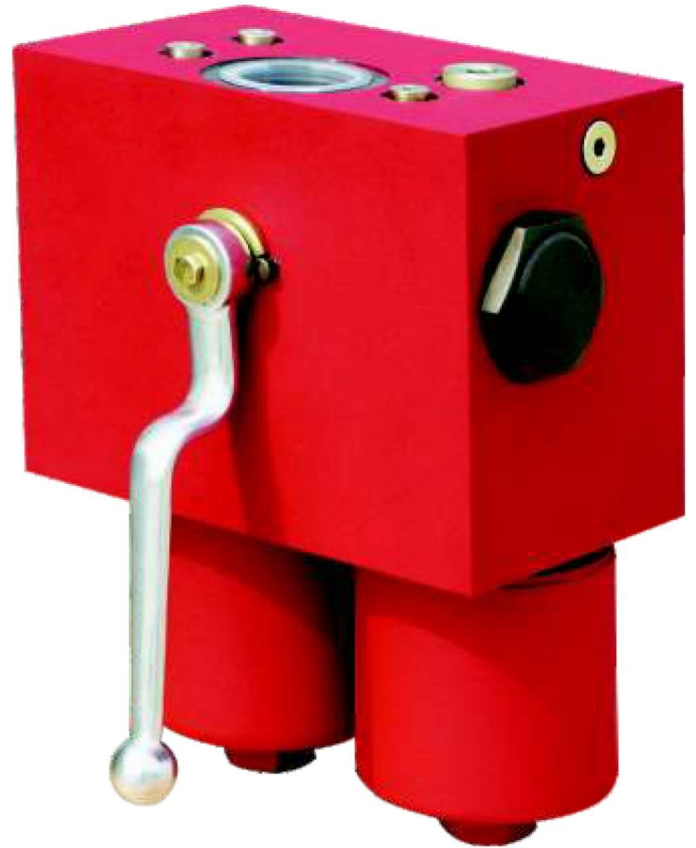


DFDK

Change-Over Pressure Filter



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 screw-in filter bowls.

Standard equipment:

- ball change-over valve
- two-piece filter bowl for WKDFDK 990, 1320 (as an option for WKDFDK 660)
- connection for a clogging indicator
- drain screw with pressure relief
- pressure equalization line (for size WKDFDK 330 and above)

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

Number of filter elements

WKDFDK	Elements per side
30	1x0030 D
60	1x0060 D
110	1x0110 D
140	1x0140 D
160	1x0160 D
240	1x0240 D
280	1x0280 D
330	1x0330 D
500	1x0500 D
660	1x0660 D
990	1x0990 D
1320	1x1320 D

Filter elements are available with the following pressure stability values:

Glass fiber (ON):	20 bar
Glass fiber (BH4HC):	210 bar
Wire mesh (W/HC, W):	20 bar
Stainless steel fibre (V):	210 bar

1.3 FILTER SPECIFICATIONS

Nominal pressure	315 bar (WKDFDK with type code 1.X and 2.X)
Fatigue strength	At nominal pressure 10^6 cycles from 0 to nominal pressure
Temperature range	-10 °C to +100 °C (-30 °C to -10 °C: $p_{max} = 157.5$ bar)
Material of filter head	EN-GJS-400-15
Material of filter bowl	Steel
Type of clogging indicator	VD (differential pressure measurement up to 420 bar operating pressure)
Pressure setting of the clogging indicator	8 bar (others on request)

1.4 SEALS

NBR (=Perbunan)

1.5 INSTALLATION

As inline filter

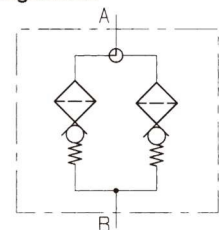
1.6 SPECIAL MODELS AND ACCESSORIES

- Pressure equalization line for WKDFDK 160 - 280
- Detent pin to lock the lever for WKDFDK330-1320... 1.x/2.x
- Ball change-over in T configuration (simultaneous flow on both sides including detent)

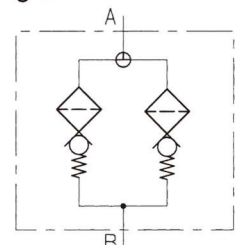
1.7 SPARE PARTS

See Original Spare Parts List

Symbol for hydraulic systems WKDFDK ball change-over in L configuration



Symbol for hydraulic systems WKDFDK ball change-over in T configuration



2. MODEL CODE (also order example)

WKDFDK ON 160 Q L F 10 D 1 X /-L24

2.1 COMPLETE FILTER

Filter type

WKDFDK

Filter material

ON Glass fiber V Metal fibre
BH/HC Glass fiber(BH4HC) W/HC, W Wire mesh

Size of filter or element

30, 60, 110, 140, 160, 240, 280, 330, 500, 660, 990, 1320

Operating pressure

Q 315 bar

Type of change-over

L ball change-over in L configuration (standard)

Type and size of connection

Type	Port	Filter size											
		30	60	110	140	160	240	280	330	500	660	990	1320
B	G ½	•											
C	G ¾		•	•	•								
F	G1 ½					•	•	•					
L	SAE DN 50*								•	•	•	•	•

* Flange SAE, 6000 PSI ** Flange SAE, 3000 PSI

Filtration rating in µm

ON: 1, 3, 5, 10, 15, 20 BH/HC, V: 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

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

Type code

1 model with one-piece filter bowls
2 model with two-piece filter bowls (only for DFDK 660 to 1320)

Modification number

X the latest version is always supplied

Supplementary details

L... light with appropriate voltage (24V, 48V, 110V, 220V)
LED 2 light-emitting diodes up to 24 Volt
SO668 detent pin to lock lever (only for DFDK 330-1320...1.x/2.x)
V FPM seals
W suitable for HFA and HFC emulsions

only for clogging
indicators Type D

2.2 REPLACEMENT ELEMENT

0160 D 010 ON /-V

Size

0030, 0060, 0110, 0140, 0160, 0240, 0280, 0330, 0500, 0660, 0990, 1320

Type

D

Filtration rating in µm

ON: 001, 003, 005, 010, 015, 020 BH4HC, V: 003, 005, 010, 020
W/HC, W: 025, 050, 100, 200

Filter material

ON, BH4HC, V, W/HC, W (with ball change-over in T configuration only possible for BH4HC and V filter elements!)

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:

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

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

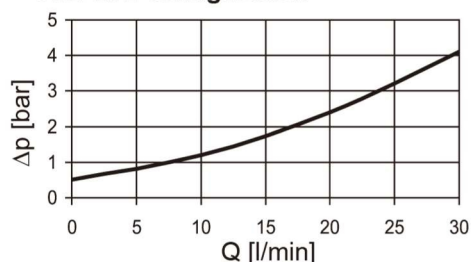
$$\Delta p_{\text{element}} = Q \cdot \frac{SK^*}{1000} \cdot \frac{\text{viscosity}}{30}$$

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

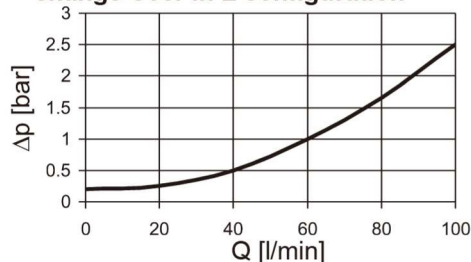
3.1 Δp - Q HOUSING CURVES BASED ON ISO 3968

The housing curves apply to mineral oil with a density of 0.86 kg/dm^3 and a kinematic viscosity of $30 \text{ mm}^2/\text{s}$. In this case, the differential pressure changes proportionally to the density.

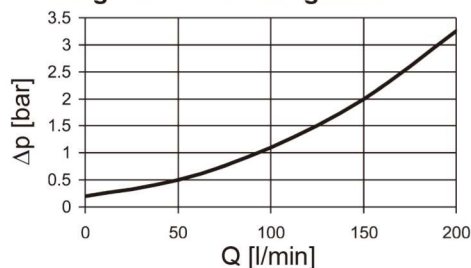
WKDFDK 30 ... 1.x with ball change-over in L configuration



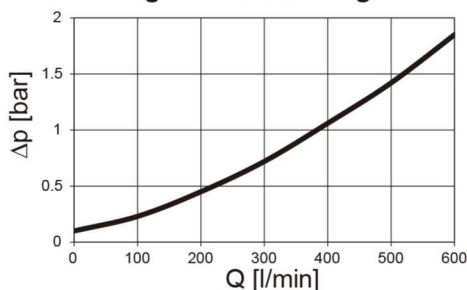
WKDFDK 60, 110, 140 ... 1.x with ball change-over in L configuration



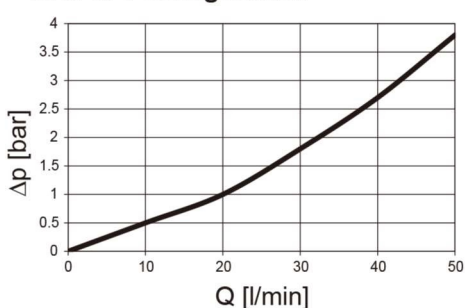
WKDFDK 160, 240, 280 ... 1.x with ball change-over in L configuration



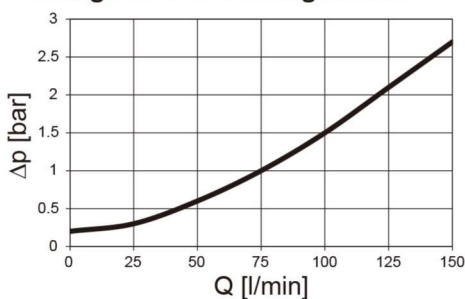
WKDFDK 330, 500, 660 ... 1.x WKDFDK 660, 990, 1320 ... 2.x with ball change-over in L configuration



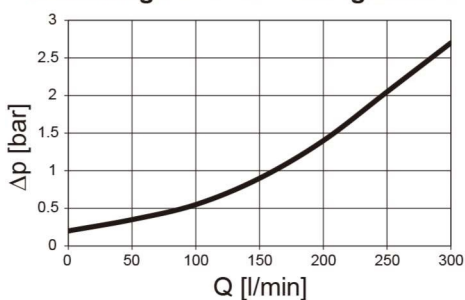
WKDFDK 30 ... 1.x with ball change-over in T configuration



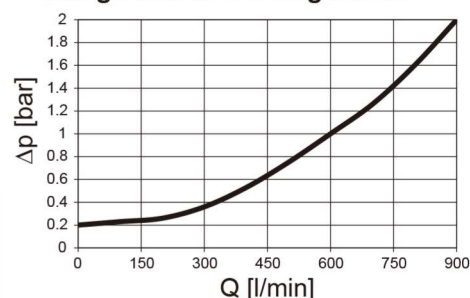
WKDFDK 60, 110, 140 ... 1.x with ball change-over in T configuration



WKDFDK 160, 240, 280 ... 1.x with ball change-over in T configuration

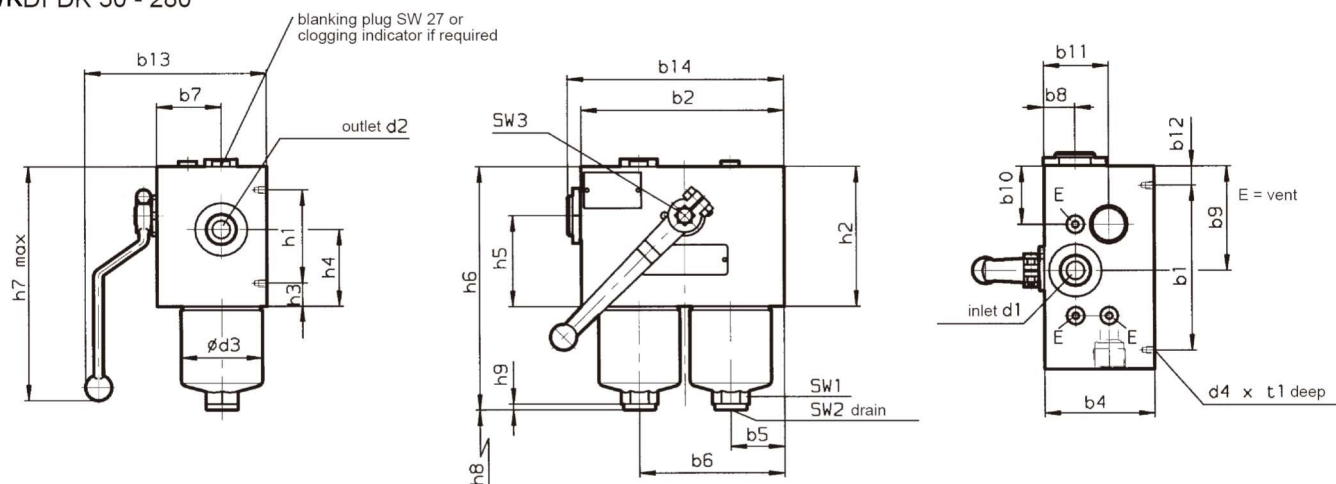


WKDFDK 330, 500, 660 ... 1.x WKDFDK 660, 990, 1320 ... 2.x with ball change-over in T configuration



4. DIMENSIONS

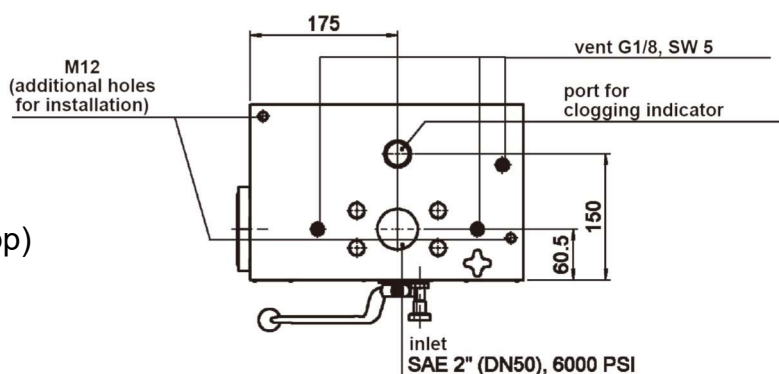
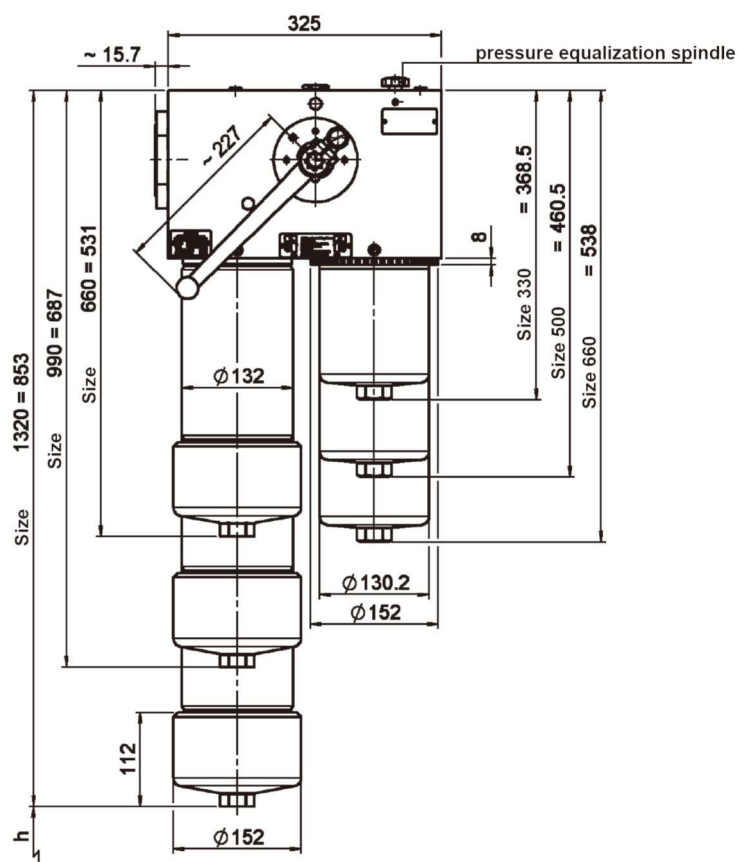
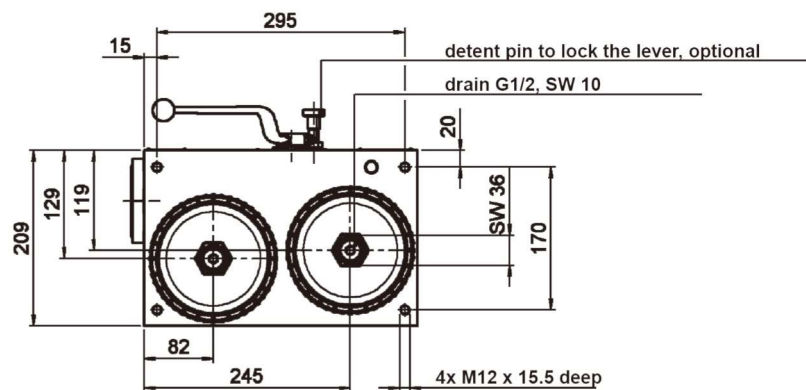
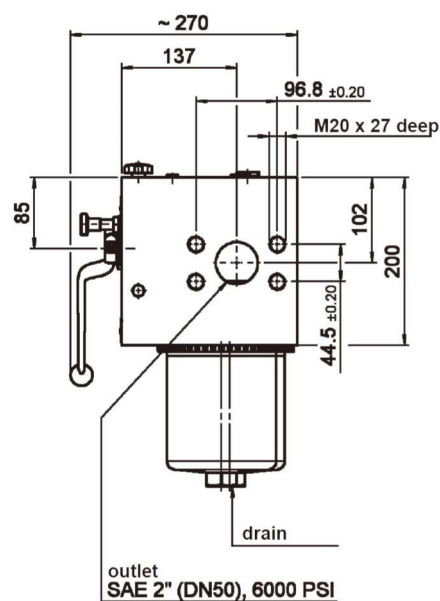
WKDFDK 30 - 280



* SAE connection 6000 psi

WKDFDK	30	60	110	140	160	240	280
b1	130	138	138	138	190	190	190
b2	145	170	170	170	210	210	210
b4	80	92	92	92	128	128	128
b5	35	45	45	45	52.5	52.5	52.5
b6	96	121.5	121.5	121.5	157.5	157.5	157.5
b7	47	54	54	54	75.5	75.5	75.5
b8	22.8	26	26	26	35.5	35.5	35.5
b9	80.9	87	87	87	105	105	105
b10	80.9	48.5	48.5	48.5	52.5	52.5	52.5
b11	59	54	54	54	75.5	75.5	75.5
b12	7.5	16	16	16	10	10	10
b13 (≈)	131	150	150	150	193	193	193
b14 (≈)	155	181	181	181	221	221	221
d1*	G ½	G ¾	G ¾	G ¾	G 1½	G 1½	G 1½
d2*	G ½	G ¾	G ¾	G ¾	G 1½	G 1½	G 1½
d3	52.2	68.2	68.2	68.2	95.2	95.2	95.2
d4	M6	M6	M6	M6	M10	M10	M10
h1	64	78	78	78	96	96	96
h2	80	117	117	117	162	162	162
h3	8	19.5	19.5	19.5	33	33	33
h4	47	64.5	64.5	64.5	106	106	106
h5	43	76	76	76	100	100	100
h6	171	205.0	276.5	317.5	284.5	346	525.5
h7 (≈)	180	205	205	205	245	245	245
h8	75	75	75	75	85	85	85
h9	5	5	5	5	5	5	5
t1	7	7	7	7	11	11	11
SW1	24	27	27	27	32	32	32
SW2	6	10	10	10	10	10	10
SW3	9	12	12	12	14	14	14
Weight incl. element [kg]	7.4	15.0	17.0	18.9	33.0	36.0	45.0
Volume of pressure chamber [l]	2x0.13	2x0.20	2x0.33	2x0.40	2x0.60	2x0.80	2x1.60

WKDFDK 330 - 660..1.x
WKDFDK 660 - 1320..2.x



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WKDFDK	330	500	660 1.x	660 2.x	990	1320
h	95	95	95	350	500	670
Weight incl. element [kg]	97.0	108.0	114.0	119.0	136.0	152.0
Volume of pressure chamber [l]	2x1.50	2x2.20	2x3.00	2x3.00	2x4.50	2x6.00