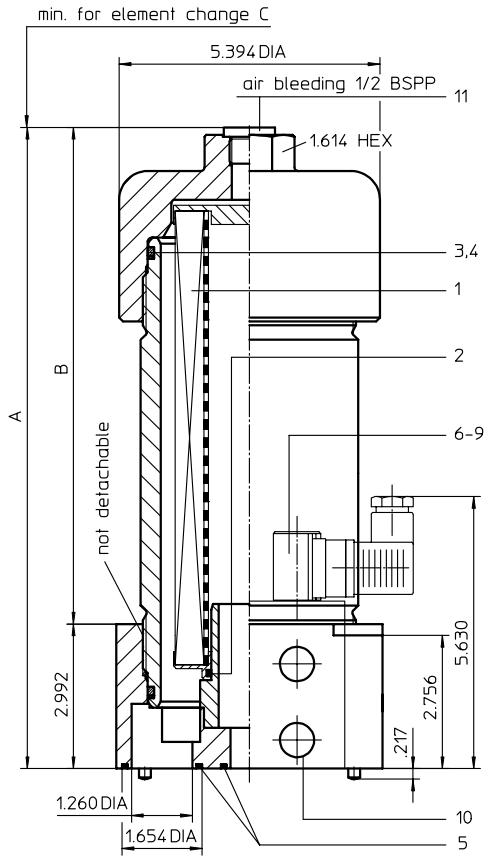
PRESSURE FILTER, manifold mounted
Series MNU 250 - 400 3600 PSI

Sheet No.
1428 J



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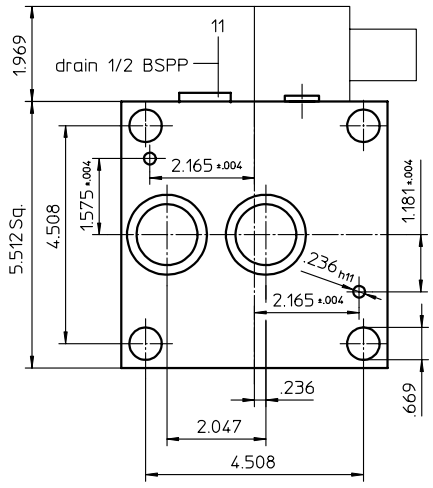

1. Type index:

1.1. Complete filter: (ordering example)

MNU.	250.	10VG.	30.	E.	P.	-.	P.	6.	-.	-.	AE
1	2	3	4	5	6	7	8	8	10	11	12

1 **series:**
MNU = medium pressure standard filter for manifold mounted

2 **nominal size:** 250, 400

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

4 **resistance of pressure difference for filter element :**
30 = Δp 435 PSI
HR = Δp 2320 PSI (rupture strength Δp 3625 PSI)

5 **filter element design:**
E = single-end open

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

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

8 **connection:**
P = manifold mounted

9 **connection size:**
6 = 1 ¼"

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

11 **internal valve:**
- = without
S1 = with by-pass valve Δp 51 PSI
S2 = with by-pass valve Δp 102 PSI

12 **clogging indicator or clogging sensor :**
- = without
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)

01NL.	250.	10VG.	30.	E.	P.	-
1	2	3	4	5	6	7

1 series:
01NL. = standard filter element according to DIN 24 550, T3

2 nominal size: 250, 400

3 - 7 see type index-complete filter

2. Dimensions: inch

type	connection	A	B	C	weight lbs.	volume tank
MNU 250	1 ¼"	13.27	10.28	8.27	44	.42 Gal.
MNU 400	1 ¼"	19.18	16.18	14.17	53	.68 Gal.

Changes of measures and design are subject to alteration!

EDV 09/09

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3. Spare parts:

item	qty.	designation	dimension		article-no.	
			MNU 250	MNU 400		
1	1	filter element	01NL. 250	01NL. 400		
2	1	O-ring	40 x 3		304389 (NBR)	304391 (FPM)
3	1	O-ring	98 x 4		301914 (NBR)	304765 (FPM)
4	1	support ring	107 x 3,5 x 1,5		317663	
5	2	O-ring	36 x 3		304358 (NBR)	313900 (FPM)
6	1	clogging indicator,visual-electrical	AE		see sheet-no. 1609	
7	1	clogging sensor,electronical	VS1		see sheet-no. 1607	
8	1	clogging sensor,electronical	VS2		see sheet-no. 1608	
9	2	O-ring	14 x 2		304342 (NBR)	304722 (FPM)
10	2	screw plug	$^1/_8$ BSPP		304791	
11	2	screw plug	½ BSPP		304678	

item 10 execution only without clogging indicator and clogging sensor

4. Description:

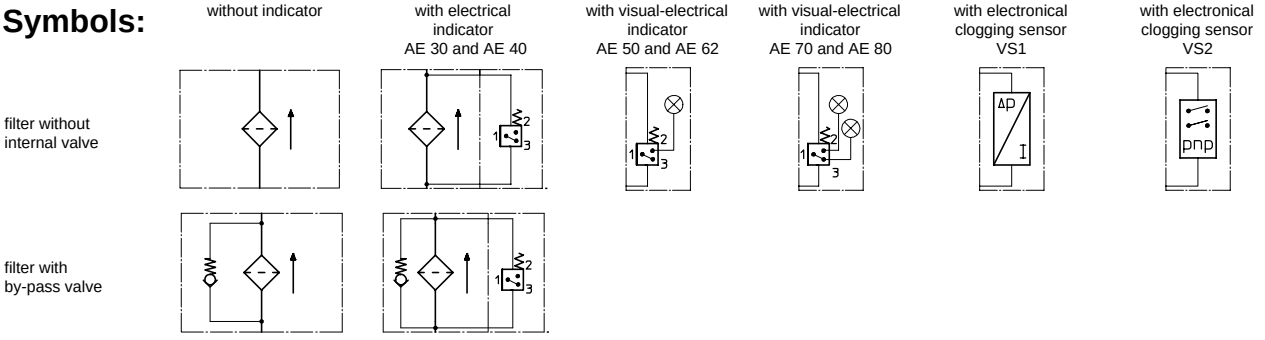
Pressure filters of the series MNU are suitable for a working pressure up to 3600 PSI and equiped with filter elements according to DIN 24550, T3. The pressure peaks are absorbed by a sufficient margin of safety.The MNU-filters are flange-mounted to the hydraulic system.
The filter element consists of 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 the inside. Filter elements are available down to 4 $\mu m_{(c)}$.
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.
INTERNORMEN-Filter elements are available up to a pressure difference resistance of Δp 2320 PSI and a rupture strength of Δp 3625 PSI.
The internal valves are integrated into the centering pivot for the filter element.
After reaching the opening pressure the by-pass valve causes that an unfiltered partial flow passes the filter.

5. 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:	3600 PSI
test pressure:	5200 PSI
connection system:	manifold mounted
housing material:	C-steel
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical

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:



7. Pressure drop flow curves:

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

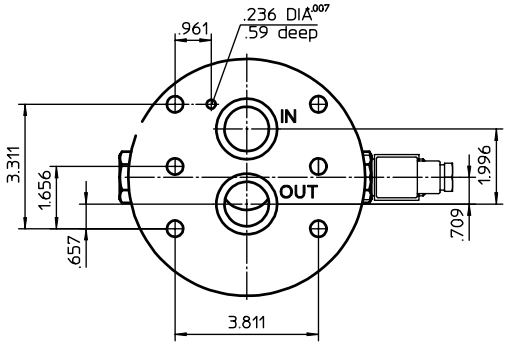
8. Test methods:

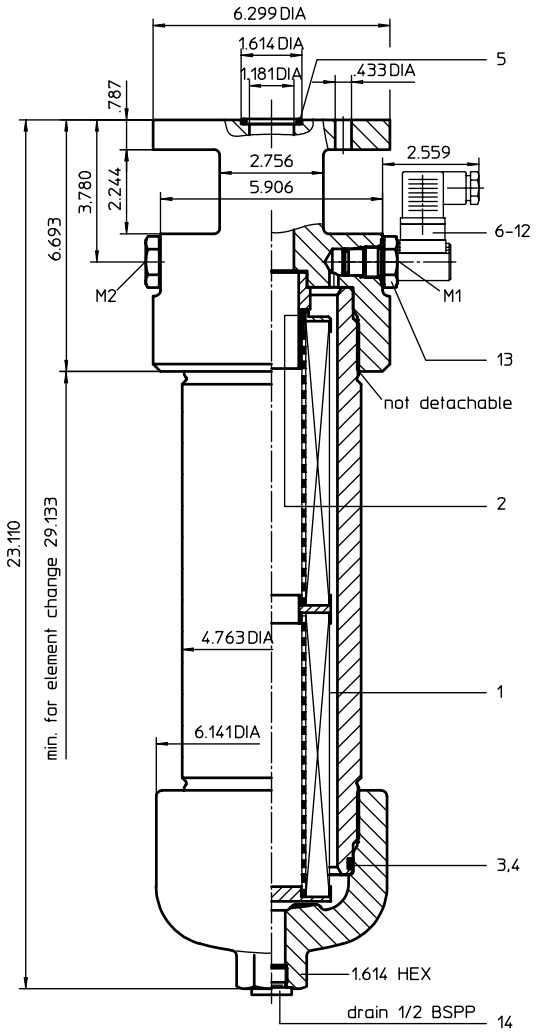
Filter elements are tested according to the following ISO standards:

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

PRESSURE FILTER, manifold mounted
Series HNU 401 4568 PSI

Sheet No.
1476 F





1. Type index:

1.1. Complete filter: (ordering example)

HNU.	401.	10VG.	HR.	E.	P.	-.	P.	6.	-.	-.	AE.	-
1	2	3	4	5	6	7	8	9	10	11	12	13

1 **series:**
HNU = pressure filter, manifold mounted

2 **nominal size:** 401

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 fiber)

4 **resistance of pressure difference for filter element:**
30 = Δp 435 PSI
HR = Δp 2320 PSI (rupture strength Δp 3625 PSI)

5 **filter element design:**
E = single-end 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

8 **connection:**
P = manifold mounted

9 **connection size:**
6 = 1 ¼"

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

11 **internal valve:**
- = without
S1 = with by-pass valve Δp 51 PSI
S2 = with by-pass valve Δp 102 PSI

12 **clogging indicator at M1:**
- = without
AOR = visual, see sheet-no. 1606
AOC = visual, see sheet-no. 1606
AE = visual-electrical, see sheet-no. 1615
VS1 = electronical, see sheet-no. 1617
VS2 = electronical, see sheet-no. 1618

13 **clogging indicator at M2:**
possible indicators see position 12 of the type index

1.2. Filter element: (ordering example)

01NL.	400.	10VG.	HR.	E.	P.	-
1	2	3	4	5	6	7

1 **series:**
01NL. = standard filter element according to DIN 24550, T3

2 **nominal size:** 400

3 - 7 see type index-complete filter

weight: approx. 88 lbs.

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Changes of measures and design are subject to alteration!

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2. Spare parts:

item	qty.	designation	dimension	article-no.	
1	1	filter element	01NL. 400		
2	1	O-ring	48 x 3	304357 (NBR)	304404 (FPM)
3	1	O-ring	98 x 4	301914 (NBR)	304765 (FPM)
4	1	support ring	110 x 3,5 x 2	304802	
5	2	O-ring	34 x 3,5	304338 (NBR)	304730 (FPM)
6	1	clogging indicator, visual	AOR or AOC	see sheet no. 1606	
7	1	clogging indicator, visual-electrical	AE	see sheet no. 1615	
8	1	clogging sensor, electronical	VS1	see sheet no. 1617	
9	1	clogging sensor, electronical	VS2	see sheet no. 1618	
10	1	O-ring	15 x 1,5	315357 (NBR)	315427 (FPM)
11	1	O-ring	22 x 2	304708 (NBR)	304721 (FPM)
12	1	O-ring	14 x 2	304342 (NBR)	304722 (FPM)
13	2	screw plug	20913-4	309817	
14	1	screw plug	½ BSPP	304678	

item 13 execution only without clogging indicator or clogging sensor

3. Description:

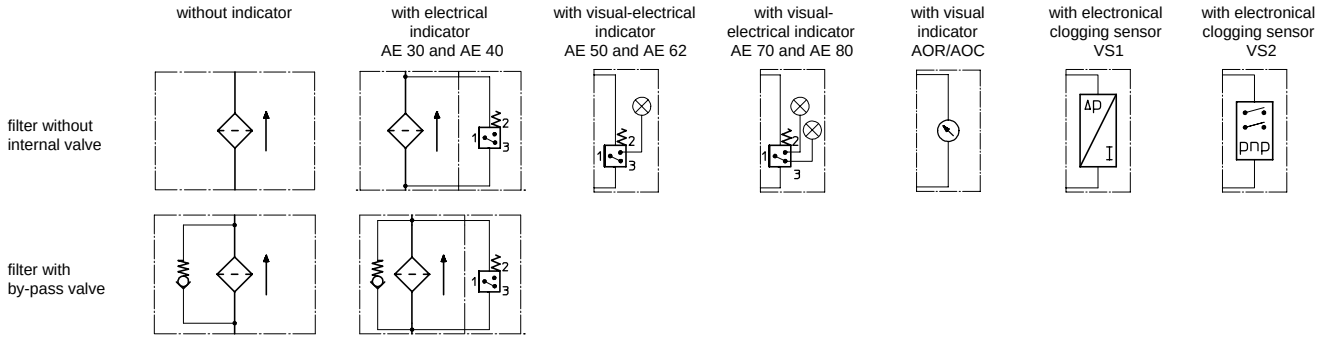
The pressure filters of the series HNU 401 are suitable for a working pressure up to 4568 PSI.
The pressure peaks are absorbed by a sufficient margin of safety. The HNU-filters are flange mounted to the hydraulic system.
The filter element consists of star-shaped, pleated filter material which is supported 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 the inside. Filter elements are available down to 5 $\mu m_{(c)}$.
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.
INTERNORMEN-Filter elements are available up to a pressure difference resistance of Δp 2320 PSI and a rupture strength of Δp 3625 PSI.
The internal valves are integrated into the centering pivot for the filter element.
After reaching the opening pressure the by-pass valve causes that an unfiltered partial flow passes the filter.

4. 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:	4568 PSI
test pressure:	6532 PSI
connection system:	manifold mounted
housing material:	EN-GJS-400-18-LT; C-steel
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical
volume tank:	.66 Gal.

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).

5. Symbols:



6. Pressure drop flow curves:

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

7. 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
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ISO 3968 Evaluation of pressure drop versus flow characteristics
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