



## Pressure Filter for Sandwich Stacking DFZ up to 80 l/min, up to 315 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:

- Service access on the right
- Without clogging indicator connection

#### 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

#### Contamination retention capacities in g

DFZ	Betamicon® (BN4HC)			
	3 µm	5 µm	10 µm	20 µm
30	4.6	5.1	5.4	5.6
60	6.5	7.3	7.8	8.0
110	13.8	15.5	16.4	16.9

DFZ	Betamicon® (BH4HC)			
	3 µm	5 µm	10 µm	20 µm
30	3.0	2.9	3.2	3.7
60	4.6	4.5	5.0	5.7
110	10.1	9.9	10.9	12.4

Filter elements are available with the following pressure stability values:

Betamicon® (BN4HC):	20 bar
Betamicon® (BH4HC):	210 bar
Optimicon® Pulse (ON/PS):	20 bar
Optimicon® Pulse (OH/PS):	210 bar
Metal fibre (V):	210 bar

#### 1.3 FILTER SPECIFICATIONS

Nominal pressure	315 bar
Fatigue strength	At nominal pressure 10 <sup>6</sup> cycles from 0 to nominal pressure
Temperature range	-30 °C to +100 °C (-30 °C to -10 °C: p <sub>max</sub> = 157.5 bar)
Material of filter head	Steel
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	8 bar (others on request)

#### 1.4 SEALS

NBR (=Perbunan)

#### 1.5 INSTALLATION

Pressure filter for sandwich stacking

#### 1.6 SPECIAL MODELS AND ACCESSORIES

Port for clogging indicator

#### 1.7 SPARE PARTS

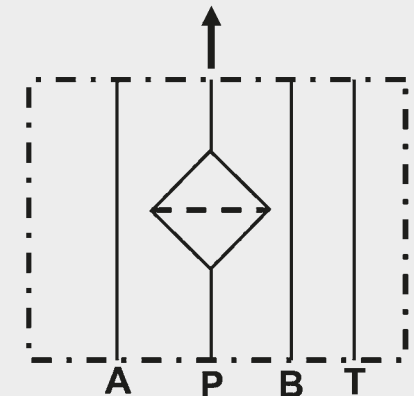
See Original Spare Parts List

#### 1.8 CERTIFICATES AND APPROVALS on request

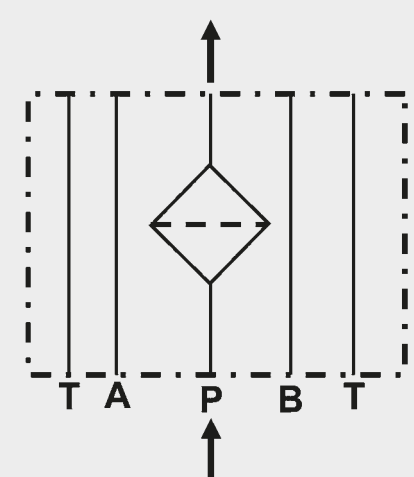
#### 1.9 COMPATIBILITY WITH HYDRAULIC FLUIDS ISO 2943

- 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 DFZ 30



#### DFZ 60/110



## 2. MODEL CODE (also order example)

**DFZ BN/HC 60 Q C 10 D 1 . X /-L24**

### 2.1 COMPLETE FILTER

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

DFZ

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

BN/HC Betamicon® (BN4HC)

ON/PS Optimicon® Pulse

BH/HC Betamicon® (BH4HC)

OH/PS Optimicon® Pulse

V Metal fibre

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

DFZ: 30, 60, 110

**Operating pressure** \_\_\_\_\_

Q = 315 bar

**Type and size of connection** \_\_\_\_\_

Type	Port	Filter size		
		30	60	110
B	4 ports A 6 DIN 24340/ Cetop R 35 H	●		
C	5 ports A 10 DIN 24340/ Cetop R 35 H		●	●

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

BN/HC, BH/HC, ON/PS, OH/PS, V: 3, 5, 10, 20

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

Y plastic blanking plug in indicator port

A steel blanking plug in indicator port

BM visual

C electrical

D visual and electrical

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

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

1

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

X the latest version is always supplied

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

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

1 service access on the left ("A" side)

only for clogging  
indicators type "D"

### 2.2 REPLACEMENT ELEMENT

**0060 D 010 BN4HC /-V**

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

0030, 0060, 0110

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

D

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

BN/HC, BH/HC, ON/PS, OH/PS, V: 003, 005, 010, 020

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

BN/HC, BH/HC, ON/PS, OH/PS, V

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

V, W (for descriptions, see Point 2.1)

### 2.3 REPLACEMENT CLOGGING INDICATOR

**VD 8 D . X /-L24**

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

VD differential pressure indicator up to 420 bar operating pressure

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

8 standard 8 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)

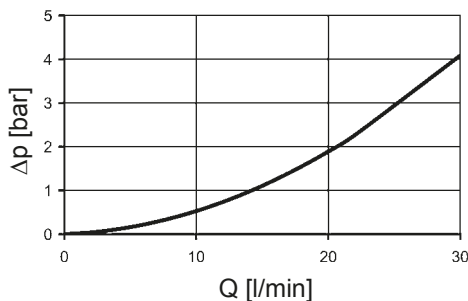
For ease of calculation, our Filter Sizing Program is available on request free of charge.

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

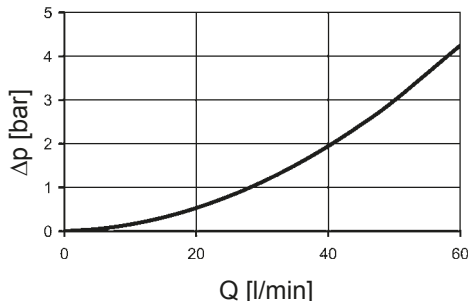
#### 3.1 $\Delta p$ -Q HOUSING CURVES BASED ON ISO 3968

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.

##### DFZ 30



##### DFZ 60/110



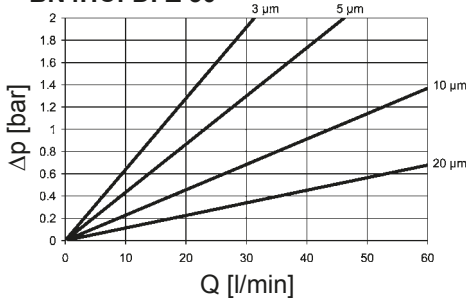
### 3.2 GRADIENT COEFFICIENTS (SK) FOR FILTER ELEMENTS

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.

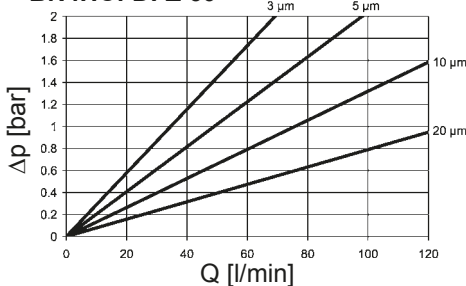
DFZ	V				BH4HC			
	3 μm	5 μm	10 μm	20 μm	3 μm	5 μm	10 μm	20 μm
30	18.4	13.5	7.5	3.6	91.2	50.7	36.3	19.0
60	16.0	9.3	5.4	3.3	58.6	32.6	18.1	12.2
110	8.2	5.6	3.3	2.2	25.4	14.9	8.9	5.6

DFZ	ON/PS				OH/PS			
	3 μm	5 μm	10 μm	20 μm	3 μm	5 μm	10 μm	20 μm
30	63.90	43.30	25.08	11.30	87.54	59.32	34.36	15.48
60	28.90	20.40	14.52	7.90	39.59	27.95	19.89	10.82
110	14.90	10.70	7.26	3.70	20.41	14.66	9.95	5.07

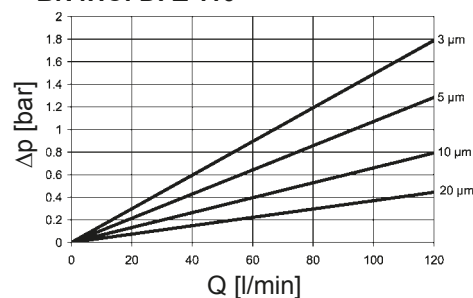
##### BN4HC: DFZ 30



##### BN4HC: DFZ 60



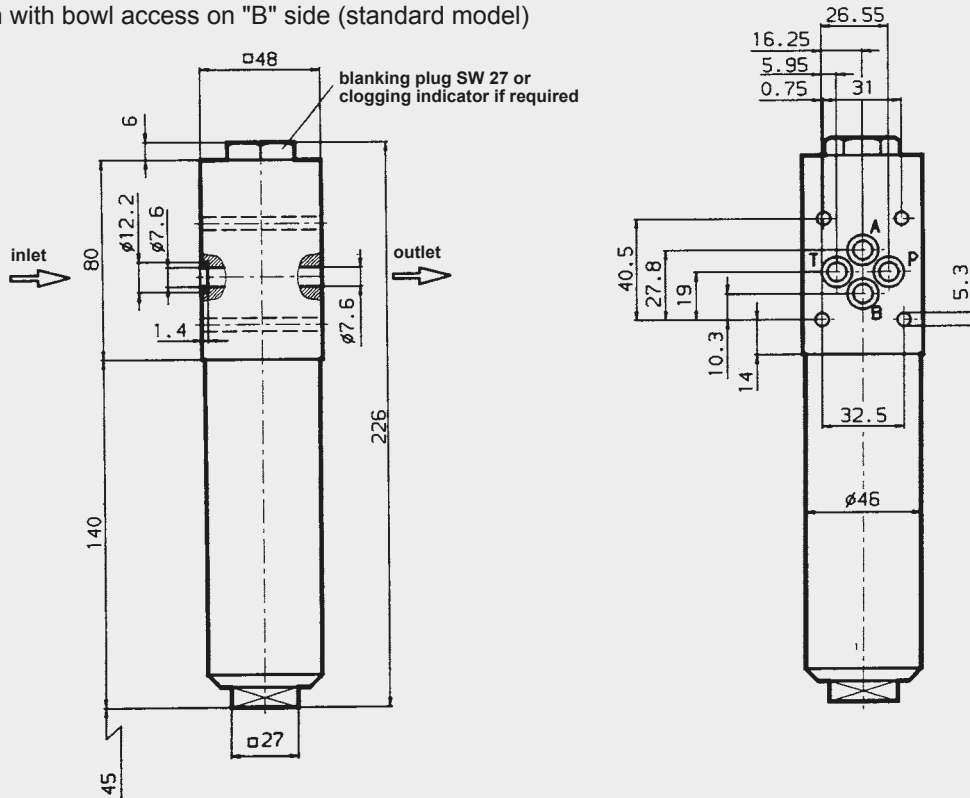
##### BN4HC: DFZ 110



## 4. DIMENSIONS

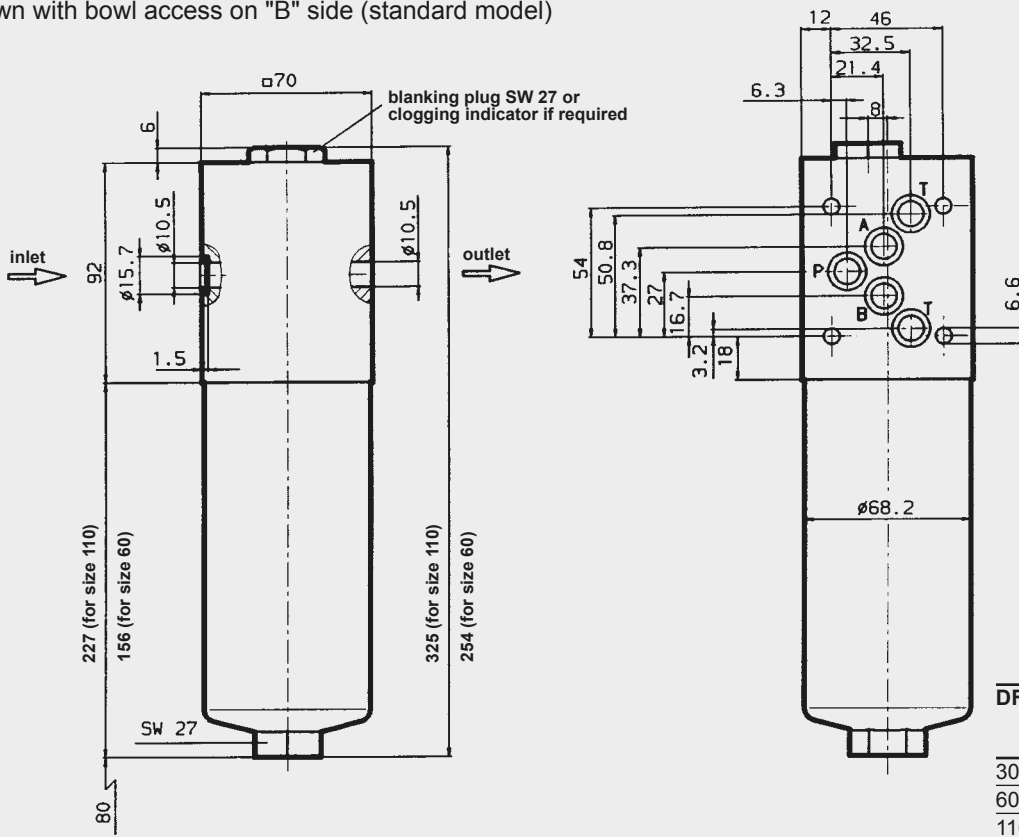
DFZ 30

shown with bowl access on "B" side (standard model)



DFZ 60/110

shown with bowl access on "B" side (standard model)



DFZ	Weight incl. element [kg]	Volume of pressure chamber [l]
30	2.4	0.13
60	5.9	0.20
110	6.8	0.33

### 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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