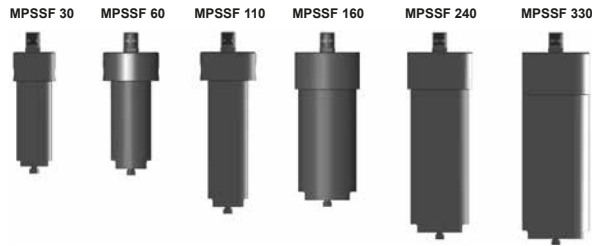




## Inline Filter MPSSF and Filter for Manifold Mounting MPSSF...P up to 130 l/min, up to 450 bar



### 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-on filter bowl.

Standard equipment:

- without bypass valve
- connection for a clogging indicator
- oil drain plug in filter bowl

#### 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® (BN4HC):	20 bar
Betamicon® (BN4HC) /-SS-SO361:	20 bar
Betamicon® (BH4HC):	210 bar
Betamicon® (BH4HC) /-SS-SO361:	210 bar
Stainless steel wire mesh (D):	210 bar
Wire mesh (W/HC):	20 bar
Chemicon® (M):	210 bar

#### 1.3 FILTER SPECIFICATIONS

Nominal pressure	450 bar
Test pressure	742.5 bar (design pressure 495 bar)
Temperature range	-20 °C to +100 °C
Material of filter head	316S11 EN 1.4404 stainless steel
Material of filter bowl	UNS S31803 DUPLEX EN 1.4462
Type of clogging indicator	VD (Diff. pressure indicator up to 450 bar operating pressure)
Pressure setting of clogging indicator	5 bar (others on request)
Bypass cracking pressure (optional)	6 bar (others on request)

#### 1.4 SEALS

FPM (Viton)

#### 1.5 INSTALLATION

Inline filter or manifold mounted filter

#### 1.6 SPECIAL MODELS AND ACCESSORIES

- Seals in NBR, NLT, EPDM, HNBR, Kalrez®
- With bypass valve
- Without port for clogging indicator
- With gauge ports (for external piping of pressure sensors)
- Reverse flow check
- Twin indicator version
- Ex or IS differential pressure indicators
- Flanged versions available (SAE, RF, RTJ, Destec®)

#### 1.7 SPARE PARTS

See Original Spare Parts List

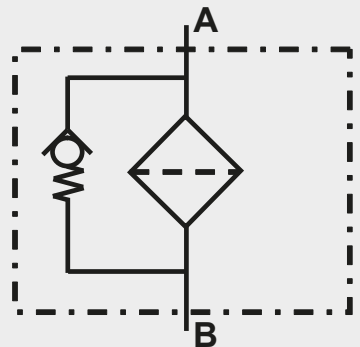
#### 1.8 CERTIFICATES AND APPROVALS

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)

### 2.1 COMPLETE FILTER

**MPSSF450 BH/HC 60 N2 005 B X /-V**

#### Filter type

MPSSF450 450 bar

#### Filter material of element

BN/HC Betamicon® (BN4HC)  
 BH/HC Betamicon® (BH4HC)  
 "SS-SO361" must be used for water-glycol applications!  
 M Chemicon®  
 W/HC Wire mesh  
 D Stainless steel wire mesh

#### Size of filter

30, 60, 110, 160, 240, 330

#### Type and size of connection

Type	Port thread	Filter size					
		30	60	110	160	240	330
BO	1/4" BSPP	●					
NO	1/4" NPT	●					
B2	1/2" BSPP	●	●	●	●	●	
N2	1/2" NPT	●	●	●	●	●	
B3	3/4" BSPP		●	●	●	●	●
N3	3/4" NPT		●	●	●	●	●
B4	1" BSPP				●	●	●
N4	1" NPT				●	●	●
B5	1 1/4" BSPP						●
N5	1 1/4" NPT						●
B6	1 1/2" BSPP						●
N6	1 1/2" NPT						●

Available in Autoclave-model

#### Filtration rating in µm

BN/HC, BH/HC : 003, 005, 010, 020  
 BN/HC, BH/HC (-SS-SO361) : 003, 010  
 M : 001, 003, 005, 010, 020  
 W/HC : 025, 050, 100, 200  
 D : 025, 040, 060, 100, 150, 200, 250

#### Type of clogging indicator

W without port (no clogging indicator)  
 A stainless steel blanking plug in indicator port  
 B visual  
 BM visual with manual reset  
 C electrical  
 D visual and electrical  
 BM+C visual with manual reset + electrical (= 2 indicators) - not for size 30  
 E 1/4"-NPT gauge ports for external connection of pressure sensors – not for size 30

For other clogging indicators see brochure no. 7.050./..

#### Modification number

X the latest version is always supplied

#### Supplementary details

B cracking pressure of bypass valve (e.g. B3 = 3 bar, B6 = 6 bar); no details = without bypass valve  
 EX electrical clogging indicator EX version (Eexd IIC T6; cable length 0.25 m standard)  
 EX/ENC electrical clogging indicator EX version (Eexd IIC T6; with IP66 junction box, M20x1.5 cable entry)  
 IS intrinsically safe electrical clogging indicator with cable length 0.25 m (standard)  
 IS/ENC intrinsically safe electrical clogging indicator with IP66 junction box (M20x1.5 cable entry)  
 IS/2GBC intrinsically safe electrical clogging indicator with gold contacts (e. g. suitable for PLC)  
 L... light with appropriate voltage (24, 48, 110, 220 Volt) ] only for clogging indicators  
 LED 2 light-emitting diodes up to 24 Volt ] type "D"  
 RC with reverse flow check (not for size 30)  
 RCRFB reverse flow check and reverse flow bypass  
 TB6 with triple bypass for reversible flow (= 1 check valve, 2 bypass valves - not for size 30)  
 N NBR seals  
 V FPM seals  
 NLT nitrile low temperature seals  
 HNBR hydrogenated nitrile (high temperature) seals  
 EPDM EPDM seals  
 K Kalrez® seals  
 SS-SO361 stainl. steel core and end caps, polyamide support fibre, optimised for water-glycol

#### Example for MPSSF450 in manifold version:

**MPSSF450 BH/HC 60 P N2 005 B X /-V**

#### Sizes

60P, 160P, 240P

## 2.2 REPLACEMENT ELEMENT

**0060 D 003 BN4HC /-V-SS-SO361**

**Size** \_\_\_\_\_  
0030, 0060, 0110, 0160, 0240, 0330

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

**Filtration rating in µm** \_\_\_\_\_  
BN4HC, BH4HC: 003, 005, 010, 020  
(Note: for /-SS-SO361  
only 003 and 010 µm)  
W/HC: 025, 050, 100, 200

**Filter material** \_\_\_\_\_  
BN4HC, BH4HC, W/HC

**Supplementary details** \_\_\_\_\_  
SS-SO361 stainl. steel core and end caps, polyamide support fibre  
N, V, NLT, HNBR, EPDM, K (for descriptions, see Point 2.1)

## 2.3 REPLACEMENT ELEMENT - PROCESS TECHNOLOGY

**060-DH-100-D-V**

**Size** \_\_\_\_\_  
030, 060, 110, 160, 240, 330

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

**Filtration rating in µm** \_\_\_\_\_  
Chemicon® (M) : 001, 003, 005, 010, 020  
Wire mesh (D) : 025, 040, 060, 100, 150, 200, 250

**Filter material** \_\_\_\_\_  
M, D

**Supplementary details** \_\_\_\_\_  
N, V, NLT, HNBR, EPDM, K (for descriptions, see Point 2.1)

## 2.4 REPLACEMENT CLOGGING INDICATOR

**VD 5 D . X /-V-L24**

**Type** \_\_\_\_\_  
VD differential pressure measurement

**Pressure setting** \_\_\_\_\_  
5 standard 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, 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)

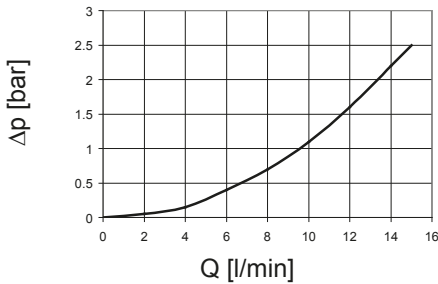
For ease of calculation, our Filter Sizing Program is available on request free of charge.

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

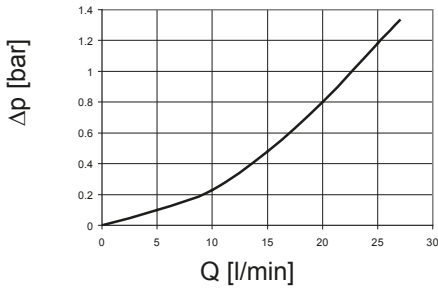
#### 3.1 $\Delta p$ -Q HOUSING CURVES BASED ON ISO 3968

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.

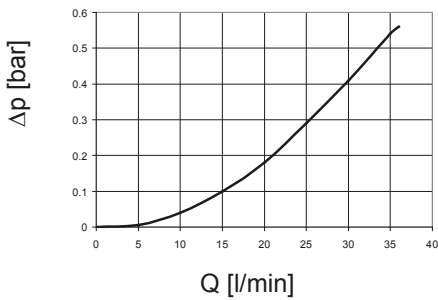
##### Size 30: 1/4" BSPP/NPT



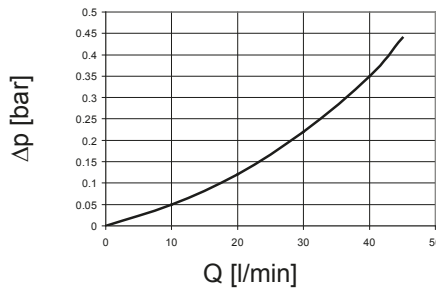
##### Size 30: 1/2" BSPP/NPT



##### Size 60-110: 1/2" BSPP/NPT

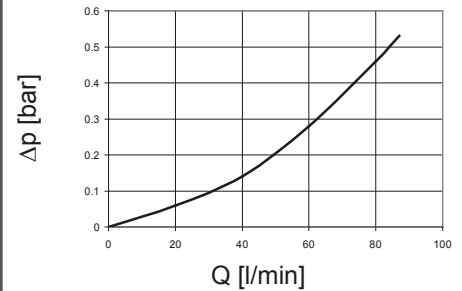


##### Size 60-110: 3/4" BSPP/NPT



Other curves on request

##### Size 60-240: 1" BSPP/NPT

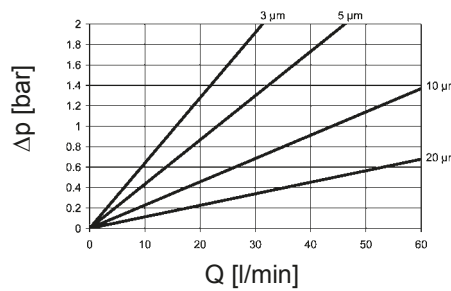


#### 3.2 GRADIENT COEFFICIENTS (SK) FOR FILTER ELEMENTS

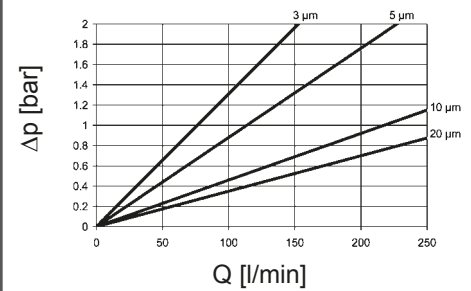
The gradient coefficients in mbar/(l/min) apply to mineral oils with a kinematic viscosity of 30 mm<sup>2</sup>/s. The pressure drop changes proportionally to the change in viscosity.

	BH4HC		W/HC	
	3 μm	10 μm	—	—
30	91.2	36.3	—	—
60	58.6	18.1	0.757	—
110	25.4	8.9	0.413	—
160	16.8	5.9	0.283	—
240	10.6	3.9	0.189	—
330	7.7	2.8	0.138	—

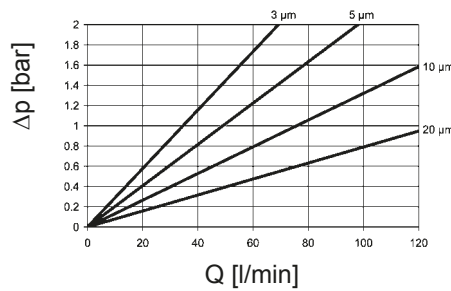
##### BN4HC: 30



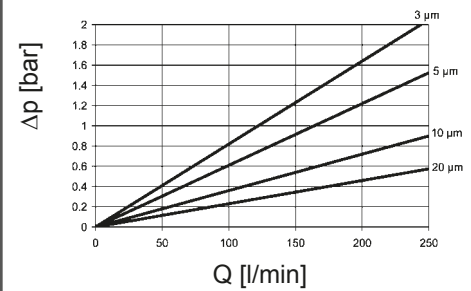
##### BN4HC: 160



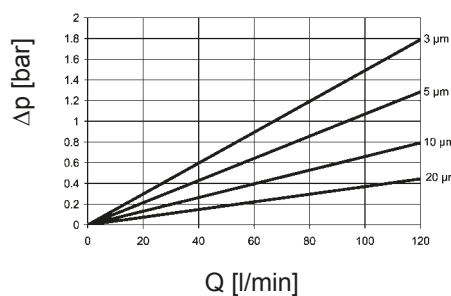
##### BN4HC: 60



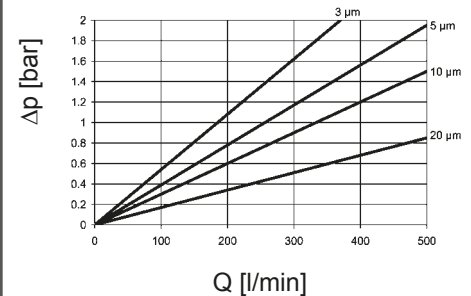
##### BN4HC: 240



##### BN4HC: 110



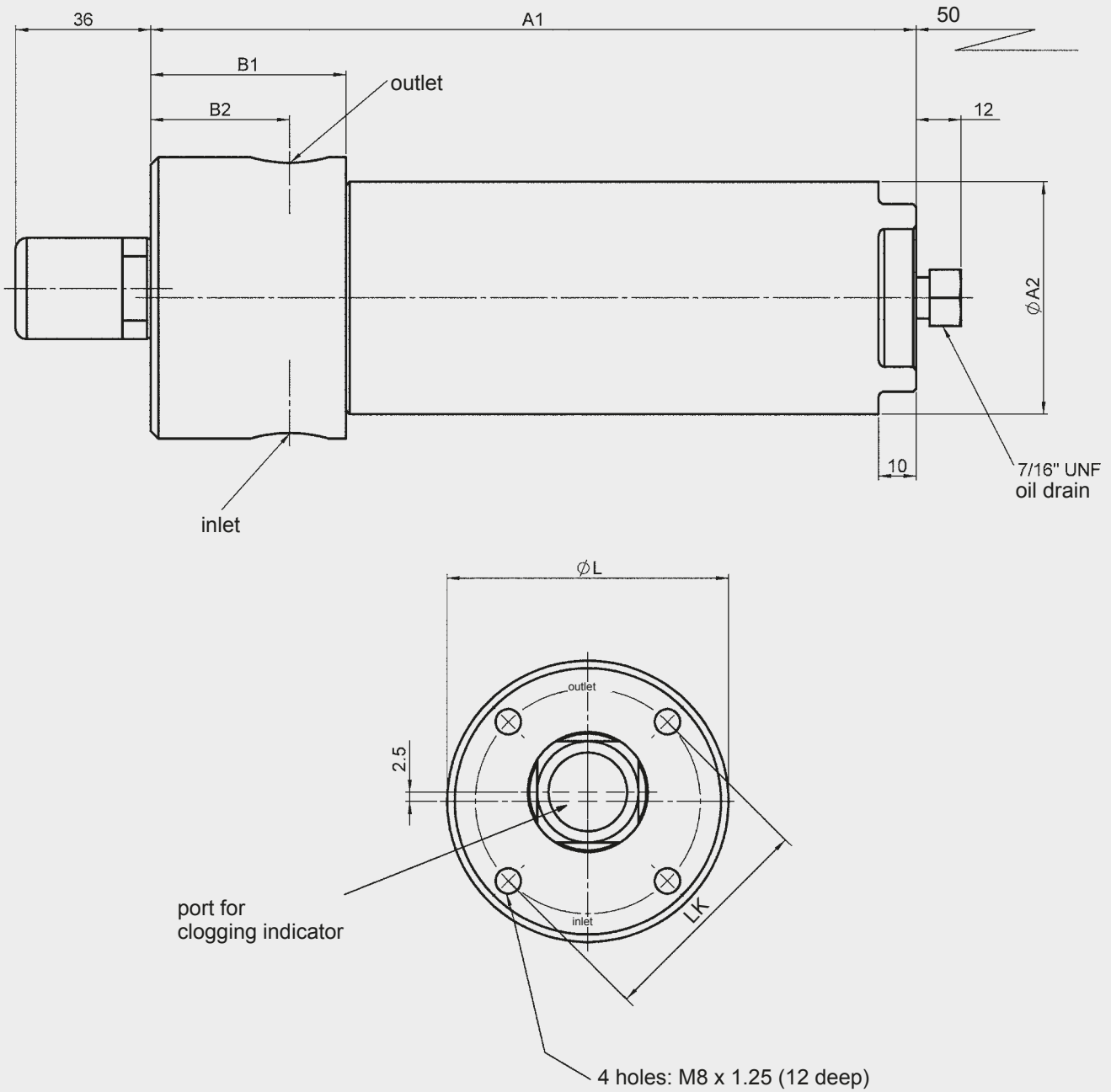
##### BN4HC: 330



## 4. DIMENSIONS

Inline Filter MPSSF450

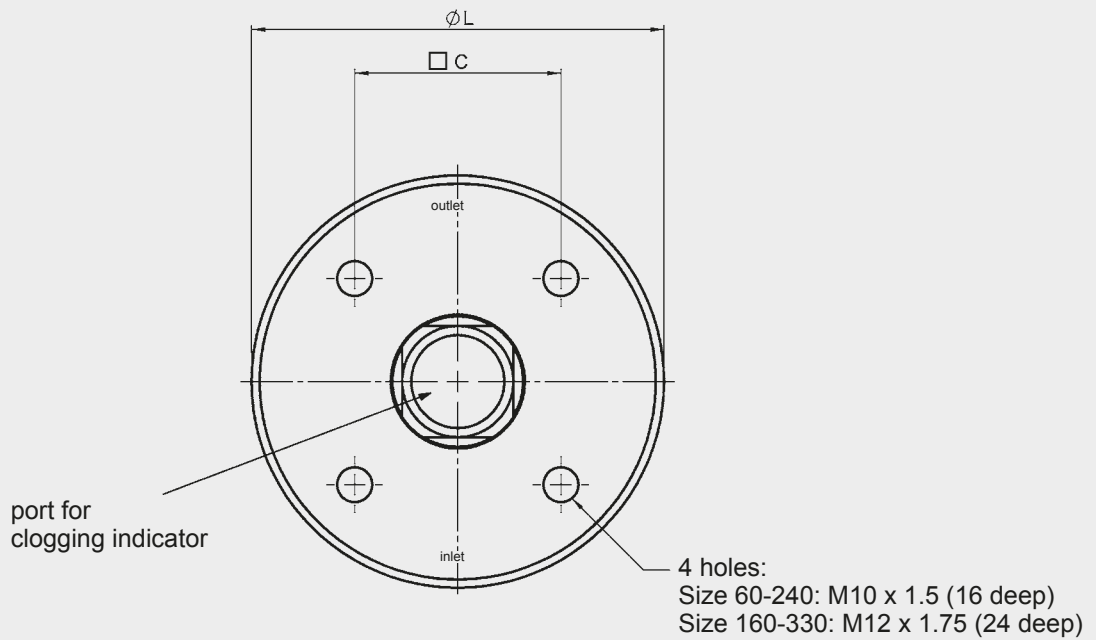
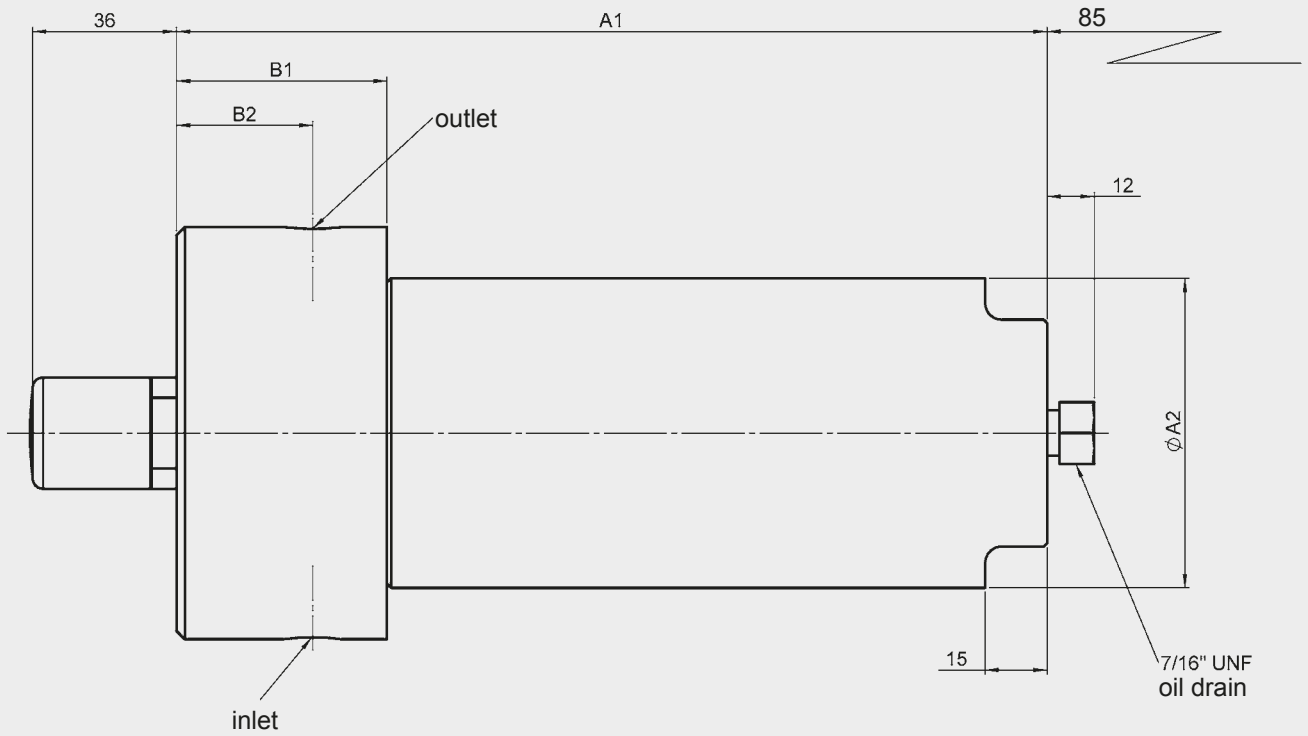
Size 30



MPSSF	A1	A2	B1	B2 ±5mm	L	LK
30	204	63.5	52	37	75	60
30 (1/4" NPT)	196	63.5	44	34	66	50

Inline Filter MPSSF450

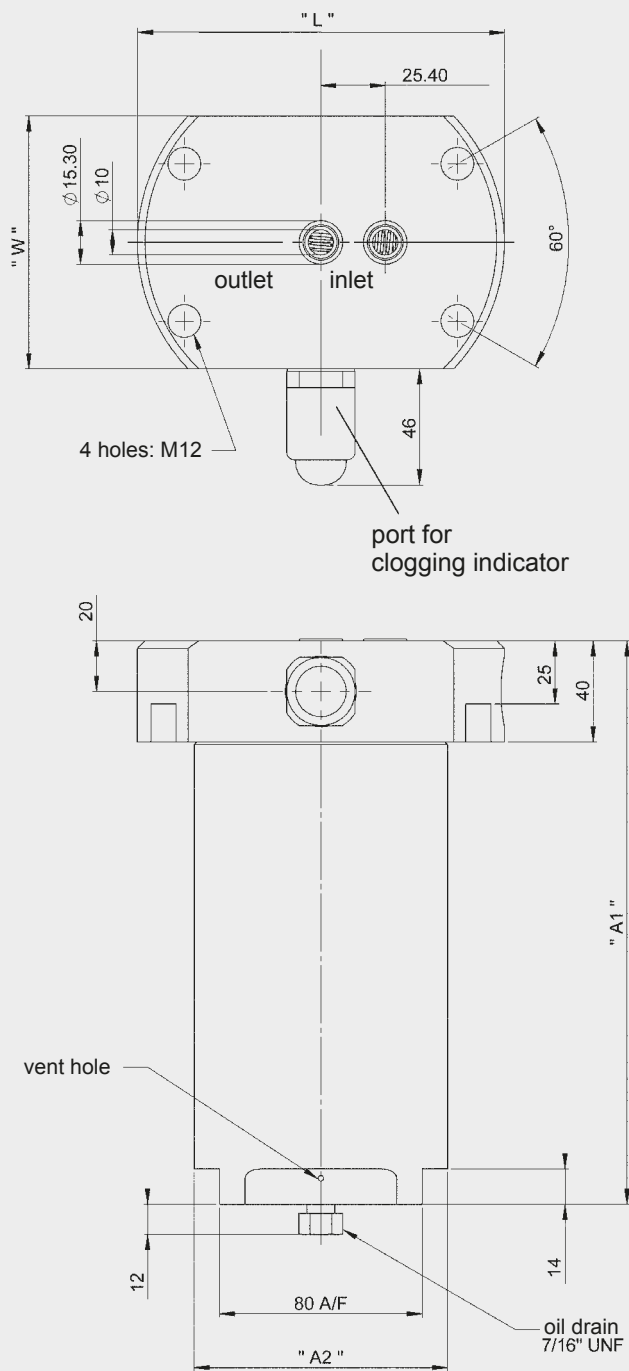
Size 60 - 330



MPSSF	A1	A2	B1	B2 ±5mm	C	L	W
60	208	72	51	35	50	100	93
110	277	72	51	35	50	100	93
160	264	104	66	38	65	127	116
240	322	104	66	36	60	127	116
330	333	120	75	45	65	127	120

Inline filter, manifold-mounted MPSSF450...P

Size 60P, 160P, 240P



Type	A1	A2	W	L	PCD mounting holes	Weight incl. element [kg]
60P	201	72	88	100	76.2	7.50
160P	204	104	100	145	124.5	13.35
240P	261	104	100	145	124.5	18.93

