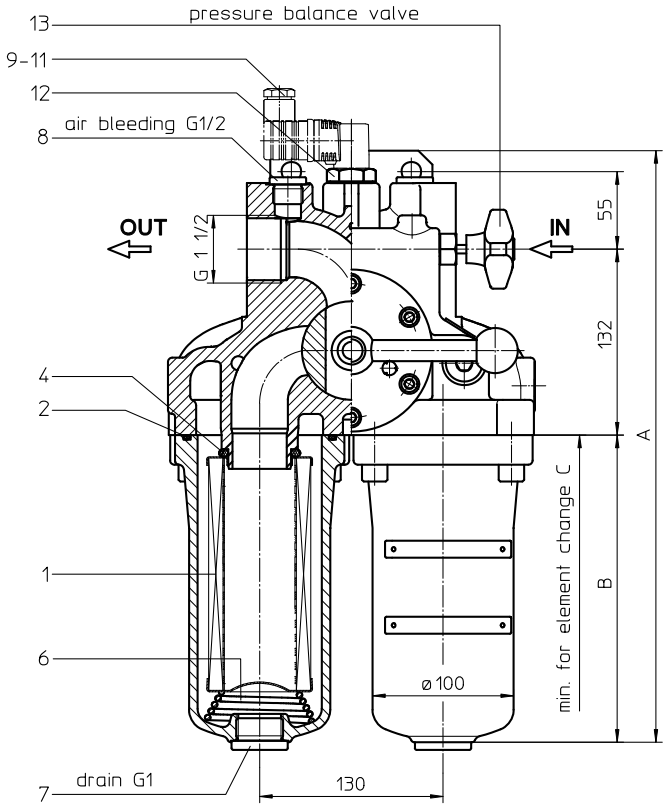
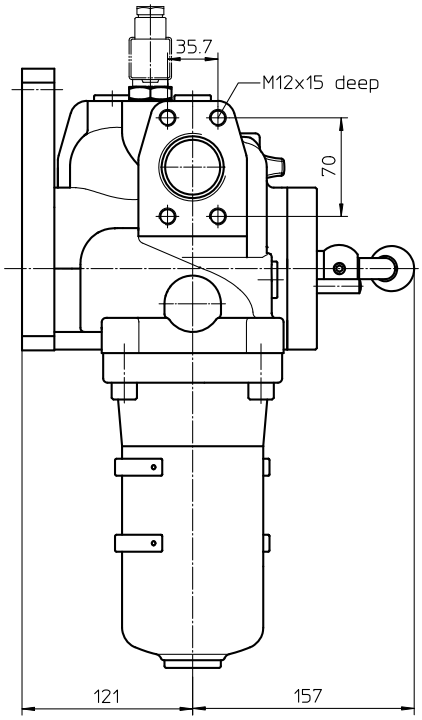
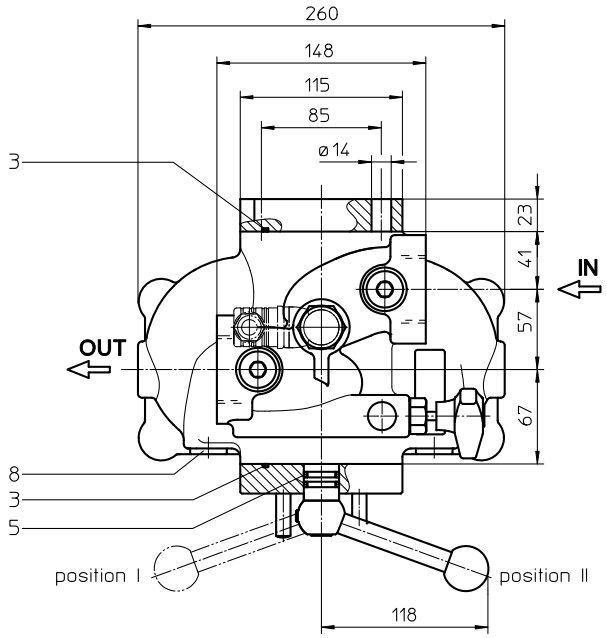
Series DSF 176-331
DN40 PN25







Dimensions:

type	DSF176	DSF 331
A	420	555
B	218	353
C	250	390
weight kg	40	44
volume tank	2x 1,2 l	2x 2,0 l

Information:
Execution IN left / OUT right
see sheet-no. 2149

Position I: Left filter-side in operation
Position II: Right filter-side in operation

Dimensions: mm

Designs and performance values are subject to change.

Pressure Filter, change over
Series DSF 176-331
DN40 PN25

Description:

Pressure filter change over series DSF 176-331 have a working pressure up to 25 bar. Pressure peaks can be absorbed with a sufficient safety margin.

A three-way-change-over valve which is integrated in the middle of the housing makes it possible to switch from the dirty filter-side to the clean filter-side without interruting operation. The filters can be installed as suction filter, pressure filter or return-line filter.

The filter element consists of star-shaped, pleated filter material, which is supported on the inside by a perforated core tube and is bonded to the end caps with a high-quality adhesive. The flow direction is from outside to inside.

For cleaning the stainless steel mesh element (see special leaflets 21070-4 and 39448-4) or changing the filter element, remove the filter boel and take out the element. The mesh elements are not guaranteed to maintain 100% performance after cleaning.

For filtration finer than 40 µm, use the disposable elements made of microglass. Filter elements as fine as 5 µm(c) are available; finer filter elements are available upon request.

Eaton filter elements are known for a high intrinsic stability and an excellent filtration capability, a high dirt-retaining capacity and a long service life.

Eaton filter can be used for petroleum-based fluids, HW emulsions, water glycols, most synthetic fluids and lubrication fluids. Consult factory for specific fluid applications.

Ship classifications available upon request.

Type index:

Complete filter: (ordering example)

DSF.	176.	10VG.	16.	E.	P.	-.	FS.	7.	-.	-.	AE
1	2	3	4	5	6	7	8	9	10	11	13

1 **series:**
DSF = duplex filter

2 **nominal size:** 176, 331

3 **filter-material:**
80G, 40G, 25G stainless steel wire mesh
25VG, 16VG, 10VG, 6VG, 3VG microglass
10P paper

4 **filter element collapse rating:**
16 = Δp 16 bar

5 **filter element design:**
E = single end open
S1 = with bypass valve Δp 3,5 bar
S2 = with bypass valve Δp 7,0 bar

6 **sealing material:**
P = Nitrile (NBR)
V = Viton (FPM)

7 **filter element specification:**
- = standard
VA = stainless steel

8 **process connection:**
FS = SAE-flange connection 3000 PSI
G = thread connection according to DIN 3852, T2

9 **process connection size:**
7 = 1 ½"

10 **filter housing specification:**
- = standard

11 **internal valve:**
- = without

12 **clogging indicator or clogging sensor:**
- = without
AOR = visual, see sheet-no.1606
AOC = visual, see sheet-no.1606
AE = visual-electric, see sheet-no.1615
VS5 = electronic, see sheet-no.1619

To add an indicator/sensor to your filter, use the corresponding indicator data sheet to find the indicator details and add them to the filter assembly model code.

Filter element: (ordering example)

01E.	175.	10VG.	16.	E.	P.	-
1	2	3	4	5	6	7

1 **series:**
01E. = filter element according to company standard

2 **nominal size:** 175, 330

3 - 7 see type index complete filter

Accessories:

- SAE-counter flanges, see sheet-no. 1652

Technical data:

operating temperature:	-10°C to +100°C
operating medium:	mineral oil, other media on request
max. operating pressure:	25 bar
test pressure:	50 bar
process connection:	SAE-flange connection 3000 PSI or thread connection DIN3852, T2
housing material:	EN-GJS-400-18-LT
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical

Classified under the Pressure Equipment Directive 2014/68/EU for mineral oil (fluid group 2), Article 4, Para. 3.
Classified under ATEX Directive 2014/34/EU according to specific application (see questionnaire sheet-no. 34279-4).

Pressure drop flow curves:

Filter calculation/sizing

The pressure drop of the assembly at a given flow rate Q is the sum of the housing Δp and the element Δp and is calculated as follows:

$\Delta p_{assembly} = \Delta p_{housing} + \Delta p_{element}$
$\Delta p_{housing}$ = *(see Δp = f (Q) - characteristics)*

$$\Delta p_{Element}\,(mbar) = Q\left(\frac{l}{min}\right) x \frac{MSK}{10}\left(\frac{mbar}{l/min}\right) x\, \nu\left(\frac{mm^2}{s}\right) x \frac{p}{0{,}876}\left(\frac{kg}{dm^3}\right)$$

For ease of calculation our Filter Selection tool is available online at
www.eatonpowersource.com/calculators/filtration/

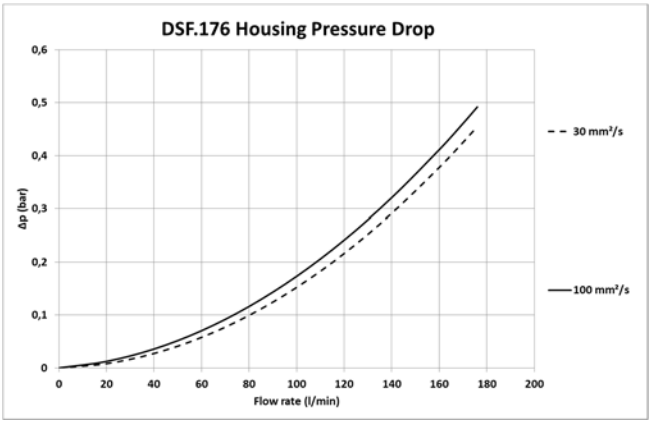
Material gradient coefficients (MSK) for filter elements

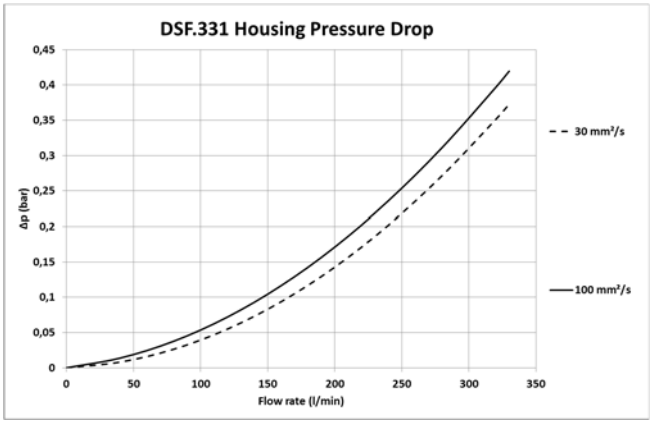
The material gradient coefficients in mbar/(l/min) apply to mineral oil (HLP) with a density of 0,876 kg/dm³ and a kinematic viscosity of 30 mm²/s (139 SUS). The pressure drop changes proportionally to the change in kinematic viscosity and density.

DSF	VG					G			P
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G	10P
176	1,724	1,197	0,766	0,667	0,456	0,0607	0,0567	0,0388	0,36
331	0,956	0,664	0,425	0,370	0,253	0,0344	0,0321	0,0220	0,20

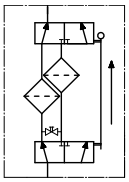
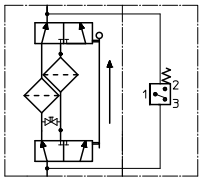
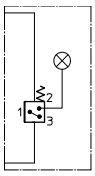
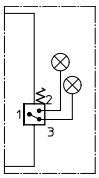
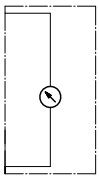
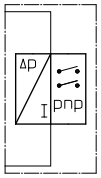
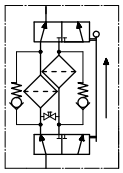
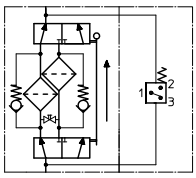
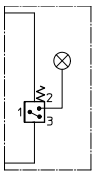
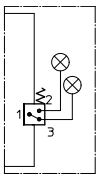
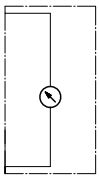
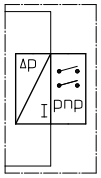
Δp = f(Q) – characteristics according to ISO 3968

The pressure drop characteristics apply to mineral oil (HLP) with a density of 0,876 kg/dm³. The pressure drop changes proportionally to the density.





Symbols:

	without indicator	with electric indicator AE 30 and AE 40	with visual-electric indicator AE 50 and AE 62	with visual-electric indicator AE 70 and AE 80	with visual indicator AOR/AOC	with electronic sensor VS5
filter without bypass valve						
filter with bypass valve						

Spare parts:

item	qty.	designation	dimension DSF 176	dimension DSF 331	article-no.	
1	2	filter element	01E.175…	01E.330…		
2	2	O-ring	98 x 4		301914 (NBR)	304765 (FPM)
3	2	O-ring	75 x 3		302215 (NBR)	304729 (FPM)
4	2	O-ring	44 x 6		302222 (NBR)	304384 (FPM)
5	2	O-ring	18 x 3		304359 (NBR)	304399 (FPM)
6	2	Feder	Da = 52		304989	
7	2	screw plug	G 1		305303	
8	4	screw plug	G ½		304678	
9	1	clogging indicator, visual	AOR or AOC		see sheet-no 1606	
10	1	clogging indicator, visual-electric	AE		see sheet-no 1615	
11	1	clogging sensor, electronic	VS5		see sheet-no 1619	
12	1	screw plug	20913-4		309817	
13	1	pressure balance valve	DN10		305000	

item 12 execution only without clogging indicator or clogging sensor

Test methods:

Filter elements are tested according to the following ISO standards:

ISO 2941	Verification of collapse/burst resistance
ISO 2942	Verification of fabrication integrity
ISO 2943	Verification of material compatibility with fluids
ISO 3723	Method for end load test
ISO 3724	Verification of flow fatigue characteristics
ISO 3968	Evaluation of pressure drop versus flow characteristics
ISO 16889	Multi-pass method for evaluating filtration performance

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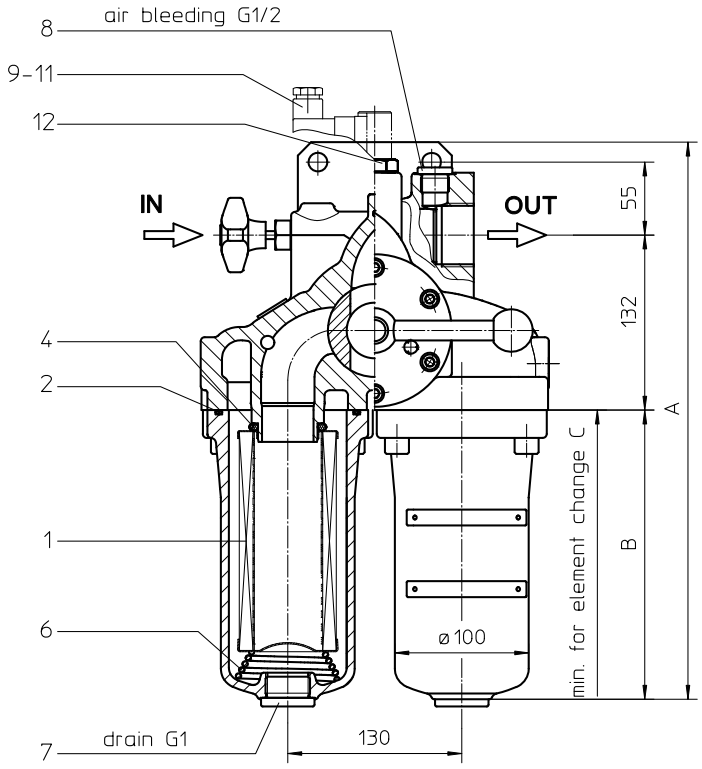
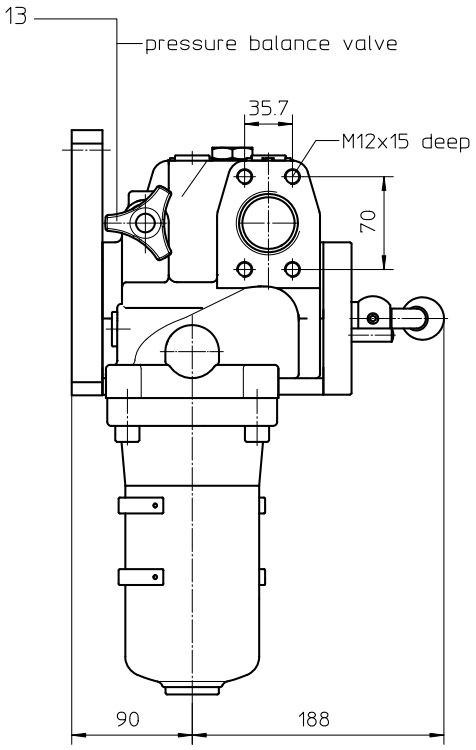
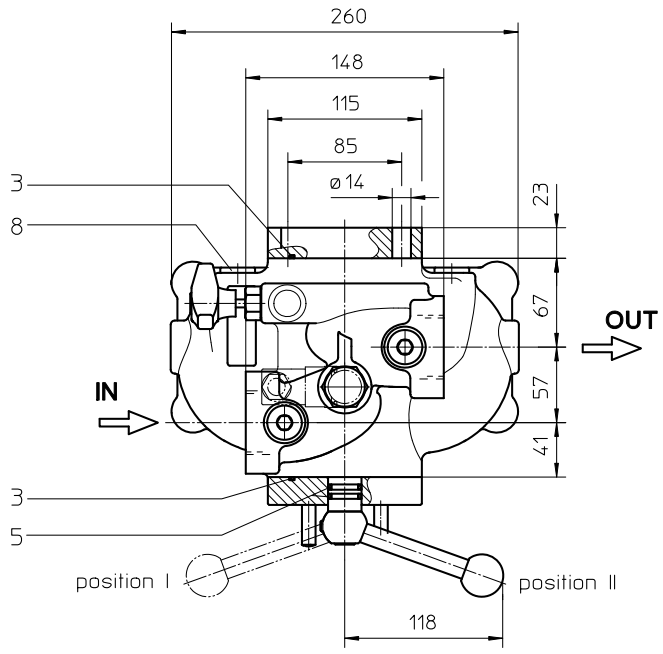
Powering Business Worldwide

Series DSF 180-340
DN40 PN25







Dimensions:

type	DSF180	DSF 340
A	420	555
B	218	353
C	250	390
weight kg	40	44
volume tank	2x 1,2 l	2x 2,0 l

Information:
Execution IN right / OUT left
see sheet-no. 2148

Position I: Left filter-side in operation
Position II: Right filter-side in operation

Dimensions: mm

Designs and performance values are subject to change.

Pressure Filter, change over
Series DSF 180-340
DN40 PN25

Description:

Pressure filter change over series DSF 180-340 have a working pressure up to 25 bar. Pressure peaks can be absorbed with a sufficient safety margin.

A three-way-change-over valve which is integrated in the middle of the housing makes it possible to switch from the dirty filter-side to the clean filter-side without interruting operation. The filters can be installed as suction filter, pressure filter or return-line filter.

The filter element consists of star-shaped, pleated filter material, which is supported on the inside by a perforated core tube and is bonded to the end caps with a high-quality adhesive. The flow direction is from outside to inside.

For cleaning the stainless steel mesh element (see special leaflets 21070-4 and 39448-4) or changing the filter element, remove the cover and take out the element. The mesh elements are not guaranteed to maintain 100% performance after cleaning.

For filtration finer than 40 µm, use the disposable elements made of microglass. Filter elements as fine as 5 µm(c) are available; finer filter elements are available upon request.

Eaton filter elements are known for a high intrinsic stability and an excellent filtration capability, a high dirt-retaining capacity and a long service life.

Eaton filter can be used for petroleum-based fluids, HW emulsions, water glycols, most synthetic fluids and lubrication fluids. Consult factory for specific fluid applications.

Ship classifications available upon request.

Type index:

Complete filter: (ordering example)

DSF.	180.	10VG.	16.	E.	P.	-.	FS.	7.	-.	-.	AE
1	2	3	4	5	6	7	8	9	10	11	13

1 **series:**
DSF = duplex filter

2 **nominal size:** 180, 340

3 **filter-material:**
80G, 40G, 25G stainless steel wire mesh
25VG, 16VG, 10VG, 6VG, 3VG microglass
10P paper

4 **filter element collapse rating:**
16 = Δp 16 bar

5 **filter element design:**
E = single end open
S1 = with bypass valve Δp 3,5 bar
S2 = with bypass valve Δp 7,0 bar

6 **sealing material:**
P = Nitrile (NBR)
V = Viton (FPM)

7 **filter element specification:**
- = standard
VA = stainless steel

8 **process connection:**
FS = SAE-flange connection 3000 PSI
G = thread connection according to DIN 3852, T2

9 **process connection size:**
7 = 1 ½"

10 **filter housing specification:**
- = standard

11 **internal valve:**
- = without

12 **clogging indicator or clogging sensor:**
- = without
AOR = visual, see sheet-no.1606
AOC = visual, see sheet-no.1606
AE = visual-electric, see sheet-no.1615
VS5 = electronic, see sheet-no.1619

To add an indicator/sensor to your filter, use the corresponding indicator data sheet to find the indicator details and add them to the filter assembly model code.

Filter element: (ordering example)

01E.	175.	10VG.	16.	E.	P.	-
1	2	3	4	5	6	7

1 **series:**
01E. = filter element according to company standard

2 **nominal size:** 175, 330

3 - 7 see type index complete filter

Accessories:

- SAE-counter flanges, see sheet-no. 1652

Technical data:

design temperature:	-10°C to +100°C
operating temperature:	-10°C to +80°C
operating medium:	mineral oil, other media on request
max. operating pressure:	25 bar
test pressure:	50 bar
process connection:	SAE-flange connection 3000 PSI or thread connection DIN3852, T2
housing material:	EN-GJS-400-18-LT
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical

Classified under the Pressure Equipment Directive 2014/68/EU for mineral oil (fluid group 2), Article 4, Para. 3.
Classified under ATEX Directive 2014/34/EU according to specific application (see questionnaire sheet-no. 34279-4).

Pressure drop flow curves:

Filter calculation/sizing

The pressure drop of the assembly at a given flow rate Q is the sum of the housing Δp and the element Δp and is calculated as follows:

$\Delta p_{assembly} = \Delta p_{housing} + \Delta p_{element}$
$\Delta p_{housing}$ = *(see Δp = f (Q) - characteristics)*

$$\Delta p_{Element}\,(mbar) = Q\left(\frac{l}{min}\right) x \frac{MSK}{10}\left(\frac{mbar}{l/min}\right) x\, \nu\left(\frac{mm^2}{s}\right) x \frac{p}{0{,}876}\left(\frac{kg}{dm^3}\right)$$

For ease of calculation our Filter Selection tool is available online at
www.eatonpowersource.com/calculators/filtration/

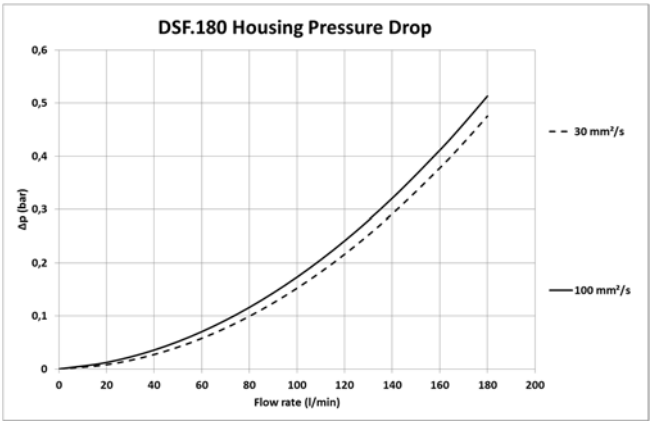
Material gradient coefficients (MSK) for filter elements

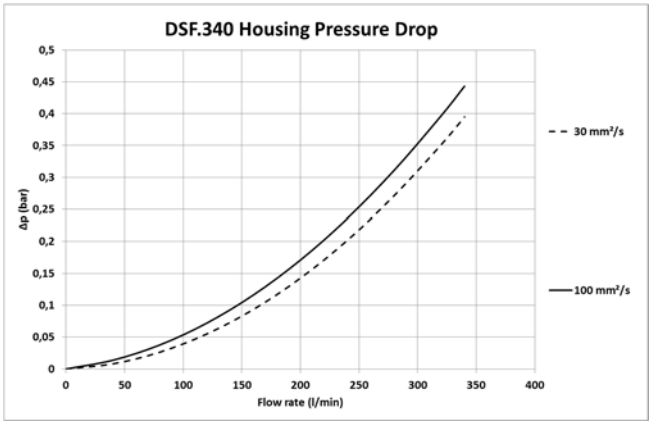
The material gradient coefficients in mbar/(l/min) apply to mineral oil (HLP) with a density of 0,876 kg/dm³ and a kinematic viscosity of 30 mm²/s (139 SUS). The pressure drop changes proportionally to the change in kinematic viscosity and density.

DSF	VG					G			P
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G	10P
180	1,724	1,197	0,766	0,667	0,456	0,0607	0,0567	0,0388	0,36
340	0,956	0,664	0,425	0,370	0,253	0,0344	0,0321	0,0220	0,20

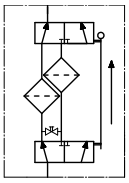
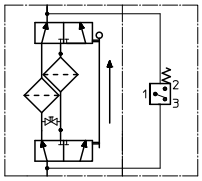
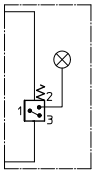
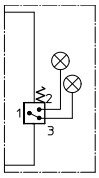
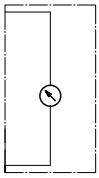
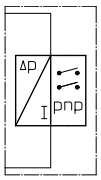
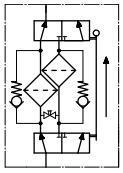
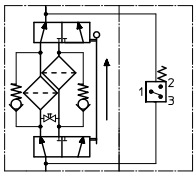
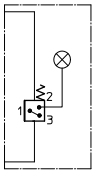
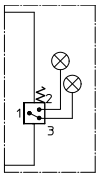
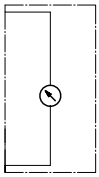
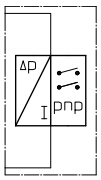
Δp = f(Q) – characteristics according to ISO 3968

The pressure drop characteristics apply to mineral oil (HLP) with a density of 0,876 kg/dm³. The pressure drop changes proportionally to the density.





Symbols:

	without indicator	with electric indicator AE 30 and AE 40	with visual-electric indicator AE 50 and AE 62	with visual-electric indicator AE 70 and AE 80	with visual indicator AOR/AOC	with electronic sensor VS5
filter without bypass valve						
filter with bypass valve						

Spare parts:

item	qty.	designation	dimension DSF 180	dimension DSF 340	article-no.	
1	2	filter element	01E.175…	01E.330…		
2	2	O-ring	98 x 4		301914 (NBR)	304765 (FPM)
3	2	O-ring	75 x 3		302215 (NBR)	304729 (FPM)
4	2	O-ring	44 x 6		302222 (NBR)	304384 (FPM)
5	2	O-ring	18 x 3		304359 (NBR)	304399 (FPM)
6	2	Feder	Da = 52		304989	
7	2	screw plug	G 1		305303	
8	4	screw plug	G ½		304678	
9	1	clogging indicator, visual	AOR or AOC		see sheet-no 1606	
10	1	clogging indicator, visual-electric	AE		see sheet-no 1615	
11	1	clogging sensor, electronic	VS5		see sheet-no 1619	
12	1	screw plug	20913-4		309817	
13	1	pressure balance valve	DN10		305000	

item 12 execution only without clogging indicator or clogging sensor

Test methods:

Filter elements are tested according to the following ISO standards:

ISO 2941	Verification of collapse/burst resistance
ISO 2942	Verification of fabrication integrity
ISO 2943	Verification of material compatibility with fluids
ISO 3723	Method for end load test
ISO 3724	Verification of flow fatigue characteristics
ISO 3968	Evaluation of pressure drop versus flow characteristics
ISO 16889	Multi-pass method for evaluating filtration performance

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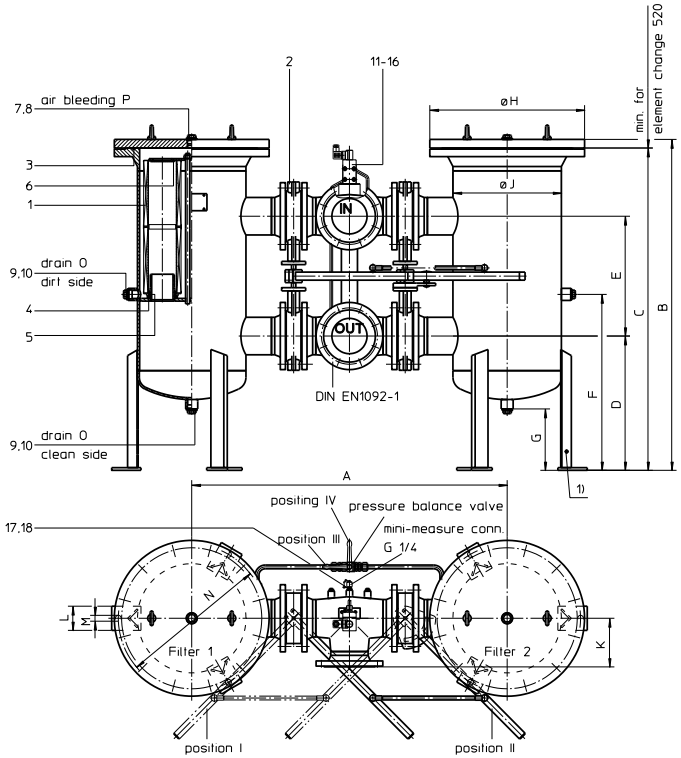
Powering Business Worldwide

PRESSURE FILTER, change-over
Series DSF 1201-10001 DN 50-250 PN 16

Sheet No. **2133 O**



Pos. I: filter 1 in operation
Pos II: filter 2 in operation

with pressure balance valve:
Pos III: valve open
Pos IV: valve closed

Connection standard as in drawing.
On request: inlet- on top and backside
outlet - bottom and backside

Please specify on order!

1) connection for the potential equalisation, only for application in the explosive area

3. Dimensions:

Typ	connection DN	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	weight kg	volume tank
DSF 1201	50	796	1035	1015	395	330	490	183	340	219	111	70	18	330	G1	G ½	200	2x 26,0 l
	65	822				347					123							
	80	862				400					138							
	100	914				421					159							
DSF 2001	65	902	1100	1075	425	347	550	186	405	273	123	70	18	380	G1	G1	280	2x 44,0 l
	80	942				400					138							
	100	984				421					159							
	125	1032				446					181							
DSF 2401	65	952	1115	1085	425	347	540	183	460	324	123	70	18	450	G1	G1	355	2x 63,0 l
	80	982				400					138							
	100	1034				421					159							
	125	1082				446					181							
	150	1150	1185	1155	445	492	610				200							2x 67,0 l
DSF 3601	80	1092	1235	1200	500	400	655	238	580	406	138	90	22	550	G1	G1	580	2x 109,0 l
	100	1144				421					159							
	125	1182				446					181							
	150	1212				492					200							
DSF 4001	65	902	1596	1570	425	347	550	186	405	273	123	70	18	380	G1	G1	340	2x 70,0 l
	80	942				400					138							
	100	984				421					159							
	125	1032				446					181							
DSF 4801 DSF 6001	100	1274	1240	1200	520	421	655	232	715	508	159	90	22	650	G1	G1	800	2x 171,0 l
	125	1322				446					181							2x 171,0 l
	150	1352	1290	1250	530	492	705				200							2x 180,0 l
	200	1440	1390	1350	560	543	765				242							2x 199,0 l
DSF 10001	125	1592	1340	1300	620	446	755	283	910	711	181	120	22	900	G1 ½	G1 ½	950	2x 355,0 l
	150	1632	1390	1350	630	492	805				200							2x 374,0 l
	200	1700	1490	1450	650	543	870				242							2x 411,0 l
	250	1800	1620	1580	680	618	1000				288							2x 460,0 l

EDV 08/12

1. Type index:

1.1. Complete filter: (ordering example)

DSF. 3601. 10VG. 10. E. P. -. FD1. B. -. AE

1	2	3	4	5	6	7	8	9	10	11

1 **series:**
DSF = duplex filter

2 **nominal size:** 1201, 2001, 2401, 3601, 4001, 4801, 6001, 10001

3 **filter material and filter fineness:**
80 G = 80 µm, 40 G = 40 µm, 25 G = 25 µm stainless steel wire mesh,
25 VG = 20 $\mu m_{(c)}$, 16 VG = 15 $\mu m_{(c)}$, 10 VG = 10 $\mu m_{(c)}$, 6 VG = 7 $\mu m_{(c)}$, 3 VG = 5 $\mu m_{(c)}$ Interpor fleece (glass fibre)
25 API = 20 µm, 10 API = 10 µm Interpor fleece (glass fibre) according to API
10 P = 10 µm paper

4 **resistance of pressure difference for filter element:**
10 = Δp 10 bar

5 **filter element design:**
E = without by-pass valve; S = with by-pass valve Δp 2,0 bar

6 **sealing material:**
P = Nitrile (NBR); V = Viton (FPM)

7 **filter element specification:** (see catalog)
- = standard
VA = stainless steel
IS06 = see sheet-no. 31601

8 **connection:**
FD1 = flange connection DIN EN 1092-1, design B1
FD2 = flange connection DIN EN 1092-1, design B2

9 **connection size:**

DN	filter nominal size							
8 = 50	1201							
9 = 65	1201	2001	2401		4001			
A = 80	1201	2001	2401	3601	4001			
B = 100	1201	2001	2401	3601	4001	4801	6001	
C = 125		2001	2401	3601	4001	4801	6001	10001
D = 150			2401	3601		4801	6001	10001
E = 200						4801	6001	10001
F = 250								10001

10 **filter housing specification:** (see catalog)
- = standard
IS06 = see sheet-no. 31605

11 **clogging indicator or clogging sensor:**
- = without
OP = visual, see sheet-no.1628
AE = visual-electrical, see sheet-no.1609; VS1 = electronical, see sheet-no.1607
OE = visual-electrical, see sheet-no.1628; VS2 = electronical, see sheet-no.1608

1.2. Filter element: (ordering example)

01E. 1201. 10VG. 10. E. P. -

1	2	3	4	5	6	7

1 **series:**
01E. = filter element according to company standard

2 **nominal size:** 1201, 2001, 4001

3 - 7 see type index-complete filter

2. Accessories:

- measure-and bleeder -connections, see sheet-no. 1650
- evacuation- and bleeder-connections, see sheet-no. 1651
- counter flanges, see sheet-no. 1653
- shut-off valve, see sheet-no. 1655
- lifting mechanism, see sheet-no. 1661

Changes of measures and design are subject to alteration!

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4. Spare parts:

4.1. Depending on different series:

item	designation	qty.	dimension and article-no. DSF 1201	dimension and article-no. DSF 2001	qty.	dimension and article-no. DSF 2401	qty.	dimension and article-no. DSF 3601	qty.	dimension and article-no. DSF 4001	qty.	dimension and article-no. DSF 4801	qty.	dimension and article-no. DSF 6001	qty.	dimension and article-no. DSF 10001
1	filter element	2	01E.1201	01E.2001	4	01E.1201	6	01E.1201	2	01E.4001	8	01E.1201	6	01E.2001	10	01E.2001
2	stop flap [1]	4	DN 50-100	DN 65-125	4	DN 65-150	4	DN 80-150	4	DN 65-125	4	DN 100-200	4	DN 100-200	4	DN 125-250
3	O-ring	2	225 x 5 308652 (NBR) 311473 (FPM)	275 x 5 307414 (NBR) 310288 (FPM)	2	330 x 5 303080 (NBR) 310275 (FPM)	2	429 x 6 308659 (NBR) 310273 (FPM)	2	275 x 5 307414 (NBR) 310288 (FPM)	2	516 x 6 301962 (NBR) 311474 (FPM)	2	516 x 6 301962 (NBR) 311474 (FPM)	2	722 x 8 308145 (NBR) 311805 (FPM)
4	O-ring	2	85 x 10 304386 (NBR) 304541 (FPM)	125 x 10 304388 (NBR) 306006 (FPM)	4	85 x 10 304386 (NBR) 304541 (FPM)	6	85 x 10 304386 (NBR) 304541 (FPM)	2	125 x 10 304388 (NBR) 306006 (FPM)	8	85 x 10 304386 (NBR) 304541 (FPM)	6	125 x 10 304388 (NBR) 306006 (FPM)	10	125 x 10 304388 (NBR) 306006 (FPM)
5	O-ring	2	93 x 5 307588 (NBR) 307589 (FPM)	135 x 5 306016 (NBR) 307045 (FPM)	4	93 x 5 307588 (NBR) 307589 (FPM)	6	93 x 5 307588 (NBR) 307589 (FPM)	2	135 x 5 306016 (NBR) 307045 (FPM)	8	93 x 5 307588 (NBR) 307589 (FPM)	6	135 x 5 306016 (NBR) 307045 (FPM)	10	135 x 5 306016 (NBR) 307045 (FPM)
6	spring	2	Da = 95 304414		2	pressure plate			2	Da = 95 304414	2	pressure plate				
7	screw plug	2	G ½ 309730	G 1 309732	2	G1 309732									2	G 1 ½ 318556
8	gasket	2	A 22 x 27 305564	A 33 x 39 308257	2	A 33 x 39 308257									2	A 48 x 55 309764
9	screw plug	4	G1 309732	G1 309732	4	G1 309732									4	G 1 ½ 318556
10	gasket	4	A 33 x 39 308257	A 33 x 39 308257	4	A 33 x 39 308257									4	A 48 x 55 309764

[1] dimension of stop flap = connection size

4.2. Independing on the series:

item	qty.	designation	dimension	article-no.	
11	1	clogging indicator, visual	OP	see sheet-no. 1628	
12	1	clogging indicator, visual-electrical	OE	see sheet-no. 1628	
13	1	clogging indicator, visual-electrical	AE	see sheet-no. 1609	
14	1	clogging sensor, electronical	VS1	see sheet-no. 1607	
15	1	clogging sensor, electronical	VS2	see sheet-no. 1608	
16	2	O-ring	14 x 2	304342 (NBR)	304722 (FPM)
17	2	gasket	A 14 x 18	306330	
18	2	screw plug	G ¼	309734	

5. Description:

Duplex filters of the series DSF 1201 - 10001 are suitable for a working pressure up to 16 bar.
Pressure peaks can be absorbed with a sufficient margin of safety.
Four mechanically connected change-over flaps enabling the change-over without service-interruption from the clean to the dirty filter-side.
The filters can be installed as suction filter, pressure filter or return-line filter.
The filter element consist of star-shaped, pleated filter material which is supported on the inside by a perforated core tube and is bonded to the end caps with a high-quality adhesive. The flow direction is from outside to the inside. Filter finer than 40 µm should use throw-away elements made of paper or Interpor fleece (glass fibre). Filter elements as fine as 5 $\mu m_{(c)}$ are available; finer filter elements on request.
Internormen Product Line filter elements are known as elements with a high intrinsic stability and an excellent filtration capability, a high dirt-retaining capacity and a long service life.
Internormen Product Line filter are suitable for all petroleum based fluids, HW-emulsions, most synthetic hydraulic fluids and lubrication oils.
Approvals according to TÜV, and the major „Shipyard Classification Societies“ D.N.V.; B.V.; G.L.; L.R.S.; R.I.N.A.; A.B.S.; P.R.S.;USS.R.S. and others are possible.

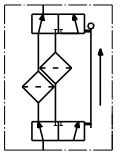
6. Technical data:

temperature range:	- 10°C to + 80°C (for a short time + 100°C)
operating medium:	mineral oil, other media on request
max. operating pressure:	16 bar
test pressure:	23 bar
connection system:	flange connection DIN EN 1092-1, 16 bar
housing material:	C-steel
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical
mini-measuring connection:	G ¼

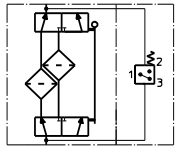
Classified under the Pressure Equipment Directive 97/23/EC for mineral oil (fluid group 2), Article 3, Para. 3.
Classified under ATEX Directive 94/9/EC according to specific application (see questionnaire sheet-no. 34279-4).

7. Symbols:

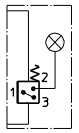
without indicator



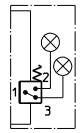
with electrical indicator AE 30 and AE 40



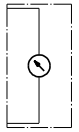
with visual - electrical indicator AE 50 and AE 62



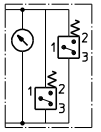
with visual - electrical indicator AE 70 and AE 80



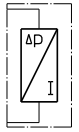
with visual indicator OP



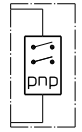
with visual - electrical indicator OE



with electronical clogging sensor VS1



with electronical clogging sensor VS2



8. Pressure drop flow curves:

Precise flow rates see ‘Interactive Product Specifier’, respectively Δp-curves; depending on filter fineness and viscosity.

9. Test methods:

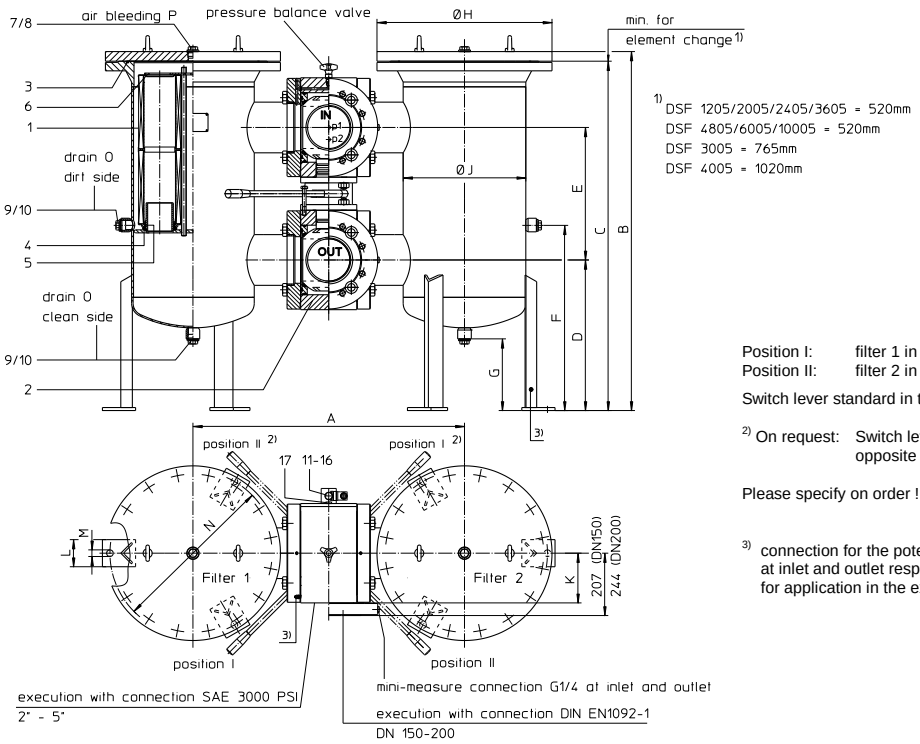
Filter elements are tested according to the following ISO standards:

ISO 2941	Verification of collapse/burst resistance
ISO 2942	Verification of fabrication integrity
ISO 2943	Verification of material compatibility with fluids
ISO 3723	Method for end load test
ISO 3724	Verification of flow fatigue characteristics
ISO 3968	Evaluation of pressure drop versus flow characteristics
ISO 16889	Multi-pass method for evaluating filtration performance

PRESSURE FILTER, change-over ball valve

Series DSF 1205-10005 DN 50-200 PN 16

Sheet No. **2134 H**



1) DSF 1205/2005/2405/3605 = 520mm
DSF 4805/6005/10005 = 520mm
DSF 3005 = 765mm
DSF 4005 = 1020mm

Position I: filter 1 in operation
Position II: filter 2 in operation

Switch lever standard in the front

2) On request: Switch lever backside opposite to inlet and outlet.

Please specify on order !

3) connection for the potential equalisation at inlet and outlet resp. filter housing, only for application in the explosive area

3. Dimensions:

type	DN	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	weight kg	volume tank
DSF 1205	50	610	1009	985	365	175	460	185	340	219	74	70	18	330	G1	G ½	200	2x 26 l
	65	560	1009	985	365	270	460				90							2x 26 l
	80	585	1009	985	375	290	460				100							2x 26 l
	100	620	1024	1000	390	365	475				127							2x 26 l
DSF 2005	65	630	1011	985	380	270	460	185	405	273	90	70	18	380	G1	G1	280	2x 39 l
	80	640	1011	985	380	290	460				100							2x 39 l
	100	670	1046	1020	400	365	495				127							2x 41 l
	125	730	1086	1060	420	395	535				142							2x 43 l
DSF 2405	65	680	1053	1025	390	270	480	185	460	324	90	70	18	450	G1	G1	355	2x 58 l
	80	700	1053	1025	400	290	480				100							2x 58 l
	100	730	1078	1050	410	365	505				127							2x 60 l
	125	770	1113	1085	425	395	540				142							2x 63 l
DSF 3005	65	630	1258	1232	380	270	460	185	405	273	90	70	18	380	G1	G ½	310	2x 52 l
	80	640	1258	1232	380	290	460				100							2x 52 l
	100	670	1293	1267	400	365	495				127							2x 54 l
	125	730	1333	1307	420	395	535				142							2x 56 l
	150	760	1333	1307	420	440	535	175			-							2x 57 l
DSF 3605	80	780	1152	1120	480	290	575	235	580	406	100	90	22	550	G1	G1	580	2x 97 l
	100	810	1152	1120	480	365	575				127							2x 97 l
	125	870	1192	1160	500	395	615				142							2x 103 l
	150	900	1192	1160	500	440	615				-							2x 103 l
DSF 4005	65	630	1506	1480	380	270	460	185	405	273	90	70	18	380	G1	G1	340	2x 65 l
	80	640	1506	1480	380	290	460				100							2x 65 l
	100	670	1541	1515	400	365	495				127							2x 67 l
	125	730	1581	1555	420	395	535				142							2x 69 l
DSF 4805 DSF 6005	100	910	1216	1180	520	365	635	235	715	508	127	90	22	650	G1	G1	800	2x 165 l
	125	970	1216	1180	520	395	635				142							2x 165 l
	150	1040	1236	1200	530	440	655				-							2x 171 l
	200	1090	1376	1340	560	520	795				-							2x 197 l
DSF 10005	125	1170	1350	1310	630	395	765	285	910	711	142	120	22	900	G1 ½	G1 ½	950	2x 358 l
	150	1250	1350	1310	630	440	765				-							2x 358 l
	200	1290	1490	1450	660	520	905				-							2x 408 l

EDV 08/12

1. Type index:

1.1. Complete filter: (oedering example)

DSF. 3605. 10VG. 10. E. P. -. FS. B. -. AE

1	2	3	4	5	6	7	8	9	10	11

1 **series:**
DSF = duplex filter

2 **nominal size:** 1205, 2005, 2405, 3005, 3605, 4005, 4805, 6005, 10005

3 **filter-material and filter- fineness:**
80 G = 80 µm, 40 G = 40 µm, 25 G = 25 µm, 10 G = 10 µm stainless steel wire mesh,
25 VG = 20 $\mu m_{(c)}$, 16 VG = 15 $\mu m_{(c)}$, 10 VG = 10 $\mu m_{(c)}$, 6 VG = 7 $\mu m_{(c)}$, 3 VG = 5 $\mu m_{(c)}$ Interpor fleece (glass fibre)
25 API = 20 µm, 10 API = 10 µm Interpor fleece (glass fibre) according to API
10 P = 10 µm paper

4 **resistance of pressure difference for filter element:**
10 = Δp 10 bar

5 **filter element design:**
E = without by-pass valve S = with by-pass valve Δp 2,0 bar

6 **sealing material:**
P = Nitrile (NBR) V = Viton (FPM)

7 **filter element specification:** (see catalog)
- = standard
VA = stainless steel
IS06 = see sheet-no. 31601

8 **connection:**
FS = flange connection SAE 3000 PSI , only for DN 50-125
FD1 = flange connection DIN EN 1092-1, design B1 (only for DN 150-200)
FD2 = flange connection DIN EN 1092-1, design B2 (only for DN 150-200)

9 **connection size:**

filter-nominal size	DSF 1205	DSF 2005	DSF 2405	DSF 3005	DSF 3605
connection size	8-9-A-B	9-A-B-C	9-A-B-C	9-A-B-C-D	A-B-C-D
filter-nominal size	DSF 4005	DSF 4805	DSF 6005	DSF 10005	
connection size	9-A-B-C	B-C-D-E	B-C-D-E	C-D-E	

8 = DN 50 9 = DN 65 A = DN 80 B = DN 100 C = DN 125 D = DN 150 E = DN 200

10 **filter housing specification:** (see catalog)
- = standard
IS06 = see sheet-no. 31605

11 **clogging indicator or clogging sensor:**
- = without
OP = visual, see sheet-no. 1628
OE = visual-electrical, see sheet-no. 1628
AE = visual-electrical, see sheet-no. 1609
VS1 = electronical, see sheet-no. 1607
VS2 = electronical, see sheet-no. 1608

1.2. Filter element: (ordering example)

01E. 1201. 10VG. 10. E. P. -

1	2	3	4	5	6	7

1 **series:**
01E. = filter element according to company standard

2 **Nenngröße:** 1201, 2001, 3001, 4001

3 - 7 see type index-complete filter

2. Accessories:

- measure -and bleeder-connections, see sheet-no. 1650
- evacuation- and bleeder-connections, see sheet-no. 1651
- shut-off valve, see sheet-no. 1655
- SAE-counter flanges, see sheet-no. 1652
- adaptor for flange DIN 2633 (DN 50-125), see sheet-no. 1657
- lifting mechanism, see sheet-no. 1661

Changes of measures and design are subject to alteration!

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4. Spare parts:

4.1. Depending on different series:

item	designation	qty.	dimension and article-no. DSF 1205	dimension and article-no. DSF 2005	qty.	dimension and article-no. DSF 2405	qty.	dimension and article-no. DSF 3005	qty.	dimension and article-no. DSF 3605	qty.	dimension and article-no. DSF 4005	qty.	dimension and article-no. DSF 4805	qty.	dimension and article-no. DSF 6005	qty.	dimension and article-no. DSF 10005
1	filter element	2	01E.1201	01E.2001	4	01E.1201	2	01E.3001	6	01E.1201	2	01E.4001	8	01E.1201	6	01E.2001	10	01E.2001
2	change over UKK	1	DN 50-100	DN 65-125	1	DN 65-125	1	DN 65-150	1	DN 80-150	1	DN 65-125	1	DN 100-200	1	DN 100-200	1	DN 125-200
3	O-ring	2	225 x 5 308652 (NBR) 311473 (FPM)	275 x 5 307414 (NBR) 310288 (FPM)	2	330 x 5 303080 (NBR) 310275 (FPM)	2	275 x 5 307414 (NBR) 310288 (FPM)	2	429 x 6 308659 (NBR) 310273 (FPM)	2	275 x 5 307414 (NBR) 310288 (FPM)	2	516 x 6 301962 (NBR) 311474 (FPM)	2	516 x 6 301962 (NBR) 311474 (FPM)	2	722 x 8 308145 (NBR) 311805 (FPM)
4	O-ring	2	85 x 10 304386 (NBR) 304541 (FPM)	125 x 10 304388 (NBR) 306006 (FPM)	4	85 x 10 304386 (NBR) 304541 (FPM)	2	125 x 10 304388 (NBR) 306006 (FPM)	6	85 x 10 304386 (NBR) 304541 (FPM)	2	125 x 10 304388 (NBR) 306006 (FPM)	8	85 x 10 304386 (NBR) 304541 (FPM)	6	125 x 10 304388 (NBR) 306006 (FPM)	10	125 x 10 304388 (NBR) 306006 (FPM)
5	O-ring	2	93 x 5 307588 (NBR) 307589 (FPM)	135 x 5 306016 (NBR) 307045 (FPM)	4	93 x 5 307588 (NBR) 307589 (FPM)	2	135 x 5 306016 (NBR) 307045 (FPM)	6	93 x 5 307588 (NBR) 307589 (FPM)	2	135 x 5 306016 (NBR) 307045 (FPM)	8	93 x 5 307588 (NBR) 307589 (FPM)	6	135 x 5 306016 (NBR) 307045 (FPM)	10	135 x 5 306016 (NBR) 307045 (FPM)
6	spring	2	Da = 95 304414	Da = 95 304414	2	pressure plate	2	Da = 95 304414	2	pressure plate	2	Da = 95 304414	2	pressure plate	2	pressure plate	2	pressure plate
7	screw plug	2	G ½ 309730	G 1 309732	2	G1 309732											2	G 1 ½ 318556
8	gasket	2	A 22 x 27 305564	A 33 x 39 308257	2	A 33 x 39 308257											2	A 48 x 55 309764
9	screw plug	4	G1 309732	G1 309732	4	G1 309732											4	G 1 ½ 318556
10	gasket	4	A 33 x 39 308257	A 33 x 39 308257	4	A 33 x 39 308257											4	A 48 x 55 309764

4.2. Independing on the series:

item	qty.	designation	dimension	article-no.	
11	1	clogging indicator, visual	OP	see sheet-no. 1628	
12	1	clogging indicator, visual-electrical	OE	see sheet-no. 1628	
13	1	clogging indicator, visual-electrical	AE	see sheet-no.. 1609	
14	1	clogging sensor, electronical	VS1	see sheet-no. 1607	
15	1	clogging sensor, electronical	VS2	see sheet-no. 1608	
16	2	O-ring	14 x 2	304342 (NBR)	304722 (FPM)
17	2	screw plug	G ¼	305003	

item 17 execution only without clogging indicator or clogging sensor

5. Description:

Duplex filters of the series DSF 1205 - 10005 are suitable for a working pressure up to 16 bar.
Pressure peaks can be absorbed with a sufficient margin of safety.
Change-over ball valve between the two filter housings makes it possible to switch from the dirty filter-side to the clean filter-side without interruting operation.
The filters can be installed as suction filter, pressure filter or return-line filter.
The filter element consist of star-shaped, pleated filter material which is supported on the inside by a perforated core tube and is bonded to the end caps with a high-quality adhesive. The flow direction is from outside to the inside.
For cleaning (see special leaflet 21070-4 and 34448-4) the mesh element respectively to change the glass fibre element remove the cover and take out the element.
Filter finer than 40 µm should use throw-away elements made of paper or Interpor fleece (glass fibre). Filter elements as fine as 5 $\mu m_{(c)}$ are available; finer filter elements on request.
Internormen Product Line filter elements are known as elements with a high intrinsic stability and an excellent filtration capability, a high dirt-retaining capacity and a long service life.
Internormen Product Line filter are suitable for all petroleum based fluids, HW-emulsions, most synthetic hydraulic fluids and lubrication oils.
Approvals according to TÜV, and the major „Shipyard Classification Societies“ D.N.V.; B.V.; G.L.; L.R.S.; R.I.N.A.; A.B.S.; P.R.S.;USS.R.S. and others are possible.

6. Technical data:

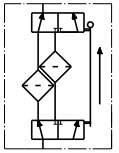
temperature range:	- 10°C to + 80°C (for a short time + 100°C
operating medium:	mineral oil, other media on request
max. operating pressure:	16 bar
test pressure:	23 bar
connection system:	SAE-flange connection 3000 PSI or flange connection DIN EN 1092-1, 16 bar
housing material:	C-steel
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical
mini-measuring connection:	G ¼

Classified under the Pressure Equipment Directive 97/23/EC for mineral oil (fluid group 2), Article 3, Para. 3.
Classified under ATEX Directive 94/9/EC according to specific application (see questionnaire sheet-no. 34279-4).

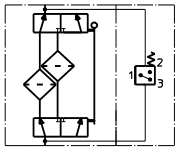
E 2134 H

7. Symbols:

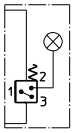
without indicator



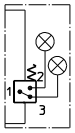
with electrical indicator AE 30 and AE 40



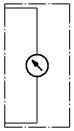
with visual - electrical indicator AE 50 and AE 62



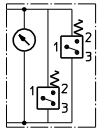
with visual - electrical indicator AE 70 and AE 80



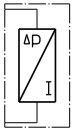
with visual indicator OP



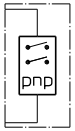
with visual - electrical indicator OE



with electronical clogging sensor VS1



with electronical clogging sensor VS2



8. Pressure drop flow curves:

Precise flow rates see ‘Interactive Product Specifier’, respectively Δp-curves; depending on filter fineness and viscosity.

9. Test methods:

Filter elements are tested according to the following ISO standards:

ISO 2941	Verification of collapse/burst resistance
ISO 2942	Verification of fabrication integrity
ISO 2943	Verification of material compatibility with fluids
ISO 3723	Method for end load test
ISO 3724	Verification of flow fatigue characteristics
ISO 3968	Evaluation of pressure drop versus flow characteristics
ISO 16889	Multi-pass method for evaluating filtration performance