



Stainless Steel Pressure Filters EDF

up to 300 l/min, up to 400 bar



1. TECHNICAL SPECIFICATIONS

1.1 GENERAL

HYDAC stainless steel pressure filters are designed for use in the chemical industry and in industrial processing plants. The range of 5 different sizes, filter materials and sealing materials means that the filters can be adapted to a wide variety of application conditions.

Depending on the particular application, reusable stainless steel filter elements are available in either Chemicon® (metal fibre) or wire mesh. Disposable filter elements are available in Betamicron® (glass fibre).

The element can be changed quickly and easily without removing the filter from the pipe system. This means the filter can be used up to 200 °C. The max. permissible operating pressure for HYDAC stainless steel pressure filters is 400 bar (higher pressures on request) at 200 °C for all sizes.

Contamination of the filter elements can be monitored by means of a clogging indicator fitted to the filter.

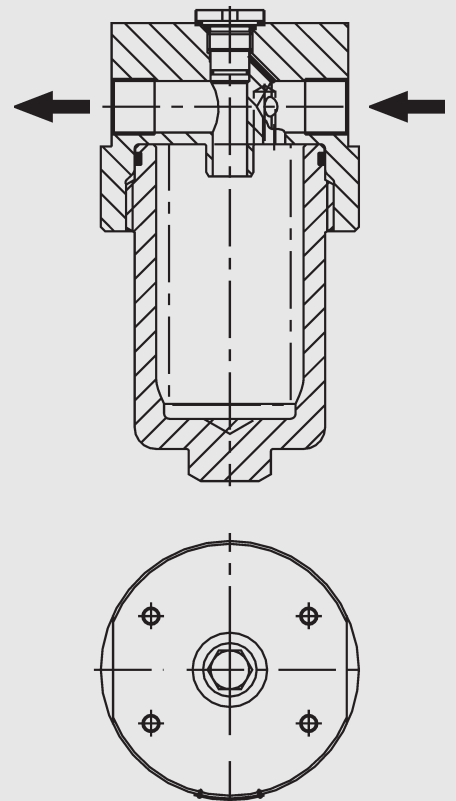
The filter elements can be cleaned several times, thereby saving the costs of disposal and re-purchase.

1.2 SUMMARY OF AVAILABLE SIZES AND CONNECTIONS

Connection size	Series				
	060	160	330	660	990
G 3/4"	●				
G 1 1/4"		●			
G 1 1/2"			●	●	●
G 2"			●	●	●
SAE 1 1/2"			●	●	●
SAE 2"			●	●	●

The selection of connection size depends on the level of contamination in the fluid and on the corresponding filter area load.

1.3 SECTIONAL FUNCTION DRAWING



2. FILTER SPECIFICATIONS

2.1 SUMMARY OF TECHNICAL SPECIFICATIONS OF FILTER HOUSING (STANDARD CONFIGURATION)

Size	Connection size		Materials	Max. * operating pressure [bar]	Temperature		Weight [kg]	Volume [l]
	SAE	Pipe thread G			[°C]**			
060	–	¾"	Stainless steel 1.4571	400	FPM EPDM FEP Stainless steel	+200 +120 +200 +400	8.5	0.23
160	–	1 ¼"					14.5	0.69
330	1 ½" 2"	1 ½" 2"					34.5	1.62
660							50	2.8
990							64	4.0

* at T_{max} = 200 °C

** depending on the seal material

2.2 SUMMARY OF TECHNICAL SPECIFICATIONS OF FILTER ELEMENTS

Two types of element are available for the stainless steel pressure filter EDF, one with radial sealing (EDFR) and one with axial sealing (EDFA):

● DR elements: suitable for EDFR

● DA elements: suitable for EDFA

In addition, filter elements from HYDAC Process Technology GmbH are available for the pressure filters of HYDAC Filtrertechnik (DF series)

● DH elements: suitable for DF Filters (HYDAC Filtrertechnik)

2.2.1 Filter elements DR and DA

Size	Filter area [cm²]	Type of filter element	Filter materials and filtration ratings [µm]			Permiss. Diff. pressure across element [bar]
			Betamicron® (glass fibre)	Chemicon® (metal fibre)	wire mesh	
060	430	DR / DA	3, 5, 10, 20	1, 3, 5, 10, 20	25, 40, 60, 100, 150, 200, 250	210
160	1230	DR / DA				
330	2100	DR / DA				
660	4410	DR / DA				
990	6350	DR / DA				

2.2.2 Filter elements DH

Size	Filter area [cm²]	Type of filter element	Filter materials and filtration ratings [µm]			Permiss. Diff. pressure across element [bar]
			Betamicron® (glass fibre)	Chemicon® (metal fibre)	wire mesh	
060	390	DH	3, 5, 10, 20	1, 3, 5, 10, 20	25, 40, 60, 100, 150, 200, 250	210
110	770	DH				
140	990	DH				
160	945	DH				
240	1475	DH				
280	3105	DH				
330	2165	DH				
500	3430	DH				
660	4515	DH				

2.3 FURTHER SPECIFICATIONS OF THE FILTER HOUSING (STANDARD CONFIGURATION)

2.3.1 Seal materials

- FPM (Viton) up to + 200°C
- EPDM up to +120°C
- FEP encapsulated up to + 200°C
- Stainless steel up to +400°C (only for EDFA with axial seal)

2.3.2 Documentation

Operating and maintenance instructions

2.4 OPTIONAL VERSIONS

There is a range of optional versions available for EDF stainless steel pressure filters. For technical details and prices, please contact our Technical Sales Department at Head Office.

2.4.1 Flange connections

- SAE connection

2.4.2 Housing materials

- Various qualities of stainless steel

2.4.3 Seal materials

- FEP encapsulated Viton seals
- Various seal materials on request, depending on the resistance to the fluid

2.4.4 Differential pressure monitoring

- Visual
- Electrical
- Visual-electrical
- Option of piping indicator separately for fluid temperatures > 100 °C

2.4.5 Duplex filter model

All sizes of EDF are available as duplex filters including pipework and change-over valve

2.4.6 Documentation

- Manufacturer's test certificates
- Material certificates (3.1 according to DIN EN 10204)
- and many others on request

Further optional models on request

3. MODEL CODE

3.1 STAINLESS STEEL PRESSURE FILTER

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

Filter type

EDFR
EDFA (on request)
EDFRU (on request)

Material of filter element

M = Chemicon®
1 µm - 20 µm absolute
D = wire mesh
25 µm - 250 µm
nominal
BH/HC = Betamicon®
3 µm - 20 µm absolute
(see brochure on Filter
Elements No. 7.200../..)

Size

060, 160, 330, 660, 990

Type of connection

G = threaded

Filtration rating in µm

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

Clogging indicator

0 = without clogging indicator
1 = visual indicator
(PVD 5 B.1)
2 = visual-electrical indicator
(PVD 5 D.0/-L..)
6 = electrical clogging indicator
(PVD 5 C.0)

See brochure on Clogging Indicators
for Process Filters No. 7.706.0../..

Seal material

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

For EFDA only:

E = stainless steel (max. + 400 °C)

Modification number

X = the latest version is always supplied

Supplementary details

Light voltage for visual-electrical
clogging indicator (L24 or L22)

3.2 FILTER ELEMENT

060 - DR - 100 - D - V

Size

030, 060, 160, 330, 660, 990 (DR/DA)
060, 110, 140, 160, 240, 280, 330, 500, 660 (DH)

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 filters (up to max. + 200°C)

Filtration rating in µm

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

Material of filter element

M = Chemicon® (1,5 - 20 µm absolute)
D = wire mesh (25 - 250 µm nominal)

Seal material

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

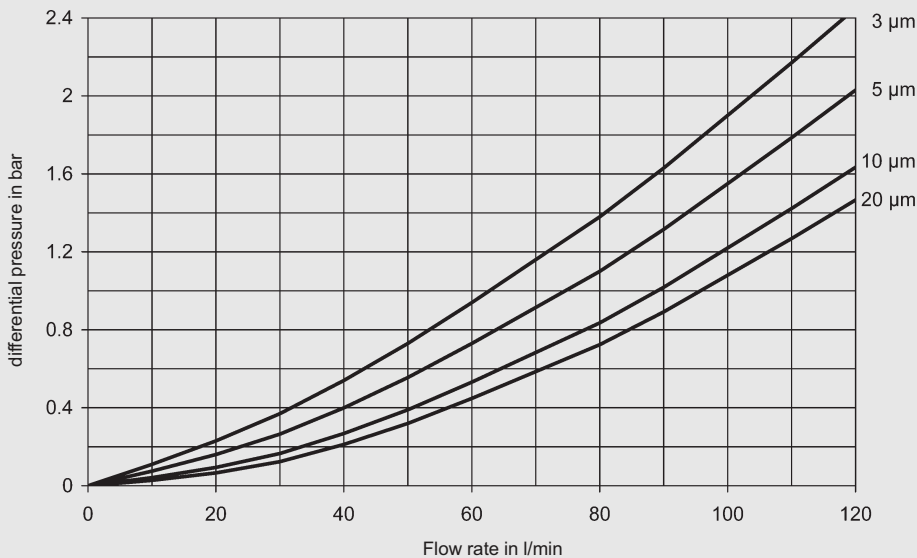
Other seals on request

4. FILTER CALCULATION / SIZING

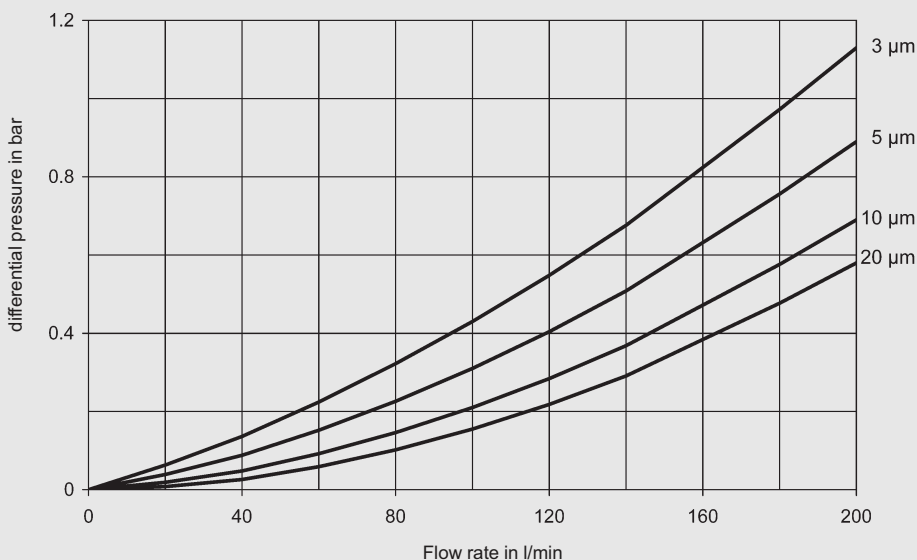
The curves apply to water at 20°C or other fluids up to 15 mm²/s viscosity

4.1 PRESSURE DROP CURVES

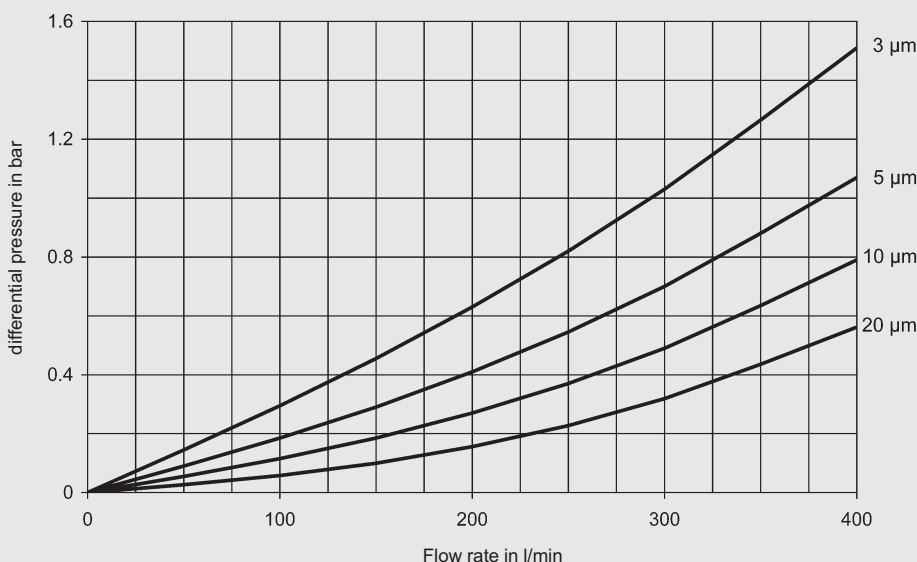
4.1.1 Curve for size 060



4.1.2 Curve for size 160



4.1.3 Curve for size 330 / 660 / 990



In order to be able to size the filter correctly, the following design data should be available:

- Flow rate
- Type of medium
- Materials / resistance
- Viscosity
- Required filtration rating
- Particulate loading in the fluid
- Type of contamination
- Operating pressure
- Operating temperature

Use the pressure drop curves to calculate the stainless steel pressure filters EDF.

4.2 FILTRATION PERFORMANCE

- Retention rates for wire mesh and slotted tubes:

Nominal retention rates

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

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

- Retention rates for
Betamicon® (glass fibre)
Chemicon® (metal fibre):

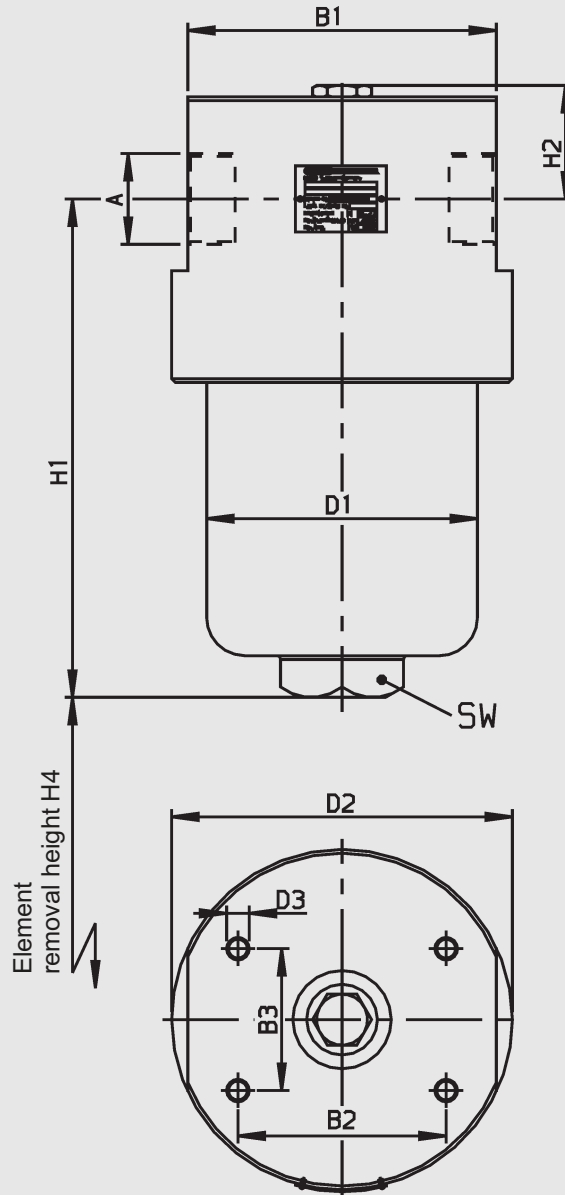
Absolute retention rate

The filtration rates are determined by the multi-pass test carried out on the HYDAC test rig, based on ISO 4572 (multi-pass test for the determination and proof 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 max. permissible differential pressure across the filter element. A filtration rate of 99 % corresponds to a β_x value of 100 ($\beta_x = 100$), which denotes absolute filtration.

5. DIMENSIONS

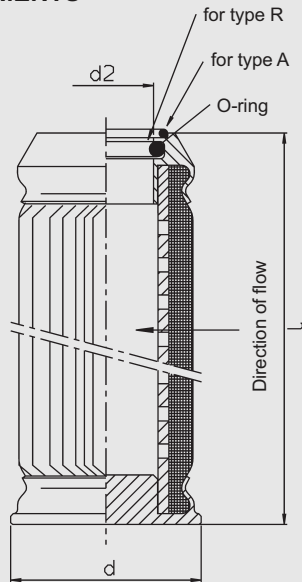
5.1 SINGLE HOUSING



Size	A	B1	B2	B3	D1	D2	D3	H1	H2	H4	SW
060	G 3/4	110	60	40	72	120	M6	139	45	50	27
160	G 1 1/4	136	80	50	105	150	M10	197	46	60	32
330	G 1 1/2	164	110	75	143	180	M12	263	50	75	46
660	G 1 1/2	180	110	75	150	180	M12	425	50	75	41
990	G 1 1/2	180	110	75	150	180	M12	594	50	75	41

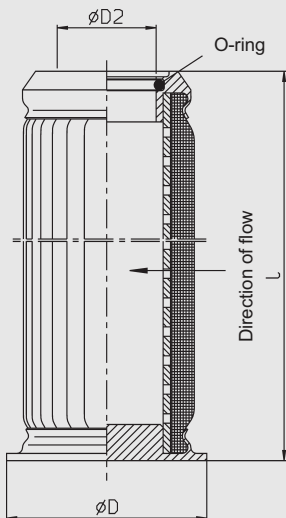
5.2 FILTER ELEMENTS

5.2.1 DR/DA



DA	DR	Nominal size	Area	L	d	d2	O-ring
	x	030	310	93.5	35	12.3	12.37 x 2.62
X	x	060	430	91	44.2	22.1	22 x 3.5
X	X	160	1230	129	60	34.1	34 x 3.5
X	X	330	2100	180	76.6	48.1	48 x 3
	X	660	4410	349	76.6	48.1	48 x 3
	X	990	6350	518	76.6	48.1	48 x 3

5.2.2 DH



Nominal size	Area	L	D	D2	O-ring
060	390	83	47	22.1	22x 3.5
110	770	152.7	47	22.1	22x 3.5
140	990	193	47	22.1	34 x 3.5
160	945	116	69	34.1	34 x 3.5
240	1475	174.75	69	34.1	34 x 3.5
280	3105	355.75	69	34.1	34 x 3.5
330	2165	163.5	90.5	48.1	48 x 3
500	3430	253	90.5	48.1	48 x 3
660	4515	329	90.5	48.1	48 x 3

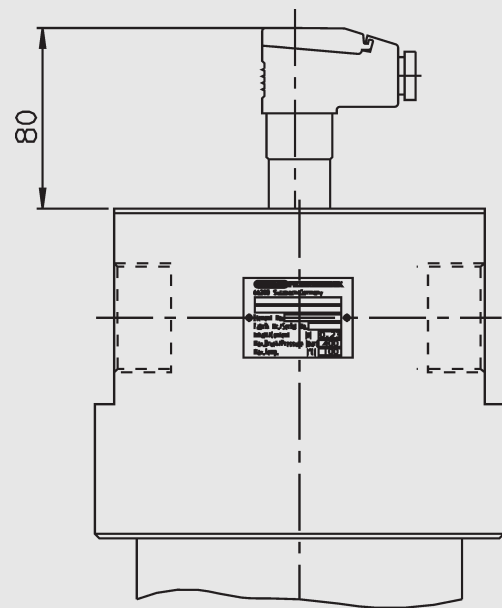
NOTE

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.

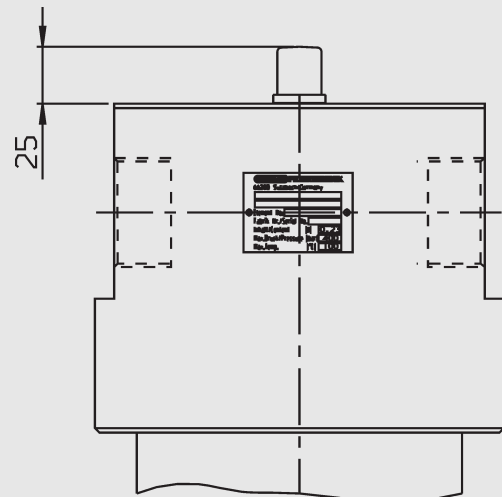
Subject to technical modifications.

5.3 CLOGGING INDICATORS

5.3.1 Visual electrical indicator



5.3.2 Visual clogging indicator



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