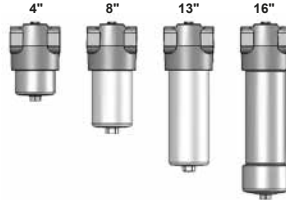




## Inline Filter HF3P

up to 450 l/min, up to 420 bar



### 1. TECHNICAL SPECIFICATIONS

#### 1.1 FILTER HOUSING

##### Construction

The filter housings are designed in accordance with international regulations. They consist of a filter head and a screw-in filter bowl.

Standard equipment:

- bypass valve
- connection for a clogging indicator

#### 1.2 FILTER ELEMENTS

HYDAC filter elements are validated and their quality is constantly monitored according to the following standards:

- ISO 2941
- ISO 2942
- ISO 2943
- ISO 3724
- ISO 3968
- ISO 11170
- ISO 16889

Filter elements are available with the following pressure stability values:

Betamicon® (BN): 20 bar  
Betamicon® (BH): 210 bar

#### 1.3 FILTER SPECIFICATIONS

Nominal pressure	420 bar
Fatigue strength	At nominal pressure 10 <sup>6</sup> cycles from 0 to nominal pressure
Temperature range	-30 °C to +100 °C
Material of filter head	EN-GJS
Material of filter bowl	Steel
Type of clogging indicator	VD (differential pressure measurement up to 420 bar operating pressure)
Pressure setting of the clogging indicator	5 bar (others on request)
Bypass cracking pressure	6 bar (others on request)

#### 1.4 SEALS

NBR (=Perbunan)

#### 1.5 INSTALLATION

Inline filter

#### 1.6 SPECIAL MODELS AND ACCESSORIES

- Without bypass valve
- Without port for clogging indicator

#### 1.7 SPARE PARTS

See Original Spare Parts List

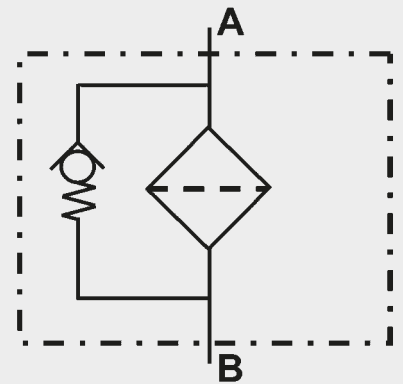
#### 1.8 CERTIFICATES AND APPROVALS

On request

#### 1.9 COMPATIBILITY WITH HYDRAULIC FLUIDS ISO 2943

- Hydraulic oils H to HLPD DIN 51524
- Lubrication oils DIN 51517, API, ACEA, DIN 51515, ISO 6743
- Compressor oils DIN 51506
- Biodegradable operating fluids VDMA 24568 HETG, HEES, HEPG
- Fire-resistant fluids HFA, HFB, HFC and HFD
- Operating fluids with high water content (> 50 % water content) on request

#### Symbol for hydraulic systems



## 2. MODEL CODE (also order example)

HF3P BN 08 G 3 C 1 . X /12 V-B6

### 2.1 COMPLETE FILTER

**Filter type** \_\_\_\_\_

HF3P

**Filter material** \_\_\_\_\_

BN Betamicron® (BN)

BH Betamicron® (BH)

**Size of filter or element** \_\_\_\_\_

04 4"

08 8"

13 13"

16 16"

**Port** \_\_\_\_\_

G threaded port

F flange port

**Filtration rating in µm** \_\_\_\_\_

BN : 3, 6, 12, 25

BH : 3, 6, 10, 17

**Type of clogging indicator** \_\_\_\_\_

W without port (no clogging indicator)

A steel blanking plug in indicator port

B visual

C electrical

D visual and electrical

J electrical switch (Brad Harrison 5 Pin Mini)

J4 electrical switch (Brad Harrison 4 Pin Micro)

for other clogging indicators,  
see brochure no. 7.050../..

**Type code** \_\_\_\_\_

1 2" flange (420 bar) or SAE 24" or G ½

2 1½" flange (210 bar)

3 1" SAE 16 or G 1" thread

**Modification number** \_\_\_\_\_

X the latest version is always supplied

**Supplementary details** \_\_\_\_\_

0 G 1½" or G 1 BSPP

12 SAE 24" or 16" O-ring boss

16 SAE 2" flange (420 bar) or 1½" (210 bar)

B. bypass cracking pressure (e.g. B3 = 3 bar); without details = without bypass valve

L... light with appropriate voltage (24, 48, 110, 220 Volt)

LED 2 light emitting diodes up to 24 Volt

V FPM seals

W suitable for HFA and HFC emulsions

only for clogging indicator  
type "D"

### 2.2 REPLACEMENT ELEMENT

1.11.08 D 03 BN /-V

**Size** \_\_\_\_\_

04 4"

08 8"

13 13"

16 16"

**Type** \_\_\_\_\_

D

**Filtration rating in µm** \_\_\_\_\_

BN: 03, 06, 12, 25

BH: 03, 06, 10, 17

**Filter material** \_\_\_\_\_

BN, BH

**Supplementary details** \_\_\_\_\_

V (for descriptions, see Point 2.1)

### 2.3 REPLACEMENT CLOGGING INDICATOR

VD 5 D . X /-L24

**Type of indicator** \_\_\_\_\_

VD differential pressure indicator up to 420 bar operating pressure

**Pressure setting** \_\_\_\_\_

5 standard 5 bar, others on request

**Type of clogging indicator** \_\_\_\_\_

D (see Point 2.1)

**Modification number** \_\_\_\_\_

X the latest version is always supplied

**Supplementary details** \_\_\_\_\_

L..., LED, V, W (for descriptions, see Point 2.1)

### 3. FILTER CALCULATION / SIZING

The total pressure drop of a filter at a certain flow rate Q is the sum of the housing  $\Delta p$  and the element  $\Delta p$  and is calculated as follows:

$$\Delta p_{\text{total}} = \Delta p_{\text{housing}} + \Delta p_{\text{element}}$$

$$\Delta p_{\text{housing}} = (\text{see Point 3.1})$$

$$\Delta p_{\text{element}} = Q \cdot \frac{SK^*}{1000} \cdot \frac{\text{viscosity}}{30}$$

(\*see Point 3.2)

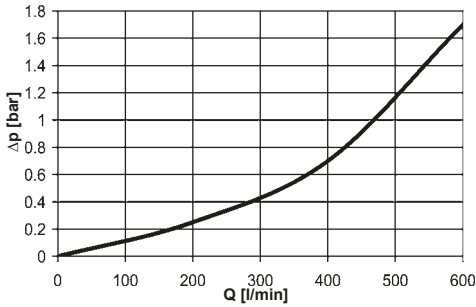
For ease of calculation, our Filter Sizing Program is available on request free of charge.

**NEW:** Sizing online at [www.hydac.com](http://www.hydac.com)

#### 3.1 $\Delta p$ -Q HOUSING CURVES BASED ON ISO 3968

The housing curves apply to mineral oil with a density of 0.86 kg/dm<sup>3</sup> and a kinematic viscosity of 30 mm<sup>2</sup>/s. In this case, the differential pressure changes proportionally to the density.

##### HF3P

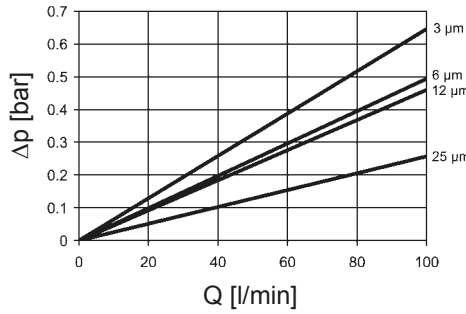


### 3.2 GRADIENT COEFFICIENTS (SK) FOR FILTER ELEMENTS

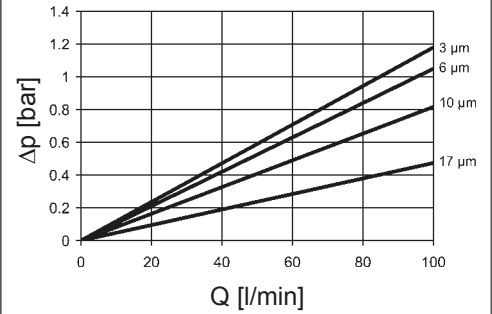
The gradient coefficients in mbar/(l/min) apply to mineral oils with a kinematic viscosity of 30 mm<sup>2</sup>/s. The pressure drop changes proportionally to the change in viscosity.

HF3P	BN				BH			
	3 μm	6 μm	12 μm	25 μm	3 μm	6 μm	10 μm	17 μm
04	6.46	4.94	4.60	2.57	11.79	10.49	8.16	4.74
08	3.28	2.51	2.43	1.30	5.73	5.10	3.98	2.30
13	1.98	1.52	1.41	0.78	3.44	3.06	2.38	1.38
16	1.51	1.15	1.08	0.60	2.59	2.28	1.80	1.04

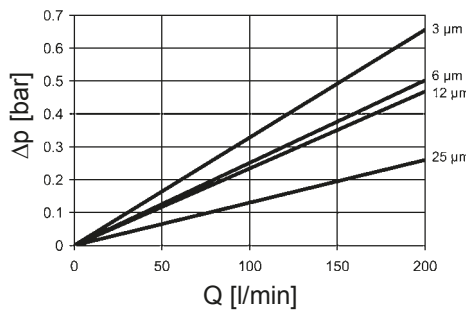
##### 04 BN:



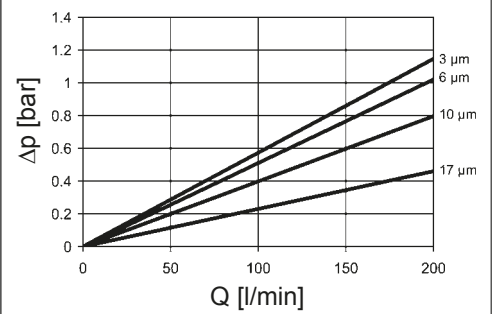
##### 04 BH:



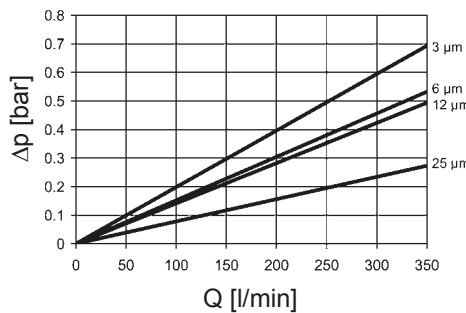
##### 08 BN:



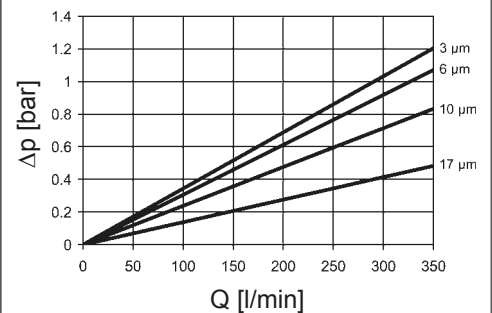
##### 08 BH:



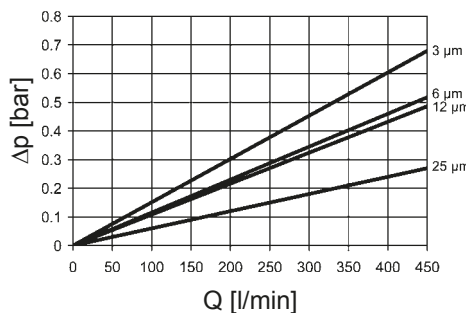
##### 13 BN:



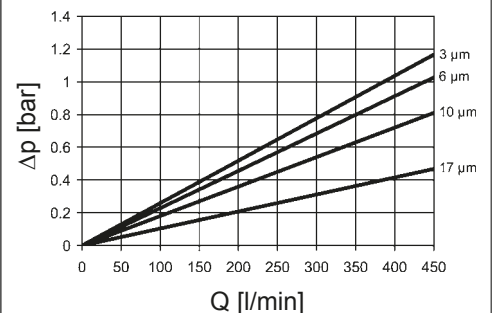
##### 13 BH:



##### 16 BN:

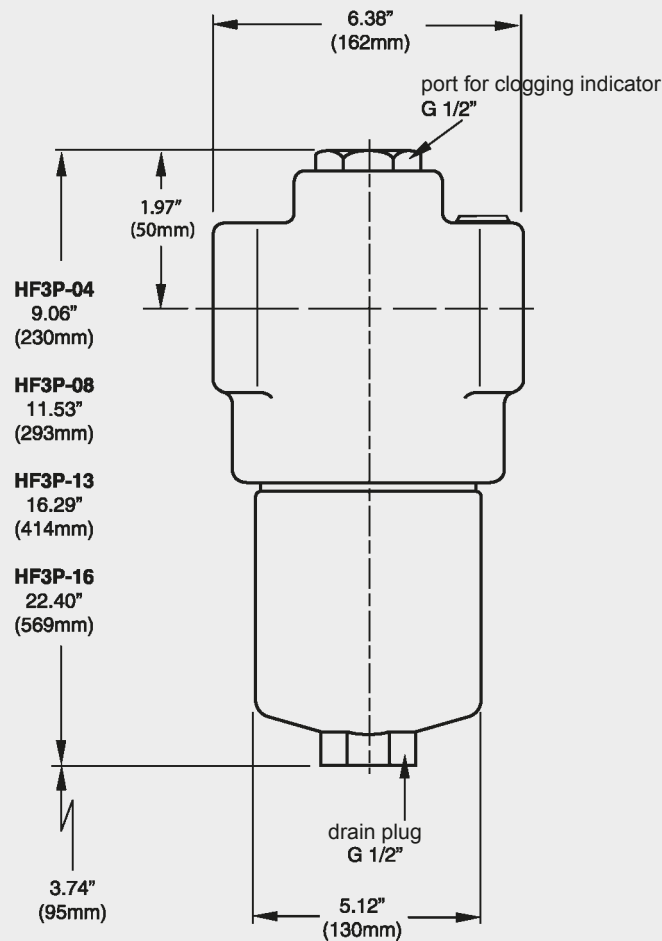
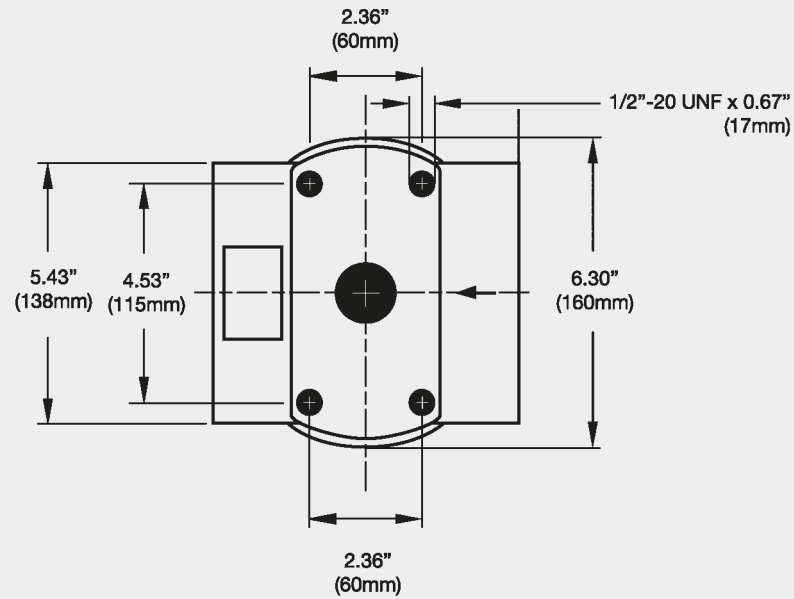


##### 16 BH:



## 4. DIMENSIONS

### HF3P



HF3P	Weight incl. element [kg]
04	20.32
08	22.45
13	28.53
16	43.41

### 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.

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