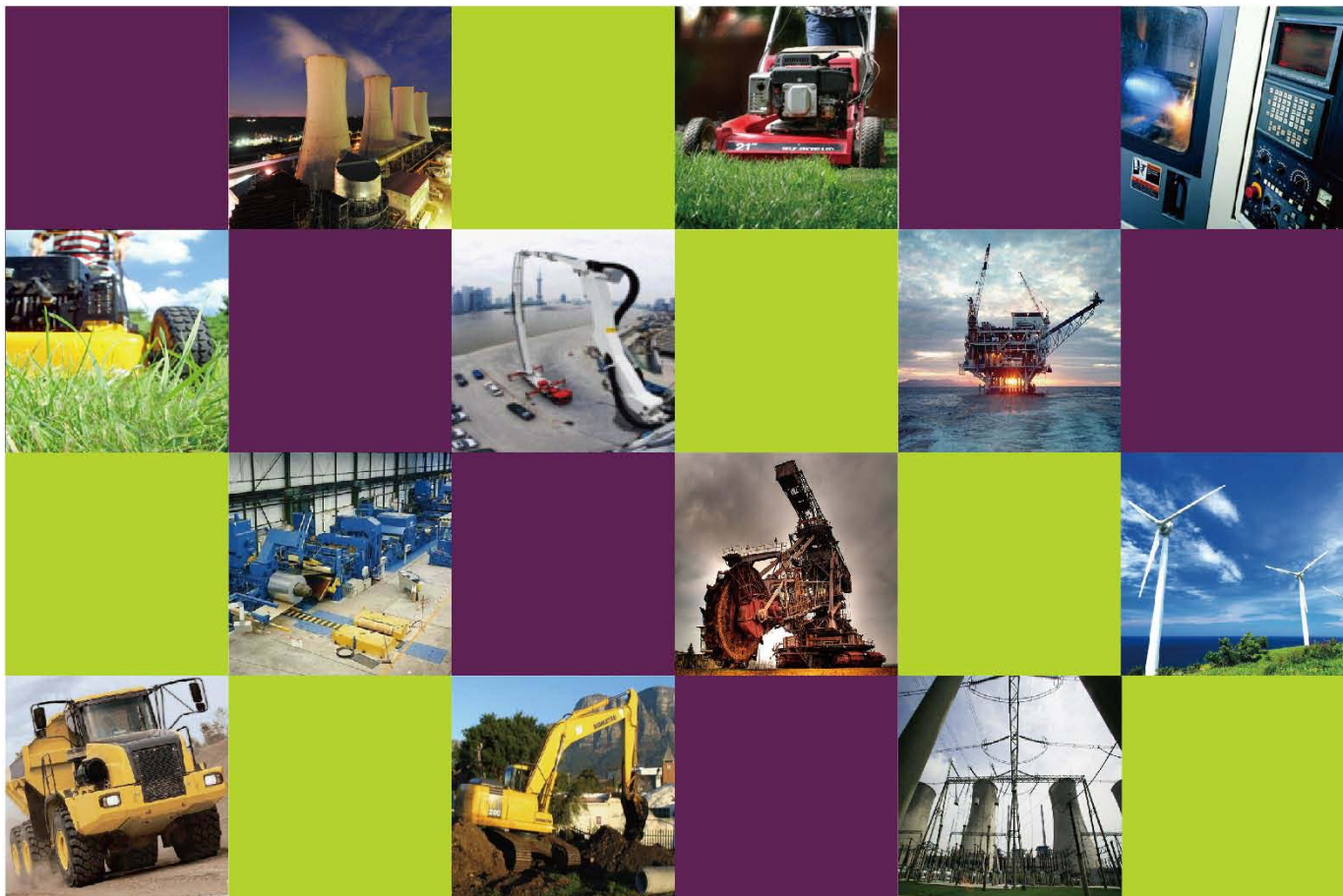


## Filters & Accessories





CLEAN filtration measures its success by what it does for you. Guided by a relentless drive to improve your products and processes, we bring our filtration know-how to your application, wherever it may be.

CLEAN filtration is dedicated to the highest level of quality performance, our extensive and diversified production capability makes us one of the most unique manufacturers in the filtration market.



Our engineering capabilities range in scope from superior design of basic filter elements to complex multi-layer media for sophisticated filter element applications including filter manifolds and electronically controlled filtration packages & systems.



“Quality” at CLEAN filtration means more than making a product the right way. Quality permeates our whole organization so that every employee thinks about what he or she does and what is expected by our customers.

### Suitable contamination class of typical hydraulic components:

Typical application	Test rings, aeronautics	Industrial Robotics, aeronautics	Industrial robotics, Machine tools	Hydrostatic transmission	Earth moving machines	Mobile machine	Heavy machine	Agriculture machine
Pumps and/or motors	–	Piston, variable > 210bar	Piston, variable < 210bar Vane, variable > 140bar	Pist./Vane, variable < 140bar Pist./Vane, fixed > 140bar	Piston, fixed < 140bar Vane, fixed > 140bar	Vane, fixed gear > 140bar	Vane, fixed gear < 140bar	Vane, fixed gear < 140bar
Valves	Servo valves > 210bar	Servo valves < 210bar Proportional > 210bar	Servo valves, < 210bar Proportional > 140bar	Cartridge, < 140bar	Solenoid > 210bar	Solenoid > 210bar	Solenoid > 140bar	Solenoid < 140bar
Contamination class NAS1638 NAS1638	4	5	6	7	8	9	10	11
ISO4406-1999	15/13/10	16/14/11	17/15/12	18/16/13	19/17/14	20/18/15	21/19/16	22/20/17
Recommended filter media	F002 $\beta$ 2>200	F003-F005 $\beta$ 2>200 $\beta$ 5>200	F005 $\beta$ 5>200	F005-F010 $\beta$ 5>200 $\beta$ 10>200	F010-F020 $\beta$ 10>200 $\beta$ 20>200	F020 $\beta$ 20>200	F020-P010 $\beta$ 20>200 $\beta$ 10>2	P010 $\beta$ 10>2

### The comparison table of contamination degree of ISO 4406, NAS1638 and others

ISO4406	NAS1638	SAE749D	> 10 $\mu$ m Particular /mL Oil	ACFTD Weight Concentration(mg/L)
26/23			140000	26/23
25/23			85000	25/23
23/20			14000	23/20
21/18	12		4500	21/18
20/18			2400	20/18
20/17	11		2300	20/17
20/16			1400	20/16
19/16	10		1200	19/16
18/15	9	6	580	18/15
17/14	8	5	280	17/14
16/13	7	4	140	16/13
15/12	6	3	70	15/12
14/12			40	14/12
14/11	5	2	35	14/11
13/10	4	1	14	13/10
12/9	3	0	9	12/9
11/8	2		5	11/8
10/8			3	10/8
10/7	1		2.3	10/7
10/6			1.4	10/6
9/6	0		1.2	9/6
8/5	00		0.6	8/5
7/5			0.3	7/5
6/3			0.14	6/3



# Suction filter and Strainer

**Suction** filters serve to protect the pump from fluid contamination. They are located before the inlet port of the pump. Some may be inlet “strainers”, submersed in the fluid. Others may be externally mounted. In either case, they utilize relatively coarse elements, due to cavitation limitations of pumps. For this reason, they are not used as primary protection against contamination. Some pump manufactures do not recommend the use of a suction filter. Always consult the pump manufacturer for inlet restrictions.

## SEF Series:



Operation temperature:  $-30^{\circ}\text{C} \sim +120^{\circ}\text{C}$   
Element material: Stainless steel mesh  
Filtration rating: 100,180 micron

## PSF Series:



Flow Rate: Max.55L/min  
Removal rating: 10~180 Micron

# Return filter

**Return** filters, when the pump is a sensitive component in a system, a return filter may be the best choice. In most systems, the return filter is the last component through which fluid passes before entering the reservoir. Therefore, it captures wear debris from system working components and particles entering through worn cylinder rod seals before such contaminant can enter the reservoir and be circulated. Since this filter is located immediately upstream from the reservoir, its pressure rating and cost can be relatively low. In some cases, cylinders with large diameter rods may result in “flow multiplication”. The increased return line flow rate may cause the filter bypass valve to open, allowing unfiltered flow to pass downstream. This may be an undesirable condition and care should be taken in sizing the filter.

## RAF Series:



Working Pressure: Max.3bar  
Flow Rate: Max.160L/min  
Filtration Rating: 2~40  $\mu$  m  
Type of construction: Top tank

## RTF Series:



Pressure: Max.16bar  
Flow Rate: Max.1200L/min  
Filtration Rating: 2~40  $\mu$  m  
Type of construction: Top tank

## PSF Series:



Working Pressure: Max.12bar  
Flow Rate: Max.300L/min  
Filtration Rating: 2~40  $\mu$  m

# Pressure Filter

**Pressure** filters are located downstream from the system pump. They are designed to handle the system pressure and sized for the specific flow rate in the pressure line where they are located. Pressure filters are especially suited for protecting sensitive components directly downstream from the pump, such as servo valves. Located just downstream from the system pump, they also help protect the entire system from pump generated contamination.

## PAF Series:



Working Pressure: Max.420bar  
Flow Rate: Max.660L/min  
Filtration Rating: 2~40  $\mu$  m

## PBF Series:



Working Pressure: Max.210bar  
Flow Rate: Max.240L/min  
Filtration Rating: 2~40  $\mu$  m

## PCF Series:



Working Pressure: Max.70bar  
Flow Rate: Max.660L/min  
Filtration Rating: 2~40  $\mu$  m

## PMF Series:



Working Pressure: Max.320bar  
Flow Rate: Max.660L/min  
Filtration Rating: 2~40  $\mu$  m



# Filter cart and accessories

**Good** air filters (breathers), filtering the air sucked into the tank when the oil goes to the actuators, must be used to avoid contaminant ingress from the environment. When a very low contamination class is required (i.e. very good cleanliness) it can be necessary to use a off-line filter, that operates at steady flow rate and pressure, thus getting the highest filtration efficiency. Even the new oil has always a certain solid contamination, so it is a good rule to make any filling or refilling of the system by using a filtration unit.



Flow Rate: 40L/min 100L/min  
Filtration Rating: 2~40  $\mu$ m  
Motor: 0.75KW/1450rpm 2.2KW/1450rpm  
Voltage: 220V 380V

## Accessories

### Air breather:



### Fluid level :



### Pressure / Vacuum Indicator:



# CLEAN HYDRAULIC



## CLEAN

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