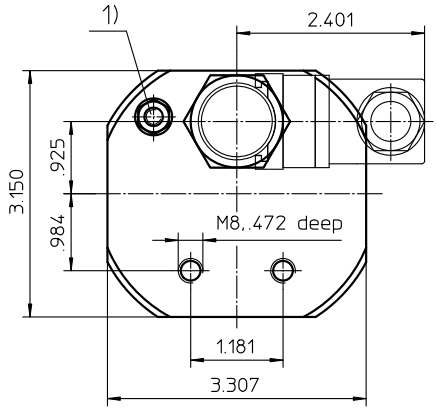
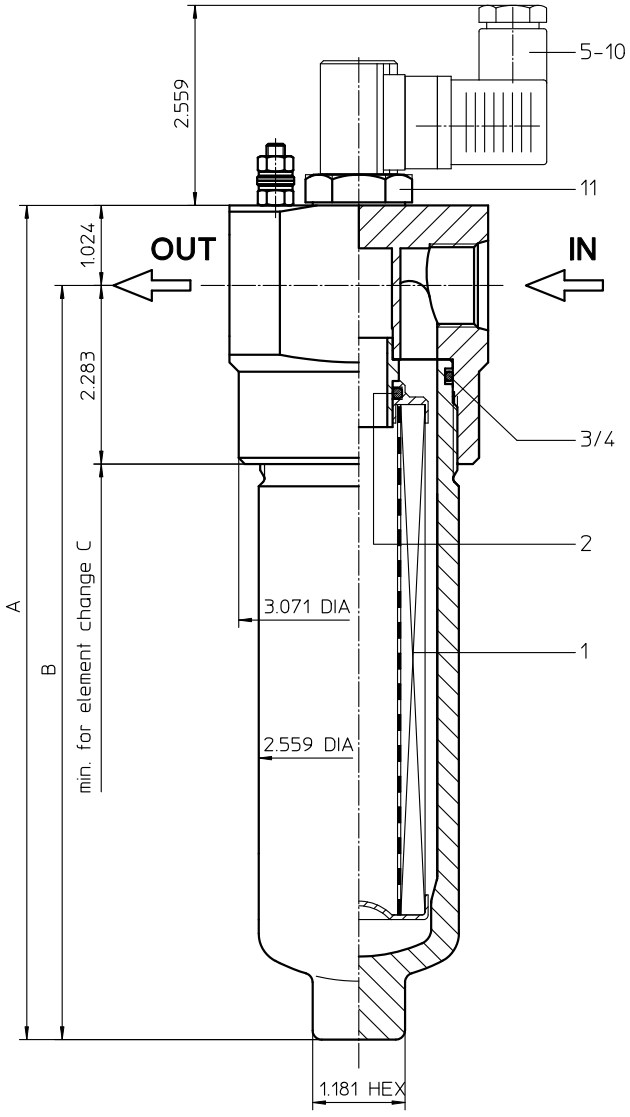
Series HP 61-151
6000 PSI





Dimensions:

Type	HP 61	HP 91	HP 151
Connection	- 8 SAE	-12 SAE	-16 SAE
A	8.11	10.66	14.96
B	7.08	9.64	13.93
C	10.63	13.19	17.52
Weight approx.	8.80 lbs.	9.90 lbs.	12.10 lbs.
Volume tank	0.08 gal.	0.10 gal.	0.16 gal.

1) Connect the stand grounding tab to a suitable earth ground point.

Dimensions: inches
Designs and performance values are subject to change.

Powering Business Worldwide

Pressure Filter
Series HP 61-151
6000 PSI

Description:

Pressure filter series HP 61-151 have a working pressure up to 6000 PSI. Pressure peaks can be absorbed with a sufficient safety margin. The HP-filter is in-line mounted.

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 4 $\mu m_{(c)}$.

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 elements 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 Δp 2320 PSI and a rupture strength ofΔp 3625 PSI.

The internal valve is integrated into the filter head.

After reaching the bypass pressure setting, the bypass valve will send unfiltered partial flow around the filter.

The reversing valve provides another level of protection for the filter element. The reverse flow will not be filtered.

1. Type index:

1.1. Complete filter: (ordering example)

HP.	91.	10VG.	HR.	E.	P.	-.	UG.	4.	-.	-.	AE
1	2	3	4	5	6	7	8	9	10	11	12

1 **series:**
HP = pressure filter

2 **nominal size:** 61, 91, 151

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 = Δp 435 PSI
HR = Δp 2320 PSI (rupture strength Δp 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 applications, see sheet-no. 31601

8 **process connection:**
UG = thread connection

9 **process connection size:**
3 = -8 SAE
4 = -12 SAE
5 = -16 SAE

10 **filter housing specification:** (see catalog)
- = standard
IS06 = for HFC applications, see sheet no.31605

11 **internal valve:**
- = without
S1 = with bypass valve Δp 51 PSI
S2 = with bypass valve Δp 102 PSI
R = reversing valve, Q ≤ 18.50 GPM

12 **clogging indicator or clogging sensor:**
- = without
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.	90.	10VG.	HR.	E.	P.	-
1	2	3	4	5	6	7

1 **series:**
01E. = filter element according to company standard

2 **nominal size:** 60, 90, 150

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:	6000 PSI
test pressure:	8580 PSI
process connection:	thread connection
housing material:	C-steel
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical

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 Δp and the element Δp and is calculated as follows:

$\Delta p_{assembly} = \Delta p_{housing} + \Delta p_{element}$
$\Delta p_{housing}$ = *(see Δp = f (Q) - characteristics)*

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

For ease of calculation our Filter Selection tool is available online at www.eatonpowersource.com/calculators/filtration/

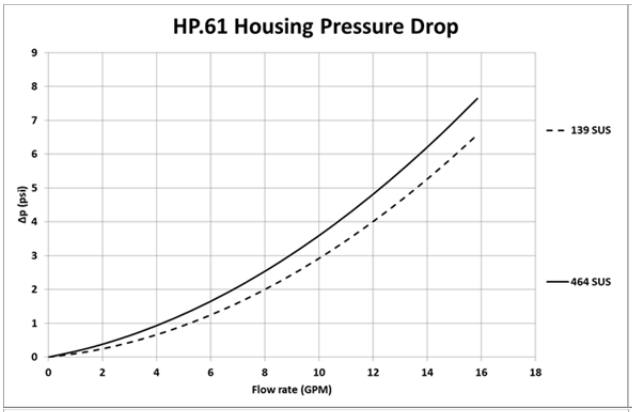
Material gradient coefficients (MSK) for filter elements

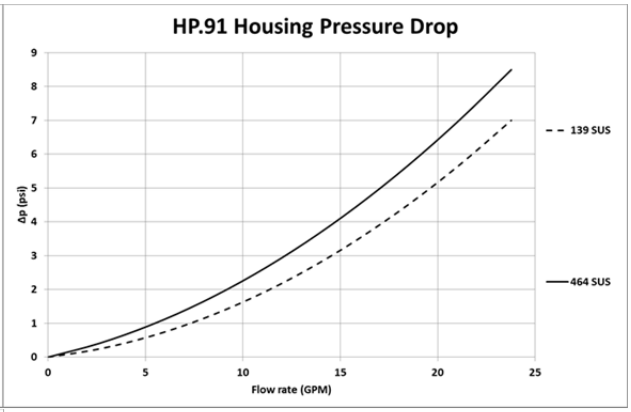
The material gradient coefficients in PSI/GPM apply to mineral oil (HLP) with a density of 0.876 kg/dm³ and a kinematic viscosity of 139 SUS (30 mm²/s). The pressure drop changes proportionally to the change in kinematic viscosity and density.

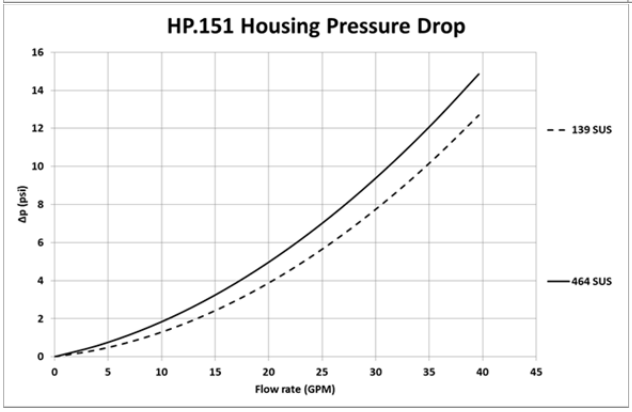
HP	VG					G		
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G
61	6.748	4.685	2.999	2.577	1.760	0.2002	0.1868	0.1280
91	4.059	2.818	1.804	1.550	1.059	0.1210	0.1130	0.0774
151	2.422	1.681	1.076	0.925	0.632	0.0723	0.0675	0.0462

Δp = f(Q) – characteristics according to ISO 3968

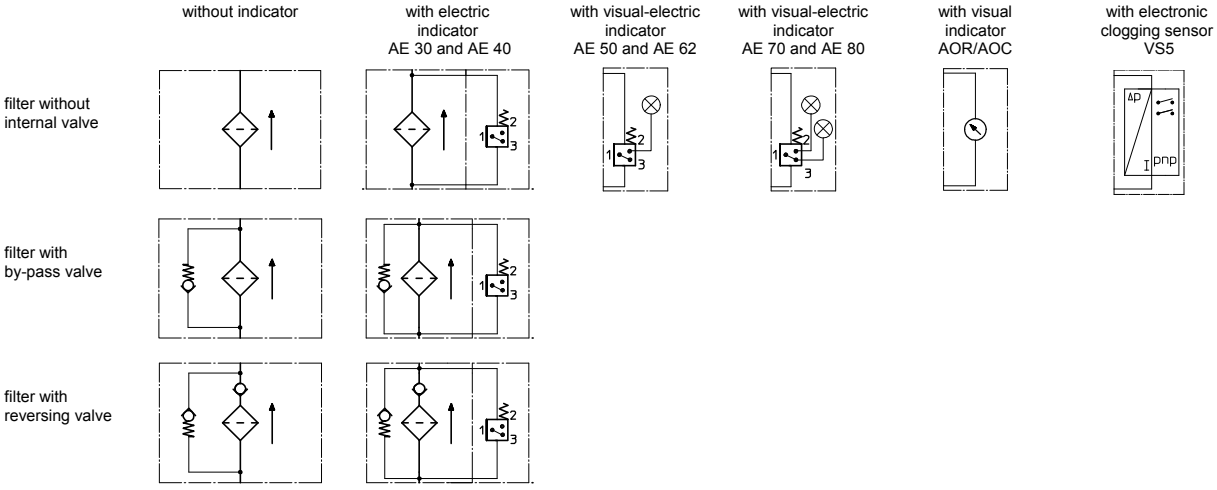
The pressure drop characteristics apply to mineral oil (HLP) with a density of 0.876 kg/dm³. The pressure drop changes proportionally to the density.







Symbols:



Spare parts:

item	qty.	designation	dimension HP61	dimension HP91	dimension HP151	article-no.	
1	1	filter element	01E.60…	01E.90…	01E.150…		
2	1	O-ring	11 x 3			312603 (NBR)	312727 (FPM)
3	1	O-ring	40 x 3			304389 (NBR)	304391 (FPM)
4	1	support ring	48 x 2,6 x 1			305391	
5	1	clogging indicator, visual	AOR or AOC			see sheet-no. 1606	
6	1	clogging indicator, visual-electric	AE			see sheet-no. 1615	
7	1	clogging sensor, electronic	VS5			see sheet-no. 1619	
8	1	O-ring	15 x 1,5			315357 (NBR)	315427 (FPM)
9	1	O-ring	22 x 2			304708 (NBR)	304721 (FPM)
10	1	O-ring	14 x 2			304342 (NBR)	304722 (FPM)
11	1	screw plug	20913-4			309817	

item 11 execution only without clogging indicator or clogging sensor

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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