

ZL High-efficiency Vacuum Insulation Oil Purifier



Application

ZL Single-Stage Vacuum transformer oil machine is mainly used to improve the properties of insulation oil. It can remove trace water, gas, particulate matters etc. From the insulating oil effectively and rapidly so as to boost performance of transformers, circuit breakers, mutual inductors, cable and capacitors which have insulation system.



Edges of ZL

- ◆ Compare with Double stage Transformer Oil Purifier,ZL has no roots pump
- ◆ Eliminates water,gas and impurities effectively by utilizing unique technology of power generation equipment.
- ◆ It can inject the insulation oil into the transformer device,and has the function of electrification online operation
- ◆ Enhance the value of breakdown voltage greatly
- ◆ Easy handling and maintenance.
- ◆ Inject oil into the transformers.
- ◆ Online work
- ◆ Lower maintenance and replacement expenses.
- ◆ High efficiency and effectiveness.
- ◆ Small size, light weight, low noise
- ◆ Various sizes and configurations (shield) available.
- ◆ Low maintenance and replacement expenses.
- ◆ Low operation cost.
- ◆ High regeneration rate.
- ◆ Automatic reverse-washing system will extend the lifetime of filters and improve the performance of the filters.
- ◆ High performance security system including pressure protection device and automatic temperature controller makes purifier operate safely.
- ◆ Small size, light weight, low noise.
- ◆ Utilizes coacervation technology, coalescing technology, separating technology and refined purification technology. To remove free, soluble water,

carbon, free and dissolved gases and particulate matters from insulating oil effectively and rapidly.

◆ This machine can work independently, also it can work with the oil regeneration system that can eliminate the acid, the color and reduce the PH value effectively, then further enhance the insulation value of oil.

Structure

◆ Dehydration (Degas) System

1, The vacuum vessel can evaporation area efficiently. The heater, being placed on the vacuum vessel, becomes an evaporator. Thus the evaporation area of vacuum vessel is three times more than that of the general vacuum vessel. This innovation can dehydrate and degas effectively and efficiently.

2, The optimal structure of the dehydration (degas) system enlarges the surface area of oil exposed to the vacuum system and extends the flowing distance of the oil in the vacuum system. Thus there has sufficient time to remove the moisture and gas from the oil by vaporization.

◆ Filtering System (particulate matter removal)

1, The filtering materials with variable apertures are made of specialized glass fiber. The sizes of the filtering fiber and aperture dwindle gradually in the different filtering stages. The impurities with different particulate sizes are filtered step by step. The capability of removing particulate matters and impurities is improved greatly by this method.

2, The filtering system has stable and perfect filtering fineness. The filtering fineness has several grades, including 0.5, 1, 2, 3, 5, 6, 10 Micron etc. Oil

$\beta \geq 1000$ after filter.

3, The filtering system is equipped with reverse rinse and filth device. It improves the effectiveness of filtering and extends the lifetime of filter awfully.

◆ Oil heating System

1, The unique heater structure heats the oil uniformly.

2, Oil Heater System assures less than 1.0 w/cm^2 . During the heating process, the deterioration of the oil caused by overheating is avoided.

3, The oil temperature can be adjusted between 20C to 80C . The heater is controlled manually or automatically. The heater will stop automatically when the oil temperature reaches a certain degree.

4, Being installed with safety protection devices, the heating system is secure and reliable. The heater will stop operation automatically when the oil volume of inlet is too low to avoid the damages of the heater.

◆ Vacuum Pump

Rotary Vane Vacuum Pumps, is a basic equipment used for pumping air from sealed vessels to attain vacuum condition.

The vacuum pumps may be applied singly, or as the backing pump of the other kinds of pumps, such as booster pump, diffusion pump, molecular pump and titanium pump etc. it may be used for vacuum film-plating, vacuum heat treatment, vacuum casting and also air-extraction of electric tubes, bulbs and thermos flasks. The pump may also be equipped in medical institutions and laboratory.

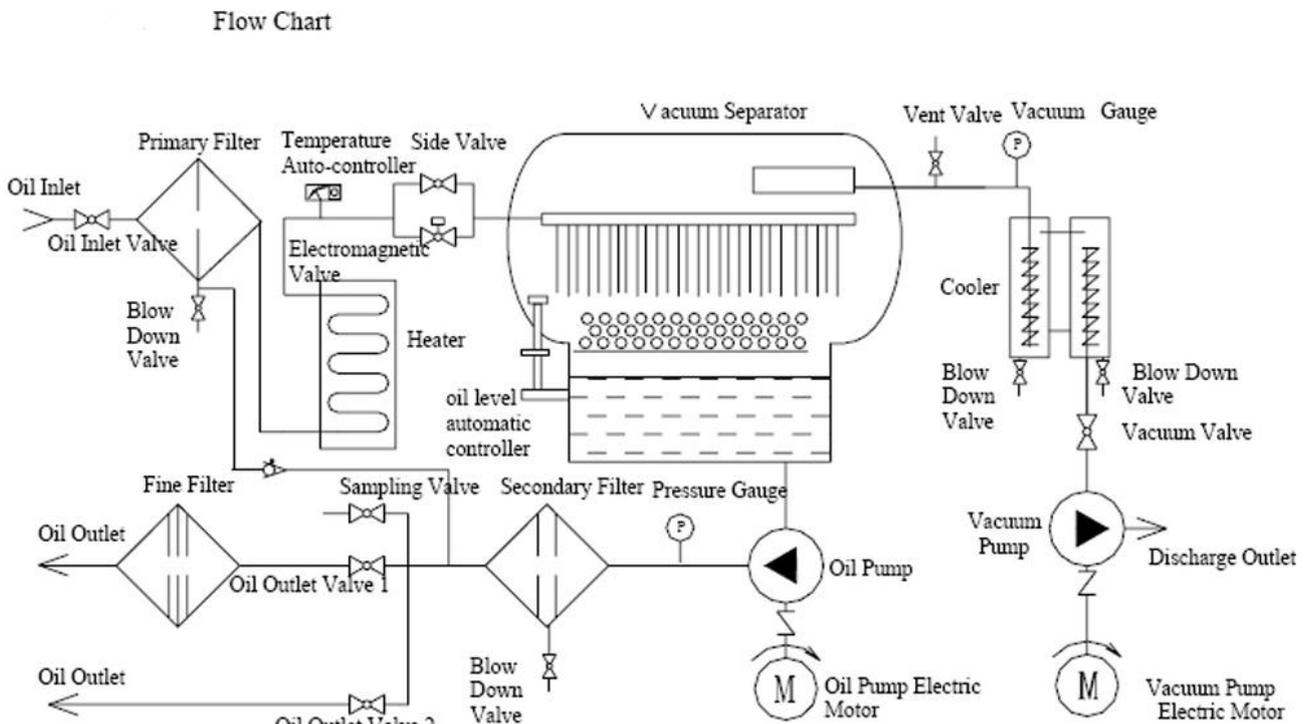
Features

- ◆ The oil purifier use special duplex space solid flash evaporation, can remove the water content and gas rapidly, this system need no maintain.
- ◆ Trash extraction technology composed by reticulation filtration and high macular adsorption, use excellent quality filter, can contain a large amount of waste, encrypt progressive, high precision, more than one degrade purifier.
- ◆ Safe heat system, the most excellent pipeline, make sure there is no died oil area.
- ◆ Double infrared ray liquid control automatically, control inlet and outlet the oil smoothly, to achieve man separate with machine really.
- ◆ The oil recycling can be used absolutely and also can used with oil regeneration system, it can deacidification , decoloring, reduce the device, PH value, then enhance the insulation value of oil.
- ◆ This machine can be used in vacuum oiling and vacuum dryness of insulation electrical device.
- ◆ It can be used for testing insulator withstand voltage and print the result.(ZL-T Series)
- ◆ This machine has the ability of vacuum oiling and can electrification operate every degrade of transformer oil.
- ◆ There is trinity interlock and protection device(phase protection, thrashing protection.
- ◆ Overexpressure protection),use the precision oil pump special design by our company, low noise, can satisfy the high standard of international.

Superiority:

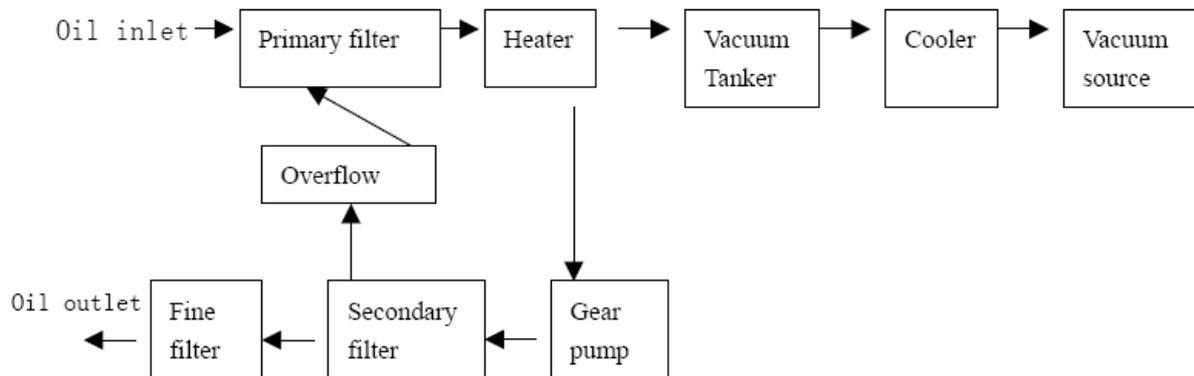
This series of machine is high efficiency vacuum oil purifier, it adopts the technology of Trinitarian flash evaporation, and applies the new absorptive materials which can effectively absorb the impurities, the jelly substance in oil, and eliminate the acid content. So the effect is 5-8times higher than the common machine. The machine is also environment-friendly and energy-saving

Flow Chart



Picture 1

Working Process



Instrumentation options

◆ Oil Tester

There can be attach the oil tester in the main machinery, used test the oil specification.

Guarantees & Documentation

YANGJIANG Warrant the plant supplied under this specification against defects in material and workmanship under normal use and service for a period of sixteen (16) months from date of shipment or twelve (12) months after the start up of the system. Two(2) copies of operating & maintenance manuals are supplied with each purifier

Working principle

When the oil purification starts, firstly contaminated oil enter into heater, secondly flowed into pre-filter under the difference pressure, in which the large impurities are removed. Thirdly oil goes into intermediate filter. Fourthly oil flow into water separator, the water separator adopts a special skill which changes

the change the impaction of oil and water to speed up trace water and coagulate big water which is separated from oil and stored in water content. After that, oil passes through the fine filter and fine particles of matters is removed during the process. Finally oil flows into vacuum pump which use stereo-evaporation removing residual trace of water and steam is condensed in the condenser or expelled out by the vacuum system. the oil was transported out by oil pump. The purification process has finished.

[Pictures of products](#)

- ◆ Standard model.



- ◆ Single axle trailer, mounted on chassis with 2 pneumatic tyres, 1 pre-leg; covered steel shield. Air brake system, hand brake, rear lights, tow-eye etc.



Double axle trailer



Specification of Machinery

Item	Unit	ZL-10	ZL-20	ZL-30	ZL-50	ZL-100	ZL-150	ZL-200
Flow Rate	L/H	600	1200	1800	3000	6000	9000	12000
Vacuum Range	MPa	-0.065----0.098						
Working Pressure	MPa	<=0.4						

Temperature Range	C	20-80							
Water Content	PPm	<=5							
Gas Content	%	<=0.1							
Power Supply	V	380V, 50Hz (or as needed)							
Working Noise	dB	<=72				<=78			
Heating Power	Kw	11	13	15	30	58	70	85	
Total power	Kw	12.5	14.5	16.5	33.5	65	76	94	
Inlet(Outlet) Diameter	Mm	DN25	DN25	DN25	DN32	DN50	DN50	DN60	
Net Weight	Kg	230	350	270	300	700	950	1200	
size	Length	Mm	1000	1100	1150	1200	1600	1750	1800
	Width	Mm	700	800	900	950	1100	1200	1200
	Height	Mm	1300	1350	1450	1500	1800	1900	1900