FUOTECH
OIL FILTRATION GROUP

http://www.fuootech.com

Series FTY Vacuum Turbine Oil Filtration & Dehydration Machine

Purify various turbine lube oils from steam turbine, gas turbine & Lube/seal oil system for power plants

- Coalescing-separation Dehydration system, remove water effectively
- Remove free water, liquid water & dissolved water content
- Degassing
- Multi-stage Particles Filtration
- High efficiency heating & reheating
- On-line & Off-line Filtration are available
- Working at High Vacuum with low temperature
- Quick breaking emulsification
- Flow meter installed
- Hooks (lifting eyes) installed for convenient lifting



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WHO WE ARE

- Fuootech Oil Filtration Group is one of largest R&D based high-tech group engaged in designing, developing, manufacturing and exporting various vacuum oil/fluid treatment machines, oil filtration system, oil regeneration machine, transformer evacuation system, dry air generator, electrical testing equipment and oil testing kits for various industries, helping clients all over the world solve various oil problems.

- Fuootech develops custom solutions for virtually any application involving industrial oil management. With Fuootech oil management systems, oils can be re-used indefinitely, thus drastically reducing new oil purchasing and waste oil disposal, protecting environment, and improving productivity for industries to be more competitive in the global economy.

- Nowadays, the company's sales and service network covers all the provinces of China and exports to more than 118 countries. Our products are more and more popular in domestic market and international market based on High quality, advanced technology, competitive price and excellent before & after sales service, as well as continuous technical supports.

- Fuootech's oil filtration systems & oil testing kits are extensively used in the fields of electrical power, power station, power transmission, power generation, Petrochemical, petroleum, Paper and Pulp, compressor, mechanical manufacture, steel mills, electrical utilities, engineering contractors, metallurgy, railway, aviation etc. which are consuming various oils. More than 100 standard models are offered to different clients and also can be customized according to actual need of oil solutions in different areas.





PRODUCT INTRODUCTION & FEATURES

Introduction

- The oil used for lubrication system of turbine generators need maintenance and treatment because it may be mixed with air, water and impurities. Otherwise, it can speed up oil quality turning bad or break down the adjuster and protection system, damage the plain journal bearing, and influence the whole machine running.
- In the past, we used pressure type and centrifugal type oil filter to get rid of impurities and water in oil for middle and small equipments. But the operation processes of those two equipments are very complex as well as waste of large quantity of oils and materials. The efficiency of the equipments is very low. Therefore, they are not suitable.
- Our Series FTY Vacuum Turbine Oil Filtration & Dehydration Machine is specially designed for purifying various unqualified turbine oil (such as ISO–VG–46/32/68/100, etc.) from steam turbine system, gas turbine system & Fans, especially for serious emulsion turbine oil, it can quickly and efficiently break emulsification, separate water (emulsified and dissolved water), gas, dirt, particles from oil, so that make sure quality of treated oil to achieve new oil's standard, ensure whole turbine system work safely.
- This equipment use a special polymer materials as filter medium combined with vacuum separating technology and coalescing-separation dehydration system to break emulsification, dewater, degas, remove acid and particles, make the badly turbid turbine oil becomes clean.

Features

- Breaking emulsification thoroughly with high- molecule polymeric material.
- Multi-stage filtration system to ensure high filtration precision.
- With distinctive removing impurities technique filtering through double FH trapezoidal network and absorbing by high polymer material, this machine can make the ß3 equal or surpass 200 and make the cleanness lower Grade 6 (NAS1638).
- Duplex-Stereo film evaporation technology, equipped with unique and advanced dewatering, degassing components, can rapidly and effectively remove water, gas, particles and volatile matter (such as alcohol, gasoline, ammonia, etc.)
- Advanced automatic medium cooling system, improving working efficiency and making water content cooled down quickly and removed.
- Electric control panel with vacuum indicator, pressure indicator, digital type temperature controlling system with indicator and automatic shut-down system.
- Advanced fully automatic temperature controlling system, liquid-level controlling system, pressure protecting system and excellent configuration can ensure operation of the equipment with high performance.
- Interlock protection system, pressure protection device, interaction of oil inlet ad heating, which avoid influence of incorrect manipulation.
- Designed FOR 24X7 CONTINUOUS OPERATION BASIS
- Explosion-proof materials can be designed as per need so as to use it at dangerous area if requested.
- low maintenance cost and time

TECHNICAL SPECIFICATION

Item		Unit	FTY-10	FTY-30	FTY-50	FTY-100	FTY-150	FTY-200	FTY-300	FTY-500
Nominal Flow rate		L/H	600	1800	3000	6000	9000	12000	18000	30000
Maximum treatment oil capacity in one tank		Tons	3	6	9	15	22	28	36	40
Working Vacuum Degree		MPa	-0.06 ～ -0.095							
Working Pressure		MPa	≤ 0.4							
Temperature Range		℃	0 ～100							
Continuous work			≥ 100 Hours							
No failure running			≥ 5000 Hours							
Power Supply			380V AC, 3 PHASE, 50 HZ (or as per requirement)							
Noise		dB (A)	50 ~ 80 (1 meter test distance)							
Heating power		kW	24	30	48	72	90	132	150	180
Total power		kW	26	33	53	79	106	148	170	201
Inlet/outlet caliber		mm	Φ25	Φ25	Φ32	Φ42	Φ42	Φ50	Φ76	Φ76
Weight		kg	430	500	600	700	900	1200	1920	2160
Dimension	Length	mm	1350	1350	1400	1500	1500	1750	2400	2560
	Width	mm	900	950	950	1000	1200	1450	1630	1690
	Height	mm	1450	1500	1600	1650	1800	1950	2280	2420

The dimension and weight will be changed with changing of technical specs. All the specs can be customized according to client's requirements.
FUOOTECH reserves the rights to change any parts of these specs due to improvement & upgrades without notification.

OIL RESULT AND WORKING PRINCIPLE

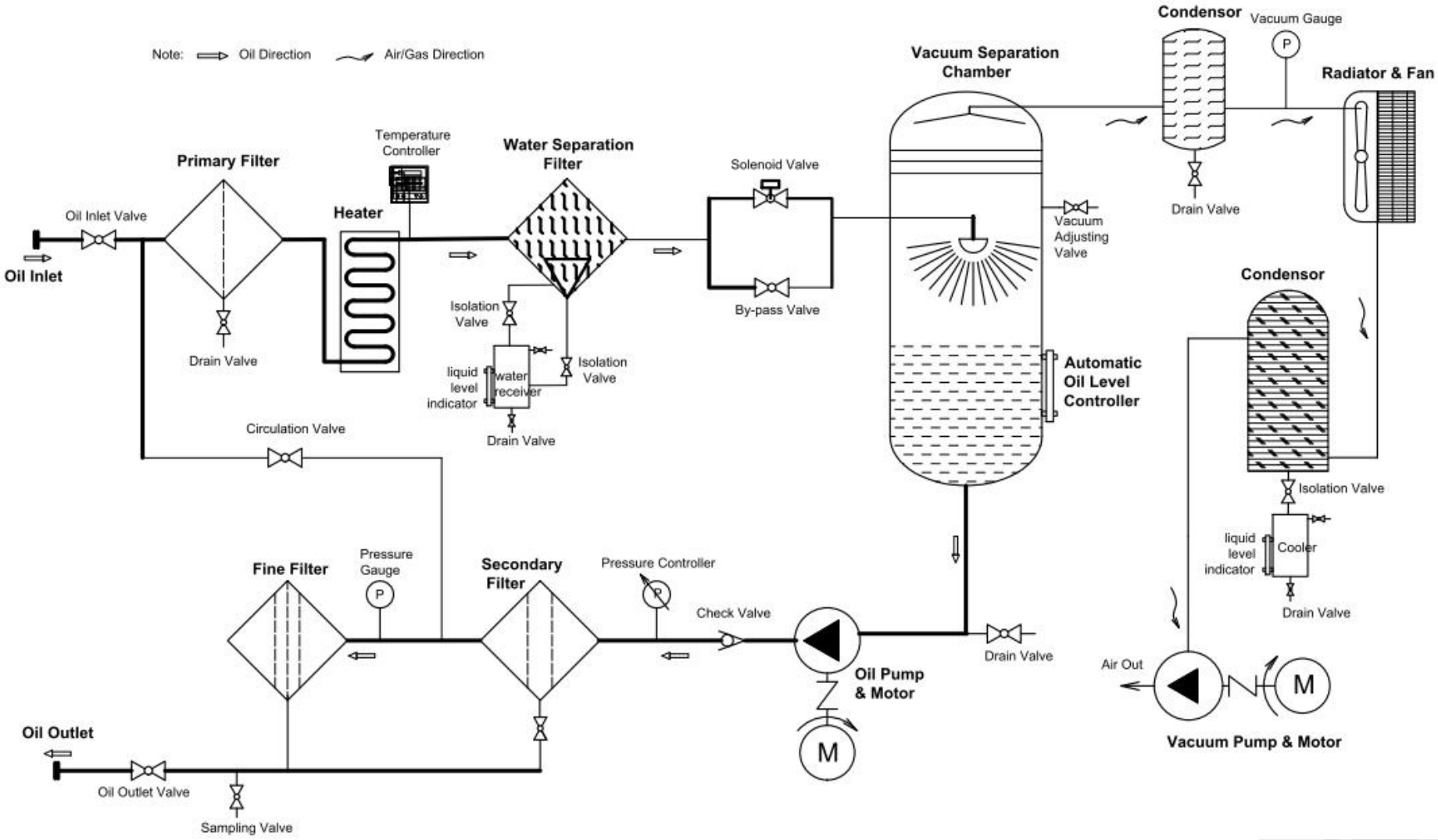
Oil Result After Treatment

Moisture (water content)	≤100 PPM (remove 100% of free water and 99%of dissolved/emulsified water)
Gas Content	≤0.1%
Suspended Particles (Filtration precision)	≤ 3 micron
Demulsification	New oil≤12min, running oil≤30min
Cleanliness	≤NAS 1638-Grade 6

Working Principle

When the oil filtration machine starting, oil flow into primary filter under the difference vacuum pressure between inside and outside and big impurities are removed. After heating, oil flow into secondary filter to remove more particles. Then oil flow into water separator filter which adopts a special skill which changes 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. Oil flows into vacuum separator chamber which use 3D stereo-evaporation high technology removing the remaining trace water and separating the gas content. Vaporized water was drained away by cooler or vacuum system. After that, oil is filtered again by fine filter then discharged out by oil outlet pump, finally the one whole pass of purification process is completed.

FLOW CHART OF SERIES FTY



MAIN ADVANCED TECHNOLOGIES

Unique Dehydration (Degas) System

- We adopt Duplex 3D stereo-evaporation technology whose the evaporation area is three times more than that of normal evaporation technology. This innovation can dehydrate and degas effectively and efficiently.

- Meanwhile, we bring in UK G technology from Japan which eliminates the kinds of trace water content and dissolved water thoroughly.
- Sight Glass installed for observation of oil evaporation and oil flow level.
- Effective vacuum adjusting valve is designed specially for adjusting suitable vacuum degree inside of vacuum chamber according to actual operation condition.
- Blow-down valve and safety valve equipped for necessary operation while use.

High-tech Demulsification

- The quality of the turbine oil treatment machine depends on the technology of breaking emulsification by the machine, if the machine cannot break the emulsification, it cannot dewater at all.

- Many traditional factories usually adopt two methods to solve this problem, one is to add the Emulsion-breaking agent or use the glass fiber cotton. But there are two defects by adding the emulsion-breaking agent: One is to damage the oil, the other one is that the oil will be emulsified again after putting the emulsion-breaking agent.
- Although it can break the emulsion by using the glass fiber cotton, the emulsion-breaking filter's life will be short and
- changed more often because of its easy-blocked disadvantage.

- Our company adopts H.P.M high molecule polymer material of breaking emulsion, it contains a large number of active elements of free verse polymer materials, these free verse polymer materials can directly go into the emulsion oil, emulsified oil will be cut off of molecular chain, separate the Oil molecules and water molecules, it easily solve the problem of emulsion.

  And it won't damage the oil, and use repeatedly without exhausting any supplies.

Distinctive Impurities and Water Filtering System

- The Impurities and water filtering system, which is combined double FH trapezoidal network, Coalescing-separation dehydration system with H.P.M high molecule polymer material absorbing for demulsification, distinctively remove various impurities, particles and water content .

A: First-stage Filter

- Made of Stainless steel material, Double FH trapezoidal network filtering technology, it removes particles and impurities down to 80 microns.

MAIN ADVANCED TECHNOLOGIES

B: Second-stage Filter

- Made of Stainless steel material, Double FH trapezoidal network filtering technology, it removes particles and impurities down to 20 microns.

C: Water Separation system -- Coalescing-separation dehydration system

Made by lignocelluloses and imported from Italy, separates and removes 100% of free water and 99% of dissolved / emulsified water in the waste oil directly and effectively.

Multi-stage water separation systems can be designed specially for purifying the oils which contain too much water.

D: Fine Filter:

- Made by High Polymer Materials and imported from Germany, thorough demulsification and separate water from the waste oil, it removes particles and impurities down to 1 microns, making oil clean.
- Also other filters can be designed to install on the machine according to customer's actual requirements.

Electrical Control System & Control Panel (Cabinet)

- Electrical control system is one of the most important parts for oil filtration machine, which control and protect the whole filtration process, keeping danger away from operators.
- All the electrical parts are chosen and compared by our professional electrical engineers from hundreds of brands products, currently we mainly choose Germany Schneider brands. And the wiring & installation of electrical parts are well designed according to operators' operation habit.
- All Electrical Control Gear, Mains Isolating Arrangement, Starters, Contactors, Fuses, Relays, Indicating Lamps and Interlocking, etc... are well housed in a Compact Control Cabinet, as well as the lights, pushing buttons, vacuum gauge, pressure gauge, temperature controller screen, indicators, etc.. are also well installed on the control panel.
- German 3UG3 Relay keep the machine safe working efficaciously at any situations such as power off, lack of phase, wrong phase position, etc...

High Density Oil Heating System

- Heating by High Density Oil heating system which is the most advanced heating technology, the unique heater structure heats the oil uniformly and easily controlled, it gives out the heat quickly (in 3 seconds after power on) and Efficiency of electricity transforming to heat is very high (more than 98%).
- Oil Heater System assures less than 1.6 w/cm². During the heating process, the deterioration of the oil caused by overheating is avoided. The oil temperature can be adjusted between 0 ~ 100℃. The heater is controlled manually or automatically. The heater will stop automatically when the oil temperature reaches a certain degree. 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.
- The material is good at oxidation resistance at high temperature and can be used for more than 10 years.

MAIN ADVANCED TECHNOLOGIES

Double-safety fluid level auto-control system

- Double-safety fluid level auto-control system is installed in the vacuum vessel to control the oil level automatically so as to avoid the oil leaking in the operation. It can help machine working continuously for 150 hours even online without worker monitor. 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 SIEMENS, ABB, SCHNEIDER, FUOOTECH and AMICO etc. Kinds of brands are optional according to customer's specific requirement. It ensures our products high quality and reliability.
- Some extra components are available to install on our oil filtration machine as per client's requirements, such as flow meter, PLC, hooks, doors, covers, alarms, special Logo, etc...

Structure and Appearance of Oil filtration machine

- 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.
- Available in mobile option, immovable option and trailer, etc...
- Oil treatment machine can be made in hermetical, canopy-covering, open and frame style, etc...
- Color of the oil treatment machine can follow customer's favor.
- Available in installing PLC controller for making machine operation Fully-automatically
- Equipped with Explosion Proof Materials when the machine is used in hazardous areas is optional.

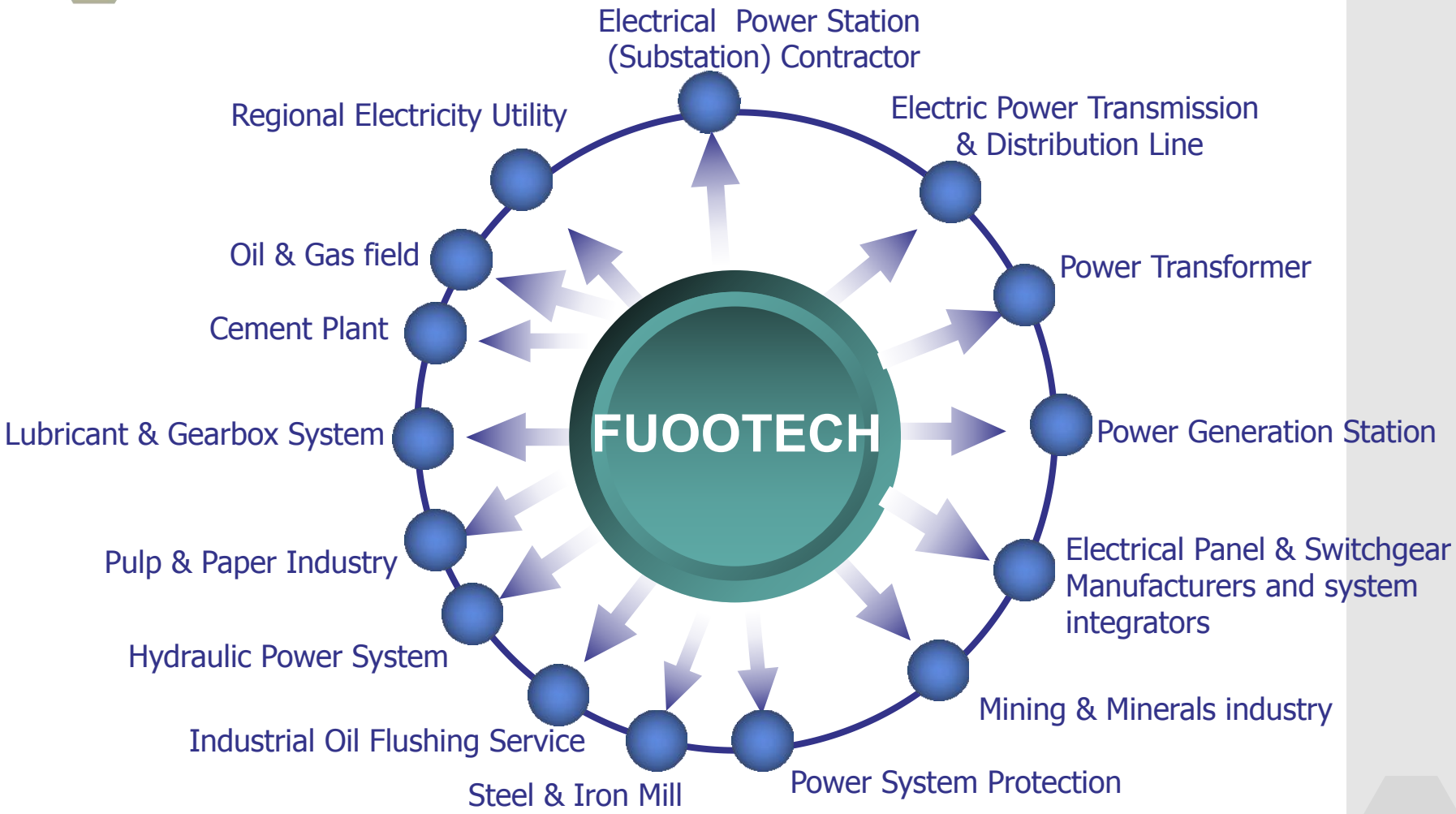
Cooler, Dielectric Condensation System

- 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 dielectric condenser whose decalescence medium changes water vapour changes to liquid water quickly, then are condensed again in cooler.
- The reductive condensed water is 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.

High performance of Vacuum pump system and Oil Pump

- High performance vacuum pump system keeps oil filtration machine operation with high performance at the high vacuum status.
- Series FTY has a high quality of rotary vane vacuum pump, keep the machine's filtration jobs at high vacuum degree.
- Series FTY also uses a high quality durable oil pump to keep strong ability of the oil discharging and head.

THE INDUSTRIES WE ARE ALSO INVOLVING AND SERVICING



More other industries are also not listed here, but also involved

OUR MAIN PARTNERS & CLIENTS

ALSTOM

SIEMENS

ABB

oerlikon leybold vacuum

هيئة كهرباء ومياه دبي
Dubai Electricity & Water Authority

KESC KARACHI ELECTRIC SUPPLY COMPANY

SFG

microtech

Bangladesh Power Development Board

ZPC ZIMBABWE POWER COMPANY

ROYAL ELECTRIC

IPELSA

AREC

SFT SUPERFECTA TRADING 209 CC
General Engineering & Facilities Management

TRIOGROUP

BARRICK

ACACIA

RCG

More other partners and clients are also not listed here

FUOOTECH'S PRODUCTS ARE FILTERING, PURIFYING, REGENERATING

- Insulating Oil
- Lubricating Oil
- Cable Oil
- Industrial Oil
- Transformer Oil
- Turbine Oil
- Vacuum Oil
- Transmission Oil
- Dielectric Oil
- Mutual Inductor Oil
- Switchgear Oil
- Circulating Oil
- Compressor Oil
- Cutting Oil
- Gear Oil
- Heat Transfer Oil
- Hydraulic Oil
- Cooking Oil (UCO)
- Fire Resistant Hydraulic Oil
- Engine Oil
- Coolant Oil
- Quench Oil
- Soluble Coolants
- Rolling Oil
- and more ...





BENEFITS FROM FUOOTECH'S PRODUCTS

- Removes Dissolved Moisture from Oil
- Reduces combustible gases and oxygen
- Improves oil dielectric values
- Improves transformer power factor
- Extends oil service life
- Extends transformer service life and reliability
- Protect transformer, power station, power plants
- Zero disposal of waste oil
- Eliminate new oil purchases and reduce oil inventories
- Keep equipment working more efficiently
- Protect machinery and reduce maintenance time
- Create a cleaner environment
- Extended lubricant life
- Minimized "stick-and-slip" of bearings and gears
- Less wear on servos and O-rings
- Reduced machine downtime
- Less equipment maintenance
- Significantly reduced overall costs
- Cost savings from fewer oil changes, less associated labor
- Eliminate oil changes by always keeping oil like new
- Fuel consumption savings through increased engine efficiency
- Extend engine life with resultant increased times between major overhauls and reduced capital expenditure to replace damaged equipment
- Win profits from our oil treatment machine machines when you resell or rent to others





FUOOTECH'S OVERSEA PROJECTS & TRAINING



South Africa



Pakistan



Saudi Arabia



Tanzania



Bangladesh



Malaysia



Cambodia



Dubai, UAE



Zambia



Nigeria



Laos



Zimbabwe

More projects are not listed here

WHAT WE ARE MANUFACTUREING & EXPORTING



Main Product Category



Oil Filtration Machines

- Transformer Oil Filtration Machine
- Insulating Oil Treatment Plant
- Transformer Oil Purifier
- Dielectric Oil Purification System
- Transformer Oil Regeneration Unit
- Lubricating Oil Purifier
- Turbine Lube Oil Purifier
- Portable High Precision Oil Purifier
- Transformer Evacuation System
- Cooking Oil Recycling Machine
- Oil Water Separation & Filtration System
- Hydraulic Oil Cleaning System
- Centrifugal Oil Purifier
- Phosphate Ester Fire-resistance Oil Purifier
- Plate Frame Pressurized Type Oil Purifier
- OLTC Insulation Oil Purifier
- Dry Air Generator

Automatic Oil Test Set & Electrical Test Equipment

- Transformer Oil BDV Tester
- Online PPM Moisture Content Meter
- DGA Analysis System
- Oil Acidity Test Kit
- Oil Dielectric Loss and Resistivity Tester
- Flash Point Tester
- Interfacial Tension Tester
- Transformer DC Resistance Tester
- Tan Delta and capacitance Tester
- Transformer Test Bench
- Variable Frequency AC Resonant Test System
- Transformer Turns Ratio Test Set
- Line Loop and Contact Resistance Tester
- VLF AC Hipot Test Set
- DC Hipot Test Set (DC High Voltage Generator)

TECHNICAL SUPPORTS & AFTER-SALE SERVICES

- FuooTech Oil Filtration Group has a professional after-sales service team, We are in the spirit of "high quality, excellent service, create first-class brand" and base on the principle of "quality equipments, reasonable price and warm-heat service". we can provide our customers free installation and adjustment of machine, free training and two years warranty from final acceptance.

- During warranty period, if the purchaser discovers defects in workmanship and or material and so notifies the supplier promptly in writing, we have the responsibility to dispatch the technician and provide supplementary accessories within twenty days from the date of receipt of written notification from the purchaser.

- We will provide 24-hour one-stop service to ensure that we can deal with customer issues in first time
- Service target: Always to provide customers with satisfactory service.

- We also provide OEM & ODM Service & Solutions to your specific needs according to the actual market plan. Please Contact Us for more details.
- 7*24 Technical Supports and After-sale services are also available for all clients.
- We also provide the professional installation, commissioning, training services for customers at their working site.
- Technical Upgrade and improvement are also belongs to our experienced services.

- For more services, please don‘t hesitate to contact us. We will provide you the best solutions.



FUOOTECH
OIL FILTRATION GROUP

CONTACT US



Thank You!
LOOK FORWARD TO COOPERATING WITH YOU!

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