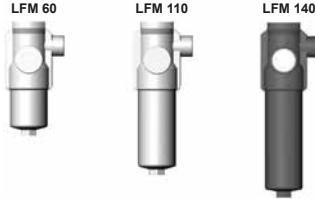




Inline Filter LFM with Differential Pressure Relief Valve

up to 120 l/min, up to 63 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:

- differential pressure controlled relief 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

Contamination retention capacities in g

LFM	Betamicon® BN4HC			
	3 µm	5 µm	10 µm	20 µm
60	6.5	7.3	7.8	8.0
110	13.8	15.5	16.4	16.9
140	18.1	20.3	21.5	22.2

Filter elements are available with the following pressure stability values:
Betamicon® (BN4HC): 20 bar

1.3 FILTER SPECIFICATIONS

Nominal pressure	63 bar
Fatigue strength	At nominal pressure 10 ⁶ cycles from 0 to nominal pressure
Temperature range	-30 °C to +100 °C (LFM 140: -30 °C to -10 °C: p _{max} =31.5 bar)
Material of filter head	Aluminium
Material of filter bowl	Aluminium (steel for LFM 140)
Type of clogging indicator	VM (differential pressure measurement up to 210 bar operating pressure)
Pressure setting of the clogging indicator	2 bar (others on request)
Bypass cracking pressure	3.5 bar (others on request)

1.4 SEALS

NBR (=Perbunan)

1.5 INSTALLATION

Inline filter

1.6 SPECIAL MODELS AND ACCESSORIES

With pressure release / oil drain plug (SO184)

1.7 SPARE PARTS

See Original Spare Parts List

1.8 CERTIFICATES AND APPROVALS

On request

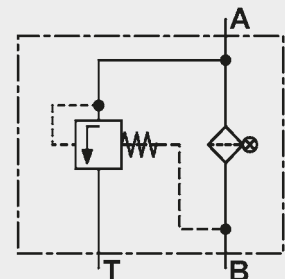
1.9 COMPATIBILITY WITH HYDRAULIC FLUIDS ISO 2943

- 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

1.10 MAINTENANCE INSTRUCTIONS

- Filter housings must be earthed.
- When using electrical clogging indicators, the electrical power supply to the system must be switched off before removing the clogging indicator connector.

Symbol for hydraulic systems



2. MODEL CODE (also order example)

LFM BN/HC 110 F C 10 D 1 . X /-L24

2.1 COMPLETE FILTER

Filter type _____

LFM

Filter material of element _____

BN/HC Betamicon® (BN4HC)

Size of filter or element _____

LFM: 60, 110, 140

Operating pressure _____

F = 63 bar

Type and size of connection _____

Type	Port	Filter size		
		60	110	140
C	G 3/4	●	●	●

Filtration rating in µm _____

BN/HC: 3, 5, 10, 20

Type of clogging indicator _____

Y plastic blanking plug in indicator port

A stainless steel blanking plug in indicator port

B 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 _____

DBV5.5 opening pressure of pressure relief valve 5.5 bar

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

LED 2 light-emitting diodes up to 24 Volt

SO184 pressure release/oil drain screw

V FPM seals

} only for clogging
indicators type "D"

2.2 REPLACEMENT ELEMENT

0110 D 010 BN4HC /-V

Size _____

0060, 0110, 0140

Type _____

D

Filtration rating in µm _____

BN4HC: 003, 005, 010, 020

Filter material _____

BN4HC

Supplementary details _____

V (for descriptions, see Point 2.1)

2.3 REPLACEMENT CLOGGING INDICATOR

VM 2 D . X /-L24

Type of indicator _____

VM differential pressure indicator up to 210 bar operating pressure

Pressure setting _____

2 standard 2 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 (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 Δp and the element Δp 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)

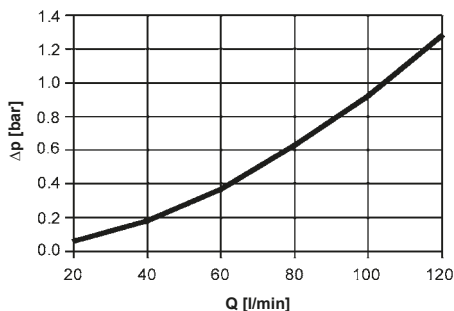
For ease of calculation, our Filter Sizing Program is available on request free of charge.

NEW: Sizing online at www.hydac.com

3.1 Δp -Q HOUSING CURVES BASED ON ISO 3968

The housing curves apply to mineral oil with a density of 0.86 kg/dm³ and a kinematic viscosity of 30 mm²/s. In this case, the differential pressure changes proportionally to the density.

LFM 60/110/140

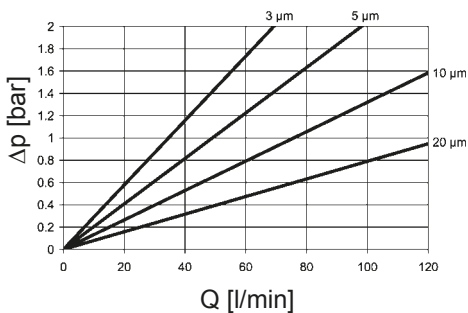


3.2 GRADIENT COEFFICIENTS (SK) FOR FILTER ELEMENTS

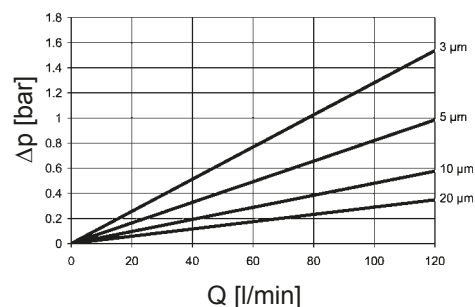
The gradient coefficients in mbar/(l/min) apply to mineral oils with a kinematic viscosity of 30 mm²/s. The pressure drop changes proportionally to the change in viscosity.

LFM	BN4HC			
	3 μm	5 μm	10 μm	20 μm
60	28.9	20.4	13.2	7.9
110	14.9	10.7	6.6	3.7
140	12.8	8.2	4.8	2.9

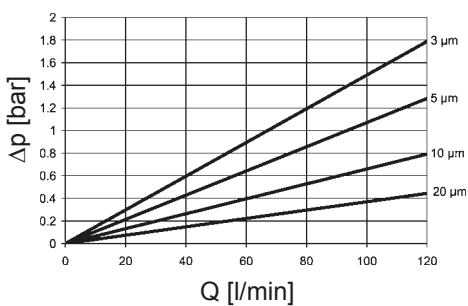
BN4HC: LFM 60



BN4HC: LFM 140



BN4HC: LFM 110

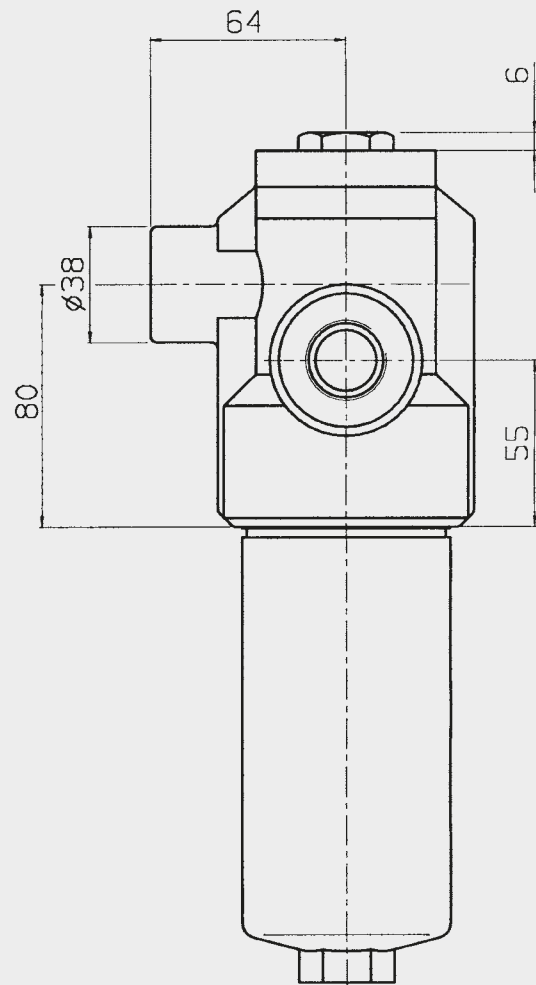
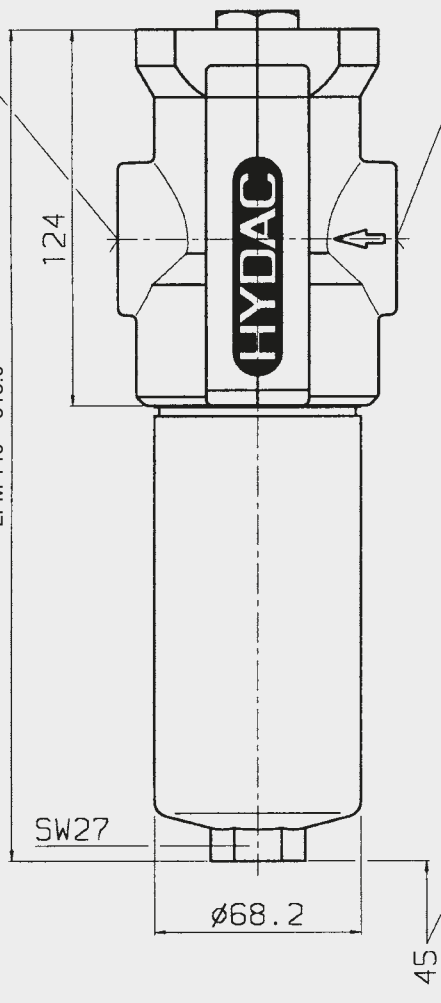


4. DIMENSIONS

outlet
G 3/4 x 16 deep

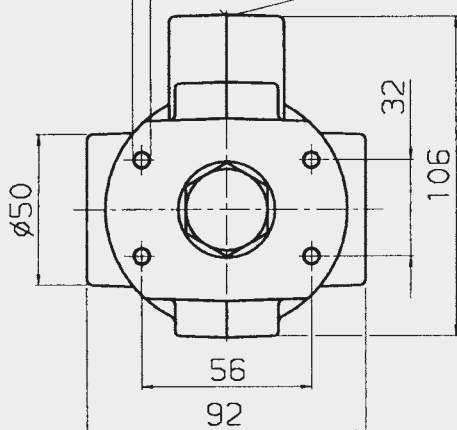
inlet
G 3/4 x 16 deep

LFM 60 = 206.5
LFM 110 = 274.5
LFM 140 = 318.0



M6 x 9 deep

tank connection
M18 x 1.5 x 12 deep



LFM	Weight incl. element [kg]	Vol. of pressure chamber [l]
60	1.9	0.20
110	2.3	0.33
140	4.5	0.40

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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