

## Inline Filter MFX

up to 130 l/min, up to 50 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:

- 4 possible positions for a clogging indicator
- bypass valve

#### 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 16889

Filter elements are available with the following pressure stability values:

Betamicon® (BN4HC):	20 bar
Ecomicon® (ECON2):	10 bar
Mobilemicon® (MM):	10 bar

#### 1.3 FILTER SPECIFICATIONS

Nominal pressure	50 bar
Fatigue strength (without BF clogging indicator)	At nominal pressure 10 <sup>6</sup> cycles from 0 to nominal pressure 300,000 cycles at 70 bar
Temperature range	-10 °C to +80 °C
Material of filter head	Aluminium
Material of filter bowl	Aluminium
Type of clogging indicator	VM (Diff. pressure indicator up to 210 bar operating pressure) VL (Diff. pressure indicator up to 50 bar operating pressure)
Setting pressure of the clogging indicator	Standard 2.5 bar, optional 1 bar (others on request)
Bypass cracking pressure	Standard 3.5 bar, optional 1.7 bar (others on request)

#### 1.4 SEALS

NBR (=Perbunan)

#### 1.5 INSTALLATION

INLINE FILTER

#### 1.6 SPECIAL MODELS AND ACCESSORIES

Seals in EPDM (on request)

#### 1.7 SPARE PARTS

See Original Spare Parts List

#### 1.8 CERTIFICATES AND APPROVALS

On request

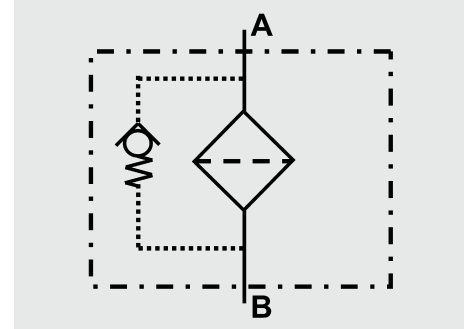
#### 1.9 COMPATIBILITY WITH HYDRAULIC FLUIDS ISO 2943

- 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 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)

**MFX BN/HC 100 G I 10 BF 4 . X /-B3.5**

### 2.1 COMPLETE FILTER

#### Filter type

MFX

#### Filter material

BN/HC Betamicon® (BN4HC)

ECO/N Ecomicon® (ECON2)

MM Mobilemicon

#### Size of filter or element

MFX:100, 200

#### Operating pressure

G = 50 bar

#### Type and size of connection

Type	Connection	Filter size	
		100	200
C	G ¾	●	●
D	G 1	●	●
E	M26 x 1.5	●	●
I	1 1/16-12 UN	●	●
K	1 5/16-12 UN	●	●
L	M33 x 2	●	●

#### Filtration rating in µm

BN/HC, ECO/N : 5, 10, 20

MM : 8, 10, 15

#### Type of clogging indicator

W without port (no clogging indicator)

A plastic blanking plug in indicator port

B visual, manual

C electrical

D visual and electrical

BF visual, mobile (only on type codes 3.X and 4.X)

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

#### Type code

1-4 see point 2.5 – Installation position of the clogging indicator

#### Modification number

X the latest version is always supplied

#### Supplementary details

B3.5 standard: bypass cracking pressure 3.5 bar \*

B. special bypass cracking pressure (e.g. B1.7 = 1.7 bar)

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

LED 2 light-emitting diodes up to 24 volts

W suitable for HFA and HFC emulsions

] A bypass is essential and  
must be selected! only for  
clogging indicator  
indicators type "D"

### 2.2 Preferred models

MFX ..... 100/200 G C .... BF 4.X/-A1.0

MFX ..... 100/200 G C .... W 0.X

MFX ..... 100/200 G C .... A 2.X

MFX ..... 100/200 G D .... BF 4.X/-A1.0

MFX ..... 100/200 G D .... W 0.X

MFX ..... 100/200 G D .... A 2.X

### 2.3 REPLACEMENT ELEMENT

**0100 MX 010 BN4HC /-B3.5**

#### Size

0100, 0200

#### Type

MX

#### Filtration rating in µm

BN4HC, ECON2 : 005, 010, 020

MM : 008, 010, 015

#### Filter material

BN4HC, ECON2, MM

#### Supplementary details

W (for descriptions, see point 2.1)

B3.5 standard: bypass cracking pressure 3.5 bar

B. special bypass cracking pressure (e.g. B1.7 = 1.7 bar)

] A bypass is essential and must be  
selected!

\* If an MFX filter is set up with a 3.5 bar bypass valve and clogging indicator (VA), the response pressure of the VA is automatically 2.5 bar (=A2.5)

## 2.4 REPLACEMENT CLOGGING INDICATOR

VM 2.5 D . X /-L24

### Type of indicator

VM Diff. pressure indicator up to 210 bar operating pressure  
VL Diff. pressure indicator type "BF" up to 50 bar operating pressure and  
max. operating temperature of -10 °C to +80 °C

### Pressure setting

2.5 standard 2.5 bar, others on request

### Type of clogging indicator (see Point 2.1)

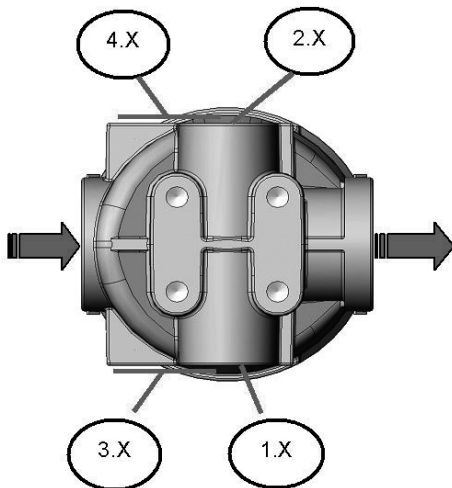
### Modification number

X the latest version is always supplied

### Supplementary details

L..., LED, W (for descriptions, see point 2.1)

## 2.5 TYPE CODE: INSTALLATION POSITION OF THE CLOGGING INDICATOR



Type code 3.X and 4.X only possible with indicator type "BF"!

## 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:

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

$\Delta p_{\text{housing}}$  = given in graphs (see point 3.1)

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

(\*see point 3.2)

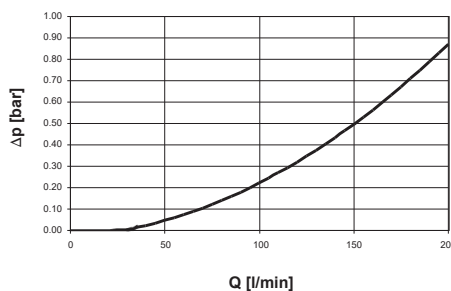
For ease of calculation, our Filter Sizing Program is available on request free of charge.

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

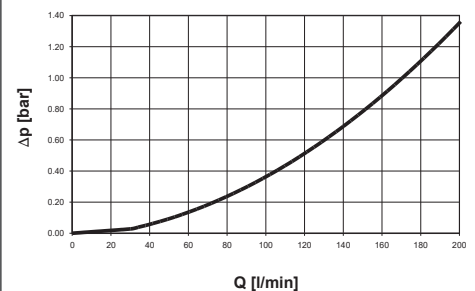
## 3.1 $\Delta p$ -Q HOUSING CURVES BASED ON ISO 3968

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.

### MFX 100/200: G1



### MFX 100/200: G 3/4



## 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.

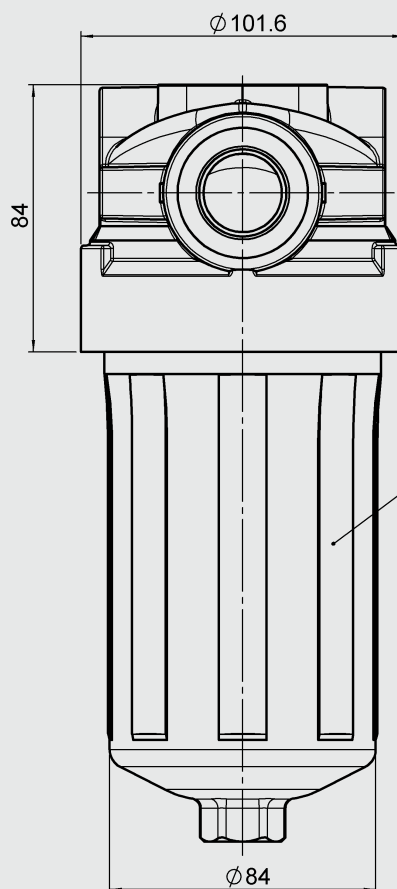
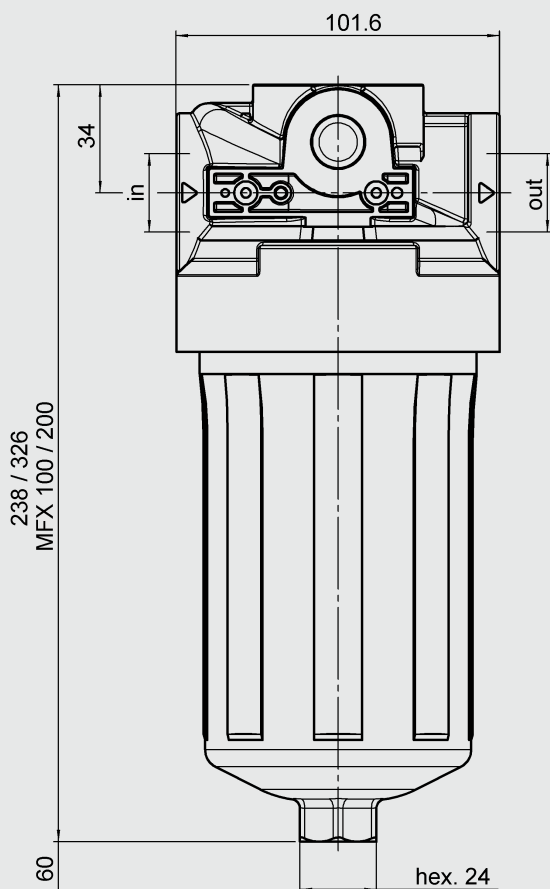
MFX	BN4HC			
	3 μm	5 μm	10 μm	20 μm
100	12.0	9.0	4.6	3.4
200	7.0	5.3	2.7	2.0

MFX	ECON2				MM*	
	3 μm	5 μm	10 μm	20 μm	10 μm	15 μm
100	13.00	10.00	6.50	4.80	2.70	2.20
200	8.00	5.90	3.80	2.80	1.60	1.30

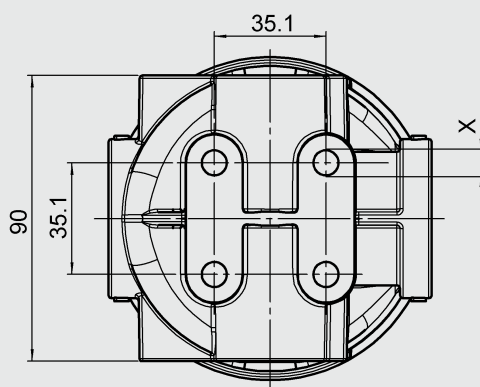
\* 8 μm values on request!

## 4. DIMENSIONS

### MFX 100/200



Torque value for housing  
M<sub>a</sub> = 40 Nm



MFX 100/200...	Mounting x
...G C...	M10 – 13 [0.5] deep
...G D...	M10 – 13 [0.5] deep
...G E...	M10 – 13 [0.5] deep
...G I...	3/8 – 16 UNC, 13 [0.5] deep
...G K...	3/8 – 16 UNC, 13 [0.5] deep
...G L...	M 10 – 13 [0.5] deep

MFX	Weight incl. element [kg]	Volume of pressure chamber [l]
100	1.46	0.71
200	1.74	1.12

### 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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