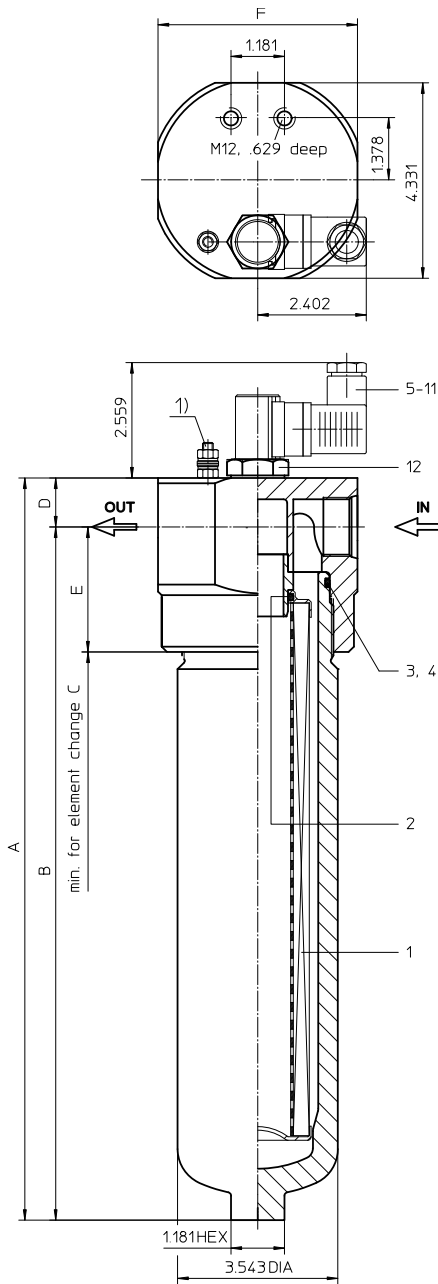


PRESSURE FILTER

Series ML 170 - 450 2320 PSI

Sheet No.
1429 H



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

2. Dimensions: inch

| type | ML 170 | | ML 240 | | ML 360 | | ML 450 | |
|-------------|----------|----------|----------|----------|----------|----------|----------|----------|
| connection | -16SAE | -24SAE | -16SAE | -24SAE | -16SAE | -24SAE | -16SAE | -24SAE |
| A | 11.33 | 11.81 | 13.30 | 13.77 | 16.45 | 16.92 | 20.59 | 21.06 |
| B | 10.23 | 10.43 | 12.20 | 12.40 | 15.35 | 15.55 | 19.48 | 19.68 |
| C | 13.77 | 13.77 | 15.74 | 15.74 | 18.89 | 18.89 | 23.03 | 23.03 |
| D | 1.10 | 1.37 | 1.10 | 1.37 | 1.10 | 1.37 | 1.10 | 1.37 |
| E | 2.76 | 2.95 | 2.76 | 2.95 | 2.76 | 2.95 | 2.76 | 2.95 |
| F | 4.40 | 4.56 | 4.40 | 4.56 | 4.40 | 4.56 | 4.40 | 4.56 |
| weight lbs. | 16.5 | 17.3 | 18.7 | 19.5 | 22.2 | 23.1 | 28.8 | 29.7 |
| volume tank | .18 Gal. | .18 Gal. | .23 Gal. | .23 Gal. | .31 Gal. | .31 Gal. | .42 Gal. | .42 Gal. |

EDV 02/14

1. Type index:

1.1. Complete filter: (ordering example)

ML . 360. 10VG. HR. E. P. -. UG. 5. -. -. AE

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

- 1 **series:**
ML = in-line filter-medium pressure range
- 2 **nominal size:** 170, 240, 360, 450
- 3 **filter-material and filter-fineness:**
80 G = 80 μm , 40 G = 40 μm , 25 G = 25 μm
stainless steel wire mesh
25 VG = 20 $\mu\text{m}_{(c)}$, 16 VG = 15 $\mu\text{m}_{(c)}$, 10 VG = 10 $\mu\text{m}_{(c)}$,
6 VG = 7 $\mu\text{m}_{(c)}$, 3 VG = 5 $\mu\text{m}_{(c)}$ Interpor fleece (glass fiber)
- 4 **resistance of pressure difference for filter element:**
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 = see sheet-no. 31601
- 8 **connection:**
UG = thread connection
- 9 **connection size:**
5 = -16 SAE
7 = -24 SAE
- 10 **filter housing specification:** (see catalog)
- = standard
IS06 = see sheet-no. 31605
- 11 **internal valve:**
- = without
S1 = with by-pass valve Δp 51 PSI
S2 = with by-pass valve Δp 102 PSI
R = reversing valve, $Q \leq 55.75$ GPM
- 12 **clogging indicator or clogging sensor:**
- = without
AOR = visual, see sheet-no. 1606
AOC = visual, see sheet-no. 1606
AE = visual-electrical, see sheet-no. 1615
VS1 = electrical, see sheet-no. 1617
VS2 = electrical, see sheet-no. 1618

1.2. Filter element: (ordering example)

01E. 360. 10VG. HR. E. P. -

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

- 1 **series:**
01E. = filter element according to company standard
- 2 **nominal size:** 170, 240, 360, 450
- 3 - 7 see type index-complete filter

Changes of measures and design are subject to alteration!

3. Spare parts:

| item | qty. | designation | dimension | | | | article-no. | |
|------|------|--------------------------------------|--------------|----------|----------|----------|--------------------|--------------|
| | | | ML 170 | ML 240 | ML 360 | ML 450 | | |
| 1 | 1 | filter element | 01E. 170 | 01E. 240 | 01E. 360 | 01E. 450 | | |
| 2 | 1 | O-ring | 34 x 3,5 | | | | 304338 (NBR) | 304730 (FPM) |
| 3 | 1 | O-ring | 75 x 3 | | | | 302215 (NBR) | 304729 (FPM) |
| 4 | 1 | support ring | 81 x 2,6 x 1 | | | | 304581 | |
| 5 | 1 | clogging indicator visual | AOR or AOC | | | | see sheet-no. 1606 | |
| 6 | 1 | clogging indicator visual-electrical | AE | | | | see sheet-no. 1615 | |
| 7 | 1 | clogging sensor electrical | VS1 | | | | see sheet-no. 1617 | |
| 8 | 1 | clogging sensor electrical | VS2 | | | | see sheet-no. 1618 | |
| 9 | 1 | O-ring | 15 x 1,5 | | | | 315357 (NBR) | 315427 (FPM) |
| 10 | 1 | O-ring | 22 x 2 | | | | 304708 (NBR) | 304721 (FPM) |
| 11 | 1 | O-ring | 14 x 2 | | | | 304342 (NBR) | 304722 (FPM) |
| 12 | 1 | screw plug | 20913-4 | | | | 309817 | |

item 12 execution only without clogging indicator or clogging sensor

4. Description:

The pressure filters of the series ML 170-450 are suitable for a working pressure up to 2320 PSI.

The pressure peaks are absorbed by a sufficient margin of safety. The ML-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 a filter fineness of 4 $\mu\text{m}_{(c)}$.

Internormen Product Line filter elements are known as elements with a high intrinsic stability and an excellent filtration capability, a high dirt-retaining capacity and a long service life.

Internormen Product Line filter are suitable for all petroleum based fluids, HW-emulsions, most synthetic hydraulic fluids and lubrication oils.

Internormen Product Line filter elements are available up to a pressure difference resistance of Δp 2320 PSI and a rupture strength of Δp 3625 PSI.

The internal valves are integrated into the centering pivot for the filter element.

After reaching the opening pressure the by-pass valve causes that an unfiltered partial flow passes the filter. With the reverse valve a protection of the filter element is given when having a reverse flow inside the filter. The reverse flow will not be filtered.

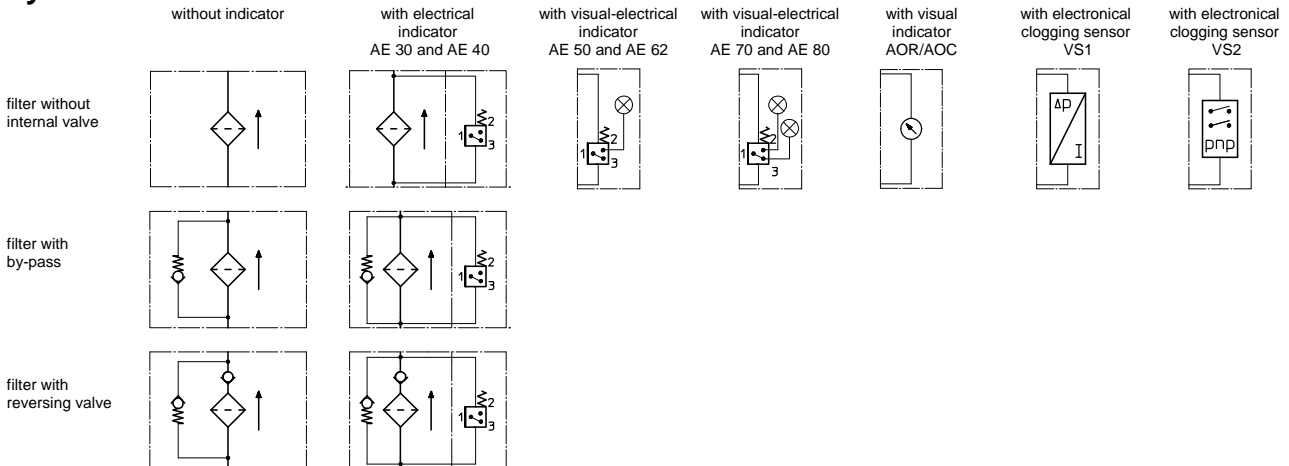
5. Technical data:

| | |
|--------------------------|--|
| temperature range: | +14°F to + 176°F (for a short time + 212°F) |
| operating medium: | mineral oil, other media on request |
| max. operating pressure: | 2320 PSI |
| test pressure: | 3320 PSI |
| connection system: | thread connection |
| housing material: | Al; C-steel |
| sealing material: | Nitrile (NBR) or Viton (FPM), other materials on request |
| installation position: | vertical |

Classified under the Pressure Equipment Directive 97/23/EC for mineral oil (fluid group 2), Article 3, Para. 3.

Classified under ATEX Directive 94/9/EC according to specific application (see questionnaire sheet-no. 34279-4).

6. Symbols:



7. Pressure drop flow curves:

Precise flow rates see 'Interactive Product Specifier', respectively Δp -curves; depending on filter fineness and viscosity.

8. 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