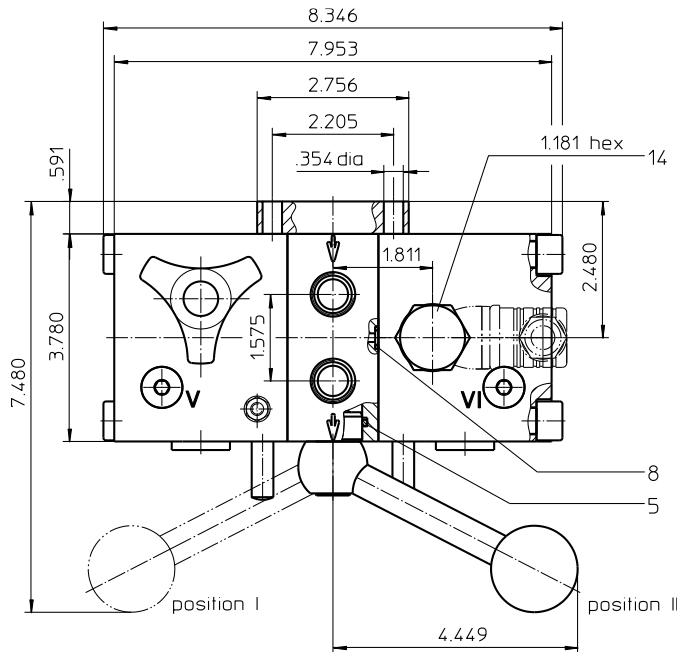


Series MDD 40-63

2900 PSI



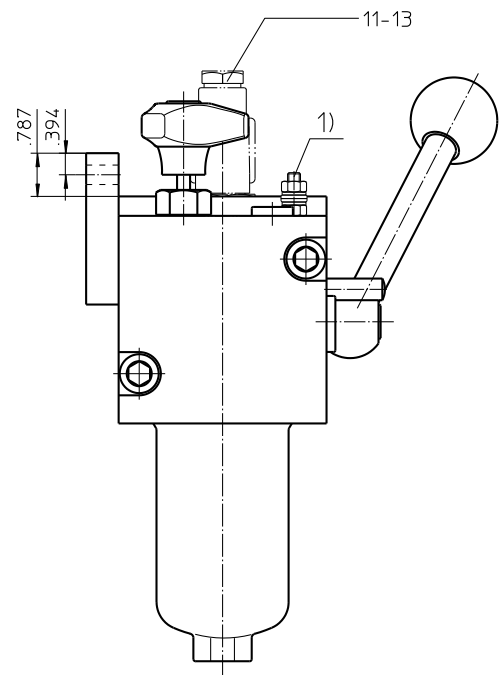
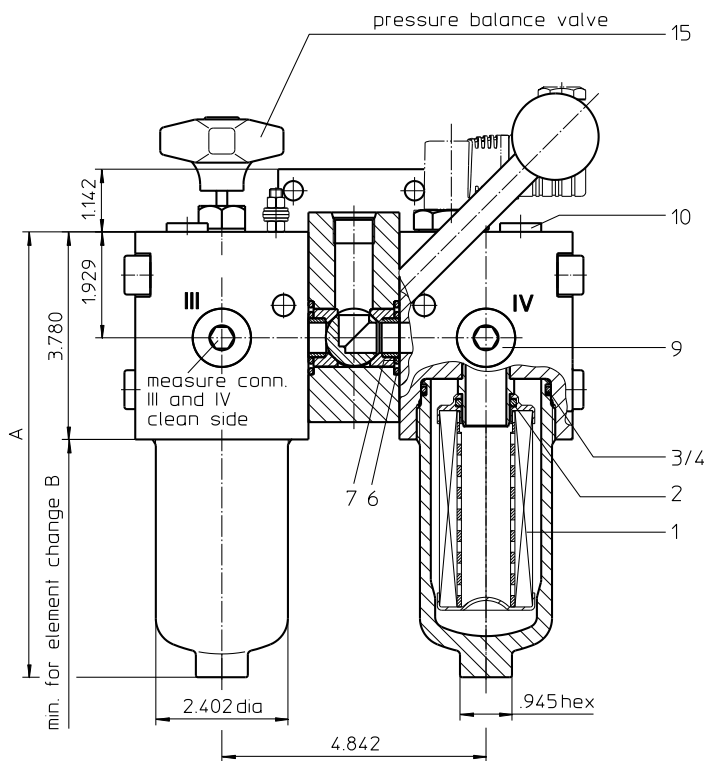
Dimensions:

| type | MDD 40 | MDD 63 |
|-------------|-------------|-------------|
| connection | -8 SAE | -12 SAE |
| A | 8.11 | 10.47 |
| B | 11.22 | 13.58 |
| weight lbs. | 35 | 37 |
| volume tank | 2x .06 Gal. | 2x .09 Gal. |

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

Measure connections III and IV to be used for pressure relief and air bleeding respective filter side.

Position I: left filter side in operation
Position II: right filter side in operation



Dimensions: inch

Designs and performance values are subject to change.



Powering Business Worldwide

Pressure Filter, change over Series MDD 40-63 2900 PSI

Description:

Pressure filters change over series MDD 40-63 are suitable for operating pressure up to 2900 PSI. The pressure peaks are absorbed by a sufficient margin of safety.

Duplex filters can be maintained without interruption. The upper part has a three-way-change-over valve which allows to change-over the flow from the dirty filter-side to the clean filter-side without interrupting the operation. The change-over procedure does not lead to a cross sectional contraction. Prior to the change-over procedure a built-in pressure balance valve equalizes the housing pressure. After change-over the pressure balance valve has to be closed again. The closed filter-side has to be air-bled by vent V respectively by vent VI. Then change filter element. After screw in the filter bowl the pressure balance has to be opened shortly and the just serviced filter-side has to be air-bled. Filter elements are available down to a filter fineness of 5 µm(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 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.

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.

Type index:

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: 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 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: - = standard IS06 = for HFC applications, see sheet-no. 31605 IS12 = internal parts of change over armature stainless steel, see sheet-n. 41028 |
| 11 | internal valve: - = without S1 = with by-pass valve Δp 51 PSI S2 = with by-pass valve Δp 102 PSI R = with 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/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 |
|---|---|---|---|---|---|---|

- | | |
|---|---|
| 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 connections, see sheet-no. 1650

Technical data:

| | |
|---|--|
| operating temperature: | +14 °F to +212 °F |
| operating medium: | mineral oil, other media on request |
| max. operating pressure: | 2900 PSI |
| test pressure: | 4150 PSI |
| process connection: | thread connection |
| housing material: | C-steel |
| sealing material: | Nitrile (NBR) or Viton (FPM), other materials on request |
| installation position: | vertical |
| bleeder- and measuring connections dirt side: | BSPP ¼ |
| measuring connections clean side: | BSPP ½ |

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:

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

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

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

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

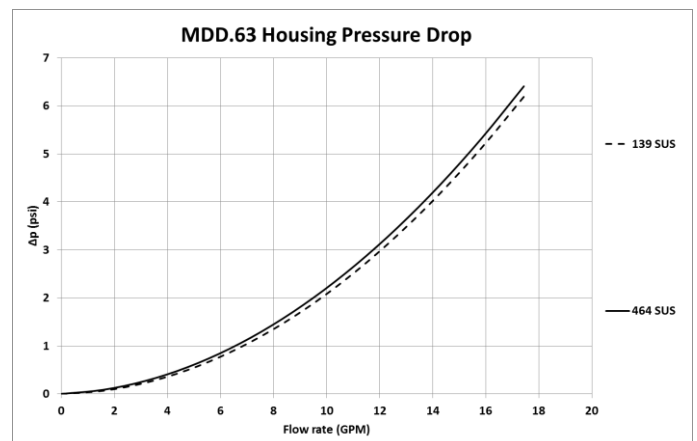
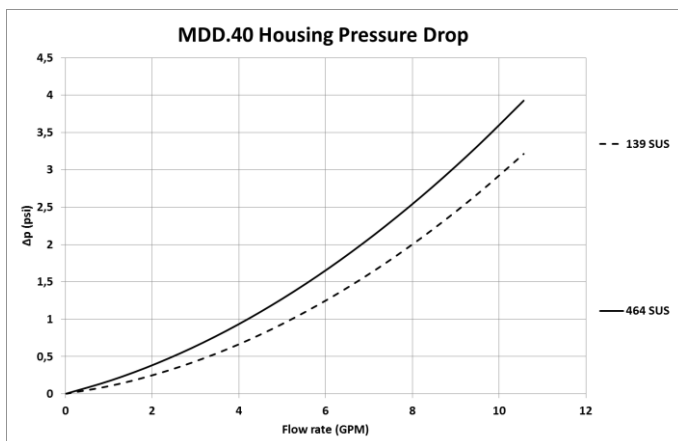
Material gradient coefficients (MSK) for filter elements

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.

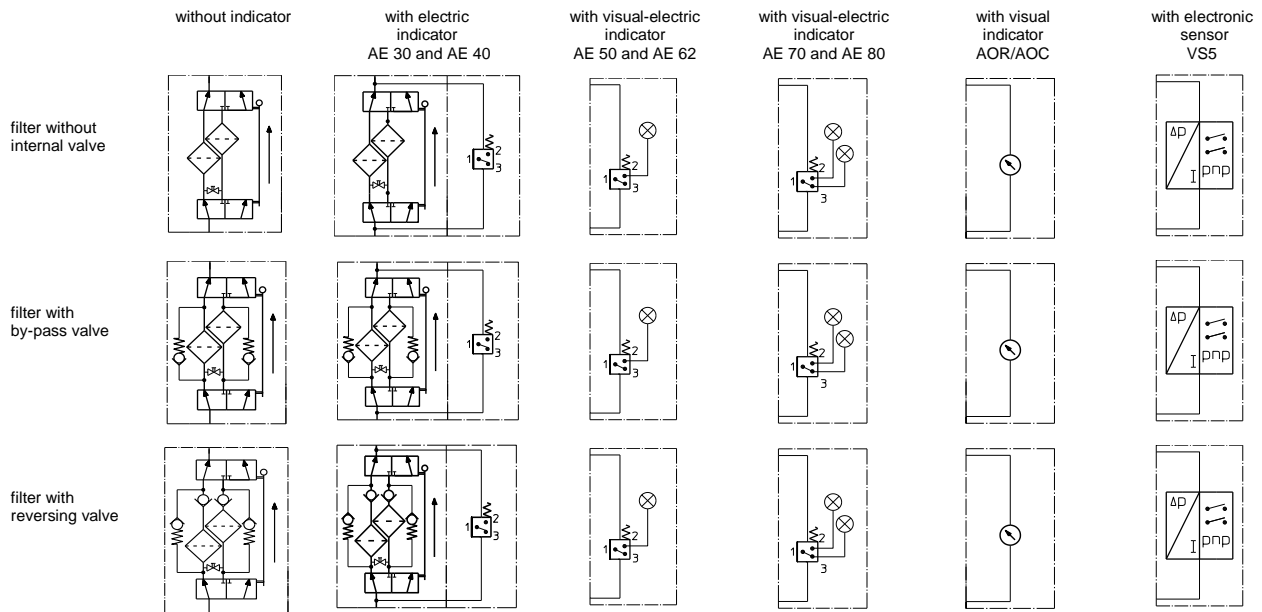
| MDD | VG | | | | |
|-----|-------|-------|-------|-------|-------|
| | 3VG | 6VG | 10VG | 16VG | 25VG |
| 40 | 6.991 | 4.853 | 3.107 | 2.705 | 1.848 |
| 63 | 4.214 | 2.926 | 1.873 | 1.631 | 1.114 |

$\Delta p = f(Q)$ – 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 | | 304359 (NBR) | 304399 (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 | BSPP 1/2 | | 304678 | |
| 10 | 2 | screw plug | BSPP 1/4 | | 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 | screw plug | 20913-4 | | 309817 | |
| 15 | 1 | pressure balance valve | 3/8" | | 305000 | |

item 14 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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