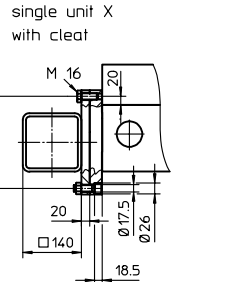
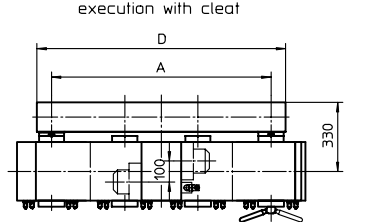
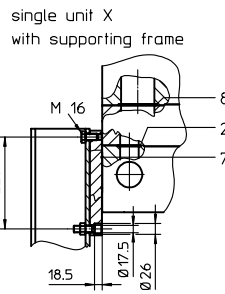
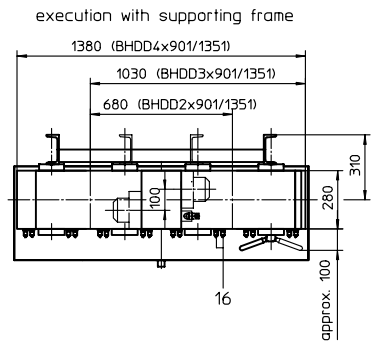
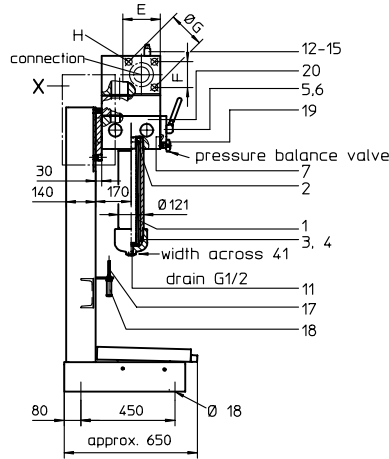
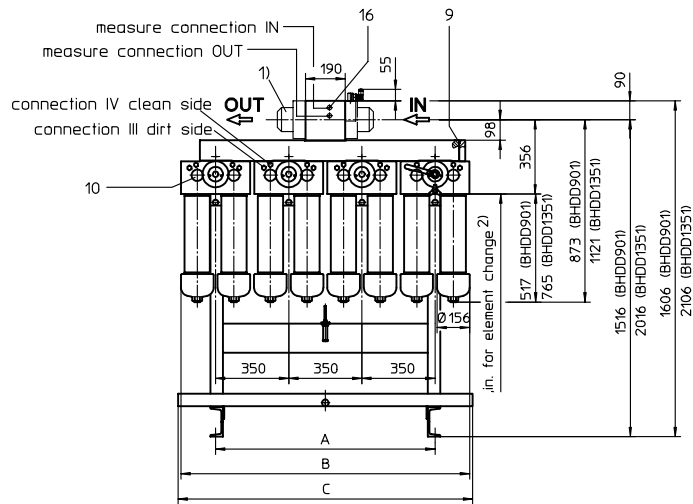


FILTER-BATTERY, change-over
Series BHDD 2x901/1351- 4x901/1351 DN 50-80 PN 315



1. Type index:

1.1. Complete filter: (ordering example)
BHDD.4x901.10VG.HR.E.P.-.FV.A.-.-.AE.T

1	2	3	4	5	6	7	8	9	10	11	12	13
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- series:**
BHDD = battery-pressure filter, change-over
- nominal size:**
2x901, 2x1351
3x901, 3x1351
4x901, 4x1351
- filter-material and filter-fineness:**
25 VG = 20 µm_(c), 16 VG = 15 µm_(c), 10 VG = 10 µm_(c), 6 VG = 7 µm_(c), 3 VG = 5 µm_(c) Interpor fleece (glass fibre)
- resistance of pressure difference for filter element:**
30 = Δp 30 bar
HR = Δp 160 bar (rupture strength Δp 250 bar)
- filter element design:**
E = single-end open
- sealing material:**
P = Nitrile (NBR)
V = Viton (FPM)
- filter element specification:**
- = standard
VA = stainless steel
- connection:**
FV = AVIT-flange connection 320 bar
- connection size:**
8 = 2"
9 = 2 1/2"
A = 3"
- filter housing specification:**
- = standard
- internal valve:**
- = without
S1 = with by-pass valve, Δp 3,5 bar
S2 = with by-pass valve, Δp 7,0 bar
R = reversing valve, Q ≤ 465,348 l/min
- clogging indicator or clogging sensor:**
- = without
AE = visual-electrical, see sheet-no. 1609
VS1 = electrical, see sheet-no. 1607
VS2 = electrical, see sheet-no. 1608
- fixing:**
- = without supporting frame with fastening bores
B = with cleat
T = with supporting frame

1.2. Filter element: (ordering example)

01E.900.10VG.HR.E.P.-

1	2	3	4	5	6	7
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- series:**
01E. = filter element according to INTERNORMEN factory specification
- nominal size:** 900, 1350
- 7 | see type index-complete filter

Measuring connections III and IV to be used to bleed filter or to relieve pressure.

1) Flanges are not part of the connecting block. If required they have to be ordered separately.

filter-battery	A	B	C	D
BHDD 2x901/1351	350	680	710	490
BHDD 3x901/1351	700	1030	1060	840
BHDD 4x901/1351	1050	1380	1410	1190

connection	E	F	G	H
2"	120	83,4	118	M20 x 25 deep
2 1/2"	150	102,5	145	M24 x 30 deep
3"	180	123,7	175	M30 x 32 deep

2) min. for element change: 940 (BHDD901)
1440 (BHDD1351)

Changes of measures and design are subject to alteration!

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phone +49 - (0)6205 - 2094-0 e-mail sales@internormen.com
fax +49 - (0)6205 - 2094-40 url www.internormen.com

2. Accessories:

- counter-flange see sheet-no. 1654

3. Spare parts:

item	qty. BHDD 2x901/1351	qty. BHDD 3x901/1351	qty. BHDD 4x901/1351	designation	dimension	article-no.	
1	4	6	8	filter element (BHDD 2-4x901)	01E.900		
				filter element (BHDD 2-4x1351)	01E.1350		
2	8	12	16	O-ring	48 x 3	304357 (NBR)	304404 (FPM)
3	4	6	8	O-ring	98 x 4	301914 (NBR)	304754 (FPM)
4	4	6	8	support ring	110 x 3,5 x 2	304802	
5	4	6	8	O-ring	18 x 3	304359 (NBR)	304399 (FPM)
6	4	6	8	support ring	25 x 2,5 x 0,5	311311	
7	4	6	8	O-ring	71 x 3	306451 (NBR)	306897 (FPM)
8	2	2	2	O-ring	85 x 3,5	310785 (NBR)	
9	2	2	2	O-ring	69,45 x 3,53	305868 (NBR)	307357 (FPM)
10	16	24	32	screw plug	G 1 ½	311475	
11	4	6	8	screw plug	G ½	304678	
12	1	1	1	clogging indicator, visual-electrical	AE	see sheet-no. 1609	
13	1	1	1	clogging sensor, electrical	VS1	see sheet-no. 1607	
14	1	1	1	clogging sensor, electrical	VS2	see sheet-no. 1608	
15	2	2	2	O-ring	14 x 2	304342 (NBR)	304722 (FPM)
16	10	14	18	mini-measuring connection	MA.1.St	305453	
17	1	1	1	high pressure hose	M16.2000	see sheet-no. 1650	
18	1	1	1	spray protection	M16	see sheet-no. 1650	
19	2	3	4	pressure balance valve	NG 10	305000	
20	2	3	4	pressure filter, change-over	HDD901 resp. HDD1351	see sheet-no. 2524	

4. Description:

The filter-batteries of the series BHDD are suitable for the filtration of large flow volumes up to a working pressure of 315 bar and are stressing a high filter efficiency. The duplex pressure filters, of the filter-batteries consist of high quality spheroidal graphite cast iron (EN-GJS-400-18-LT) resp. c-steel. The intrinsic joint plate is made out of high-tensile aluminium alloy.

Duplex filters can be maintained without interruption of operation, as the change-over device allows to change-over the flow from the dirt filter-side to the clean filter-side after opening of pressure balance valve. For changing the filter elements the filter tubes have to be opened at the tube plug (bottom part of the filter). Filter elements are available down to a filter fineness of 4µm (c).

INTERNORMEN-Filter elements consist of filter materials with a high intrinsic stability, an excellent particle retention, respectively a high dirt holding capacity and provide a long service life.

INTERNORMEN-Filters can be used for mineral oil based fluids, HW-emulsions, water glycols, most synthetic hydraulic fluids and lubrication fluids.

INTERNORMEN-Filter elements are available with a pressure difference resistance up to Δp 160 bar and a rupture strength up to Δp 250 bar.

The internal valves are integrated into the centering pivot for the filter element. After reaching the by-pass valve causes that an unfiltered partial flow passes the filter. With the reverse valve a protection of the filter element is given when having a reverse flow inside the filter. The reverse flow will not be filtered.

5. Technical data:

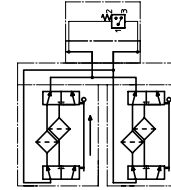
temperature range: - 10°C to + 80°C (for a short time + 100°C)
operating medium: mineral oil, other media on request
max. operating pressure: 315 bar
test pressure: 410 bar
connection system: AVIT-flange connection 320 bar
air bleeding and mini-measuring connection: G ¼
contents:

BHDD 2x901 = 25 l	BHDD 2x1351 = 34 l
BHDD 3x901 = 36 l	BHDD 3x1351 = 50 l
BHDD 4x901 = 48 l	BHDD 4x1351 = 66 l
BHDD 2x901 = 465 kg	BHDD 2x1351 = 478 kg
BHDD 3x901 = 665 kg	BHDD 3x1351 = 696 kg
BHDD 4x901 = 865 kg	BHDD 4x1351 = 905 kg

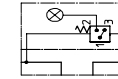
Classified under the Pressure Equipment Directive 97/23/EC for mineral oil (fluid group 2), Article 3, Para. 3.
Classified under ATEX Directive 94/9/EC according to specific application (see questionnaire sheet-no. 34279-4).

6. Symbols:

with electrical
indicator
AE30 and AE40

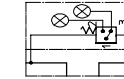


with visual-
electrical indicator
AE50 and AE62

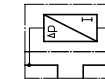


filter without
internal valve

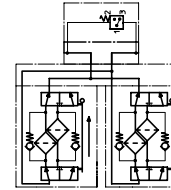
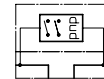
with visual-
electrical indicator
AE70 and AE80



with electrical
clogging sensor
VS1

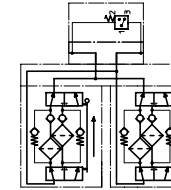


with electrical
clogging sensor
VS2

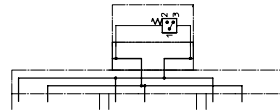


filter with
by-pass valve

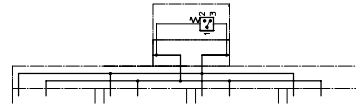
BHDD 2x901 / 1351



filter with
reversing valve



BHDD 3x901 / 1351



BHDD 4x901 / 1351

7. Pressure drop flow rates:

Precise flow rates see 'INT-Expert-System Filter', respectively Δp-curves; depending on filter fineness and viscosity.

8. 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