



Chongqing Fason Purification Equipment Co., Ltd

Tel: +86-23-81698825 Mobile: +86-15823899525 Contact Person: Yake Zhang
Email: sales06@cqfason.cn Whatsapp: +86-15823899525
Add: No.4-7-8, Qianye Building, 99th Huoju Street, Jiulongpo Dist., Chongqing, China

DTS Multifunctional Waste Oil Purification & Regeneration Equipment

1. Features of our DTS Equipment

1) DTS adopts the pure physical low temperature distillation and micro-filtration purification technology, it can rapidly separate all kinds of contaminations such as moisture, oxides, metal impurities, carbon residues, colloids, suspended and emulsified matters from waste oil, completely restore the physiochemical index (i.e. viscosity, PH value and flashing point) of the waste oil to meet the standards to be exactly same as brand new oil.

It can fully cracks the molecular chains & refractory oxides wrapped by oil film which cannot be filtrated by the common oil purifier; with the pure physical method(flocculation and bridging)to fully remove all the suspended particles or sediment which cannot be dissolved in gasoline or benzene, to recombine and link the oil molecular chain and film, and restore the physiochemical indexes and cleanliness of oil to meet the international standard

2) The unique decolorization system is able to turn the black color of waste oil into transparent yellow color to be exactly same as new oil, in the meanwhile the oil substances will be well kept. The regenerated oil can be used as new oil constantly.

3) With an exclusive Gravity Separation System and Static Magnetic-Field purification system generated by high-frequent vibrations as well as the Filter-Free Technology, our customer won't have to replace any consumable filters any more by using our equipment. It will save you





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a lot of unnecessary expenses significantly for buying filters.

4) Our DTS applies the brand new technology of Five Pumps and Double Temperature Control System, completely avoid those problems caused by control failures from happening; and it has configured with Backwash System, Automatic Feeding and Sludge Discharging System as well as the Exclusive Water Cooling System, combines every single parts with Fason's exclusive technologies makes our equipment running more and more stable and operation gets more and more convenient.

2. What makes our DTS is so different from any of our competitors?

1) Energy Saving Technology (20% power consumption)

The total power consumption for Common Oil Purifier (i.e. Model 100) is about 46 KW per hour. But our DTS equipment (i.e. Model 100) consumes only 15 KW per hour on average. Comparing with those similar machines from our competitors, our DTS can save your electric by 31 KW per hour. Suppose that the cost for electricity is 1 dollar per kWh, that means our DTS can save your 31 Dollars per hour. Suppose that you use our DTS by 8 hours a day, then it will save you 248 dollars per day. Comparing with those competitors, our DTS can save you 7,440 Dollars per month. And suppose that you use our DTS by 7 month per year on average, it can save you 52,000 USD each year. Yes, that's right, it is 52,000USD, you can only imagine that how much you will save just by our Energy Saving Technology.

2) World Leading Decolorization System

With our brand new Automatic Decolorization Reaction Still & Micro-Filtration Purification technology, the color of purified oil will be restored as light yellow color (like brand new oil).

3) Exclusive FILTER-FREE Technology

Unlike any of our competitors, DTS equipment doesn't need any kinds of Strainers, Filter Papers, Fabrics or Plate Frame, so you don't need to spend time and money to



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purchase and replace those expensive filter frequently. It will save you a lot of troubles and money which you might have to spend on replacing and purchasing the consumable filters, and in the meanwhile the color, performance and cleanliness of the purified oil will still be guaranteed.

4) Recovery Capability

Our DTS equipment is able to recover Viscosity, Acid Value, Condensation Point, Pour Point, Emulsibility, Viscosity-Temperature Property, Corrosion Resistance and Oxidation Stability of oil substances, and increase the flash point of oil by 5% ~ 30%. The flash point of oil is one of an very important volatility index. The higher the flash point, the less the volatility, and its cooling performance will be increased as well, also it could be better for cooling the mechanical equipment, and in the meanwhile it can improve the oil's Viscosity Temperature Performance dramatically, and extend its Lubrication Effect and Life.

5) NO DAMAGING for oil substances

The pipe wall temperature of heating pipe for traditional oil purifiers from all over the world, are more than 300°C, it will cause the aging of oil substances instantly. Our unique heating device in DTS can make the temperature into balance between inner and surface of oil, the temperature for inner and surface of oil is 80°C only, so the oil substances won't be damaged and its quality will be assured.

6) New Separation System

Our DTS equipment can efficiently separate the Non-Ideal Ingredients from the oil (i.e., low volatility and low flash point substances, such as acid, alkaline, water, kerosene, gasoline, diesel, methane, ethane, arene, acetylene, naphthenic acid and so on) to achieve the separation targets, then use the vacuum to extract and transmit those ingredients into the conversion system for cooling, and then those components after cooling will be sent into the trash collection tank until proper dispose.

7) Faster SPEED for Separation

The traditional oil purifier uses the oil columnar circulation, makes the oil go through the heating pipe and then filtrate at first, then get it degassed and separated, the process for heating and separating are isolated. Our DTS equipment uses our own patent technology (Disc membrane separation), the speed of our separation is several times to 30



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times faster than other common oil purifiers from our competitors.

8) Five pumps, Double temperature controls and Double liquid level sensors

Our DTS completely solved the problems like oil escaping, oil blockage, emulsification of vacuum pump oil, empty running of oil pump, oil wasting, environment pollution and any other problems which might be caused by control failure.

9) Automatic Backwash system

The cleaning of some particular oils for normal oil purifier can be very complex; its groove parts can be cleaned only after disassembly. Our DTS equipment can clean up the pipelines easily and completely just by pressing one button.

10) Automatic additive feeding and Residue discharging system

Pressing one button slightly, the DTS system can help you to feed the additive and mix it into oil automatically; simply and rapidly discharge the residue by our exclusive air-power driving discharging system after the oil purification process is done.

11) Static Magnetic-Field System created by high frequency vibration without centrifugal effect

Easily separate and remove those headachy metal particles in micro size.

12) Improving history of our DTS equipment

The 1st generation oil purifier can only be used to treat the oil which is less or equal than standard No.15, It has adopted plate frame pressure filtration system.

The 2nd generation oil purifier is known as **Vacuum Oil Purifier** by using either single or double stage vacuum negative pressure technology, it has a better precision of



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filtering, degassing and Residue discharging function compare with 1st generation of oil purifier. Those kinds of machines are known as Vacuum Oil Purifier in the market by now, they're produced by the largest quantity in the industry all over the world and they have the most of the end users. This kind of machine may have different appearances but similar structures and functions such as automatically oil feeding and discharging, heating, degassing, residue discharging and filtering, and they have a large workload (80% of oil flow depends on the content of impurity). However the color and physiochemical index of purified oil cannot meet the national standard of new oil. Not to mention that their final users usually would be limited as the light pollution corporation or enterprise for instance Power Machinery Commissioning Oil and oil of repairing and testing for machinery assembly. Those are indeed economical equipments.

The 3rd generation oil purification equipment is the **ZTS series Oil Purification Equipment** which was developed by Chongqing Fason. It combines the advantages of the various types of equipments, and it has the new oil and water automatic separation system and emulsification separation system, it is able to separate acid, alkali, arene, methane, benzene, gasoline, kerosene, diesel oil, oxide, carbide, gas, emulsion and colloids (those impurities would reduce the viscosity, flash point, extruding, anti-wear, viscosity index and corrosion resistance property of oil), the separation rate could be reach 98%. Because those impurities are dissolved in the oil and different from other mechanical impurities, so they cannot be solved by filtration. Also the ZTS equipment is still able to purify the various of oils which is less or equal than No.3000 even when Ambient temperature is lower than minus 30°C, and it is able to improve the physiochemical indexes of oil which are reduced while using, and the filtered oil can be tested and meet the international standards.

The 4th generation oil purification and regeneration equipment **FASON DTS multifunctional Waste Oil Purification & Regeneration Equipment** is an upgraded product from our ZTS series equipment.



Liuzhou Petroleum Refining Plant



Chongqing Qingshan Industrial (China)



Beijing Capital Steel



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3. Comparison of our DTS equipment with our competitors

The Common Equipment	FASON DTS Equipment	Our Advantages
Needs filters or filter papers	No need any filter elements(i.e. strainer, fabric, paper or plate frame)	Reduce the purchasing cost of consumable materials; No need to clean filters
High power consumptions	Power saving technology	With our patented technology, the power consumption of our equipment is ONLY 20% of the competitors.
Directly heating with high-temperature	Low-Temperature distillation	Low-Temp heating can keep the oil substances from instant aging by direct heating
Can only remove impurities which are bigger than filtration pores	Can remove particles and all suspended impurities	With Fason's unique Gravity separation technology and strong dirt-removing ability ensures the cleanness of purified oil
Cannot remove the oxide substances and any impurities which is smaller than filtration pores	Can remove all oxide impurities	Recover the inoxidizability of oils completely
Can only remove 80% of water from waste oil	Can remove 100% water completely	Recover the demulsification ability, viscosity and PH value
Cannot work on heavily contaminated oil	Can purify all kinds of oils(The particular oils might need flocculation)	Wide application and high efficiency for all kinds of lubricating oils.
The color after filtration is almost same as waste	The color after purification is almost same as brand	No acid and alkali involved in treatment;



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oil	new oil	Can determine the oil quality with visual inspection.
Filtrated oils can only be checked and accepted as moisture and impurities	Purified oil can be checked and accepted as the international standard	Customer can test the purified oil with all physiochemical indexes
The filtrated oils can used on cutters and tools only	The purified oil can be used on all lubricating system	Wide applications, it is able to deal with different kinds of waste oils
Needs to mix with new oil for re-use	Directly resue or can be sold as new oil	Reduce the cost of purchasing new oils significantly
Be unable to clean the pipelines	Backwash flushing pipelines automatically	Automatically flushing pipelines by pressing one button
Single pump & temperature controller	Five pumps, dual temperature controller and dual liquid level sensors	Avoid oil leakage or blockage, vacuum pump emulsification, empty running of oil pump, waste of oil and environmental pollution etc.
The filtrated oil cannot be re-used again directly	The purified oil can be re-used constantly	No need to buy any new oil anymore
Need to replace the filters frequently & inconveniently with high cost	No need to replace filter elements permanently Deslagging with one-button	Reduce the human power, low cost and be easy to operate

4. Applications of our DTS equipment

Our DTS equipment can be used for the Regeneration and Purification for the oils as following: Cooking oil, Hydraulic Oil, Transformer Oil, Turbine Oil, Quench Oil, Ship Oil, Gear oil, Forming Oil, Rail oil, Compressor Oil, Vacuum Pump Oil, Pneumatic Oil, Bearing Oil, Drawing Oil, from the industries such as Petroleum, Chemicals, Cement, Metallurgy, Mining, Power Industry, Shipbuilding, Machinery, Military Industry, Rubber and Plastics, Instrumentation, Transportation, Building Materials, Paper Making and etc...

5. Configurations of our DTS equipment

Serial No.	Desc.	Unit	Q'TY	Features
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1	Vacuum pump	PCS	1	Double-stage rotary vane model and national inspection-free export product, it has the largest air displacement among similar products, and it can be long-running in the high temperature of 120 °C.
2	High-pressure gear pump	PCS	1	With bearing steel gear & high wear-resistance.
3	Turbo pump	PCS	1	360 °C high-temperature resistance, permanent wear-proof.
4	Main Fame	Set	1	Solid durable structure; Equipped with universal wheels, can be moved flexibly; Dismountable main case; Highly convenient for maintenance.
5	Reaction heating device	Set	2 × 3	Centralized distributed deep layer heating; high thermal efficiency; no damaging to oil medium, protect oil from instant aging.
6	Vacuum reaction device	Set	1	Double-stage vacuum multilayer spray with high efficiency degassing and dehydration ability; Imported grade reaction component no need replacement; Specific process treated, maintenance-free.
7	Oil-film atomization device	Set	1	Separate the oil and water by atomizing; increase the superficial area of molecular films; it's more conducive to improving the quality and the viscosity index of waste oil.
8	High pressure jet sprayer	Set	1	Oil is being distributed after concentrating, higher degassing efficiency.
9	Multidimensional flash evaporator	Set	1	5 to 20 times of tridimensional differentiation, 20 times higher efficiency of dehydration and degassing ability than the Planar Evaporation.
10	Water cooling system	Set	1	Fason patent component, exclusive water-cooling function with powerful sectional memory cooling, no requirement for using seasons and regions.
11	Thermal exchange system	Set	2	Saves 60% of power consumption.
12	Magnetic induction controller	Set	1	Unique technology, made by stainless steel, stabilizes the flow, maintenance free in life time.
13	High frequency motor	Set	1	Available for customization by the specific requirement of users.



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14	Emulsification separation system	Set	1	Made by 100% stainless steel, automatically separate the acid, alkali, carbide, emulsion etc. from the oil substance; improve the oil's demulsibility; high separation rate (99%). Especially suitable for the separation of emulsified moisture (there are two kinds of moisture in the oil: the free moisture and the emulsified moisture).
15	Gravity separation system	Set	1	Fason patent component and unique technology. Automatically separate the arene, methane, benzene, gasoline, kerosene, diesel and other substances in the oil, high separation rate (99%).
16	Oil and Moisture separation system	Set	1	Adopts anti-gravity separation method, 100% separating and removing all moisture from waste oil (Totally different from the normal sediment separation method which has been using by other oil purifier suppliers.)
17	OverPressure protection device	Set	1	Other than electrical contacts control, it will automatically shutdown the equipment in case of overpressure.
18	Pre-filtration device	Set	1	Imported stainless steel filter, corrosion resistance, high temperature resistance, life time maintenance free.
19	Air compressor	PCS	1	Part of our automatic backwash system, cleaning pipes and mixing oil, highly convenient and time-saving device.
20	Decolorization & Low-Temp Distillation device	Set	1	Fason patent component and unique technology. Adopts low temperature decompression distillation technology, ideally suitable for black waste oil treatment.
21	Automatic feeding and residue discharging system	PCS	1	Easy operating, time saving, high efficiency, reducing the production cost.
22	Oil inlet and outlet hose	PCS	2	Steel wire reinforced transparent PVC hose.
23	Liquid level control valve	PCS	1	Automatic control device (no need adjusting the degree of vacuum and valve size).
24	Temperature controller	PCS	1	Automatic constant temperature with lowest power consumption
25	Single liquid level control Dual liquid levels control	Set	2	Dual protections, One is mechanical control; another is electronic control, ensure the long-running of the equipment without monitoring.
26	Vacuum negative pressure system	Set	1	Automatically control the equipment, pressure, degree of vacuum and oil flow, ensure the well-functioning of the whole system.
27	Valves	Set	1	All made by stainless steel, rust free and maintenance free.



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28	Decolorization reaction still	PCS	1	Ideally applicable to the decolorization and regeneration for all kinds of allochroic and oxydic oil.
29	Trash collection system	PCS	1	Collect the acid, alkali, arene, methane, benzene, gasoline, kerosene, diesel, carbide, oxide, emulsion and so on which separated from waste oil and then discharging all together.
30	Constant temperature heater	Set	1	Made by stainless steel, protect the oil quality from damaging. It is able to save you 80% electricity compare with the similar products from our competitors.
31	Independent automatic Backwash & mixing device	Set	1	Exclusive patent technology, it can quickly and completely clean the pipelines and mix oils.
32	Trash collection tank	Set	1	Independently collecting and discharging the steam and other kinds of gaseous substances.
33	Separation tank	Set	1	Processed and tested based on the pressure vessels standard, improves the reliability and durability of the separation system.
34	High frequency static magnetic-field filtration device	Set	1	Fason patent component and unique technology.(Magnetic field filtration) Complete purification effect.

6. Configuration Drawing of our DTS equipment

Only 20% power consumption of our competitors

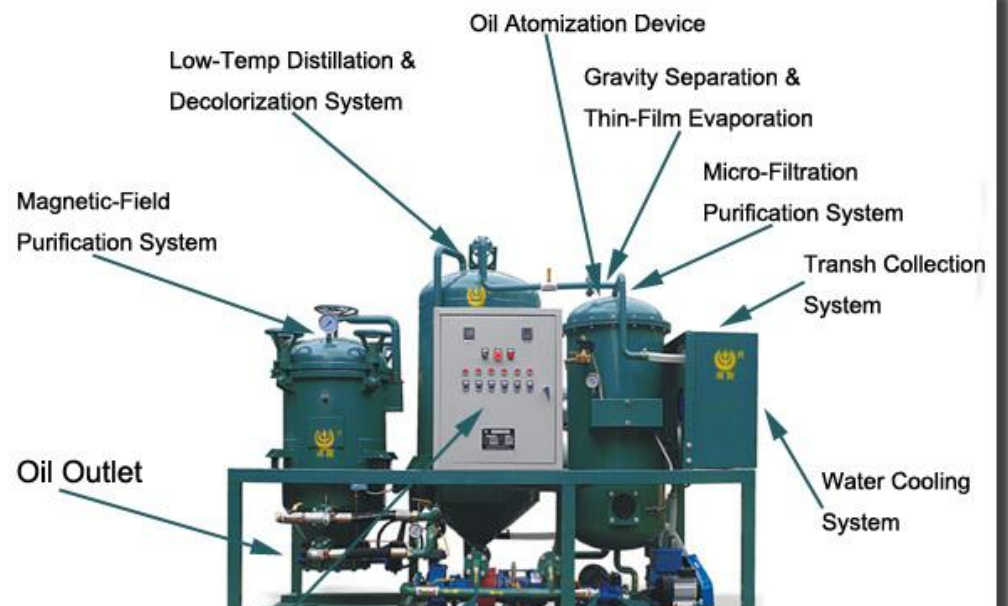
Pure physical low-temperature distillation technology

New gravity separation technology

Decolorization system

(restore the oil to its transparent color)

Automatic backwash system





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7. The Technical parameters of our DTS series equipment

Technical items	Unit	DTS-MINI	DTS -I	DTS-II	DTS-III	DTS-IV
Total Power Consumption	Kw / h	30	36	53	67	74
Rated Heating Power	Kw / h	2	3	4.5	6	4.5
Average Power Consumption	Kw / h	10	12	17	22	24
Oil Inlet Flow	L / min	50	55	100	150	200
Working Capacity	L/8hours	800	1200	1600	2400	4500
Processing cost	USD / Ton	32 ~ 55				
Operating Voltage	V	220/380				
Working oil's temperature	°C	30 ~ 160				
Working pressure	MPa	≤ 0.8				
Noise	dB(A)	≤ 75				



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8. The Oil Inspection Method after Purification

Technical items	Unit	Chinese national standard number
Kinematic Viscosity	mm ² /s	ASTM D445
Density	(20°C)kgm ³	ASTM D1298
Flash point	°C Opening	ASTM D92/93
Pour point	°C	ASTM D97
Acid number	Mg KOH/g	GB/T 264 or 4945
Mechanical impurities	%	ASTM 473
Water by distillation	Trace	ASTM D95
Color	Chromaticity	ASTM D1500
Water Separability	54°C(40-37-3)ML/min	ASTM D1401

Remark:

* It's non-mixed oil base on National stand

* The inspection of mixed oil and non-standard oil will be according with the testing standard of our sample oil.

9. Working Flow Chart



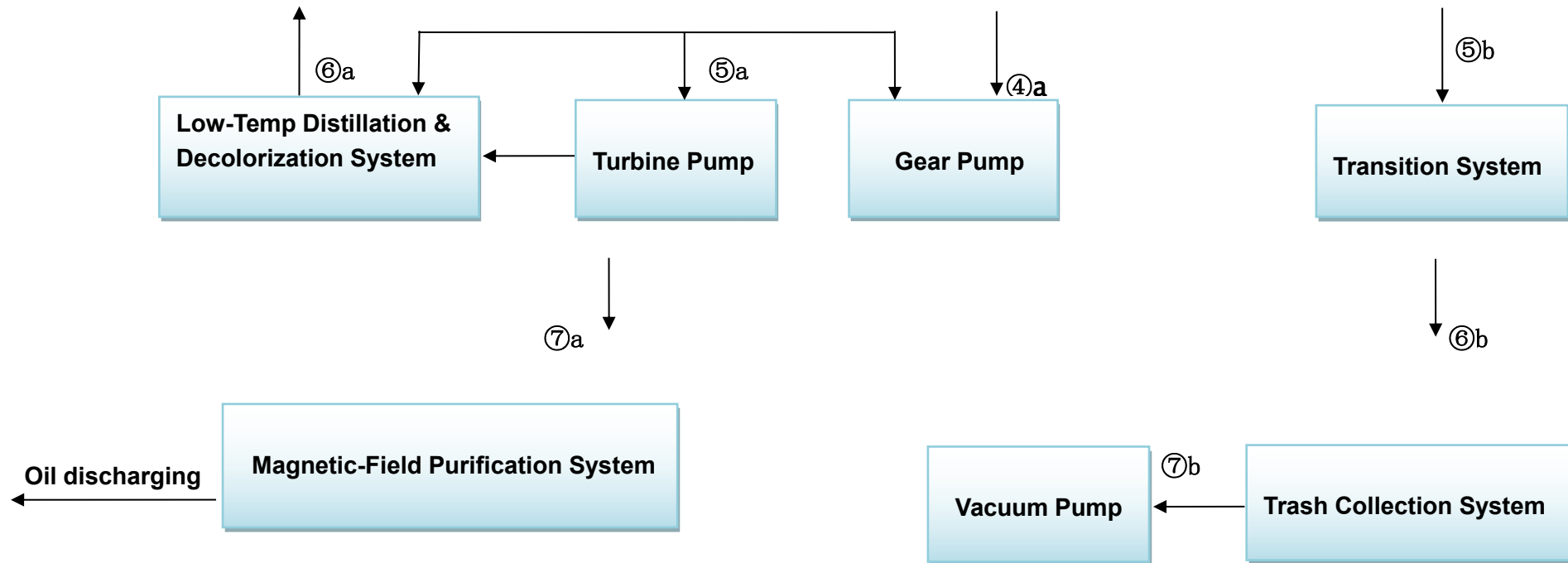


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Remarks: ④a to ⑦a
 And ④ to ⑦b are running at the same time