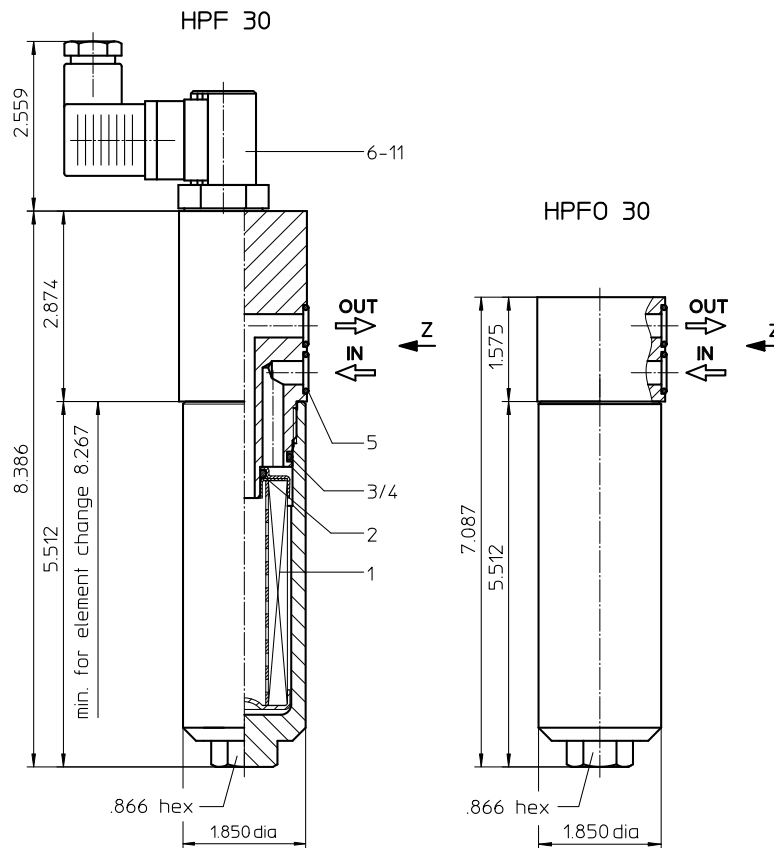
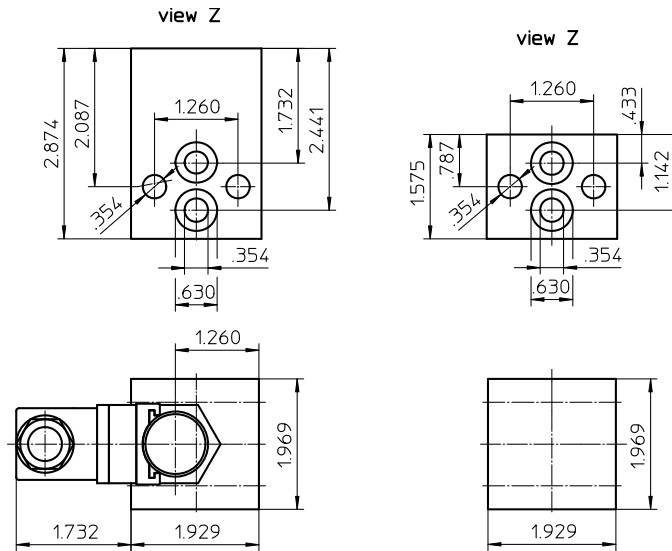


# Series HPF/HPFO 30 4568 PSI



Weight without indicator: approx. 3.96 lbs.  
Weight with indicator: approx. 5.29 lbs

Dimensions: inches

Designs and performance values are subject to change.



Powering Business Worldwide

# Pressure Filter

## Series HPF/HPFO 30

### 4568 PSI

#### Description:

Pressure filter series HPF 30 and HPFO 30, have a working pressure up to 4568 PSI. Pressure peaks can be absorbed with a sufficient safety margin. The filters are flange mounted to the hydraulic system.

The filter element consists of star-shaped, pleated filter material, which is supported on the inside by a perforated core tube and is bonded to the end caps with a high-quality adhesive. The flow direction is from outside to inside. Filter elements are available down to 5  $\mu\text{m}_{(c)}$ . Finer filtration is available upon request.

Eaton filter elements are known for high intrinsic stability and an excellent filtration capability, a high dirt-retaining capacity and a long service life.

Eaton filter are suitable for all petroleum based fluids, HW-emulsions, most synthetic hydraulic fluids and lubrication oils.

Eaton filter elements are available up to a pressure resistance of  $\Delta p$  2320 PSI and a rupture strength of  $\Delta p$  3625 PSI.

## 1. Type index:

### 1.1. Complete filter: (ordering example)

**HPF. 30. 10VG. HR. E. P. -. F. 2. -. AE**

1	2	3	4	5	6	7	8	9	10	11
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#### 1 series:

HPF = medium pressure filter, manifold mounted with indicator  
 HPFO = medium pressure filter, manifold mounted without indicator

#### 2 nominal size: 30

#### 3 filter-material and filter-fineness:

80G, 40G, 25G, 10G stainless steel wire mesh  
 25VG, 16VG, 10VG, 6VG, 3VG microglass

#### 4 filter element collapse rating:

30 =  $\Delta p$  435 PSI  
 HR =  $\Delta p$  2320 PSI (rupture strength  $\Delta p$  3625 PSI)

#### 5 filter element design:

E = single-end open

#### 6 sealing material:

P = Nitrile (NBR)  
 V = Viton (FPM)

#### 7 filter element specification: (see catalog)

- = standard  
 VA = stainless steel  
 IS06 = for HFC application, see sheet-no. 31601

#### 8 process connection:

F = manifold mounted

#### 9 process connection size:

2 = 3/8"

#### 10 filter housing specification: (see catalog)

- = standard  
 IS06 = for HFC applications, see sheet-no. 31605

#### 11 clogging indicator or clogging sensor:

series HPFO:  
 - = without  
 series HPF:  
 AOR = visual, see sheet-no. 1606  
 AOC = visual, see sheet-no. 1606  
 AE = visual-electric, see sheet-no. 1615  
 VS5 = electronic, see sheet-no. 1619

To add an indicator to your filter, use the corresponding indicator data sheet to find the indicator details and add them to the filter assembly model code.

### 1.2. Filter element: (ordering example)

**01E. 30. 10VG. HR. E. P. -**

1	2	3	4	5	6	7
---	---	---	---	---	---	---

#### 1 series:

01E. = filter element according to company standard

#### 2 nominal size: 30

#### 3 - 7 see type index-complete filter

## Technical data:

design temperature:	14 °F to +212 °F
operating temperature:	14 °F to +176 °F
operating medium	mineral oil, other media on request
max. operating pressure:	4568 PSI
test pressure:	6532 PSI
process connection:	manifold mounted
housing material:	C-steel
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical
volume tank:	.02 Gal

Classified under the Pressure Equipment Directive 2014/68/EC for mineral oil (fluid group 2), Article 4, Para. 3.  
 Classified under ATEX Directive 2014/34/EC according to specific application (see questionnaire sheet-no. 34279-4).

## Pressure drop flow curves:

### Filter calculation/sizing

The pressure drop of the assembly at a given flow rate Q is the sum of the housing  $\Delta p$  and the element  $\Delta p$  and is calculated as follows:

$$\Delta p_{assembly} = \Delta p_{housing} + \Delta p_{element}$$

$$\Delta p_{housing} = (\text{see } \Delta p = f(Q) \text{ - characteristics})$$

$$\Delta p_{element} (PSI) = Q (GPM) \times \frac{MSK}{1000} \left( \frac{PSI}{GPM} \right) \times v (SUS) \times \frac{\rho}{0.876} \left( \frac{kg}{dm^3} \right)$$

For ease of calculation our Filter Selection tool is available online at [www.eatonpowersource.com/calculators/filtration/](http://www.eatonpowersource.com/calculators/filtration/)

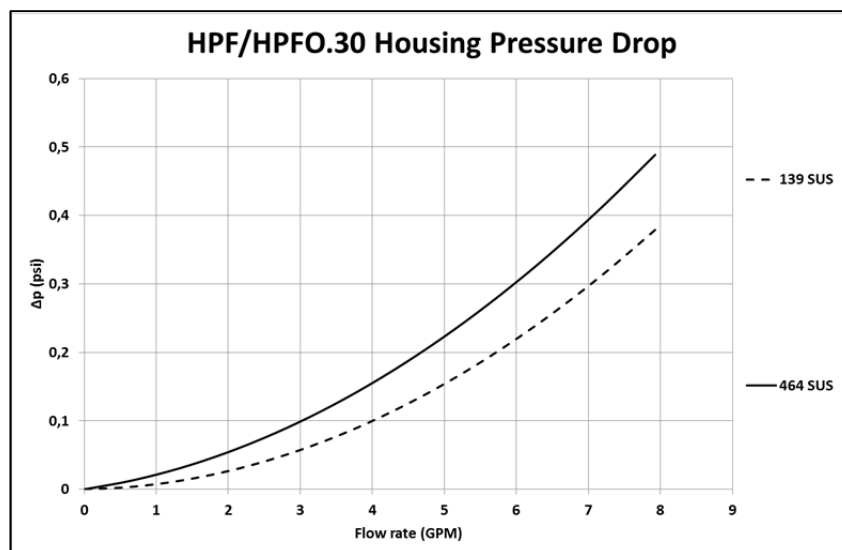
### Material gradient coefficients (MSK) for filter elements

The material gradient coefficients in psi/gpm apply to mineral oil (HLP) with a density of 0.876 kg/dm<sup>3</sup> and a kinematic viscosity of 139 SUS (30 mm<sup>2</sup>/s). The pressure drop changes proportionally to the change in kinematic viscosity and density.

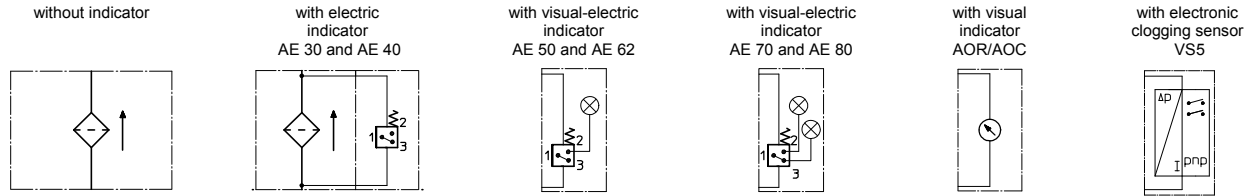
HPF/HPFO	VG					G		
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G
30	12.554	8.716	5.580	4.794	3.275	0.2539	0.2369	0.1623

### $\Delta p = f(Q)$ – characteristics according to ISO 3968

The pressure drop characteristics apply to mineral oil (HLP) with a density of 0.876 kg/dm<sup>3</sup>. The pressure drop changes proportionally to the density.



## Symbols:



## Spare parts:

item	qty.	designation	dimension	article-no.	
1	1	filter element	01E.30...		
2	1	O-ring	11 x 3	312603 (NBR)	312727 (FPM)
3	1	O-ring	32 x 2,5	306843 (NBR)	308268 (FPM)
4	1	support ring	37 x 2,1 x 1	305466	
5	2	O-ring	12 x 2	311014 (NBR)	310271 (FPM)
6	1	clogging indicator, visual	AOR or AOC	see sheet-no. 1606	
7	1	clogging indicator, visual-electric	AE	see sheet-no. 1615	
8	1	clogging sensor, electronic	VS5	see sheet-no. 1619	
9	1	O-ring	15 x 1,5	315357 (NBR)	315427 (FPM)
10	1	O-ring	22 x 2	304708 (NBR)	304721 (FPM)
11	1	O-ring	14 x 2	304342 (NBR)	304722 (FPM)

## Test methods:

Filter elements are tested according to the following ISO standards:

ISO 2941	Verification of collapse/burst resistance
ISO 2942	Verification of fabrication integrity
ISO 2943	Verification of material compatibility with fluids
ISO 3723	Method for end load test
ISO 3724	Verification of flow fatigue characteristics
ISO 3968	Evaluation of pressure drop versus flow characteristics
ISO 16889	Multi-pass method for evaluating filtration performance

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