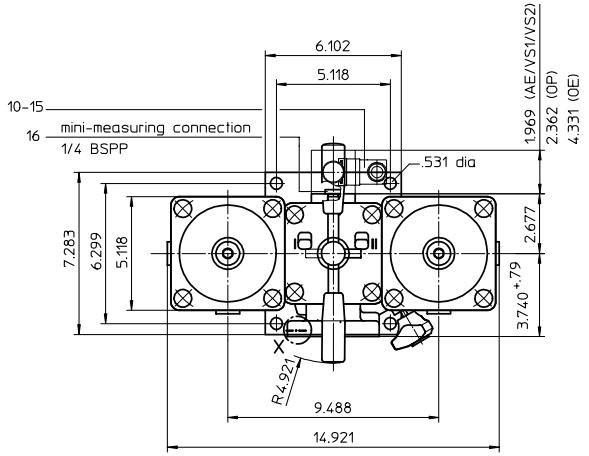
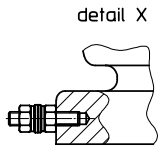
STAINLESS STEEL-PRESSURE FILTER, change-over
Series EDU 251-401 363 PSI

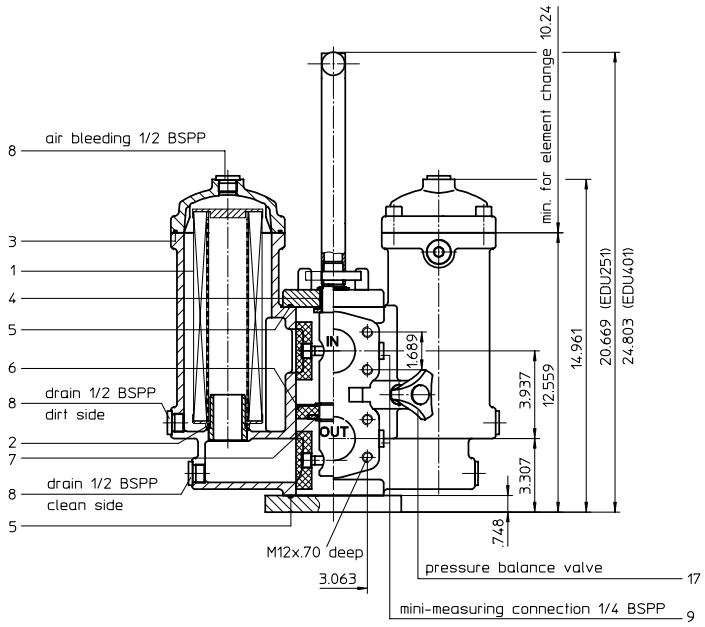
Sheet No. **2124 H**

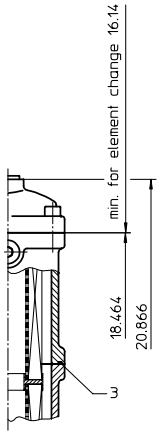
Pos. I: left filter-side in operation
Pos. II: right filter-side in operation





connection for the potential equalisation at outlet, only for application in the explosive area





filter head execution with EDU 401

1. Type index:

1.1. Complete filter: (ordering example)

EDU. 251. 10VG. 30. E. P. VA. FS. 8. VA. AE

1	2	3	4	5	6	7	8	9	10	11

1 **series:**
EDU = stainless steel-pressure filter, change-over

2 **nominal size:** 251, 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

5 **filter element design:**
E = single-end open
S = with by-pass valve Δp 29 PSI
S1 = with by-pass valve Δp 51 PSI

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 = SAE-flange connection 3000 PSI

9 **connection size:**
8 = 2 ‘’

10 **filter housing specification:**
VA = stainless steel

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

1.2. Filter element: (ordering example)

01NL. 250. 10VG. 30. E. P. VA

1	2	3	4	5	6	7

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

2 **nominal size:** 250, 400

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 flange, see sheet-no. 1652
- shut-off valve, see sheet-no. 1655

weight EDU 251: approx.88 lbs.
weight EDU 401: approx.110 lbs.

Changes of measures and design are subject to alteration!

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3. Spare parts:

item	designation	qty.	dimension EDU 251	qty.	dimension EDU 401	article-no.	
1	filter element	2	01NL. 250...VA	2	01NL. 400...VA		
2	O-ring	2	40 x 3			304389 (NBR)	304391 (FPM)
3	O-ring	2	115 x 3	4	115 x 3	303963 (NBR)	307762 (FPM)
4	O-ring	1	24 x 3			303038 (NBR)	304397 (FPM)
5	O-ring	2	95 x 3			305808 (NBR)	304828 (FPM)
6	O-ring	1	76 x 4			305599 (NBR)	310291 (FPM)
7	O-ring	1	32 x 2,5			306843 (NBR)	308268 (FPM)
8	screw plug	8	BSPP ½	10	BSPP ½	306966	
9	screw plug	2	BSPP ¼			306968	
10	clogging indicator, visual	1	OP			see sheet-no. 1628	
11	clogging indicator, visual-electrical	1	OE			see sheet-no. 1628	
12	clogging indicator, visual-electrical	1	AE			see sheet-no. 1609	
13	clogging sensor, electronical	1	VS1			see sheet-no. 1607	
14	clogging sensor, electronical	1	VS2			see sheet-no. 1608	
15	O-ring	2	14 x 2			304342 (NBR)	304722 (FPM)
16	screw plug	2	BSPP ¼			306968	
17	pressure balance valve	1					

item 16 execution only without clogging indicator or clogging sensor

4. Description:

Stainless steel-pressure filter of the series EDU 251-401 are suitable for a working pressure up to 363 PSI.
The pressure peaks are absorbed by a sufficient margin of safety.
Rotary slide 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 interrupting operation. These filters can be installed as suction-filters.
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 Interpor fleece (glass fiber). Filter elements as fine as 5 $\mu m_{(c)}$ 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 major „Shipyard Classification Societies“ D.N.V.; B.V.; G.L.; L.R.S.; R.I.N.A.; A.B.S. and others are possible.

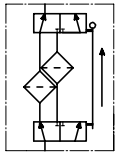
5. Technical data:

temperature range:	+14°F to + 176°F (for a short time + 212°F)
operating medium:	mineral oil, other media on request
max. operating pressure:	363 PSI
test pressure:	479 PSI
connection system:	SAE-flange connection 3000 PSI
housing material:	DIN17445 -1.4581
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical
mini-measuring connections:	BSPP ¼
evacuation-or bleeder connections:	BSPP ½
volume tank EDU 251:	2x .66 Gal
EDU 401:	2x .97 Gal

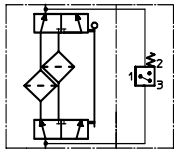
Classified under the Pressure Equipment Directive 97/23/EC for mineral oil (fluid group 2), Article 3, Para. 3.
Classified under ATEX Directive 94/9/EC according to specific application (see questionnaire sheet-no. 34279-4).

6. Symbols:

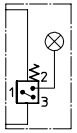
without indicator



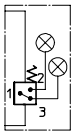
with electrical indicator
AE 30 and AE 40



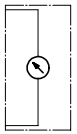
with visual-electrical indicator
AE 50 and AE 62



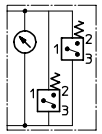
with visual-electrical indicator
AE 70 and AE 80



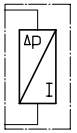
with visual indicator
OP



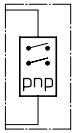
with visual-electrical indicator
OE



with electronical clogging sensor
VS1



with electronical clogging sensor
VS2



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:

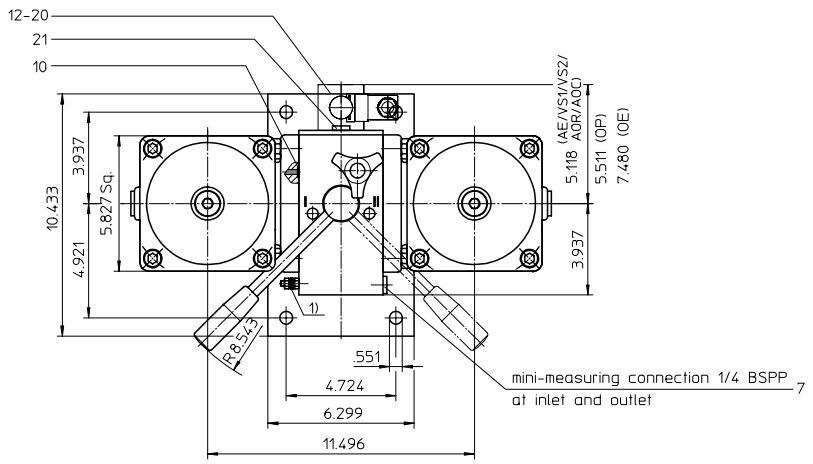
ISO 2941	Verification of collapse/burst resistance
ISO 2942	Verification of fabrication integrity
ISO 2943	Verification of material compatibility with fluids
ISO 3723	Method for end load test
ISO 3724	Verification of flow fatigue characteristics
ISO 3968	Evaluation of pressure drop versus flow characteristics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

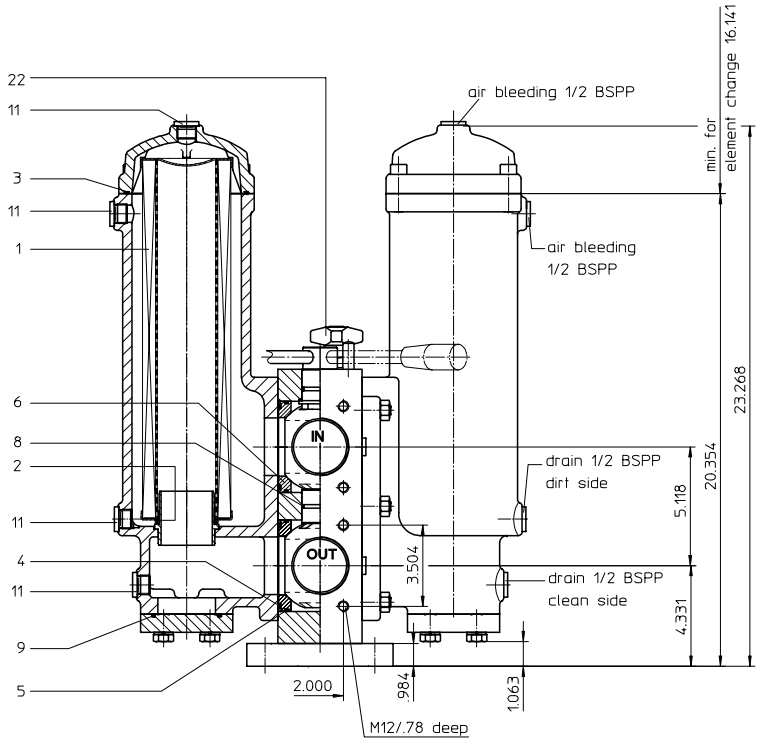
STAINLESS STEEL-PRESSURE FILTER, change-over
Series EDU 635 363 PSI

Sheet No **2150 A**

1) connection for the potential equilisation, at outlet, only for application in the explosive area

Pos. I: left filter-side in operation
Pos. II: right filter-side in operation





1. Type index:

1.1. Complete filter: (ordering example)

EDU. 635. 10VG. 30. E. P. VA. FS. 9. VA. -. AE

1	2	3	4	5	6	7	8	9	10	11	12

1 **series:**
EDU = stainless steel-pressure filter, change-over

2 **nominal size:** 635

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)
25 P = 25 µm, 10 P = 10 µm paper

4 **resistance of pressure difference for filter element:**
30 = Δp 435 PSI
S = with by-pass valve Δp 29 PSI
S1 = with by-pass valve Δp 51 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
IS07 = see sheet-no. 31602

8 **connection:**
FS = SAE-flange connection 3000 PSI

9 **connection size:**
9 = 2 ½ “

10 **filter housing specification:**
VA = stainless steel

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-electrical, see sheet-no. 1609,
OP = visual, see sheet-no. 1628
OE = visual-electrical, see sheet-no. 1628
VS1 = electronical, see sheet-no. 1607
VS2 = electronical, see sheet-no. 1608

1.2. Filter element: (ordering example)

01NL. 630. 10VG. 30. E. P. VA

1	2	3	4	5	6	7

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

2 **nominal size:** 630

3 - 7 see type index-complete filter

2. Accessories:

- measure- and bleeder connections, see sheet-no. 1650
- evacuation and bleeder-conections, see sheet-no. 1651
- counter flanges, see sheet-no. 1652
- shut-off valve, see sheet-no. 1655

weight: approx. 200 lbs.

Changes of measures and design are subject to alteration!

EDV 11/07

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3. Spare parts:

item	qty.	designation	dimension	article-no.	
1	2	filter element	01NL. 630...VA		
2	2	O-ring	60 x 3,5	304377 (NBR)	304398 (FPM)
3	2	O-ring	125 x 3	306025 (NBR)	307358 (FPM)
4	4	O-ring	85 x 4	305685 (NBR)	310285 (FPM)
5	4	O-ring	95 x 3	305808 (NBR)	304828 (FPM)
6	4	gasket		317651	
7	2	screw plug	¼ BSPP	306968	
8	2	O-ring	32 x 3	304368 (NBR)	311020 (FPM)
9	2	O-ring	69,45 x 3,53	305868 (NBR)	307357 (FPM)
10	4	O-ring	8 x 2	310004 (NBR)	316530 (FPM)
11	8	screw plug	½ BSPP	306966	
12	1	clogging indicator, visual	AOR or AOC	see sheet no. 1606	
13	1	clogging indicator, visual	OP	see sheet no. 1628	
14	1	clogging indicator, visual-electrical	OE	see sheet no. 1628	
15	1	clogging indicator, visual-electrical	AE	see sheet no. 1609	
16	1	clogging sensor, electronical	VS1	see sheet no. 1607	
17	1	clogging sensor, electronical	VS2	see sheet no. 1608	
18	1	O-ring	15 x 1,5	315357 (NBR)	315427 (FPM)
19	1	O-ring	22 x 2	304708 (NBR)	304721 (FPM)
20	2	O-ring	14 x2	304342 (NBR)	304722 (FPM)
21	2	screw plug	¼ BSPP	306968	
22	1	pressure balance valve			

item 21 execution only without clogging indicator or clogging sensor

4. Description:

Stainless steel-pressure filters, change-over series EDU 635 are suitable for operating pressure up to 363 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 interruting operation.
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. These filters can be installed as suction filters.
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 fiber). Filter elements as fine as 5 $\mu m_{(c)}$ 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 major „Shipyard Classification Societies“ D.N.V.; B.V.; G.L.; L.R.S.; R.I.N.A.; A.B.S. and others are possible.

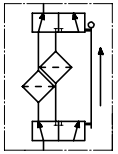
5. Technical data:

temperature range:	+ 14°F to + 176°F (for a short time + 212°F)
operating medium:	mineral oil, other media on request
max. operating pressure:	363 PSI
test pressure:	479 PSI
connection system:	SAE-flange connection 3000 PSI
housing material:	DIN17445 - 1.4581
switching housing -material:	DIN17440 - 1.4571(316 TI according to AISI)
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical
mini-measuring connections:	¼ BSPP
evacuation-or bleeder connections:	½ BSPP
volume tank:	2x 1.5 Gal

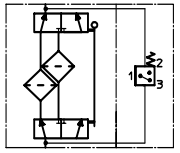
Classified under the Pressure Equipment Directive 97/23/EC for mineral oil (fluid group 2), Article 3, Para. 3.
Classified under ATEX Directive 94/9/EC according to specific application (see questionnaire sheet-no. 34279-4)

6. Symbols:

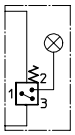
without indicator



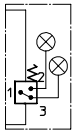
with electrical indicator
AE 30 and AE 40



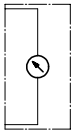
with visual-electrical indicator
AE 50 and AE 62



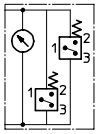
with visual-electrical indicator
AE 70 and AE 80



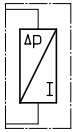
with visual indicator
AOR/AOC/OP



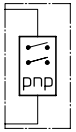
with visual-electrical indicator
OE



with electronical clogging sensor
VS1



with electronical clogging sensor
VS2



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