

# Series MDV 40-63

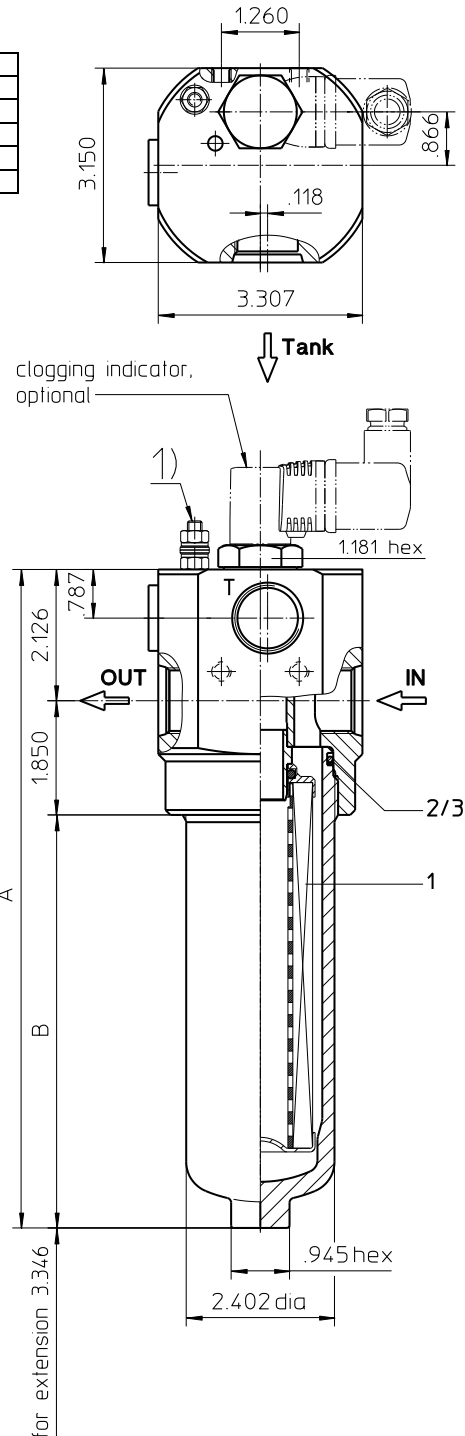
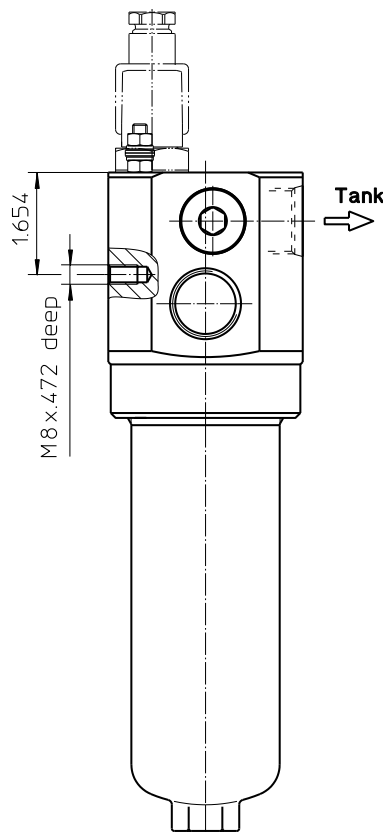
## 2900 PSI

**Dimensions:**

type	MDV 40	MDV 63
connection	-8 SAE	-12 SAE
A	8.30	10.66
B	4.33	6.69
weight	5.94 lbs.	7.04 lbs.
volume tank	.06 Gal.	.09 Gal.

Connection assignments as shown in the table are standard according to DIN 24 550 T1. Are the connection assignments against DIN 24 550 T1, see item 9 of the type code.

- 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 MDV 40-63

### 2900 PSI

#### Description:

The pressure filters of the series MDV 40-63 are suitable for a working pressure up to 2900 PSI and equipped with elements according to DIN 24 550 T3. The pressure peaks are absorbed by a sufficient margin of safety. The MDV-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  $\mu\text{m}_{(c)}$ . 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  $\Delta p$  2320 PSI and a rupture strength of  $\Delta p$  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)

**MDV. 40. 10VG. HR. E. P. -. UG. 3. -. D2. AE**

1	2	3	4	5	6	7	8	9	10	11	12
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- 1 series:**  
MDV = medium pressure filter with differential pressure-valve
- 2 nominal size:** 40, 63
- 3 filter-material:**  
80G, 40G, 25G 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:**  
- = standard  
VA = stainless steel
- 8 process connection:**  
UG = thread connection
- 9 process connection size:**  
3 = - 8 SAE  
4 = - 12 SAE
- 10 filter housing specification:**  
- = standard
- 11 internal valve:**  
D1 = differential pressure-valve  $\Delta p$  51 PSI  
D2 = differential pressure-valve  $\Delta p$  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)

**01NL. 40. 10VG. HR. E. P. -**

1	2	3	4	5	6	7
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- 1 series:**  
01NL. = standard filter element according to DIN 24550, T3
- 2 nominal size:** 40, 63
- 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:	2900 PSI
test pressure:	4147 PSI
process connection:	thread connection
housing material:	aluminium forging alloy ; C-steel (filter bowl)
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  $\Delta p$  and the element  $\Delta p$  and is calculated as follows:

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

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

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

For ease of calculation our Filter Selection tool is available online at [www.eaton.com/hydraulic-filter-evaluation](http://www.eaton.com/hydraulic-filter-evaluation)

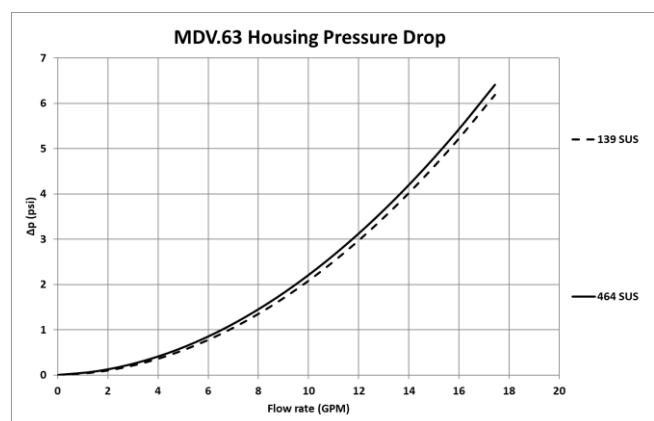
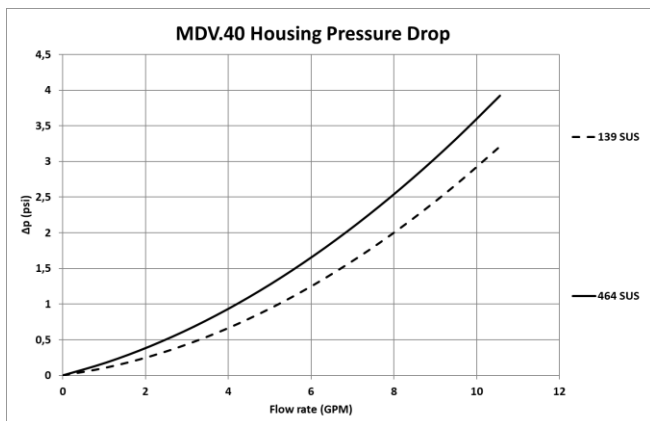
### Material gradient coefficients (MSK) for filter elements

The material gradient coefficients in mbar/(l/min) 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.

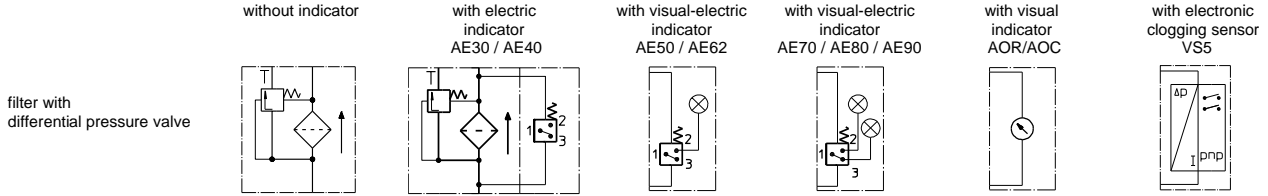
MDV	VG					G		
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G
40	6.991	4.853	3.107	2.705	1.848	0.1893	0.1766	0.1210
63	4.214	2.926	1.873	1.631	1.114	0.1131	0.1056	0.0723

### $\Delta p = f(Q)$ – 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.	
			MDV 40	MDV 63		
1	1	filter element	01NL.40...	01NL.63...		
2	1	O-ring	54 x 3		304657 (NBR)	304720 (FPM)
3	1	support ring	60 x 2,6 x 1		311779	

## 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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