



FS

Precise Oil Filter

鍍鑫精密淨油機系列

**Awarded as National Green Equipments by
Industrial Development Bureau Ministry
of Economic Affairs**

Energy Saving Specialist for Industrial Oil
專門為解決中至大型油壓機械污染油而設計



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鍍鑫經由不斷測試及改良後，淨油過濾成效顯著!!

Full Shine Co. Has Great Achievement On Oil Filtering After Numerous Test And Improvements.

FS Precise Oil Filter makes filtering precise below NAS grade 6 (to achieve below grade 9 by first filtration). Normally, new oil from the oil factory is below grade 7, but the oil may be polluted during transportation, so the standard new oil is grade 9-10. After the oil being used and polluted to grade 12, it should be changed for new oil.

When the machine equipped with FS Precise Oil Filter, it can filter the pollutants at any time, and keep the oil always in purity stage, and extend the oil usage life to 10 years.

使用鍍鑫精密淨油機之優點及解答

The Advantages And Solutions By Using FS Precise Oil Filter:

Pollution Problem 長久以來的污染油問題	Solved Method 解決方法
Particle Pollution 粒子污染 The metal powder comes from the friction. Carbon or particle get into oil tube through the breath-hole and already existed in dirty oil which can resulted in 80~90% problem of hydraulic system. All kind of particle became micro particle under high pressure, the oil lubrication will be reduced by high pressure and also lead to the friction increasing. The frost of metal surface was caused by this situation. The service life of hydraulic parts will be shorter.	Isolated Particle 隔離粒子 FS filter-paper meets the successive system of oil filter which can filter 0.1 micron (The volume of erythrocyte is 8 micron). FS filter can clean particle dust water continuously and the particle gets into tube through the breath-hole. Moreover, FS filter opilate-resistance design can ensure the durability.
Water Pollution 水份污染 The oil with water will make temperature difference which can cause nature humidity mixed into oil pressure causing erodent and consumption the air tube.	Absorb Water 吸收水分 FS filter fiber-paper can fully absorb the water from the temperature difference. The absorption volume can reach to 20% of volume.
Acidity Rising 酸度升高 Water in oil and pollution particle generate chemical action causing sulfuric acid, hydrochloric acid. They can damage and erode the surface of oil tube and chap finally lead to the parts breakdown.	Particle Pollution 防止酸度升高 Although water and pollution existed, the additive could slowly reduce the acidity rising. FS filter will further form two basic objects- 「Water and Pollution Particle」, which are eliminated by FS filter.
Particle Pollution 減低潤滑性能 Under normal situation, it will oxidize after long time. High temperature cause the abnormal and force it to oxidize quickly, making the surface of metal surrounded with the dark brown viscosity, it will increase friction and hinder ventilation oxygen got through the hole in machine into oil tube, and slowly melted in oil of which will reduce the lubrication ability.	Maintain Lubricate Function 保持潤滑性能 FS filter system keep the oil viscosity under certain standard and also keep the temperature down, it could make the oxidation time slowly, hence it can keep the oil lubricative function.



**擁有勁力十足精密濾油系統，讓您10年免換油!!
提高產量、提升品質、增長機械使用壽命!!**

**Super Precise FS Oil Filter System
For Higher Production Output,
Better Quality Products, Longer Machine Life!**

The Modern Management For FS Precise Oil Filter and Hydraulic Machines

Why to use the oil for Automatic Machines

1. Hydraulic oil is very sticky, not easy for leakage.
2. Hydraulic oil could prevent the machine from getting rust.
3. Hydraulic oil is with lubrication feature.

The oil circulates in the machines, and will be polluted and oxidized gradually.
The polluted reasons and its harmfulness to the machine as follows.

1. The reason for oil be polluted and oxidized

- (1) Metal powder: Caused by the friction in the pump, valve, pipe and oil cylinder.
- (2) Carbon : Caused by high oil temperature due to friction and squeeze pressure inside oil.
- (3) Others: Dust, Rubber powder from outside.
- (4) Rubber: Oil seal ring worn out.
- (5) Water: Water drops formed from the air because of high-low temperature difference, and the water leakage of the oil cooler.

2. The harmfulness to the machine because of polluted oil

- (1) The pollutants(except water) will destroy the lubricant surface by friction, speed up the spare parts wearing, and damage valves to cause the problem.
- (2) The water will reduce the oil toughness, which is the worst for lubrication.
- (3) When water combined with pollutants in the oil, then it will speed up the oil oxidation.

For the normal hydraulic system, the machine oil will be polluted from six months to two years (it depends on the condition of the machine and its working hours), then, to change with new oil is required; after a period, new oil will be required again as a cycle. This management not only wastes time but also take too much money on the oil, besides the machine will be broken down easily.

Normally, we might think changing broken hydraulic spare parts with new ones or repair them is normal. However, in fact, many problems can be avoided. According to statistics, more than 90% machinery problems are caused by oil pollution and oil oxidization. Based on this reason, hydraulic specialists around the world are studying oil filtering. Furthermore, the serious shortage of the energy resources in recent years makes it more important on researching how to save the consumption of oil.

The research report from hydraulic specialists and machinery manufacturers from all over the world shows the hydraulic oil is no longer as consumable. It would be used for more than ten years by keeping the oil away from water and pollutants. Many machine manufacturers from Japan also prove from their test that to keep the oil in purity will extend the oil life-cycle more than 10 years.

Regarding the oil filtering, some people might worry about the additive in the oil (such as anti-friction, anti-oxidization, anti-bubble etc...) will be filtered. In fact, the worry is not necessary. The additive only has its function when it exists as molecule ion and melts into liquid, instead of existing as suspended substance (the molecule ion diameter should under 10^{-8} - 10^{-7} CM). So, for melt additive, it will not be filtered or blocked during the filtering process or to change its feature.

In fact, after filtering out tiny pollutants and water, it will extend the additive life.
This has been proved as the truth.

Designed For Solving The Problem

Improving Productivity & Quality! Extending Machine Life!

Filtering procedure adopt road-side type. Oil from hydraulic pump will go through flow adjustment valve in high pressure, and diverts to the separate filter unit for precise filtering, and then flows back to oil tank. This method always keeps the hydraulic oil in purity stage. No need to make any maintenance, except to change filter paper periodically. With the hydraulic pump of FS Precise Oil Filter continuous running, oil purity precision will get higher and always keep in purity stage.

Product Specification 產品規格

FS-RS/ FS-SP Precise Oil Filter : 精密淨油機

Specification 規格	Model 型號	RS-100	SP-100
Flow Rate(l/min±0.3) 流量		1~3.0	1~3.0
Safety Valve Open Pressure 安全閥開啓壓力		5.5kgs/cm ² ±0.3	
Pressure Gauge 壓力計		Ø40 with oil pressure gauge 0~10kgs/ cm ²	Ø40 with oil pressure gauge 0~10kgs/ cm ²
Weight 重量			6.5kgs
Suitable for Oil Tank 適用油箱容量		Below 100L	Below 100L
Motor 馬達			1/8HP
Power 電源			110V, single phase

MP-2RE SP-100

FEATURE:

- 1.Small size, space saving, easy for installation.
- 2.With oil pump for independent operation
- 3.Single phase power, easy for operation
- 4.Equipped with pre-filtering device for protecting pump and extend the usage life of precise paper filters.

RS-100

FEATURE:

Installed on the machine, it can block the pollutants through the circulation from the machine hydraulic pump and cycle routes, and send the purified oil back to the oil tank. It is the economical device, suitable for small-flow machine.



SP-100



MP-2RE



RS-100

Problem Of Polluted Hydraulic Oil

Product Specification 產品規格

FS-MP Precise Oil Filter : 精密淨油機

Model 型號		2RE	2R	3R	4R	5R	6R	7R
Specification 規格								
Flow Rate 流量	50Hz	1.30-6.60	1.30-6.60	2.00-10.70	2.60-14.00	3.30-17.30	3.90-21.00	4.60-25.00
(ℓ/Min)	60Hz	1.60-8.00	1.60-8.00	2.40-13.00	3.20-17.00	4.00-21.00	4.80-25.00	5.60-30.00
Normal Pressure for Pump 泵設定正常壓力		1-3 (kgf/cm ²)					1.5-3 (kgf/cm ²)	
Inlet/ Outlet Diameter 出入口徑		1/2-3/8		5/8-1/2		5/8-3/4		
Dimension (cm) 尺寸		63x30x79	45x52x75	63x51x75	86x51x75	86x51x75	110x51x75	110x51x75
Weight (kg) 重量		45	72	85	116	123	130	138
Suitable for Oil Tank (liter) 適用油箱容量		300-400	300-400	600-700	900-1000	1200-1300	1500-1600	1800-1900
Moter (hp) 馬達		1/2					1	
Power 電力		Single phase 110V/220V			3phase,220V/480V			
Additional Function 額外功能		Auto detecting moter turning direction;oil filtering time setting						

MP

FEATURE :

1. FS Precise Oil Filter MP Series is equipped with the independent pump for continuous oil purification; to block the pollutants, the oil purity with NAS grade 6-9, cleaner than new oil, extend the oil life to 10 years. With the clean oil, machine problems will be reduced, extend the machine life and improve the quality and productivity.
2. Equipped with pre-filtering device for protecting pump and extend the usage life of precise paper filters.
3. Various kinds of oil filter for choice, flow rate from 0.8L to 200L per minute.
4. With electric-leakage alarm, overload alarm and emergency stop device.
5. With paper filter replacement alarm, high pressure alarm and emergency stop device.
6. With filtering time setting.
7. Available as oil sucker/oil extraction machine as well.
8. With auto detecting device for motor turning re-direction.
9. Easy operation and maintenance.



MP-2R



MP-3R



MP-4R



MP-5R



MP-6R



MP-7R

CDS油品分析室測試報告:過濾後比新油更高等級

Test Report From CDS Oil Analyze Laboratory

(Filtered oil is more pure than new oil)

Most oil purity measurement is by NAS grade,

with the help of following chart, you can identify the oil purity grade

(Lower grade means better purity)

Pollutants	NAS grade													
	00	0	1	2	3	4	5	6	7	8	9	10	11	12
5-15 μ	125	250	500	1,000	2,000	4,000	8,000	16,000	32,000	64,000	128,000	256,000	512,000	1024,000
15-25 μ	22	44	89	178	356	712	1,425	2,850	5,700	14,000	22,800	45,600	91,000	182,400
25-50 μ	4	8	16	32	63	126	253	506	1,012	2,025	4,050	8,100	16,200	32,400
50-100 μ	1	2	3	6	11	22	45	90	180	360	720	1,440	2,880	5,760
100 μ	0	0	1	1	2	4	8	16	32	64	128	256	512	1,024

Acknowledge the machine status
by observing the paper filter

Fresh oil rank

Through observing paper filter's outlook and pollutants blocked, you can judge the wear parts of the machine and oil status, avoid any unexpected accidents.

-- following chart for machine protection for reference --

Status	Solution	Outlook	Surface
1 The surface of the paper filter polluted by oil carbon, dust etc...	If there are dust, oil drops, little metal powders on the paper filter, it means the machine and oil are in normal condition. If the outlook of paper filter getting dark or in yellow color, please check the acid grade.		
2 Too much metal powder on paper filter surface	The metal powder means some machine parts with the same metal material are worn out, please check the machine parts and solve the problem as soon as possible.		
3 Broken lines on paper filter surface, it feels soft when pressed by finger.	It may be too much water inside of the oil, please check the problem. Stop working before the problem solved.		
4 Broken lines on paper filter surface, it feels stiff when pressed by finger.	It means the paper filter is overloaded, please change new one at once.		
5 Paper filter sinks	It means the high pressure in the oil filter. Please check and adjust the pressure.		
6 Paper filter looks smaller	The pressure in the oil filter are getting higher because of overloaded pollutants. Please change the paper filter at once.		

Super Precise Paper Filter 精密濾芯系列

1. Paper filter is made by special long fibers, adopts deep filtering structure, and is produced by high density and high pressure treatment.

2. High precise paper filter with deep thin roll structure.

3. High precise filtering, long lifecycle, and easy handling.

4. Used for filtering hydraulic oil, lubricant, turbine oil, insulating oil etc..

Model 型號	G-30	G-50	G-100
Outer Diameter 外徑	φ 108	φ 145	φ 184
Inner Diameter 內徑	φ 38	φ 38	φ 38
Height 高度	114	114	114
Capacity for Pollutants 過濾污濁量	30g	50g	80g
Capacity for Water 過濾水容量	60cc	130cc	200cc
Grade 級別	NAS 6~9	NAS 6~9	NAS 6~9