Inline Filter LFM with Differential Pressure Relief Valve
up to 120 l/min, up to 63 bar

LFM 60 **LFM 110** **LFM 140**
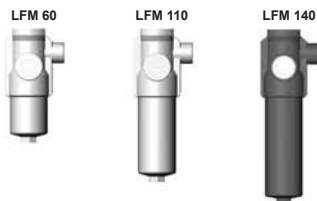
1. TECHNICAL SPECIFICATIONS

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:

- with 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

	Betamicron® BN4HC			
LFM	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:
Betamicron® (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

As inline filter

1.6 SPECIAL MODELS AND ACCESSORIES

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
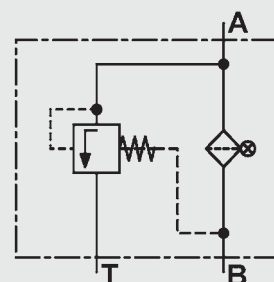
2. MODEL CODE (also order example)

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

2.1 COMPLETE FILTER

Filter type
LFM

Filter material of element
BN/HC Betamicron® (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 ¾	●	●	●

Filtration rating in µm
BN/HC: 3, 5, 10, 20

Type of clogging indicator
Y   plastic blanking plug in indicator port
A   steel blanking plug in indicator port
B   visual
C   electrical   for other clogging indicators,
D   visual and electrical   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)   only for clogging
LED   2 light-emitting diodes up to 24 Volt   indicators type "D"
SO184   pressure release/oil drain screw
V   FPM seals

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
VM   differential pressure indicator up to 210 bar oper. 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:

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

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

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

(*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 proportional to the density.
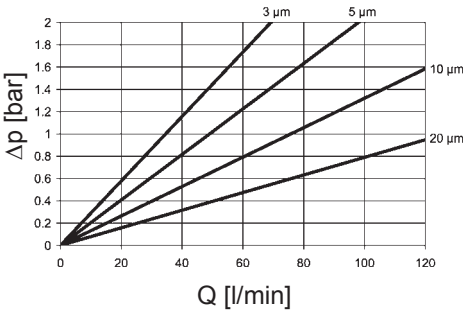
LFM 60/110/140
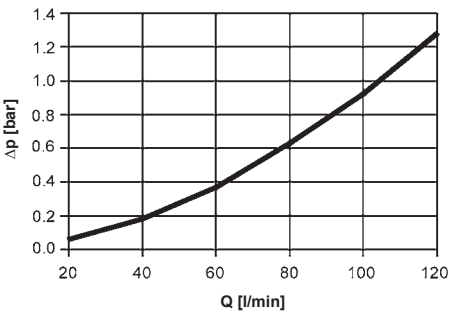
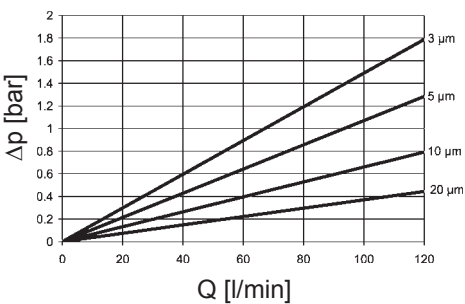## 3.2 GRADIENT COEFFICIENTS (SK) FOR FILTER ELEMENTS

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

124

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

SW27

Ø68.2

45

64

6

Ø38

80

55

M6 x 9 deep

tank connection
M18 x 1.5 x 12 deep

32

106

Ø50

56

92
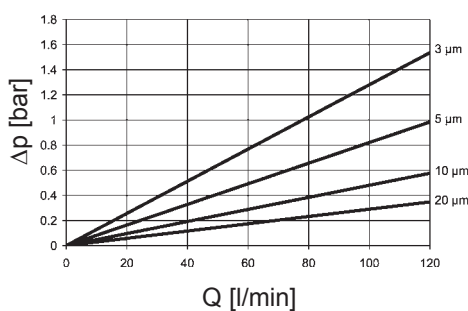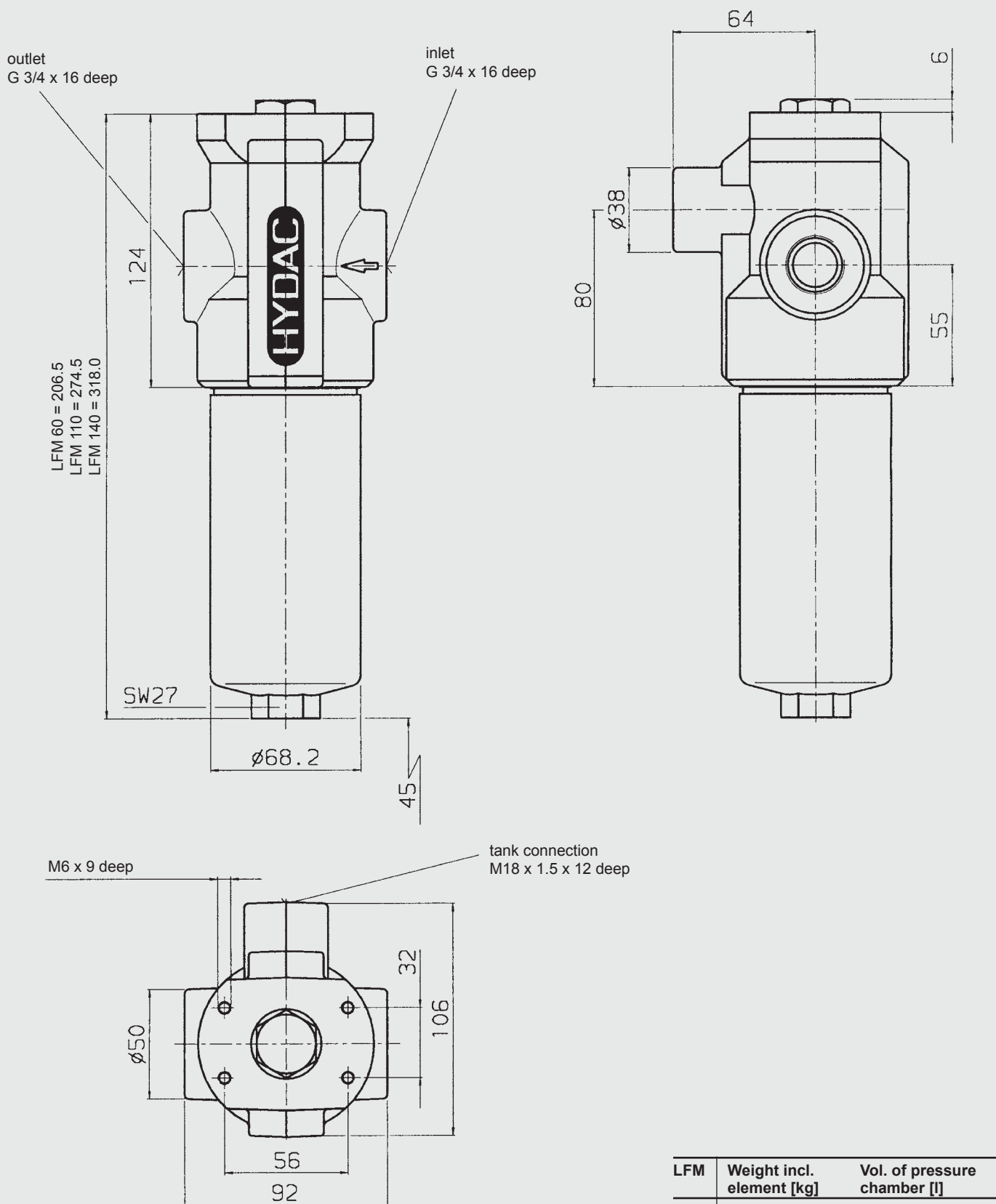
LFM	Weight incl. element [kg]	Vol. of pressure chamber [l]
60	1.9	0.20
110	2.3	0.33
140	4.5	0.40

NOTE

The information in this brochure relates to the operating conditions and applications described.
For applications and operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.