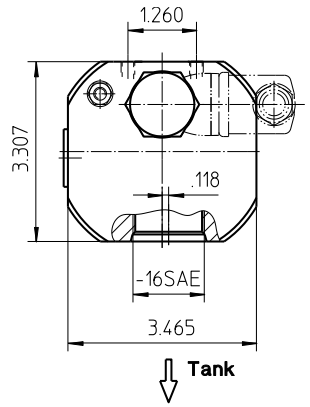
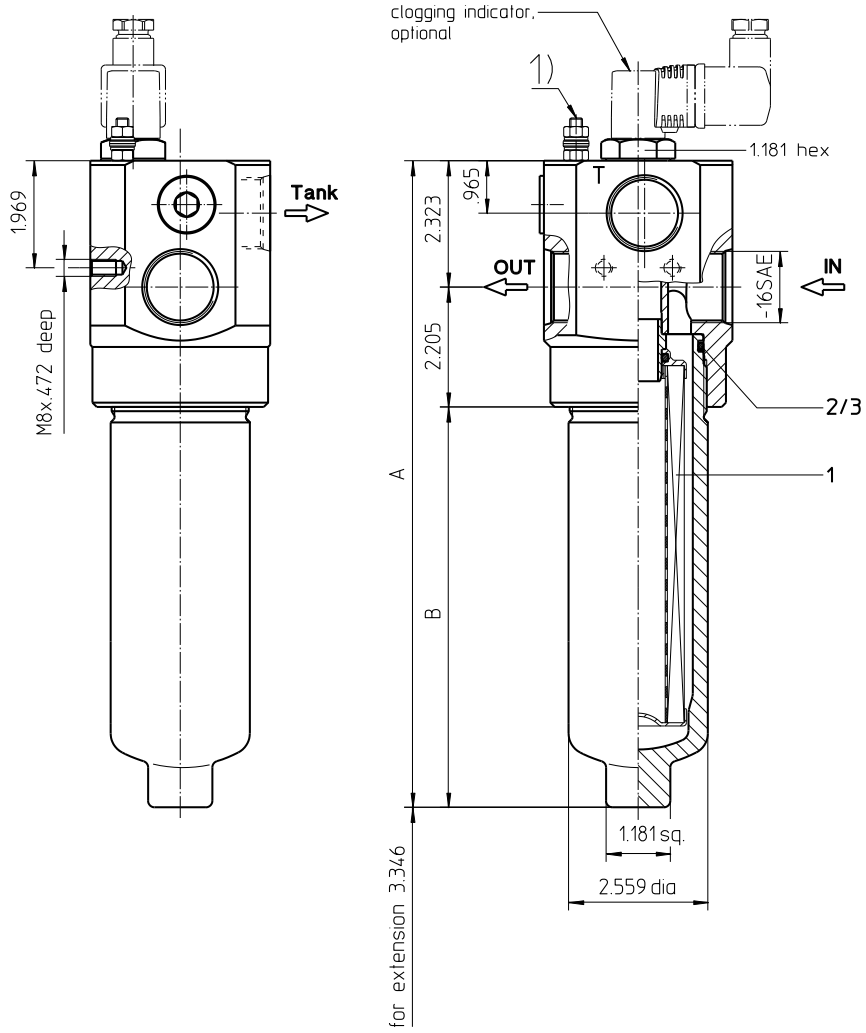
Series HPV 60-150
6000 PSI

Dimensions:

type	HPV 60	HPV 90	HPV 150
connection		-16 SAE	
A	9.33	11.88	16.18
B	4.80	7.36	11.65
weight	13 lbs.	15 lbs.	18 lbs.
volume tank	.08 Gal.	.11 Gal.	.16 Gal.

1) Connection for the potential equalization, only for application in the explosive area.





Dimensions: inches

Designs and performance values are subject to change.

Pressure Filter
Series HPV60-150
6000 PSI

Description:

Pressure filter series HPV 60-150 have a working pressure up to 6000 PSI. Pressure peaks can be absorbed with a sufficient safety margin. The HPV-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 5 $\mu m_{(c)}$. Finer filtration is available upon request.

For cleaning the stainless steel mesh element or changing the filterer element, remove the cover and take out the element. The mesh elements are not guaranteed to maintain 100% performance after cleaning.

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 can be used for petroleum-based fluids, HW emulsions, water glycols, most synthetic fluids and lubrication fluids. Consult factory for specific fluid applications.

Eaton filter elements are available up to a pressure resistance of Δp 2320 PSI and a rupture strength of Δp 3625 PSI.

The differential pressure-valve opens independently of the operating pressure at a chosen differential pressure-valve between IN and OUT and leaves an unfiltered partial-flow flowing from „IN“ to the tank.

Type index:

Complete filter: (ordering example)

HPV.	90.	10VG.	HR.	E.	P.	-.	UG.	5.	-.	D2.	AE
1	2	3	4	5	6	7	8	9	10	11	12

1 **series:**
HPV = pressure filter with differential pressure-valve

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

3 **filter-material:**
80G, 40G, 25G 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:**
- = standard
VA = stainless steel

8 **process connection:**
UG = thread

9 **process connection size:**
5 = -16 SAE

10 **filter housing specification:**
- = standard

11 **internal valve:**
D1 = with differential pressure-valve Δp 51 PSI
D2 = with differential pressure-valve Δp 102 PSI

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

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:

operating temperature:	+14°F to +212°F
operating medium	mineral oil, other media on request
max. operating pressure:	6000 PSI
test pressure:	8700 PSI
process connection:	thread
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/EU for mineral oil (fluid group 2), Article 4, Para. 3.
Classified under ATEX Directive 2014/34/EU 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.eaton.com/hydraulic-filter-evaluation

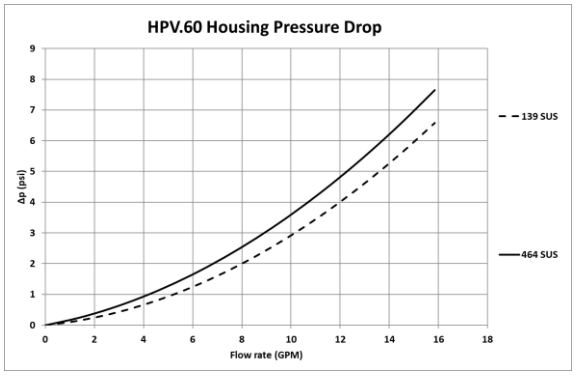
Material gradient coefficients (MSK) for filter elements

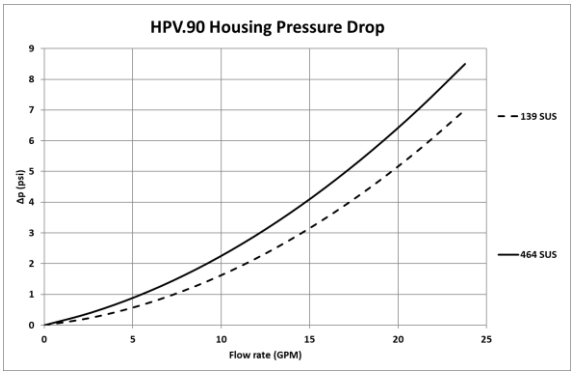
The material gradient coefficients in psi/gpm apply to mineral oil (HLP) with a density of 0.876 kg/dm³ and a kinematic viscosity of 139 SUS (30 mm²/s). The pressure drop changes proportionally to the change in kinematic viscosity and density.

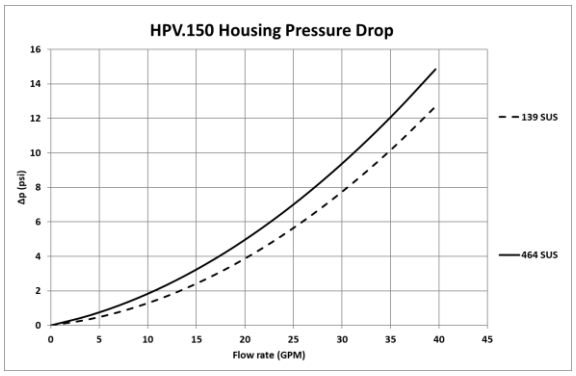
HPV	VG					G		
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G
60	6.748	4.685	2.999	2.577	1.760	0.2002	0.1868	0.1280
90	4.059	2.818	1.804	1.550	1.059	0.1210	0.1130	0.0774
150	2.422	1.681	1.076	0.925	0.632	0.0723	0.0675	0.0462

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

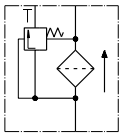
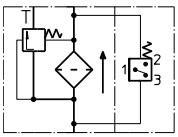
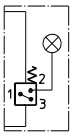
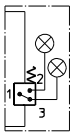
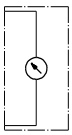
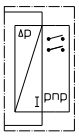
The pressure drop characteristics apply to mineral oil (HLP) with a density of 0.876 kg/dm³. The pressure drop changes proportionally to density.







Symbols:

	without indicator	with electric indicator AE30 / AE40	with visual-electric indicator AE50 / AE62	with visual-electric indicator AE70 / AE80 / AE90	with visual indicator AOR/AOC	with electronic clogging sensor VS5
filter with differential pressure-valve						

Spare parts:

item	qty.	Designation	dimension HPV 60	dimension HPV 90	dimension HPV 150	article-no.	
1	1	filter element	01E.60…	01E.90…	01E.150…		
2	1	O-ring	22 x 3,5			304341 (NBR)	304392 (FPM)
3	1	O-ring	54 x 3			304657 (NBR)	304720 (FPM)
4	1	support ring	61 x 2,6 x 1			304660	
5	1	screw plug	BSPP ½			304678	
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	screw plug	20913-4			309817	

item 9 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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