

Return Line Filters

HV6RD Series

Flows to 1,700 L/min (450 USgpm)
Pressures to 25 bar (360 psi)



Features and Benefits

- Beta Ratio: $\beta_{x(c)} = 1000$ to ISO 16889
- Extremely large filtration area and flow capacity
- Designed for both in-tank and inline applications
- Easy filter replacement using screw-on lid
- Vent and drain ports are standard
- Anodization is not required for aluminum alloy when using water based fluids
- Reusable contamination basket prevents re-entry of retained contaminants into the reservoir during element replacement
- Filters can be fitted with clogging indicators to monitor the contamination level of the element
- HV6RD duplex filters have a ball-type selector valve to provide continuous filtration and eliminate the need to shut-down the system during element changeout

Series HV6RD Filter Model Code

Sample model code:

HV6RD1F2KNB1C05

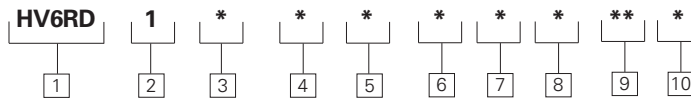
Note:

Elements used in the HV6RD are not dimensionally equivalent to elements in the HV6R series. An indicator is supplied for each side.

DESIGN SPECIFICATIONS

Rated flow:	Length 1	1300 L/min (343 USgpm)
	Length 2	1700 L/min (450 USgpm)
Fluid compatibility:	Compatible with most petroleum oil, oil-in-water and water-in-oil fluids. Optional seals available for phosphate esters.	
Temp range:	-30°C to +121°C (-22°F to +250°F)	
Pressure rating:	Operating	25 bar (360 psi)
	Fatigue	25 bar (360 psi)
Material:	Head	Aluminum
	Housing	Aluminum
	Manifolds	Ductile Iron
Dry weight: (Approximate)	Length 1	33,6 kg. (74 lbs)
	Length 2	79,8 kg. (176 lbs)
Port size:	4 in SAE Code 61 Flange with metric threads (M16 bolts provided)	

For additional filtration HV6RD filters can be configured with multiple housings/elements evenly mounted parallel to a single head. These configurations can be designed in evenly balanced series, for example: 2x2 would be 4 total elements with 2 on each side of the head. Contact Eaton to specify.



- 1 Filter Series - HV6RD**
- 2 Element Collapse Rating**
1 - 10 bar (150 psi) Low collapse
- 3 Mounting Options**
F - Inline
T - In-Tank
- 4 Valve Options**
1 - Non-Bypass
2 - Bypass set at 1.7 bar (25 psi) pressure
4 - Bypass set at 3 bar (43 psi) cracking
6 - Bypass set at 6 bar (87 psi) pressure
- 5 Indicator Options**
AN - Visual 4.9 bar (70 psi) No Connector
KN - Visual 1 bar (15 psi) No Connector
LN - Visual 2 bar (30 psi) No Connector
JN - No Indicator (plug), No Connector
MB - Electrical 1 bar (15 psi) Brad Harrison
MJ - Electrical 1 bar (15 psi) Hirschmann w 24 volt light

- MK** - Electrical 1 bar (15 psi) Hirschmann w 115 volt light
- ML** - Electrical 1 bar (15 psi) Hirschmann w 230 volt light
- MH** - Electrical 1 bar (15 psi) Hirschmann
- RB** - Electrical 2 bar (30 psi) Brad Harrison
- RJ** - Electrical 2 bar (30 psi) Hirschmann w 24 volt light
- RK** - Electrical 2 bar (30 psi) Hirschmann w 115 volt light
- RL** - Electrical 2 bar (30 psi) Hirschmann w 230 volt light
- RH** - Electrical 2 bar (30 psi) Hirschmann
- UB** - Electrical 4.9 bar (70 psi) Brad Harrison
- UJ** - Electrical 4.9 bar (70 psi) Hirschmann w 24 volt light
- UK** - Electrical 4.9 bar (70 psi) Hirschmann w 115 volt light
- UL** - Electrical 4.9 bar (70 psi) Hirschmann w 230 volt light
- UH** - Electrical 4.9 bar (70 psi) Hirschmann

- 6 Seal Material**
B - Buna-N
V - Viton-A
- 7 Assembly Length**
mm (inch)
1 - 606 (24)
2 - 1045 (41)
- 8 Element Construction**
C - Standard Construction
L - Deep Pleat Construction
X - no element
- 9 Fluid Cleanliness Rating**

Code	cleanliness level
03	16/14/12 or better
05	18/16/14 or better
10	20/18/15 or better
20	22/19/16 or better
XX	no element

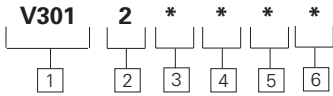
- 10 Flow Path**
A - Front inlet, front outlet
B - Front inlet, back outlet
C - Top inlet, front outlet
D - Top inlet, bottom outlet
E - In-Tank mount

Items not in bold are non-standard and may have a longer lead time

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V301 Element model code

Sample model code:

V3012B1C10

1 Filter Element - V301

2 Element Collapse Rating

2 - 17 bar (250 psi) Collapse

3 Seal Material

B - Buna-N

V - Viton-A

4 Element Length

mm (in)
1 - 254 (10)

2 - 693 (27)

5 Element Construction

C - C-pak (code 03, 05, 10, 20)

L - L-pak (code 03, 05, 10, 20)

6 Fluid Cleanliness Rating
Target fluid

Code cleanliness level

03 16/14/12 or better

05 18/16/14 or better

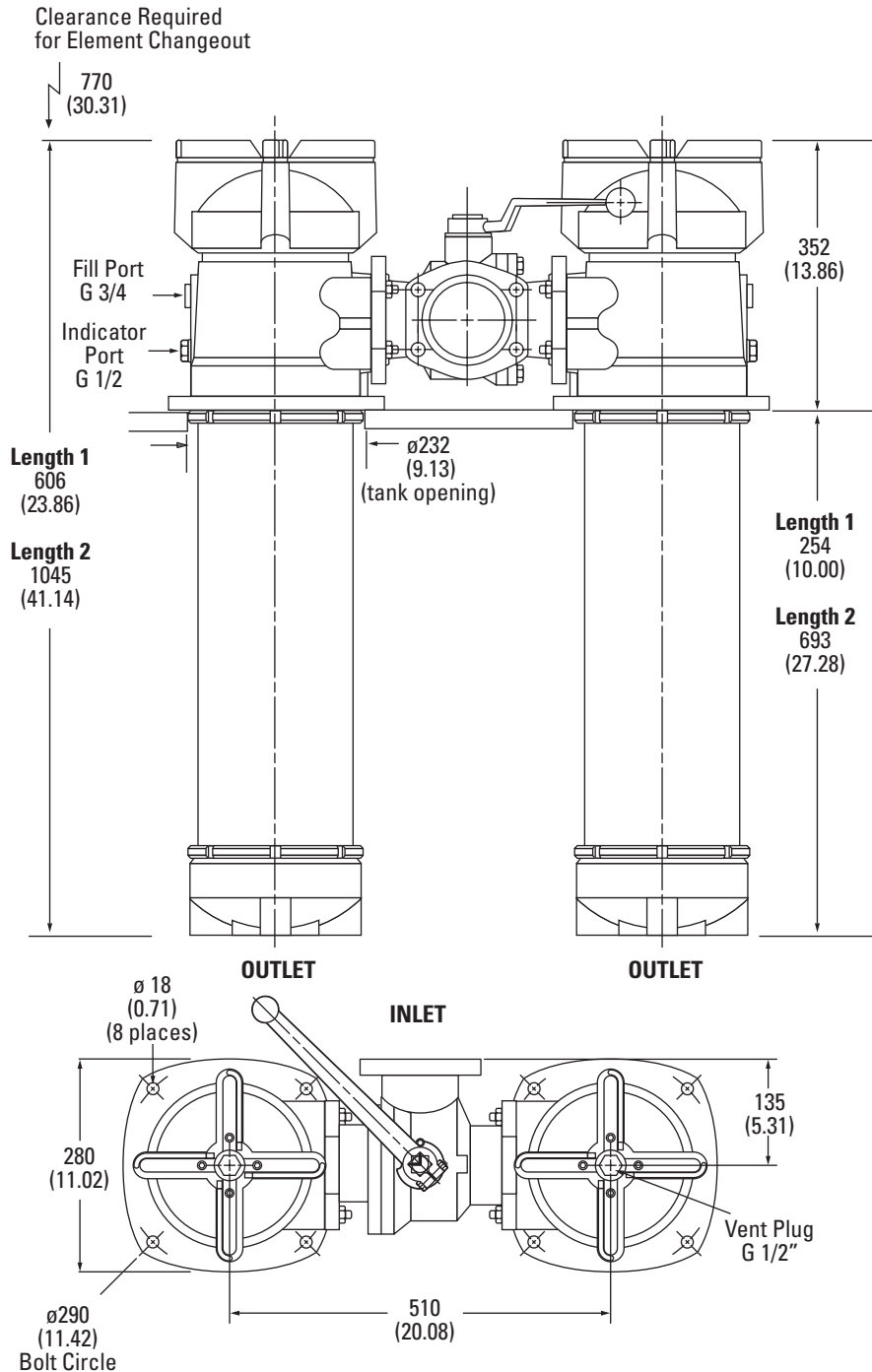
10 20/18/15 or better

20 22/19/16 or better

Housing Dimensions

mm (inch)

In-tank



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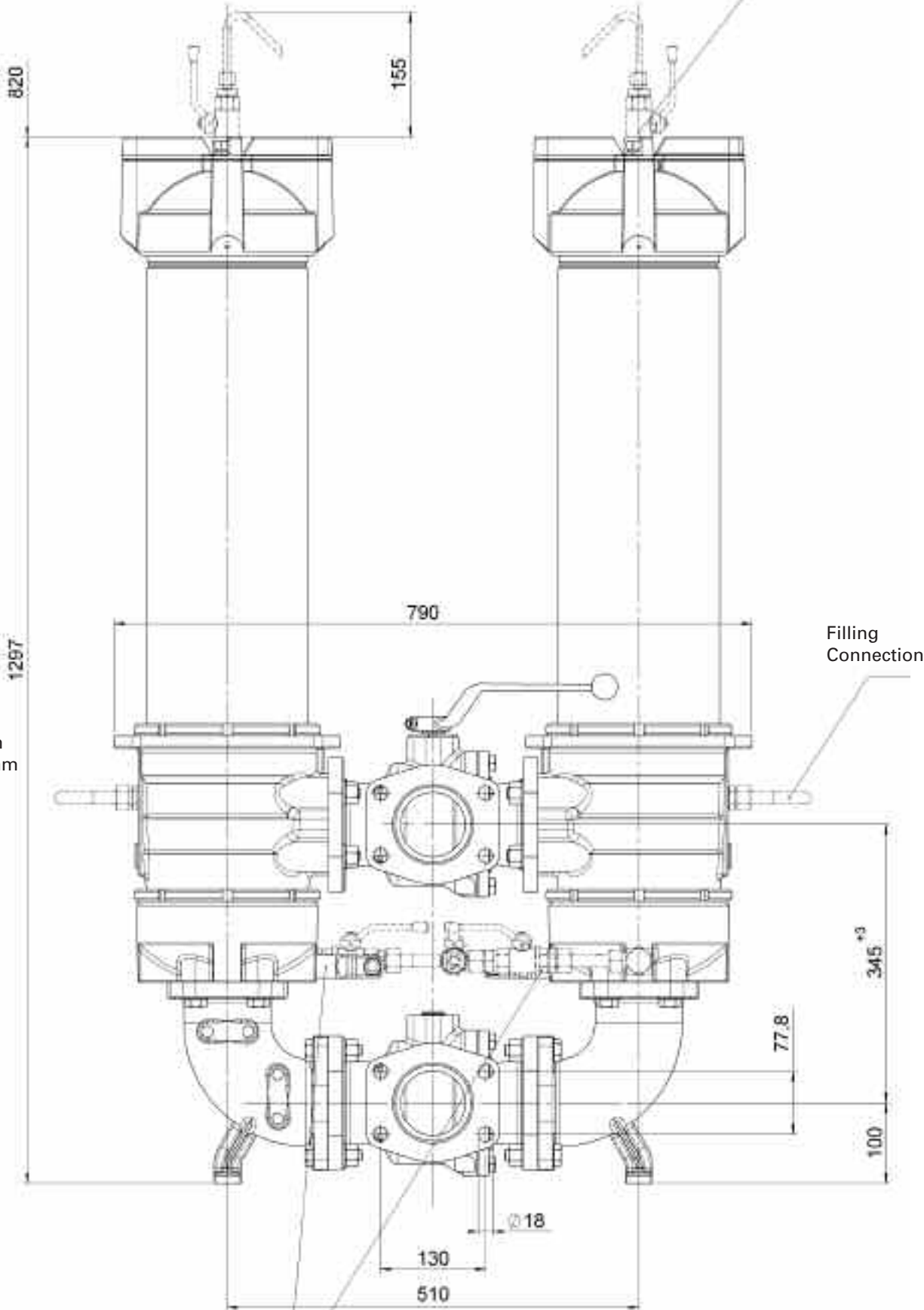
Venting G 1/2

Housing Dimensions

mm (inch)

In-Line

(16) Element - 858mm
(39) Element - 1,502mm



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Flow Data

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Flow versus pressure drop:

150 SUS (32 cSt) oil with specific gravity of ≤ 0.9

HV6RD Filter Elements Flow Data

'K' factor - bar/lpm (psi/gpm)

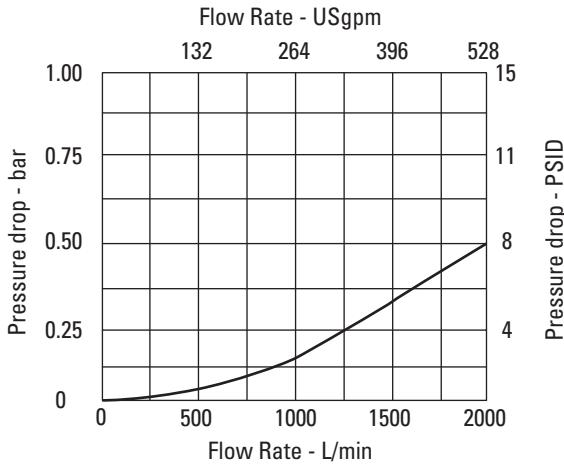
ELEMENT TYPE / SIZE		MICRON RATING			
		03	05	10	20
C -pak	1	0.001 (0.055)	0.001 (0.046)	0.001 (0.026)	0.001 (0.014)
	2	0.001 (0.023)	0.001 (0.019)	0.001 (0.011)	0.001 (0.006)
L -pak	1	0.001 (0.046)	0.001 (0.038)	0.001 (0.021)	0.001 (0.012)
	2	0.001 (0.017)	0.001 (0.014)	0.001 (0.008)	0.001 (0.004)

Note: For flow in gpm, use the values inside the brackets.

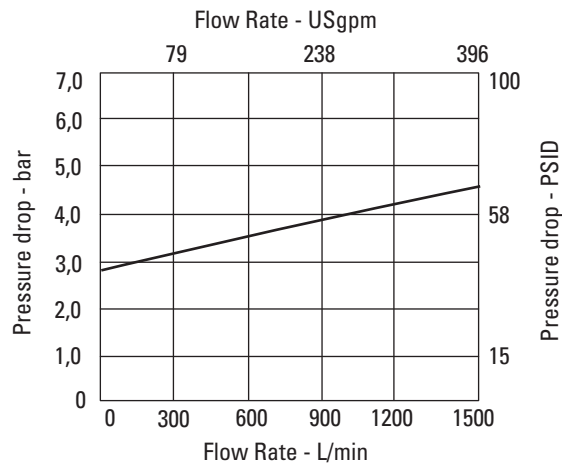
Note: The values for bar/lpm have been rounded to the third decimal.

Housing/Bypass Valve Flow Data

Housing



Bypass Valve



Sample ΔP Calculation :

HV6RD1F2ANB1C05 - Filter assembly having '1' length filter element with micron rating code '05' at 200 L/min flow rate using a hydraulic fluid at 46 cSt viscosity & specific gravity (sp.gr.)0.8.

ΔP Assembly	=	ΔP Housing	+	ΔP Element
	=	Housing factor from graph $\times \text{sp.gr.}(\text{actual})/0.9$	+	Flow Rate (Lpm) \times Element 'K' factor (bar/lpm) \times [actual cSt / 32] \times [Sp.Gr(actual) / 0.9]
	=	0.05 \times 0.8/0.9	+	200 \times 0.001 \times 46/32 \times 0.8/0.9
	=	0.044	+	0.25
	=	0.44 bar		

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