

# **TH-PF Series**

Instruction manual for industrial lubricant purification and filtration equipment



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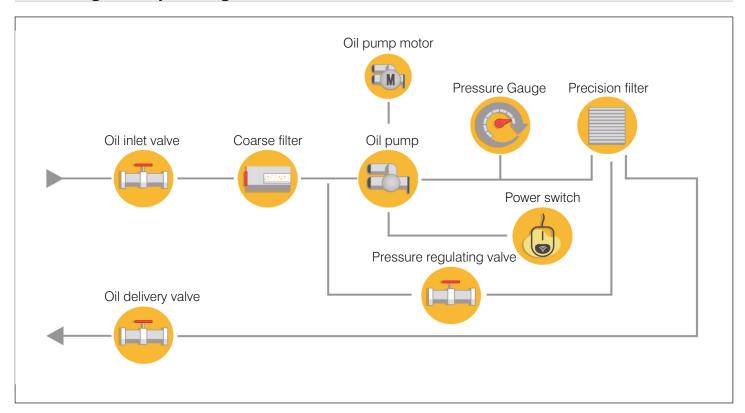


## Misconceptions about Lubricating Oil and Waste Oil





## **Working Principle Diagram of THM Oil Filter**



## **Technical Analysis**

#### The value of the electromagnetic physical penetration method used in our purification equipment:

- 1. Extending the service life of oil by 5-7 times and saving energy.
- 2. Allowing equipment to operate in excellent condition, greatly extending the service life of equipment and reducing equipment failure rates by over 80%. The electromagnetic physical penetration method can remove impurities, water, color, and odor in one step, effectively reducing the time needed for equipment maintenance and increasing production efficiency.
- 3. Reducing the size of the THM equipment, making it transportable and requiring minimal space for oil purification, thus making it more efficient and convenient. It can also perform oil purification without shutting down or stopping production.

#### The Role of NAS1638 Contamination Control on Main Components of Filter

Grade														
					The achievable effects of Oil Purifier									
								New c	il standa	ard				
Particle size UM	0	0	1	2	3	4	5	6	7	8	9	10	11	12
5-15	125	250	500	1000	2000	4000	8000	16000	32000	64000	128000	256000	512000	1024000
15-25	22	44	89	178	356	712	1425	2850	5700	11400	22800	45600	91200	182400
25-50	4	8	16	32	63	126	253	506	1012	2025	4050	8100	16200	32400
50-100	1	2	3	6	11	2	45	90	180	360	720	1440	2880	5760
>100	0	0	1	1	2	4	8	16	32	64	128	156	512	1024



# .Detailed Diagram of THM Oil Filter



Name	Model	Tank Type	Number	Daily Production Capacity in 24 hours	Total Production Capacity of One Filter Cartridge	Material
Filter	TH-PF-001	200*600	1个	1200kg/day	2000kg	iron
Filter	TH-PF-001	200*600	1个	1200kg/day	2000kg	stainless steel
Filter	TH-PF-002	200*600*2	2个	2400kg/day	4000kg	iron
Filter	TH-PF-003	200*600*3	3个	2400kg/day	6000kg	iron
Filter	TH-PF-005	200*600*5	5个	4000kg/day	15000kg	iron with packing
Filter	TH-PF-011	200*600*11	11个	8000kg/day	30000kg	iron with packing
Filter	TH-PF-018	200*600*18	18个	15000kg/day	60000kg	iron with packing

Model Parameters	TH-PF-15	TH-PF-11	TH-PF-18			
Adaptable Temperature	Room Temperature					
Power Supply (V)	220					
Pump Flow Rate (L/H)	1300					
Purification Accuracy (µm)	Transparent					
Viscosity Range	3°C to 350°C					
Dimensions of the equipment	1145*680*1145	1380*950*1145	2035*950*1145			



### Four Technical Characteristics of THM Oil Filter

THM oil filter can remove water, impurities, color, and odor, and is environmentally friendly and pollution-free. The amount of waste generated from purifying one ton of dirty oil is no more than two kilograms.

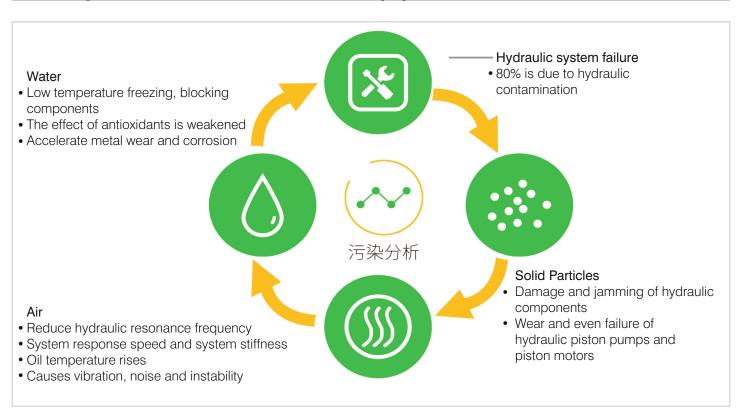
The THM oil filter can efficiently remove water from dirty oil, by passing it through the inlet and outlet pipes, then through the filter cartridge for direct purification. The entire process can be completed with just one press of the start button.

The THM oil filter can remove water, with a low cost of repeated use. The cost of purifying each liter of oil is 1.2-7 rupees.

Technical Features of Electromagnetic Physical Penetration Adsorption Filtration Method:

- 1. The filter cartridge has a large purification area and a cylindrical design that prevents slag and water. Impurities and water inside are heavy and sink to the bottom of the device, which only needs to be regularly removed. Due to the deep and micro-pressure purification, our filter cartridge is more durable than ones and can be reused 3-5 times after being replaced, dried and baked.
- 2. It uses a deep physical suction filtration method, which does not rely on the surface pore size density of conventional interception-type filtration, but utilizes special materials and multiple functional properties of new technology materials to create a new type of filter element with layered arrangement. Therefore, it can achieve one-time deslagging, dehydration, decolorization, and deodorization.

## The Importance of Clean lubricant for Equipment





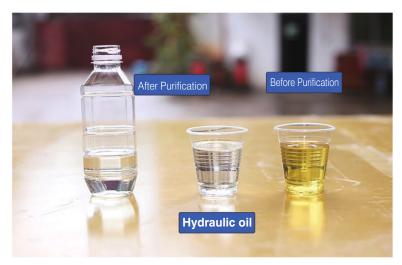
## Reactions of the equipment to contaminated lubricants

Hydraulic oil plays an indispensable role in the machine, serving as the medium for hydraulic equipment and having the functions of energy transmission, lubrication, and corrosion prevention. The maintenance of hydraulic systems and the effectiveness of hydraulic oil maintenance directly affect the safety, efficiency, and timely response of machine operation and completion of tasks.

Symptom 1		Damaged hydraulic components can cause the oil temperature to exceed the normal value.
Symptom 2	1	Valve jamming and cylinder heating can cause cylinder damage.
Symptom 3	$\bigcirc$ $\Diamond$	The oil quality becomes mixed, with impurities such as water causing emulsification, corrosion of hydraulic components, and machine jamming, resulting in the inability to work normally.
Symptom 4		A decrease in system pressure can affect work efficiency and precision.
Symptom 5	{O⊕	Shortening the service life of various machine components of the oil pressure device.

#### **Problem Solution - Oil Purification**

Achieve the ideal purification index on the basis of cost savings to ensure the reuse of oil.







## Hazards of Water in Hydraulic Oil

#### How does water enter the hydraulic system? What are the hazards? What are the solutions?

#### There are three ways for water to enter the hydraulic system:

- Mechanical failure, such as poor sealing or leakage in the cooling coil, allows water to enter the oil;
- In humid climates, the oil tank breathes in water;
- · Working in a damp environment, underground, on water, in rain, snow, or ice, can cause

#### The hazards of water in hydraulic systems:

- Can react with hydraulic oil to form acid, colloid, and sludge, and water can also precipitate additives in the oil;
- The main impact of water is to reduce lubrication. Trace amounts of water dissolved in hydraulic oil can accelerate the wear of high-stress components. Research on the fatigue life of rolling bearings in mineral oil containing water (100~400) x 10-6 shows that the bearing life is reduced by 30%-70%. Water can cause the bonding of control valves and cavitation damage at the pump inlet or other low-pressure parts; Corrosion. Rusts metal.

#### Solutions:

- Strengthen monitoring of water content in the oil;
- For outdoor hydraulic equipment, it is best to use wind and rain tents;
- Strengthen system sealing measures and prevent water from entering. Install a dryer on the oil tank breather.

## Suitable oils for purification

Oil for hydraulic test benches, hydraulic oil, turbine oil, gear oil, transformer oil, guide rail oil, cutting oil, quenching oil, stamping oil, rust preventive oil, spark machine oil, and so on...

## Misunderstandings about the Use of Hydraulic Oil

# Misunderstanding: The working life of hydraulic oil is only a few thousand hours, and it must be replaced when the time is up.

Hydraulic oil operates in a low environment (below 70 degrees Celsius), and the molecular structure is not easily changed, with little carbonization and deterioration. It is not that the oil has deteriorated but that it has become dirty. With reasonable purification, the service life can be increased by 3 to 10 times.

#### Misunderstanding: After the hydraulic oil is replaced, the equipment will not be damaged due to dirty oil.

More than 30% of the old oil in the hydraulic system exists in the pipelines and hydraulic components, and even severe cross-contamination results in failure to meet standards from the first day of oil change.

#### Misunderstanding: Hydraulic oil looks clean, so it doesn't matter whether it is changed or not.

The cleanliness of hydraulic oil below NAS 12 level is difficult to judge visually.

The cleanliness of hydraulic oil seriously affects the mechanical life and failure rate.

#### Misunderstanding: Is red or light yellow hydraulic oil color better?

The optimal working state of hydraulic oil additives is after several thousand hours.

The color of hydraulic oil can no longer indicate the high or low degree of refinement of the base oil in terms of physical and chemical indicators.



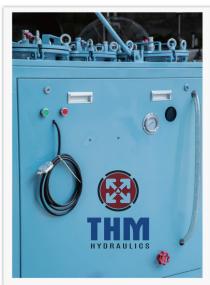
# On-Site Renderings















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