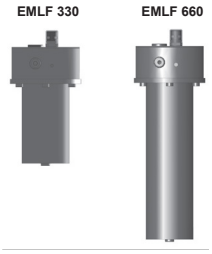
HYDAC INTERNATIONAL

Return Inline / Recirculation Filter EMLF

up to 150 l/min, up to 40 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 bolt-on filter bowl.

Standard equipment:

- 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: 20 bar Optimicron® (ON): 20 bar Betamicron® (BN4HC) "-SS-SO361": 20 bar Betamicron®/ Aquamicron®(BN/AM): 10 bar Wire mesh (W/HC): 20 bar Ecomicron® (ECON2): 10 bar

1.3 FILTER SPECIFICATIONS

Nominal pressure	40 bar
Test pressure	66 bar (design pressure: 44 bar)
Temperature range	-20 °C to +100 °C
Material of filter head	316S11 EN 1.4404 stainless steel
Material of filter bowl	316S11 EN 1.4404 stainless steel
Type of clogging indicator	VD (differential pressure indicator)
Pressure setting of clogging indicator	2 bar (others on request)
Bypass cracking pressure	3 bar (others on request)

1.4 SEALS

FPM (Viton)

1.5 INSTALLATION

Inline filter

1.6 SPECIAL MODELS AND ACCESSORIES

- Seals in NBR, NLT, EPDM, HNBR, Kalrez®
- Without 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 indicators available
- Flanged versions available (SAE, RF, RTJ, Destec®)

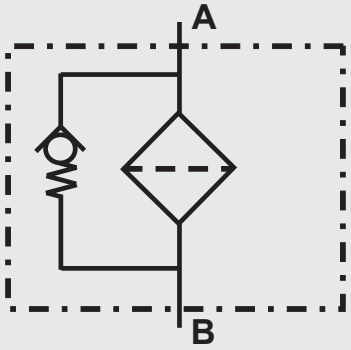
1.7 SPARE PARTS

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 und 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

EMLF40 ON 660 N4 005 B X / -V

Filter type
EMLF40 40 bar

Filter material
ON Optimicron® BN/HC Betamicron® (BN4HC) only to be used for water-glycol applications with "-SS-SO361"! BN/AM Betamicron®/Aquamicron® (BN4AM)

ECO Ecomicron (ECON2) W/HC wire mesh

Size of filter
330, 660

Type and size of connection

Type	Port (thread)	Filter size 330	660
B4	1"-BSPP	●	●
B5	1¼"-BSPP	●	●
N4	1"-NPT	●	●
N5	1¼"-NPT	●	●
F32	SAE 32	●	●

Filtration rating in µm

ON	: 001, 003, 005, 010, 015, 020	BN/HC (/-SS-SO361)	: 003, 010
ECO	: 003, 005, 010, 020	BN/AM	: 003, 010
W/HC	: 025, 050, 100, 200		

Type of clogging indicator
W without port (no clogging indicator)
A stainless steel blanking plug in indicator port
B visual electrical
C
D visual and electrical
UE vacuum gauge
BM+C visual with manual reset + electrical (= 2 indicators)
E 1/4"-NPT gauge ports for external connection of pressure sensors

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

Modification number
X the latest version is always supplied

Supplementary details
B. bypass cracking pressure (e.g. B6 = 6 bar); without 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)
IS2GBC intrinsically safe electrical clogging indicator with gold contacts (e. g. suitable for PLC)
L... lamp with appropriate voltage (24, 48, 110, 220 volts)
LED 2 light emitting diodes up to 24 Volt

only for clogging indicators type "D"

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 stainless steel elements with polyamide support fibre, optimised for water-glycol (only for BN/HC material)

2.2 REPLACEMENT ELEMENT

0660 D 005 ON /-V

Size
0330, 0660

Type
D

Filtration rating in µm

ON:	: 001, 003, 005, 010, 015, 020	BN4HC /-SS-SO361	: 003, 010
BN4AM	: 003, 010	ECON2	: 003, 005, 010, 020
W/HC	: 025, 050, 100, 200		

Filter material
ON, BN4HC, ECON2, BN4AM, W/HC

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

2.3 REPLACEMENT CLOGGING INDICATOR

VD 2 D . X /-V-L24

Type
VD differential pressure indicator

Pressure setting
2 standard 2 bar, others on request

Type of clogging indicator
(see Point 2.1)

Modification number
X the latest version is always supplied

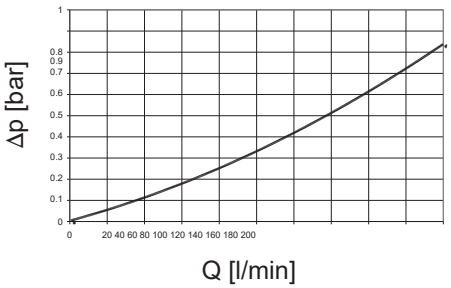
Supplementary details
L..., LED, V, W (for descriptions, see Point 2.1)

3. FILTER CALCULATION / SIZING

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.

EMLF



3.2 GRADIENT COEFFICIENTS (SK) FOR FILTER ELEMENTS

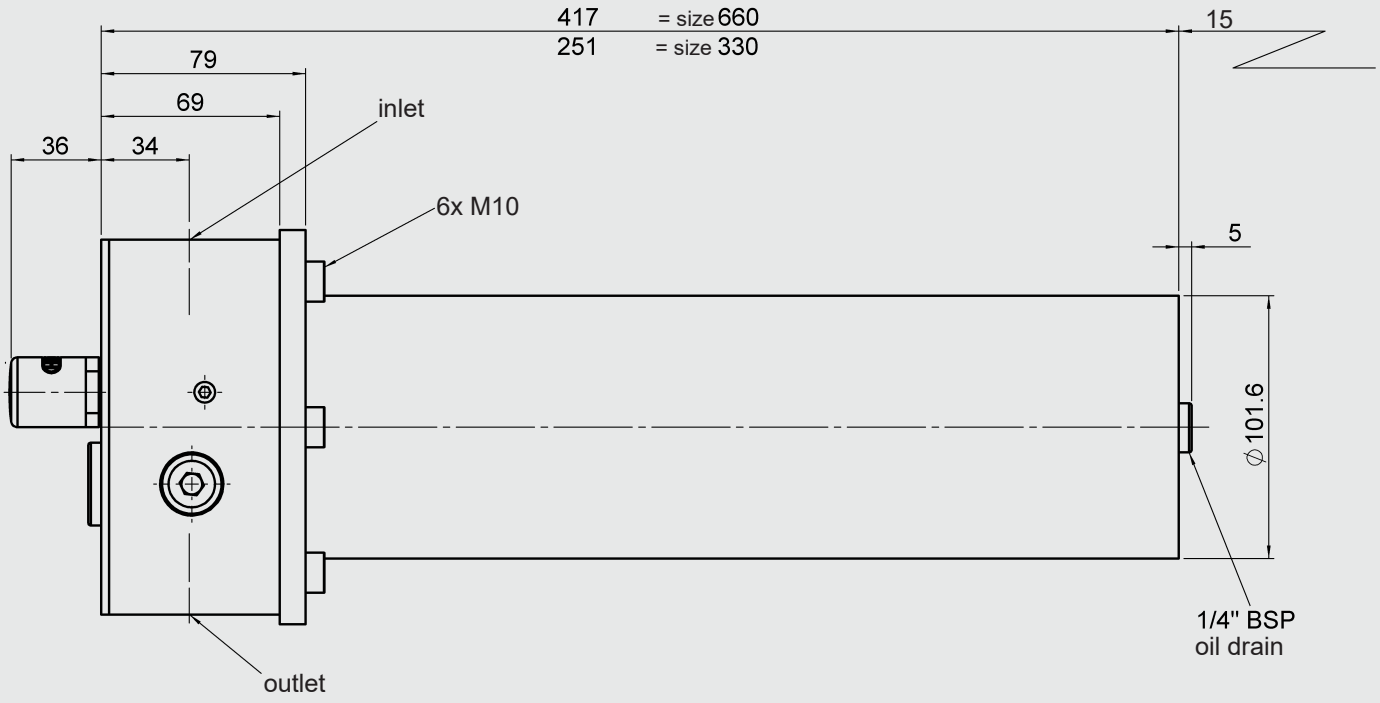
The gradient coefficients in mbar/(l/min) apply to mineral oils with a kinematic viscosity of 30 mm²/s. The pressure drop changes proportionally to the change in viscosity.

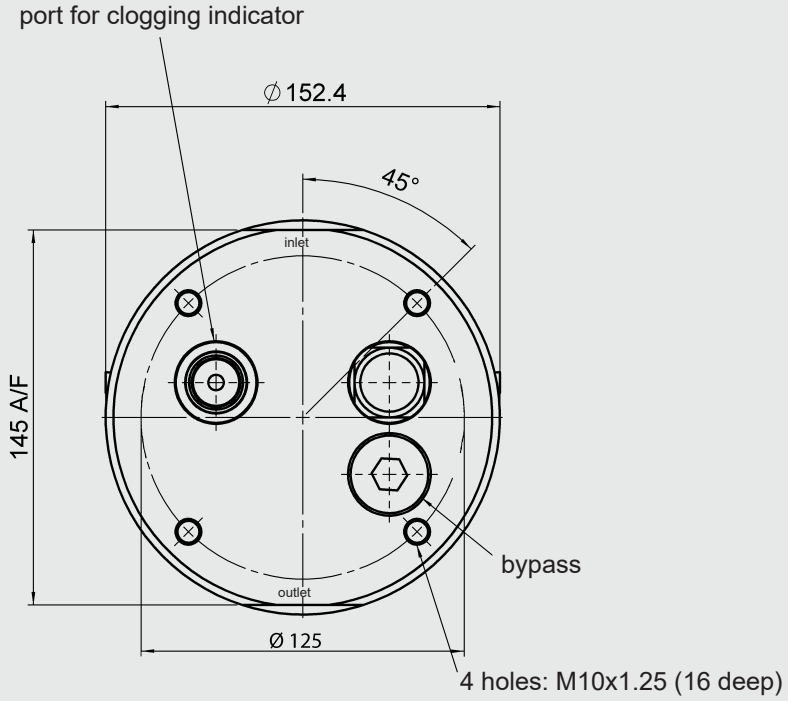
EMLF	ON						W/HC
	1 µm	3 µm	5 µm	10 µm	15 µm	20 µm	–
330	8.23	4.19	3.37	2.46	1.55	1.22	0.138
660	3.78	1.93	1.56	0.93	0.71	0.56	0.069

EMLF	BN4HC		ECON2			
	3 µm	10 µm	3 µm	5 µm	10 µm	20 µm
330	5.4	3.0	4.2	2.7	1.7	1.2
660	2.5	1.1	1.9	1.2	0.8	0.5

4. DIMENSIONS

EMLF 330/660





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.