WKFLND Change Over Inline Filter

-Up to 400L/min

-Up to 63bar

1. TECHNICAL SPECIFICATIONS

1.1 FILTER HOUSING

Construction

The filter housings are designed in accordance with international regulations. They consist of a filter head with built-in change-over valve and screw-in filter bowls.

Standard equipment:

- without bypass valve
- connection for a clogging indicator
- oil drain plug (WKFLND 160 to 400)

1.2 FILTER ELEMENTS

WK-Hydraulic 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:

Glass fiber (ON):	20 bar
Glass fiber (BN4HC):	20 bar
Glass fiber (BH4HC):	210 bar
Wire mesh (W/HC, W):	20 bar

1.3 FILTER SPECIFICATIONS

Nominal pressure	25 bar (WKFLND 160 to 400) 63 bar (WKFLND 40 to 140)
Fatigue strength	At nominal pressure 10^6 cycles from 0 to nominal pressure
Temperature range	-10 °C to +100 °C
Material of filter head	Aluminium
Material of filter bowl	Aluminium
Type of clogging indicator	VM (differential pressure measurement up to 210 bar operating pressure)
Pressure setting of the clogging indicator	2.5 bar or 5 bar (others on request)
Bypass cracking pressure (optional)	3.5 bar or 7 bar (others on request)

1.4 SEALS

NBR (=Perbunan)

1.5 INSTALLATION

Inline filter

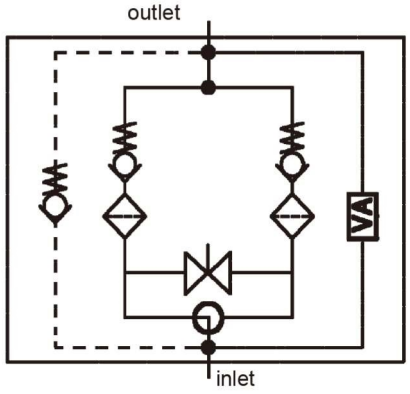
1.6 SPECIAL MODELS AND ACCESSORIES

- With bypass valve
- With oil drain plug for FLND 40 to 140 (SO184)
- Seals in FPM, EPDM
- Reverse flow "RL" for WKFLND 160 and above on request

1.7 SPARE PARTS

See Original Spare Parts List

Symbol for hydraulic systems



VA = clogging indicator

2. MODEL CODE (also order example)

FLND BN/HC 250 D D F 10 D 1 . X /-L24

2.1 COMPLETE FILTER

Filter type
WKFLND

Filter material

ON	Glass fiber	BN/HC	Glass fiber
BH/HC	Glass fiber (BH4HC)	W/HC, W	Wire mesh

Size of filter or element
WKFLND: 40, 60, 63, 100, 110, 140, 160, 250, 400

Operating pressure
D = 25 bar (WKFLND 160 to 400)
F = 63 bar (WKFLND 40 to 140)

Type of change-over
D single switching valve and check valve

Type and size of port
to DIN 24550 (●), possible ports (X)

Type	Port	Filter size								
		60	110	140	40	63	100	160	250	400
B	G ½	X	X	X	●	X	X			
C	G ¾	X	X	X	X	●	X			
D	G 1	X	X	X	X	X	●			
E	G 1¼							●	X	X
F	G 1½							X	●	X
I	DN 25**	X	X	X	X	X	X			
K	DN 38**							X	X	●

** Flange SAE, 3000 PSI

Filtration rating in µm
ON: 1, 3, 5, 10, 15, 20
BN/HC, BH/HC: 3, 6, 10, 25
BH/HC: 3, 5, 10, 20
W/HC, W: 25, 50, 100, 200

Type of clogging indicator
Y plastic blanking plug in indicator port
A steel blanking plug in indicator port
B visual
C electrical
D visual and electrical
LZ visual-mechanical / electrical
] for other clogging indicators, see brochure no. 7.050../..

Type code
1

Modification number
X the latest version is always supplied

Supplementary details
B. bypass cracking pressure (e.g. B3.5 = 3.5 bar); without details = without bypass valve
L... light with appropriate voltage (24V, 48V, 110V, 220V)
LED 2 light emitting diodes up to 24 Volt
] only for clogging indicators type D
AV LZ indicator with plug to AUDI and VW specification
BO LZ indicator with plug and pin connections to BMW and Opel specification (M12x1)
CN LZ indicator with plug to DIN 43651 with 3 LEDs (CNOMO specification)
DB LZ indicator with plug to DIN 43651 with 3 LEDs (Daimler-Benz specification)
D4C LZ with plug and connector to Daimler-Chrysler specification and cold start suppression 30°C
BO-LED as for BO, but with diode strip
SO184 oil drain plug (FLND 40 to 140)
V FPM seals
W suitable for HFA and HFC emulsions

2.2 REPLACEMENT ELEMENT

0250 DN 010 BN4HC /-V

Size
0040, 0060, 0063, 0100, 0110, 0140, 0160, 0250, 0400

Type
D 0060, 0110, 0140
DN to DIN 24550: 0040, 0063, 0100, 0160, 0250, 0400

Filtration rating in µm
ON 001, 003, 005, 010, 015, 020
BN4HC, BH4HC: 003, 006, 010, 025
BH4HC: 003, 005, 010, 020
W/HC, W: 025, 050, 100, 200

Filter material
ON, BN4HC, BH4HC, W/HC, W

Supplementary details
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 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)

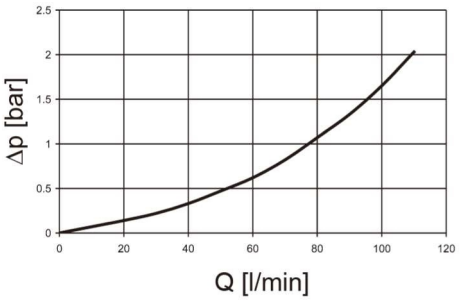
$$\Delta p_{element} = Q \cdot \frac{SK^*}{1000} \cdot \frac{viscosity}{30}$$

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

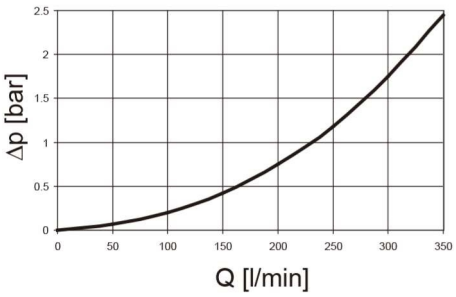
3.1 Δp-Q HOUSING CURVES BASED ON ISO 3968

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.

WKFLND 40, 60, 63, 100, 110, 140

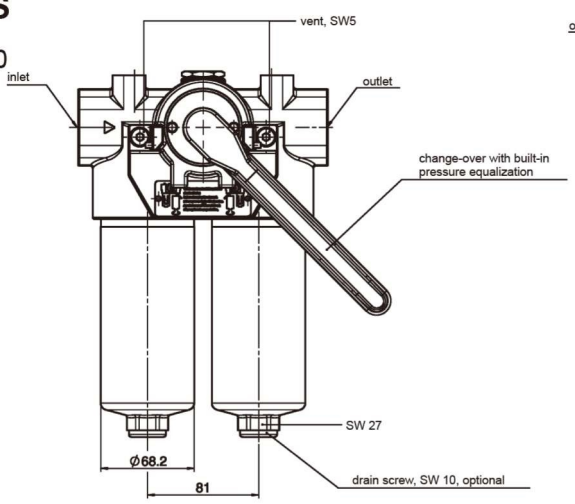


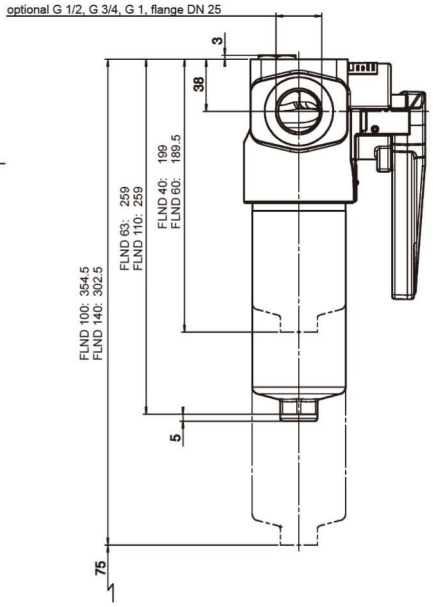
WKFLND 160, 250, 400

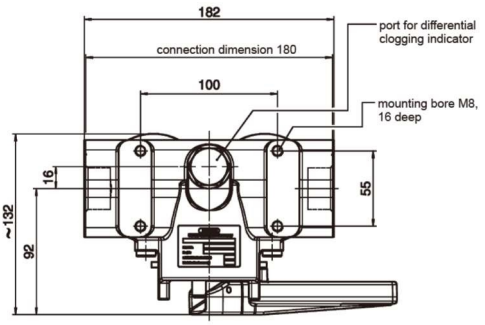


4. DIMENSIONS

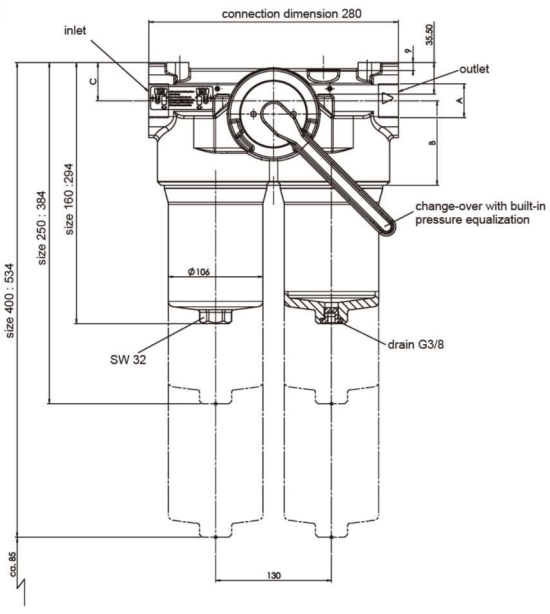
WKFLND 40 - 140

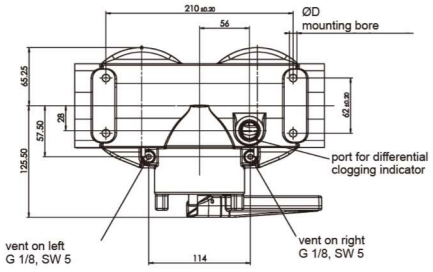






WKFLND 160 - 400





A	B	C	D
G 1 1/4	95	43	M10 x 19/22 deep
G 1 1/2	98	40	M10 x 19/22 deep
DN 38	95	43	M10 x 19/22 deep

WK-FLND	Weight incl. element [kg]	Vol. of pressure chamber [l]
40	6.73	2x 0.26
60	6.83	2x 0.25
63	7.10	2x 0.40
100	11.33	2x 0.50
110	7.32	2x 0.40
140	11.78	2x 0.40
160	9.1	2x 1.40
250	9.6	2x 2.00
400	12.0	2x 3.10

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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