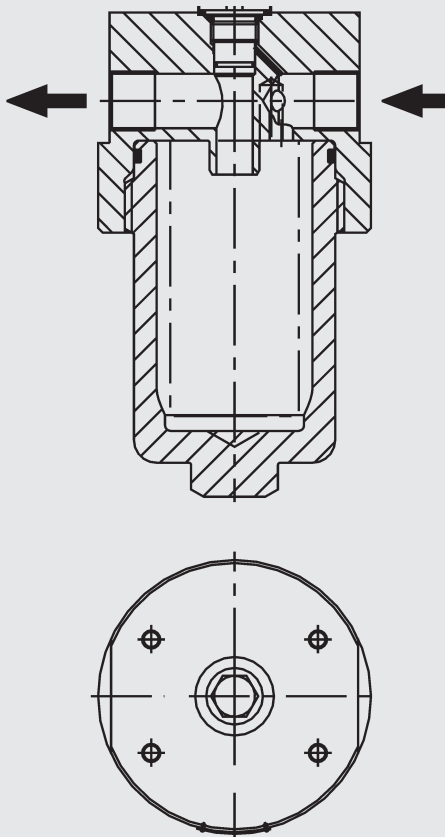


Stainless Steel Pressure Filter EDFR

HYDAC stainless steel pressure filters are designed for use in the chemical industry and in process engineering for filtering contamination from fluids at operating pressures of up to 400 bar max. and at operating temperatures up to approx. 200 °C.



EDFR



1. DESCRIPTION

1.1 GENERAL

HYDAC stainless steel pressure filters are inline filters for use in the chemical industry and in process engineering.

To satisfy the demands of diverse applications, they are available in 5 sizes and a variety of sealing materials and filter materials.

Depending on the particular application, reusable stainless steel filter elements are available in either Chemicon® (metal fibre, 1 µm - 20 µm absolute) or wire mesh (mesh width 25 µm - 250 µm). Disposable filter candles are available in Betamicron® (inorganic fibre material, 3 µm - 20 µm).

The element can be changed quickly and simply without removing the filter from the pipe system. The max. permissible operating pressure for HYDAC stainless steel pressure filters is 400 bar at 200 °C for all sizes.

Differential pressure clogging indicators can be fitted to monitor the contamination condition of the filter elements. There is a choice of visual or visual/electrical clogging indicators (see brochure: Clogging Indicators for Process Filters, no. 7.706...).

2. TECHNICAL SPECIFICATIONS

2.1. GENERAL

2.1.1 Type of construction

Inline filter

2.1.2 Materials

Stainless steel 1.4571 (AISI 316T)

2.1.3 Seals

V = FPM (Viton)

E = EPDM

T = FEP encapsulated O-rings (fluorinated ethylene propylene)

2.1.4 Inline connection

Parallel pipe thread (DIN ISO 228 Part 1)

2.1.5 Connection sizes

Size 060 : G ¾"

Size 160 : G 1 ¼"

Size 330, 660, 990 : G 1 ½" (G2 and SAE on request)

2.1.6 Weights (without elements)

| Size | Weight |
|------|---------|
| 060 | 8.5 kg |
| 160 | 14.5 kg |
| 330 | 34.5 kg |
| 660 | 50 kg |
| 990 | 64 kg |

2.1.8 Filter housing volume (without element)

| Size | Volume |
|------|--------|
| 060 | 0.23 l |
| 160 | 0.69 l |
| 330 | 1.62 l |
| 660 | 2.8 l |
| 990 | 4.0 l |

2.2. HYDRAULIC DATA

2.2.1 Operating pressure

all sizes $p_{max} = 400$ bar
at $t = 200^{max}$ °C

2.2.2 Permiss. differential pressure across filter element

$\Delta p = 210$ bar

2.2.3 Operating temperature

FPM (Viton) = up to + 200 °C

EPDM = up to + 120 °C

FEP

encapsulated = up to + 200 °C

Stainless

steel (E) = up to + 400 °C

When using a clogging indicator or filter elements in Betamicron®: up to + 100 °C

The boiling temperature of the operating fluid must be higher than the operating temperature at atmospheric pressure.

3. SPECIFICATIONS

3.1. MODEL CODE STAINLESS STEEL PRESSURE FILTER EDFR (also order code for complete filter)

EDFR - D - 060 - G - 100 - 1 - V - 2- L24

Filter type _____
 EDFR
 EDFA (only on request)

Filter material _____
 M = Chemicron®
 1 µm - 20 µm absolute
 D = Wire mesh
 25 µm - 250 µm nominal
 BH/HC = Betamicron®
 3 µm - 20 µm absolute
 (see brochure: Filter Elements, no. 7.200../..)

Size _____
 060, 160, 330, 660, 990

Connection _____
 G = threaded

Filtration rating in µm _____
 1, 3, 5, 10, 20 (Chemicron®)
 25, 40, 60, 100, 150, 200, 250 (wire mesh)
 3, 5, 10, 20 (Betamicron®)

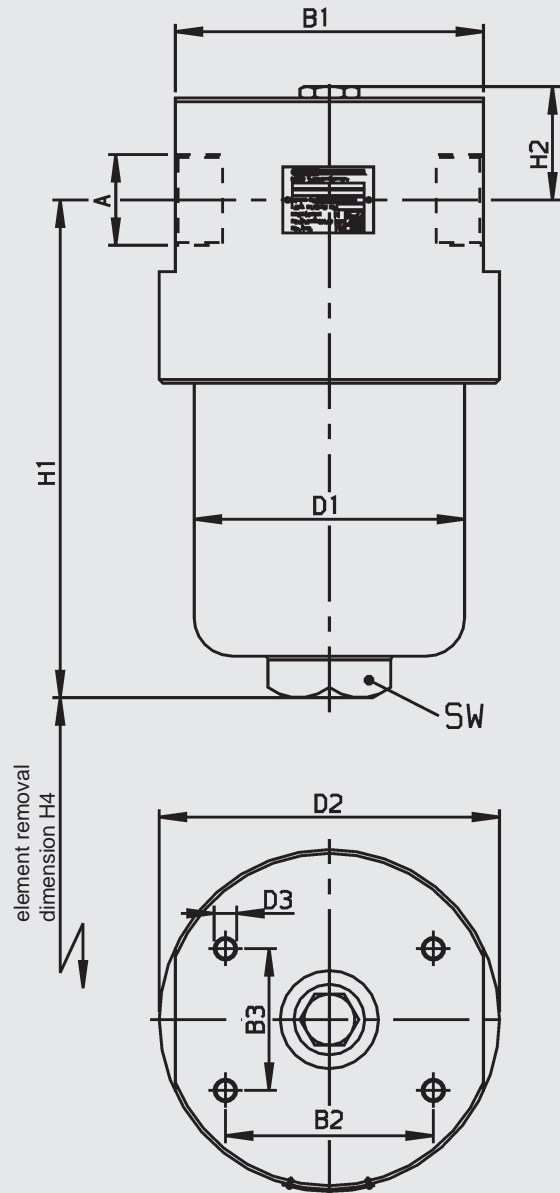
Type of clogging indicator _____
 0 = without
 1 = visual clogging indicator (PVD 5 B.1)
 2 = visual/electrical clogging indicator (PVD 5 D.0-L..)
 3 = electrical clogging indicator (PVD 5 C.O)
 See brochure: Clogging Indicators for Process Filters, No.: 7.706../..

Material of seals _____
 V = FPM (Viton) (max. + 200 °C)
 E = EPDM (max. + 120 °C)
 T = FEP encapsulated (Teflon) (max. + 200 °C)

Modification number _____

Supplementary details _____
 Voltage for light, visual/electrical clogging indicator (L24 or L220)

3.2 DIMENSIONS EDFR



| Size | Weight | Volume | A | B1 | B2 | B3 | D1 | D2 | D3 | H1 | H2 | H4 | SW |
|------|----------|--------|---------|-----|-----|----|-----|-----|------|-----|----|----|----|
| 060 | 8.50 kg | 0.23 l | G 3/4 | 110 | 60 | 40 | 72 | 120 | M 6 | 139 | 45 | 50 | 27 |
| 160 | 14.50 kg | 0.69 l | G 1 1/4 | 136 | 80 | 50 | 105 | 150 | M 10 | 197 | 46 | 60 | 32 |
| 330 | 34.50 kg | 1.62 l | G 1 1/2 | 164 | 110 | 75 | 143 | 180 | M 12 | 263 | 50 | 75 | 46 |
| 660 | 50.00 kg | 2.80 l | G 1 1/2 | 180 | 110 | 75 | 150 | 180 | M 12 | 425 | 50 | 75 | 41 |
| 990 | 64.00 kg | 4.00 l | G 1 1/2 | 180 | 110 | 75 | 150 | 180 | M 12 | 594 | 50 | 75 | 41 |

3.3. MODEL CODE FOR REPLACEMENT ELEMENT
(also order code)

060 - DR - 100 - D - V

Size _____

030, 060, 110, 140
160, 240, 280
330, 500, 660, 990

Type of element _____

DR suitable for EDFR (up to max. + 200 °C)
DA suitable for EDFA (up to max. + 400 °C)
DH suitable for hydraulic filter (up to max. +200 °C)

Filtration rating μm _____

1, 3, 5, 10, 20 (Chemicron®)
25, 40, 60, 100, 150, 200, 250 (wire mesh)

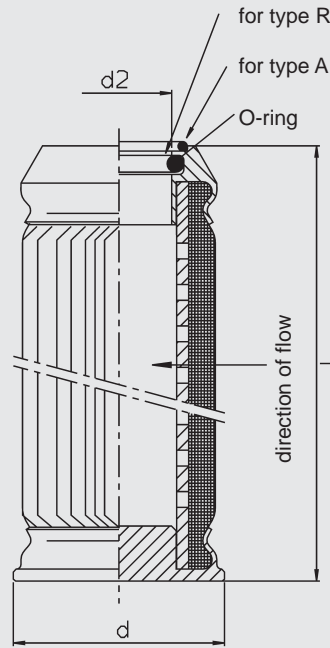
Filter material _____

M = Chemicron® (1.5 - 20 μm absolute)
D = wire mesh (25 - 250 μm nominal)

Material of seals _____

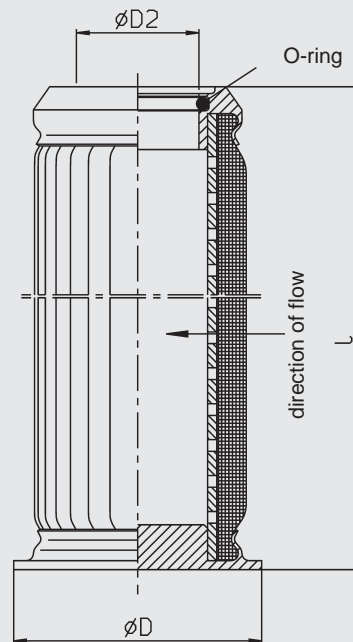
V = FPM (Viton)
E = EPDM
T = FEP encapsulated (Teflon)
E = stainless steel (DA only)
other seals on request

3.4. ELEMENT DIMENSIONS
DR/DA



| DA | DR | Nominal size | Area | L | D | D2 | O-ring |
|----|----|--------------|----------------------|------|------|------|--------------|
| | x | 030 | 310 cm ² | 93.5 | 35 | 12.3 | 12.37 x 2.62 |
| x | x | 060 | 430 cm ² | 91 | 44.2 | 22.1 | 22 x 3.5 |
| | | 110 | 785 cm ² | 160 | 44.2 | 2,1 | 22 x 3.5 |
| x | x | 160 | 1230 cm ² | 129 | 60 | 34.1 | 34 x 3.5 |
| | | 240 | 1850 cm ² | 190 | 60 | 34.1 | 34 x 3.5 |
| | | 280 | 3775 cm ² | 371 | 60 | 34.1 | 34 x 3.5 |
| x | x | 330 | 2100 cm ² | 180 | 76.6 | 48.1 | 48 x 3 |
| | x | 660 | 4410 cm ² | 349 | 76.6 | 48.1 | 48 x 3 |
| | x | 990 | 6350 cm ² | 518 | 76.6 | 48.1 | 48 x 3 |

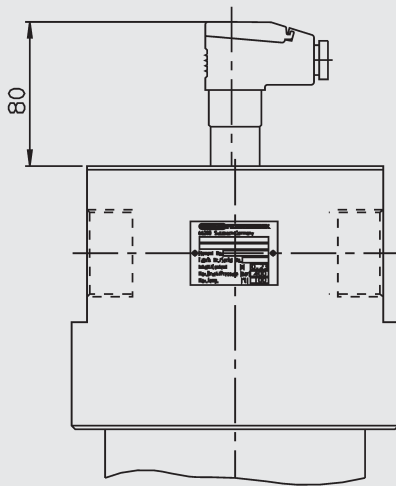
DH
(SUITABLE FOR HYDRAULIC FILTERS)



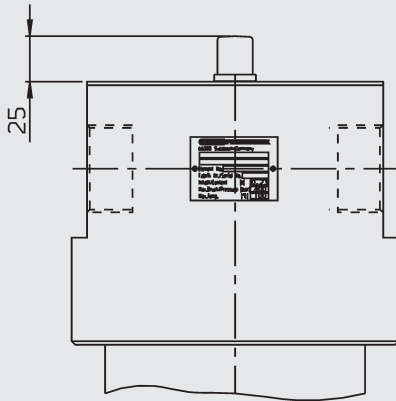
| Nominal size | Area | L | ØD | ØD2 | O-ring |
|--------------|----------------------|--------|------|------|----------|
| 060 | 390 cm ² | 83 | 47 | 22.1 | 22 x 3.5 |
| 110 | 770 cm ² | 152.7 | 47 | 22.1 | 22 x 3.5 |
| 140 | 990 cm ² | 193 | 47 | 22.1 | 34 x 3.5 |
| 160 | 945 cm ² | 116 | 69 | 34.1 | 34 x 3.5 |
| 240 | 1475 cm ² | 174.75 | 69 | 34,1 | 34 x 3.5 |
| 280 | 3105 cm ² | 355.75 | 69 | 34.1 | 34 x 3.5 |
| 330 | 2165 cm ² | 163.5 | 90.5 | 48.1 | 48 x 3 |
| 500 | 3430 cm ² | 253 | 90.5 | 48.1 | 48 x 3 |
| 660 | 4515 cm ² | 329 | 90.5 | 48.1 | 48 x 3 |

3.5. CLOGGING INDICATORS
EDFR

visual/electrical clogging indicator

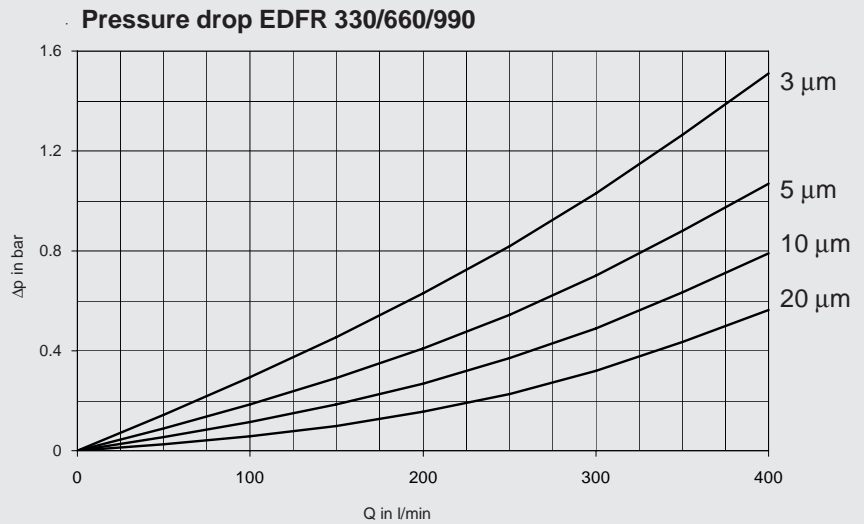
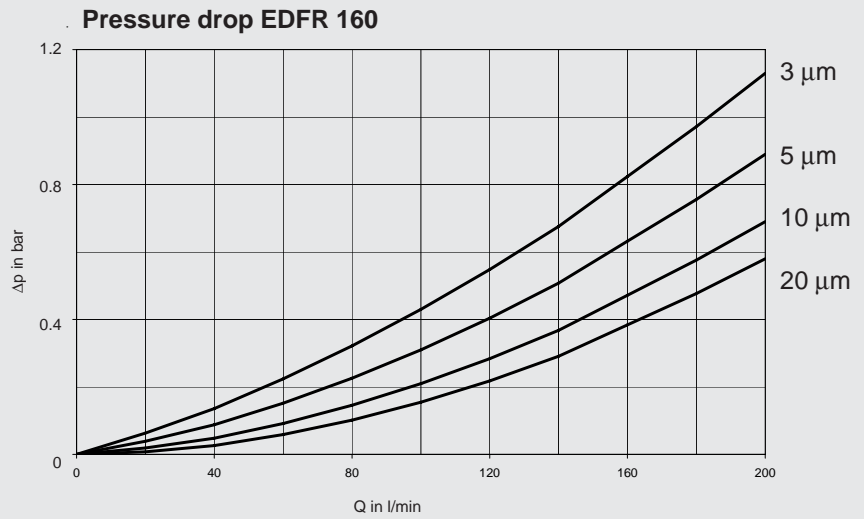
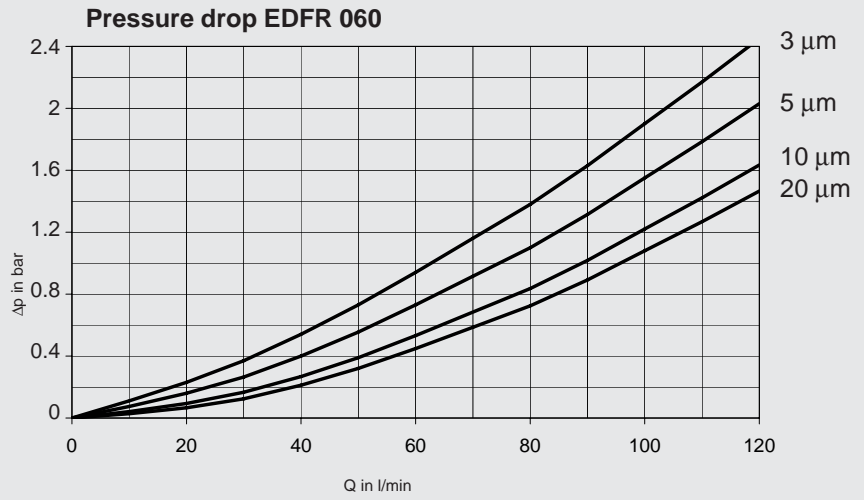


visual clogging indicator



3.6. GRAPHS

The graphs apply to water with a density of 0.997 kg/dm³ and a viscosity of 1m Pas.



4. FILTRATION PERFORMANCE

4.1 RETENTION RATES FOR WIRE MESH

Nominal retention rate

The filtration ratings given in the model code for this material are based on a factory standard filter test.

This test consists of introducing a large amount of dust (ISO MTD) at the beginning of the filter test and subsequently filtering the contamination particles over 1 hour. The test filter must retain 90 - 95% of the particles larger than the given filtration rating.

4.2. RETENTION RATES FOR CHEMICRON® AND BETAMICRON®

Absolute retention rate

The rates given in the brochure are determined by the multi-pass test carried out on the HYDAC test rig, following ISO 4572 (multi-pass test for the determination and demonstration of the filtration performance, extended to finest filtration).

In this test at least 99% of all particles larger than the given filtration rating must be retained and this up to the given differential pressure.

A filtration rate of 99% corresponds to a β_x value of 100 ($\beta_x = 100$), which denotes absolute filtration.

5. NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.