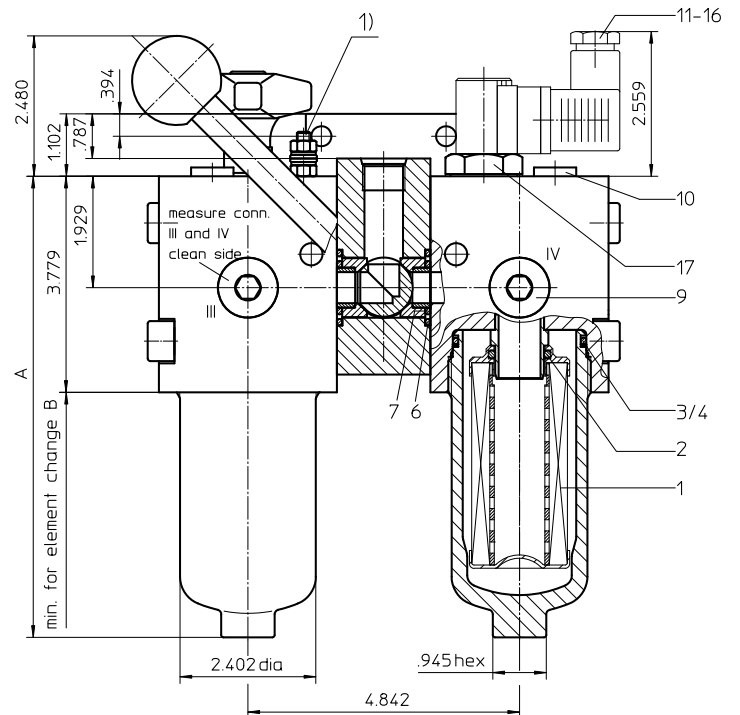
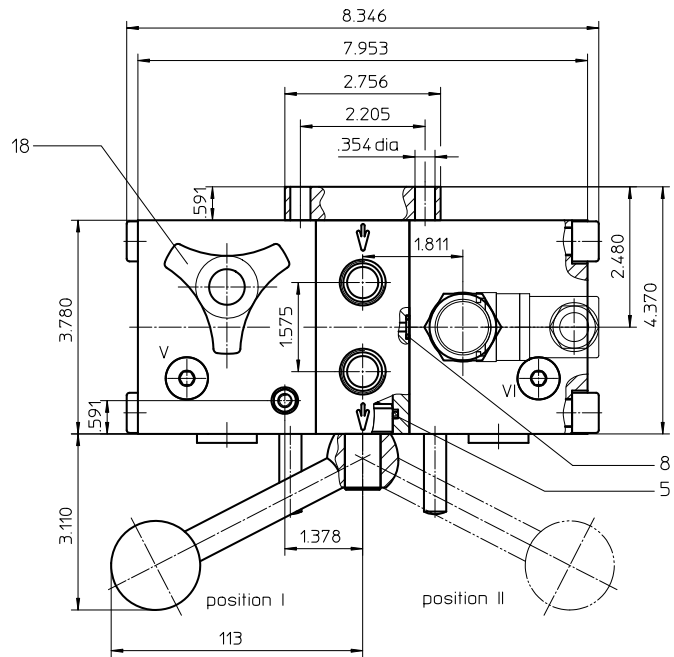


Series MDD 40-63

2900 PSI



Position. I: left filter-side in operation
 Position. II: right filter-side in operation
 Connection V and VI should be used to bleed filter or to relieve pressure.

Dimensions:

type	MDD 40	MDD 63
connection	- 8 SAE	-12 SAE
A	8.11	10.47
B	11.22	13.58
weight approx.	34 lbs.	36 lbs.
volume tank	2x .06 Gal.	2x .09 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 MDD 40-63

2900 PSI

Description:

Duplex pressure filter series MDD 40-63 with change-over valve have a working pressure up to 2900 PSI. Pressure peaks can be absorbed with a sufficient safety margin. Duplex filters can be serviced without interruption of operation.

The filter head has a three-way-change-over valve which diverts the flow from the dirty filter-side to the clean filter-side without interrupting operation of the filter. All filter housings have an integrated pressure balance valve to make main valve operation from one filter side to the other easier. Filter elements are available down to 5 $\mu\text{m}_{(0)}$. 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 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 of Δp 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)

MDD. 40. 10VG. HR. E. P. - . UG. 3. - . - . AE

1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	----	----	----

1 series:

MDD = medium pressure filter, change over

2 nominal size: 40, 63

3 filter-material and filter-fineness:

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 (MDD 40)

4 = -12 SAE (MDD 63)

10 filter housing specification: (see catalog)

- = standard

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

IS12 = for stainless steel ball valve, see sheet-no. 41028

11 internal valve:

- = without

S1 = with by-pass valve Δp 51 PSI

S2 = with by-pass valve Δp 102 PSI

R = reversing valve, $Q \leq 18.50$ 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)

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

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

1 series:

01NL. = standard filter element according to DIN 24550, T3

2 nominal size: 40, 63

3 - 7 see type index-complete filter

Accessories:

- gauge port- and bleeder connection, see sheet-no. 1650

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:	2900 PSI
test pressure:	4147 PSI
process connection:	thread connection
housing material:	C-steel
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical
air bleeding and measure connections dirt side:	BSPP ¼
measure connections clean side:	BSPP ½

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:

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

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

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

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

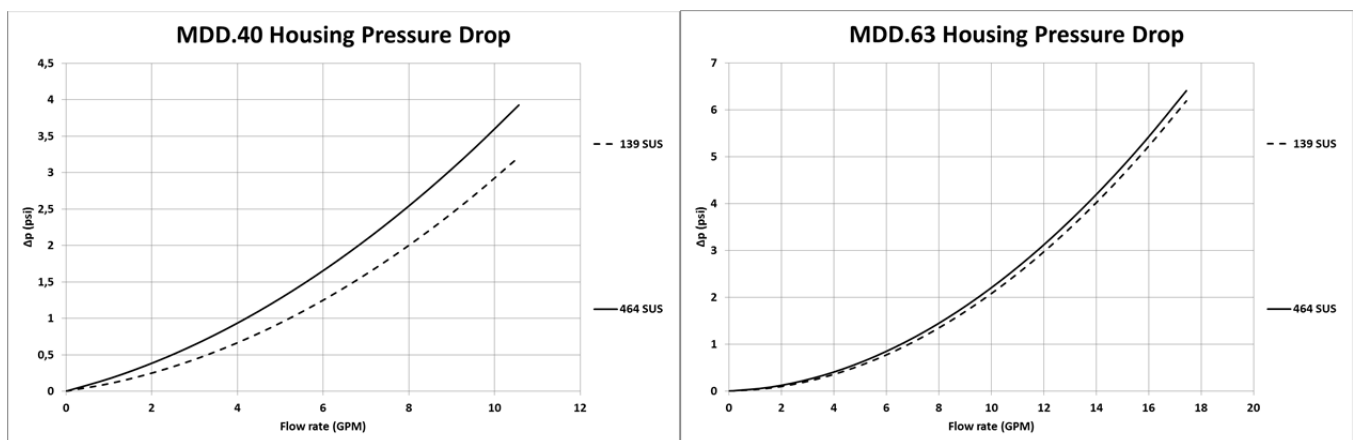
Material gradient coefficients (MSK) for filter elements

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.

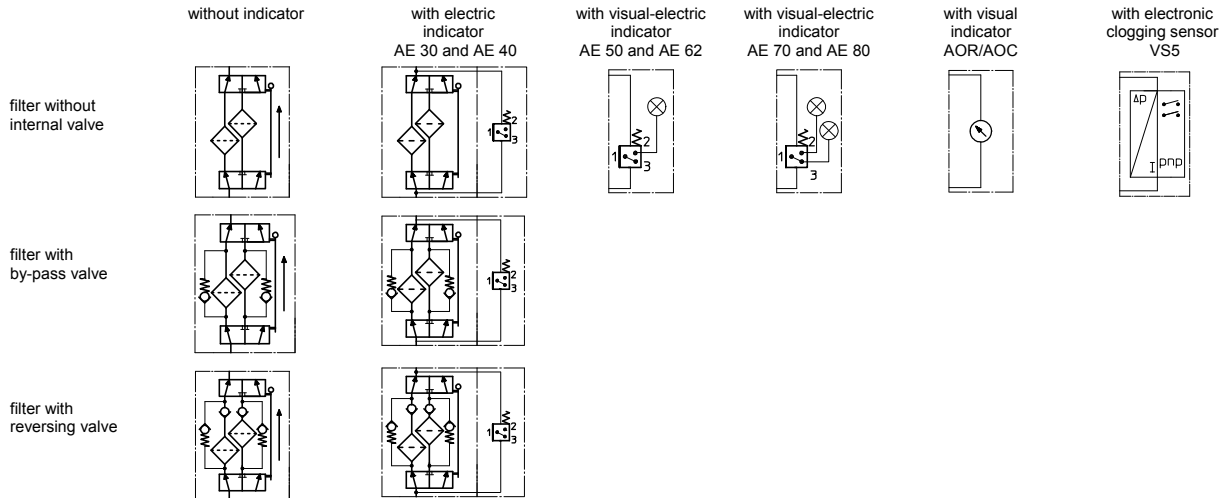
MDD	VG				
	3VG	6VG	10VG	16VG	25VG
40	6.991	4.853	3.107	2.705	1.848
63	4.214	2.926	1.873	1.631	1.114

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

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



Symbols:



Spare parts:

item	qty.	designation	dimension		article-no.	
			MDD 40 01NL.40...	MDD 63 01NL.63...		
1	2	filter element				
2	2	O-ring		22 x 3,5	304341 (NBR)	304392 (FPM)
3	2	O-ring		54 x 3	304657 (NBR)	304720 (FPM)
4	2	support ring		60 x 2,6 x 1	311779	
5	3	O-ring		26 x 3	304379 (NBR)	318576 (FPM)
6	4	O-ring		28 x 3	316778 (NBR)	318366 (FPM)
7	4	O-ring		18 x 3	304359 (NBR)	304399 (FPM)
8	4	O-ring		6,5 x 2	313553 (NBR)	318577 (FPM)
9	2	screw plug		1/2 BSPP	304678	
10	2	screw plug		1/2 BSPP	305003	
11	1	clogging indicator, visual		AOR or AOC	see sheet-no. 1606	
12	1	clogging indicator, visual-electric		AE	see sheet-no. 1615	
13	1	clogging sensor, electronic		VS5	see sheet-no. 1619	
14	1	O-ring		15 x 1,5	315357 (NBR)	315427 (FPM)
15	1	O-ring		22 x 2	304708 (NBR)	304721 (FPM)
16	1	O-ring		14 x 2	304342 (NBR)	304722 (FPM)
17	1	screw plug		20913-4	309817	
18	1	pressure balance valve		3/8"	305000	

item 17 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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