



Technical Solution

Lubricating Oil Purifier Series TYA



TYA Series

Multi-Function Lubricating Oil Purification Machine

CONTENT

Lubricating Oil Filtration System

I. Company Profile.....	2
II. Application and Features.....	4
III. Working Principle and Flow Chart.....	6
IV. Technical Data and Quality Indexes.....	9
V. Machine Technology.....	11
VI. More Photos for Reference.....	12
VII. Recommend Optional Parts.....	13

COMPANY PROFILE

CHONGQING TOP OIL PURIFIER CO., LTD

Located at Chongqing city--a southwest electromechanical manufacturing center as well as national municipality, Chongqing TOP is a professional leading manufacturer and supplier of oil purifiers and various related testers. We consists of departments respectively for technological development, machinery manufacture, instrument manufacture, quality control etc. On basis of mature development and manufacture technology and highly qualified production management team, the products own high quality, easy operation, excellent performance and lone service life.

TOP Oil Purifiers are widespread in the fields of electric power, petrification, mineral, shipbuilding, steel construction, bridge, automobile and railway, playing a great role in reducing energy consumption for clients as well as environmental pollution. We provides you with reliable oil purifiers such as transformer oil purifier, turbine oil purification machine, hydraulic oil treatment machine, lubricating oil filtration machine, fuel oil restoration, oil and water separator, oil regeneration equipment, waste oil recycling equipment , black oil discoloration plant etc.

TOP Testers works on the development, production, market, technical and after-sale service for petrochemical analyzers, transformer substation electrical testing equipment and circuit detecting equipment. main products are: petroleum products general testers, lubricating oil testers, insulating oil testers, fuel oil testers, transformer testers, transformer characteristics testers, relay protection testers, cable testers, insulation resistance earth resistance testers, high voltage switch testers, high voltage test equipment, portable waveform recorders, turbine governor system simulation tester, battery tester, thermal power speed system tester, road bituminous tester, geological tester, cooking oil tester, elemental analysis series, physical optics series, chromatograph/spectrometer, carbon black tester, coal tester, iron core loss tester, diffractometer,soil tester, waste water tester, laboratory fume hood, lab centrifuge/oven/ muffle furnace, lab solution/movable lab ect.,

Honest Team - TOP always honestly treat you and keep faith to make you satisfied with every cooperation with us.

Sincere Communication - TOP sincerely communicate with you to guarantee the provided products to be your ideal ones.

Reliable Quality -TOP own high quality and high performance for every TOP product is under strict quality control and testing.

Service Commitment - TOP bring you prompt, considerate and professional after-sale service and technical support, and explore technology future together.

COMPANY PROFILE

CHONGQING TOP OIL PURIFIER CO., LTD

Our Office



CE



ISO



Our Factory

Application and Features

CHONGQING TOP OIL PURIFIER CO., LTD

Application

Series TYA oil purifiers remove free and dissolved water, dirt, and free and dissolved air/gases from hydraulic oil, gear oil, engine oil, compression oil, freezer oil, heat treatment oil, compressor oil, refrigeration oil and other industrial oils in metallurgy, machinery, oil field, chemistry, mine, electric power generation plant, transportation and manufacturing enterprises. TYA oil purifiers reduce system wear; improve on-line and system performance; extend fluid life and reduce fluid disposal costs and environmental risks.

The new line of oil treatment plants Type TYA, with variable flow capacity, is designed for most economical conditioning and drying of lube oils. The plants are designed for the following applications:

1. The plant is delivered ready for operation.
2. Super ability in breaking emulsion, dehydration and degassing process. Adopting big-cubage, reinforced three-dimension flash distillation column, thin film evaporation technique and large area multi-level separation technique so as to remove water, gas and light hydrocarbon material efficiently and quickly.
3. Adopting high-quality filter element and sealing material with corrosion proof, high temperature resistance and excellent mechanical strength, it is suitable even for purification process of high-viscosity oil under rather high temperature conditions and in this way expanding its application scope.
4. Fine and precision multi-stage filtration system can remove mechanical particulates thoroughly and effectively.
5. With air-cooling and condensation system, it can cool the air in the vacuum system efficiently and quickly, which avoids inconvenience of water-cooling.
6. Advanced high pressure protection device and infrared oil level control system for easy operation.
7. Perfect automatic and manual oil heating temperature controller, automatic cooling and separation device, simple, safe and reliable.
8. High quality electrical control cabinet, with high efficiency for heat transfer and anti-explosion.
9. The equipment can also be installed with digital flow meter and timer for auto calculating and recording oil volume and working time. (it's optional according to user's requirement)
10. The machine can be installed with two filtration systems for easy and quick change of filter element without stopping the machine.

To meet customers' special needs, we develops:

- TYA Lubricating Oil Purifier Machine
- TYA -A Fully Automatic Lubricating Oil Purifier
- TYA -W Enclosed Lubricating Oil Purifying Unit

Working Principle and Structure

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- TYA -Ex Explosion-Proof Hydraulic Oil Cleaning Machine
- TYD High Water Content Hydraulic Oil Water Separator

Optional Features

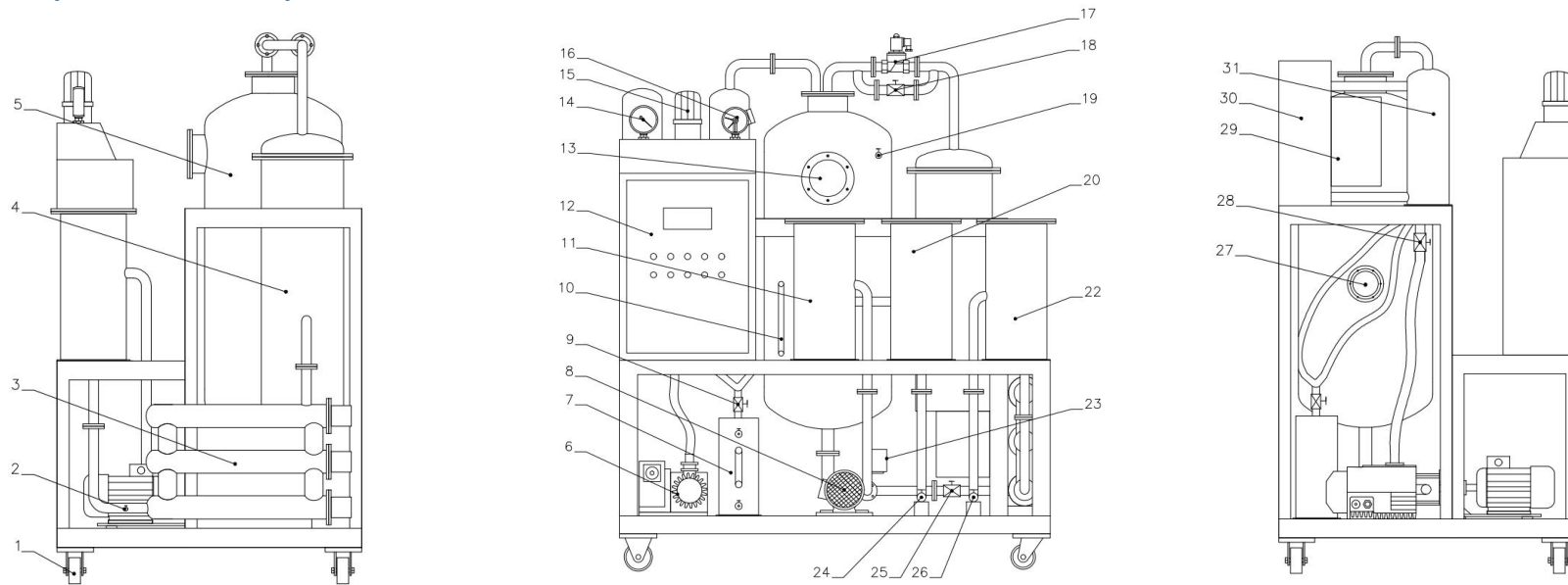
1. Siemens Brand P.L.C (Programmable Logic Controller)
2. Flow Meter for auto calculating and recording oil volume and working time
3. Continuous Online Moisture in Oil Analyzer Model PTT-001)
4. Continuous Online Moisture and Particles in Oil Monitor(Model PTT-002)
5. Metallic Weather Proof Enclosure
6. Double-axles trailer for outdoor use

Working Principle

The working principle and structure (Chart1, Chart2):

When the oil filter is working, the oil to be treated is sucked into the heater through the inlet port of the vacuum pump under the action of the suction vacuum of the vacuum pump. The oil is heated and heated to enter the primary filter, which will be in the oil. Large particle impurities are filtered out; then enter the secondary filter (water separator). Because the water separator uses hydrophilic oleophobic technology, the interaction force between the oil-water two-phase interface is changed, and the fine water droplets in the oil accelerate the movement. And the large water droplets are coalesced and separated from the oil, and precipitated in the water reservoir, and the oil enters the vacuum separation tank under pressure and passes through the spray atomization device. The device makes the oil generate a large aeration area and a residence time of the aeration, and can fully separate the oil and steam. Most of the mixed gas formed by the evaporated water vapor and the gas is condensed into a liquid by the condenser and stored in the water reservoir, and a small part of the non-condensable gas is discharged through the vacuum pump exhaust port. The oil that removes water and steam is sent to the tertiary filter and the fine filter through the oil pump to remove the particulate impurities in the oil through different filter precision filter cores to obtain the purified oil, and the entire purification and filtration process is completed.

Structure Chart (for reference)



1.Truckle 2. Oil drain valve 3. Heater 4. Water filter 5.Vacuum separation tank 6.Vacuum pump 7. Water storage tank 8.Oil drain pump 9.isolation valve 10.Oil standard pipe 11. Secondary filter 12.electrical control cabinet 13. Observation hole 14. Vacuum gauge 15.Sound and light alarm 16. The electric contact pressure gauge 17.Electromagnetic valve 18. Bypass valve 19. Miking valve 20. Fine filter 22. Primary filter 23.The pressure controller 24. The oil valve 25. circulating valve 26.Suction valve 27. liquid level switch 28.Vacuum valve 29.Cooling fan 30.Radiator 31.Condenser

Technical Data and Quality Indexes

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Technical Parameter:

Item	Unit	TYA-10	TYA -20	TYA -30	TYA -50	TYA -100	TYA -150	TYA -200	TYA-250	TYA-300	
Flow rate	L/hr	600	1200	1800	3000	6000	9000	12000	15000	18000	
Working vacuum	Mpa	-0.06 ~- 0.098									
Working pressure	Mpa	≤0.3									
Temperature Range	℃	0~100									
Working Oil Temperature	℃	45~65									
Power supply		380V/50HZ/3Ph 5 wire(as customer's requirement)									
Continuous working time	H	≥150									
Working noise	dB(A)	≤65	≤68	≤68	≤70	≤70	≤75	≤75	≤78	≤80	
Electric heating power	kW	15	18	24	36	60	72	120	150	180	
Total electric power	kW	17	20	26	39	65	79	128	180	192	
Outlet(inlet) caliber	mm	Φ25	Φ25	Φ25	Φ32	Φ42	Φ45	Φ50	Φ60	Φ63	
Weight	kg	350	400	450	500	900	1300	1500	1800	2000	
Size	L	mm	1350	1400	1450	1500	1700	1800	2000	2100	2400
	W	mm	950	1000	1050	1100	1150	1250	1400	1450	1550
	H	mm	1650	1700	1750	1800	1800	2000	2200	2300	2400
Index after filtering	Moisture content	PPM	≤50								
	Gas content	%	0.1								
	Impurity size	μm	≤1(Customerizable)								

Vacuum Dehydration (Degas) System

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

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

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.

The filtering system has stable and perfect filtering fineness. The filtering fineness has several grades, including 1, 2,3,4,5,6,10 μm etc. Oil $\beta \geq 1000$ after filter. The filtering system is equipped with reverse rinse and filth device. It improves the effectiveness of filtering and extends the lifetime of filter awfully.

• Electrical Apparatus controlling System

The main components of the electrical apparatus made by Siemens Company ensure the safety of the controlling system. Having several protection systems which will avoid oil ejection, overload and over voltage etc.

• Carbon fiber infrared oil heater

Double-infrared liquid automatic controller The indirect heating of the oil is carried out by means of electrical resistance heating elements, which are separated from the oil by vacuum tight protection tubes. A small specific heat load (less 1.0 W/cm²) guarantees a careful heating of the oil. Automatic temperature controller regulates the heating of the oil. The heating temperature range can be adjusted between 0-100 °C . We usually set at 45 to 60 °C . When the temperature exceed, it will stop automatically. If lower, it can restart automatically.

As 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 heater.

• **Oil-level Controlling System**

The oil-level floating ball and infrared liquid level automatic controller system are installed in the vacuum vessel to control the oil level so as to avoid the oil leaking in the operation.

The new innovation of eliminating froth can avoid the oil ejecting and gushing during the process.

• **High quality components**

The main component parts of our products such as vacuum pump, oil pump and electric apparatus are from CPT, SIEMENS, ABB, SCHNEIDER and AMICO etc. It ensures our products high quality and reliability.

• **Structure and appearance of Oil purifier**

Our products adopt ship-shape chassis-mount structure to ensure oil leak proof and protect the environment from pollution.

The whole equipment is characterized by small size, light weight and convenient to move around.

Various sizes and configurations(alloy shield) available

Available in mobile or stationary options

Automatic vacuum oil purifier or anti-explosion vacuum oil purifier is both available according to customers' needs.

• **Cooler, Condenser System**

The system is composed of cooler, condenser, water receiver etc

The vapor and other gas, which is evaporated from vacuum separator, first drop in temperature and are rid of moisture in condenser, then are condensed again in cooler which has retarded exchange media. The reductive condensed water are discharged by water receiver. The dry gas, which are condensed and rid of moisture twice, are discharged to air by vacuum pump so that it protects vacuum pump.

The plant is characterized by small size, light weight, rich color. And our company can produce trail car type and whole lock (alloy shield) type according to the customers' requirement.

In order to make sure that the stable of oil purifier plant which can work long time and extend the life of the machine, the electric control parts and electric parts of TOP oil purifier are imported from (ZHENGTAI, DELIXI) SIEMENS, LEYBOLD, PALL, ABB etc

More Photos for Reference




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Recommend Optional Parts

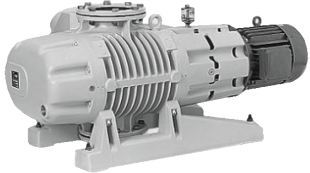



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Item	Picture	Product name	Function
1		Metallic weather-proof enclosure	with 4 lifting hooks Anti rain, dust, sun ect Can be lift by crane
2		Roadworthy trailer with double-axles trailer (also can be single-axle trailer)	With rubber car wheel Can be transported from different places The trailer is equipped with rear lights, brake lights number plate lightening, directional blinkers and cat-eyes.
3		Weather-proof enclosure + single axle trailer	For outdoor use






4		Weather-proof enclosure + double -axles trailer	
5		Truck Mounted Mobile Oil Filtration System	Mobile type for onsite use With oil filtration machine, diesel generator, operation room, computer, desk, air conditioner ect.,
6		Oval Gear Flow Meter	Size: DN25 to DN1000 Accuracy: 0.5 Flange connection, Material: Carbon steel






7		Turbine Flow Meter	Size: DN25 to DN1000 Accuracy: 0.5 Flange connection, with/without signal output (output 4-20mA signal), power supply 24V. Material: 304 stainless steel
8		Vacuum pump system ZKCC	For independent evacuating and drying of transformer with capacity 108m ³ /hr to 4320 m ³ /h with/without weather-proof type
9		PLC operational with LCD touching screen	Fully automatic operation Can connect with computer
11		Oil Filter	Primary Filter: 80 micron Secondary Filter: 20 micron Fine Filter: 1 / 5 micron

12		Oil inlet pump	
13		Oil storage tank	With capacity from 1000 liters to 40000 liters or above
14		Maintenance Tool	
15		Vacuum Pump	

16		Roots Booster Pump	
17		Motor	
	<p>Spare Parts</p>		
1		Seal ring, Sealing components	
2		Vacuum Gauge	

3		Electric Contact Pressure Gauge	
4		Temperature Controller	
5		Ball valve	
6		Alarm	
7		Glass Tube	

8		Observation glass for vacuum chamber	
9		Electrical parts	
10		Seal ring, Sealing components	
11		Hoops	
Test Equipment			
1		Insulating oil dielectric strength tester(oil BDV test kit) series IJJ-II	Test insulating oil dielectric strength up to 100kV

2		On line moisture tester PTT-001	On line test moisture in oil
3		On line moisture and particles tester PTT-002	On line test moisture(ppm) and particles (NAS1638/ISO)in oil
4		Automatic Karl Fischer Moisture Analyzer model TP-2100	Off line test moisture in oil
5		Transformer oil dissolved gas analyzer model GC-9890MD	Test gas in transformer oil(H ₂ ,O ₂ ,N ₂ ,CH ₄ ,C ₂ H ₂ ,C ₂ H ₄ ,C ₂ H ₆ ,CO, CO ₂)
6		Fully Automatic Oil Acidity Tester Model ACD-3000I (6cups)	Test acid for oil or other liquid

For more insulating oil tester, kindly visit our website www.toptester.com.cn



Abby Xiao | Manager

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