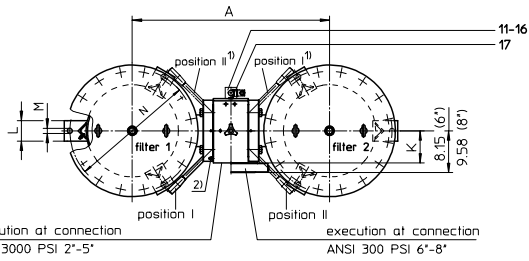


PRESSURE FILTER, change-over
Series DNR 1005-8205 **232 PSI**



Position I: filter 1 in operation
Position II: filter 2 in operation
Switch lever standard in the front

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

Please specify on order !

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

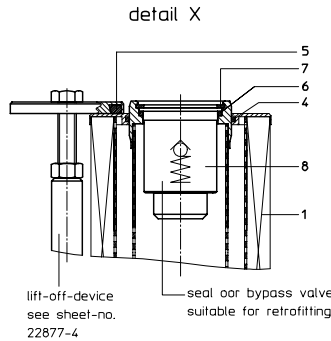
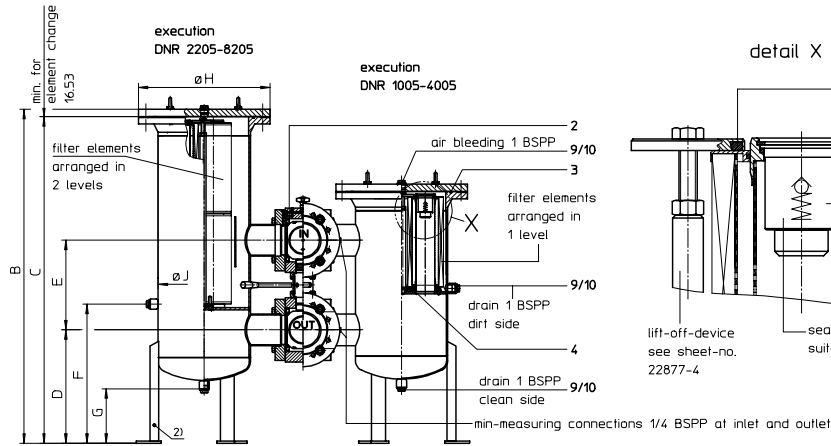
1. Type index:

1.1. Complete filter: (ordering example)

DNR. 3005. 10VG. 10. B. P. -. FS. B. -. -. AE

1	2	3	4	5	6	7	8	9	10	11	12
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- 1 series:
DNR = duplex filter with standard-return-line filter elements
- 2 nominal size: 1005, 2005, 3005, 4005 (1 level)
2205, 4205, 6205, 8205 (2 levels)
- 3 filter-material and filter-finness:
80 G = 80 µm, 40 G = 40 µm, 25 G = 25 µm stainless steel wire mesh,
25 VG = 20 µm_(G), 16 VG = 15 µm_(G), 10 VG = 10 µm_(G), 6 VG = 7 µm_(G), 3 VG = 5 µm_(G), Interpor fleece (glass fiber)
25 P = 25 µm, 10 P = 10 µm paper
- 4 resistance of pressure difference for filter element:
10 = Δp 145 PSI
- 5 filter element design:
B = both sides open ;
- 6 sealing material:
P = Nitrile (NBR); V = Viton (FPM)
- 7 filter element specification: (see catalog)
- = standard ; VA = stainless steel ; IS06 = see sheet-no. 31601 ; IS07 = see sheet-no. 31602
- 8 connection:
FS = SAE-flange connection 3000 PSI, only for 2" - 5"
FA 1 = ANSI-flange connection 300 PSI, sealing surface rough grind 1600-3600 µin, only for 6" - 8"
FA 2 = ANSI-flange connection 300 PSI, sealing surface rough grind < 640 µin, only for 6" - 8"
- 9 connection size:



3. Dimensions: inch

type	conn. ANSI	A	B	C	D	E	F	G	H	J	K	L	M	N	weight lbs.	volume tank
DNR 1005	2"	24.01	36.02	35.03	14.37	6.88	18.22	7.08	13.38	8.62	2.91	2.76	.71	12.99	396	2x 5.94 Gal
	2 1/2"	22.04	36.02	35.03	14.37	10.62	18.22				3.54				440	2x 5.94 Gal
	3"	23.03	36.41	35.43	14.76	11.41	18.62				3.93				462	2x 6.00 Gal
	4"	24.40	37.59	36.61	15.35	14.37	19.80				5.00				506	2x 6.30 Gal
DNR 2005	3"	30.70	43.50	42.12	19.68	11.41	25.31	9.44	22.83	15.98	3.93	3.54	.87	21.65	1122	2x 25.0 Gal
	4"	31.88	43.50	42.12	19.68	14.37	25.31				5.00				1144	2x 25.0 Gal
	5"	34.25	45.07	43.70	19.68	15.55	26.88				5.59				1188	2x 26.0 Gal
	6"	35.43	47.04	45.66	19.68	17.32	28.85				-				1232	2x 29.0 Gal
DNR 3005	4"	31.88	43.50	42.12	19.68	14.37	25.31	9.44	22.83	15.98	5.00	3.54	.87	21.65	1144	2x 25.0 Gal
	5"	34.25	45.07	43.70	19.68	15.55	26.88				5.59				1188	2x 26.0 Gal
	6"	35.43	47.04	45.66	19.68	17.32	28.85				-				1232	2x 29.0 Gal
	8"	38.97	52.95	51.57	21.06	20.47	34.76				-				1300	2x 32.0 Gal
DNR 4005	4"	35.82	45.86	44.48	20.47	14.37	27.67	9.44	28.14	20.00	x	3.54	.87	25.59	1144	2x 40.0 Gal
	5"	38.18	45.86	44.48	20.47	15.55	27.67				5.59				1188	2x 40.0 Gal
	6"	40.94	48.62	47.24	20.86	17.32	28.85				-				1249	2x 44.0 Gal
	8"	42.91	54.13	52.75	22.04	20.47	35.94				-				1284	2x 51.0 Gal
DNR 2205	3"	23.03	52.16	51.18	14.76	11.41	18.62	7.08	13.38	8.62	3.93	2.76	.71	12.99	550	2x 9.50 Gal
	4"	24.40	53.34	52.36	15.35	14.37	19.80				5.00				594	2x 9.80 Gal
	5"	26.77	54.13	53.14	15.74	15.55	20.59				5.59				616	2x 10.0 Gal
	6"	27.95	55.31	54.33	16.33	17.32	21.77				-				660	2x 10.6 Gal
DNR 4205	3"	30.70	58.07	56.69	19.68	11.41	24.13	9.44	22.83	15.98	3.93	3.54	.87	21.65	1188	2x 36.0 Gal
	4"	31.88	58.07	56.69	19.68	14.37	24.13				5.00				1210	2x 36.0 Gal
	5"	34.25	58.07	56.69	19.68	15.55	24.13				5.59				1255	2x 36.0 Gal
	6"	35.43	59.25	57.87	20.07	17.32	25.31				-				1300	2x 37.0 Gal
DNR 6205	4"	31.88	58.07	56.69	19.68	14.37	24.13	9.44	22.83	15.98	5.00	3.54	.87	21.65	1280	2x 36.0 Gal
	5"	34.25	58.07	56.69	19.68	15.55	24.13				5.59				1320	2x 36.0 Gal
	6"	35.43	58.07	56.69	19.68	17.32	24.13				-				1365	2x 36.0 Gal
	8"	38.97	60.43	59.05	20.86	20.47	26.49				-				1430	2x 38.0 Gal
DNR 8205	4"	35.82	58.85	57.48	20.47	14.37	24.92	9.44	28.14	20.00	5.00	3.54	.87	25.59	1830	2x 57.5 Gal
	5"	38.18	58.85	57.48	20.47	15.55	24.92				5.59				1870	2x 57.5 Gal
	6"	40.94	59.64	58.26	20.86	17.32	25.70				-				1915	2x 58.6 Gal
	8"	42.91	62.00	60.62	22.04	20.47	28.07				-				1980	2x 61.5 Gal

filter-nominal size	DNR 1005	DNR 2005	DNR 3005	DNR 4005	DNR 2205	DNR 4205	DNR 6205	DNR 8205
connection size	8-9-A-B	A-B-C-D	B-C-D-E	B-C-D-E	A-B-C-D	A-B-C-D-E	B-C-D-E	B-C-D-E

8 = 2"; 9 = 2 1/2"; A = 3"; B = 4"; C = 5"; D = 6"; E = 8"

- 10 filter housing specification: (see catalog)
- = standard
IS06 = IS06 = see sheet-no. 31605
- 11 internal valve:
- = without
S1 = with by-pass valve 51 PSI
- 12 clogging indicator or clogging sensor:
- = without; AE = visual-electrical, see sheet-no.1609
OP = visual, see sheet-no.1628; VS1 = electrical, see sheet-no.1607
OE = visual-electrical, see sheet-no 1628; VS2 = electrical, see sheet-no.1608

1.2. Filter element: (ordering example)

01NR. 1000. 10VG. 10. B. P. -

1	2	3	4	5	6	7
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- 1 series:
01NR. = standard-return-line filter element according to DIN 24550, T4
- 2 nominal size: 1000
- 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
- counter flange, see sheet-no. 1652
- adaptor for ANSI-flange 300 PSI (2"-5") see sheet-no. 1658
- lifting mechanism, see sheet-no. 1661

Changes of measures and design are subject to alteration!

4. Spare parts:

4.1. Depending on different series:

item	designation	qty.	dimension and article-no. DNR 1005	qty.	dimension and article-no. DNR 2005	qty.	dimension and article-no. DNR 3005	qty.	dimension and article-no. DNR 4005	qty.	dimension and article-no. DNR 2205	qty.	dimension and article-no. DNR 4205	qty.	dimension and article-no. DNR 8205
1	filter element	2	01NR. 1000	4	01NR. 1000	6	01NR. 1000	8	01NR. 1000	4	01NR. 1000	8	01NR. 1000	12	01NR. 1000
2	change over UKK	1	2"-4" ANSI	1	3"-6" ANSI	1	4"-8" ANSI	1	4"-8" ANSI	1	3"-6" ANSI	1	3"-8" ANSI	1	4"-8" ANSI
3	O-ring	2	225 x 5 308652 (NBR) 311473 (FPM)	2	429 x 6 308659 (NBR) 310273 (FPM)	2	429 x 6 308659 (NBR) 310273 (FPM)	2	516 x 6 301962 (NBR) 311474 (FPM)	2	225 x 5 308652 (NBR) 311473 (FPM)	2	429 x 6 308659 (NBR) 310273 (FPM)	2	429 x 6 308659 (NBR) 310273 (FPM)
4	O-ring	6	90 x 4 306941 (NBR) 307031 (FPM)	12	90 x 4 306941 (NBR) 307031 (FPM)	18	90 x 4 306941 (NBR) 307031 (FPM)	24	90 x 4 306941 (NBR) 307031 (FPM)	10	90 x 4 306941 (NBR) 307031 (FPM)	20	90 x 4 306941 (NBR) 307031 (FPM)	30	90 x 4 306941 (NBR) 307031 (FPM)
5	O-ring	-	-	2	78 x 10 305017 (NBR) 305552 (FPM)	2	78 x 10 305017 (NBR) 305552 (FPM)	2	78 x 10 305017 (NBR) 305552 (FPM)	2	78 x 10 305017 (NBR) 305552 (FPM)	2	78 x 10 305017 (NBR) 305552 (FPM)	2	78 x 10 305017 (NBR) 305552 (FPM)
6	O-ring	2	62 x 4 308045 (NBR) 311472 (FPM)	4	62 x 4 308045 (NBR) 311472 (FPM)	6	62 x 4 308045 (NBR) 311472 (FPM)	8	62 x 4 308045 (NBR) 311472 (FPM)	2	62 x 4 308045 (NBR) 311472 (FPM)	4	62 x 4 308045 (NBR) 311472 (FPM)	6	62 x 4 308045 (NBR) 311472 (FPM)
7	circlip	2	DIN 472-75x2,5 311471	4	DIN 472-75x2,5 311471	6	DIN 472-75x2,5 311471	8	DIN 472-75x2,5 311471	2	DIN 472-75x2,5 311471	4	DIN 472-75x2,5 311471	6	DIN 472-75x2,5 311471
8	bypass valve	2	2" 311974	4	2" 311974	6	2" 311974	8	2" 311974	2	2" 311974	4	2" 311974	6	2" 311974
9	screw plug	6	1 BSPP 309732												
10	gasket	6	A 33 x 39 308257												

4.2. Depending 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	¼ BSPP	305003

5. Description:

Duplex filters of the series DNR 1005-8205 are suitable for a working pressure up to 232 PSI.

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 interrupting 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. Filter finer than 40 microns should use throw-away elements made of Interpor fleece (glass fiber). Filter elements as fine as 5 microns₀ are available; finer filter elements on request.

INTERNORMEN-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-Filter are suitable for all petroleum based fluids, HW-emulsions, most synthetic hydraulic fluids and lubrication oils.

Approvals according to TÜV, and the mayor „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:

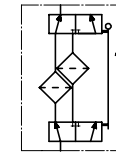
temperature range:	+14°F to +176°F (for a short time +212°F)
operating medium:	mineral oil, other media on request
max. operating pressure:	232 PSI
test pressure:	332 PSI
connection system:	SAE-flange connection 3000 PSI or ANSI-flange connection
housing material:	C-steel
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical
mini-measuring connection:	¼ BSPP

Classified under the Pressure Equipment Directive 97/23/EC for mineral oil (fluid group 2), Article 3, Para. 3.

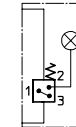
Classified under ATEX Directive 94/9/EC according to specific application (see questionnaire sheet-no. 34279-4).

7. Symbols:

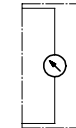
without indicator



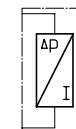
with visual -
electrical indicator
AE 50 and AE 62



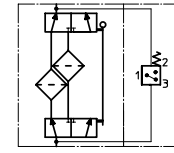
with visual
indicator
OP



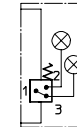
with electronical
clogging sensor
VS1



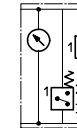
with electrical indicator
AE 30 and AE 40



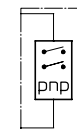
with visual -
electrical indicator
AE 70 and AE 80



with visual -
electrical indicator
OE



with electronical
clogging sensor
VS2



8. Pressure drop flow curves:

Precise flow rates see 'INT-Expert-System Filter', 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