould is filled with a liquid synthetic resin, which then hardens. The synthetic resin for such processes is a monomer for making a thermosetting polymer. During the setting process, the liquid monomer polymerizes into the polymer, thereby hardening into a solid. Resin casting plant is integrated with mixing chamber, which is designed with heating system with temperature controlling arrangement.

The simplest method is gravity casting where the resin is poured into the mold and pulled down into all the parts by gravity inside a vacuum chamber. The casting is done in a vacuum chamber to extract the air which avoids formation of air bubbles.

Features:

- Mixing chamber for mixing of resin, with hardener, accelerators, pigment and filters, of capacities from 5kg to 1000kg, designed for high vacuum degassing.
- It is designed with heating system having precise temperature controlling arrangement for controlling the exotherm during mixing, as required.
- Casting chamber, adequately sized to accommodate desired number of moulds, designed for pouring resin under high vacuum.
- Pouring system designed for vacuum casting with easy control and observation from outside, with specially designed PTFE valves.
- The plants can be offered continuous production.

Applications:

- CT and PT manufacturer
- Dry type transformer etc
The vacuum oil impregnation plant has the qualitative features of superior performance and longer service life. Salient features: aluminium valves which is 100% leak proof; good volume leak rate; equipped with rotary oil sealed pump or combustion of roots; rotary pumps to achieve 0.001 torr with loading; impregnation chamber is round or rectangular in shape and cost effective.

The Plant comprises of:
- Vacuum System
- R. O. S. T. (Raw Oil Storage Tank)
- P.O.S.T. (Process Oil Storage Tank)
- Oil Storage Tank
- Oil Filter Machine
- Oil Filling System
- Heating System
- Internal Air Circulation
- Control Panel

Vacuum drying is the mass transfer operation in which the moisture present in a substance usually wet solid is removed by means of creating vacuum. Drying is an essential unit operation to remove the moisture from various substances to get a solid finished product. Vacuum drying is generally used for the drying of those substances which are hygroscopic and heat sensitive and is based on the principle of creating vacuum. With the help of vacuum the pressure is reduced around the substance to be dried and boiling point of water inside that product decreases and rate of evaporation of water increases significantly thus increasing drying rate. The vacuum drying is a batch operation and at reduced pressures the relative humidity is also lower and that is why the drying occurs faster.

Features:
- Sturdy design to withstand fine vacuum.
- Automated process
- SCADA system.

- Motorized door opening and closing arrangement.
- Automatic Door locking and unlocking arrangement using hydraulics.
AUTOMATIC PRESSURE GELATION SYSTEM

Pressure gelation technology is now successfully used in the production of high quality enclosed pole, cross-fluorinated sulfur load switch housing, transformers and other products. Pressure gel process to produce the insulators.

1. Material Pretreatment:
A certain percentage of epoxy resin specially for pressure gel, curing agent, fillers, colorants mix the mixing tank. Stirred for 1 to 2 hours to mix material evenly. Air bubbles are removed by creating vacuum in the chamber.

2. Injecting, Forming:
Pretreated epoxy resin mixture is injected into the APG mold preheated to specific temp., with the help of pressurized pump. The mixture is released from the mold after thermal gel forming and gets semi-finished products.
APG mold should be set aside with suitable gap in a specific parting line surface in order to discharge the air from the mold in the process of injecting material. After the gel injection into the mold, the epoxy resin due to rapid heating fill into the small gaps, leaving the mold in a sealed state, so the material within the mold under pressure gradually gel to get a close texture product. In order to make the mold parting line surface, leaving some gap not only helps exhaust but also makes a reliable seal, which require higher accuracy of the mold, especially for some of the complex structure of the insulators, the mold is with much higher accuracy requirements. In short, Pressure gel mold is equipped with a high technical content.

3. curing:
After ejection, the products are transferred to the oven, and the finished products get dense and low internal stress after slow cooling under constant temperature of 140° 10 hours.
VACUUM OIL FILLING SYSTEM

The plant is specially designed for transformer oil filling in vacuum condition. It is able to evacuate and fill oil in transformer tank. Under vacuum condition, oil filling process can be automatically and manually operated with computer, PLC control.

Filling line will comprise of:

- Flow meter for recording flow rate
- Pneumatic valve for oil filling
- Flow meter controls the amount of oil to be filled.
- Connecting hose, filter and manual valve
- Filling hose
- Lid up down arrangement by pneumatic cylinder.

Oil filling process can be automatically and manually. When it is automatic, oil filling amount can be set via pneumatic valve. When it is up to setting value, valve will be closed automatically. All control of oil filling will be combined in main control cabinet.

Vacuum oil filling system

Oil filling process programmed to start filling only after vacuum condition is reached, and to stop when each float switch in transformer has been reached. Oil filling line is connected to the Storage tank.