Series EDA 636
NPS 3” CLASS 150-300 PSI

Connection for the potential equalization, only for application in the explosive area. Switch lever standard in the front.

On request: The switch lever ca be moved to backside of the changeover valve, opposite to the inlet and outlet. Please specify this configuration on the order.

Assignment of connections and functions:
A: process inlet SAE 3” 3000 PSI
B: process outlet SAE 3” 3000 PSI
C1/C2: air bleeding NPT ½"
D1/D2: drain, dirt side NPT ½"
E1/E2: drain, clean side NPT ½"
F1: measuring connection G ¼ dirty side
F2: measuring connection G ¼ clean side
G1/G2: air bleeding NPT ½"
H1/H2: drain bottom NPT ½"

Weight: approx. 170 kg
Dimensions: mm

Designs and performance values are subject to change.
Pressure Filter, change over Series EDA 636  
NPS 3” CLASS 150-300 PSI

Description:
Stainless steel-pressure filter series EDA 636 have a working pressure up to 40 bar. Pressure peaks can be absorbed with a sufficient safety margin.

A changeover 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 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 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 elements are suitable for all petroleum based fluids, HW-emulsions, most synthetic hydraulic fluids and lubrication oils.

Ship classifications available upon request.

Type index:

Complete filter: (ordering example)
EDA. 636. 10VG. 30. E. P. VA. FS. A. ~ VA.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS21. AB. OE</td>
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</tbody>
</table>

1) series:
EDA = stainless steel-pressure filter change over, acc. to ASME-Code

2) nominal size: 636

3) filter material:
80G, 40G, 25G, 10G stainless steel wire mesh
25VG, 16VG, 10VG, 6VG, 3VG microglass
25API, 10API microglass according to API

4) filter element collapse rating:
30 = Δp 30 bar

5) filter element design:
E = single-end open
S = with by-pass valve Δp 2,0 bar
S1 = with by-pass valve Δp 3,5 bar

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

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

8) process connection:
FS = flange SAE 3000 PSI
FA1 = flange ANSI CLASS 300 PSI (1)
FA2 = flange ANSI CLASS 300 PSI (2)
FA11 = flange ANSI CLASS 150 PSI (1)
FA12 = flange ANSI CLASS 150 PSI (2)

9) process connection size:
A = 3”

10) air bleeding/drain dirt side:
= standard (NPT ½”)
FA1 = flange ANSI ¼” CLASS 300 PSI (1)
FA2 = flange ANSI ¼” CLASS 300 PSI (2)
FA11 = flange ANSI ¼” CLASS 150 PSI (1)
FA12 = flange ANSI ¼” CLASS 150 PSI (2)

11) filter housing specification:
VA = stainless steel, see sheet-no. 69578

12) specification pressure vessel:
IS21 = ASME VIII Div.1 with U-stamp, see sheet-no. 43415
IS23 = ASME VIII Div.1 without U-stamp, see sheet-no. 55218

13) shut-off:
- = without
AB = with shut-off block

14) clogging indicator or clogging sensor:
AE = visual-electric, see sheet-no. 1609
OP = visual, see sheet-no. 1628
OE = visual-electric, see sheet-no. 1628
VS5 = electronic, see sheet-no. 1641

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.

1) sealing surface Rz = 160 μm (not finer than 40 μm)
2) sealing surface Rz = 16 μm

Filter element: (ordering example)

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

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>01NL = standard filter element according to DIN 24550, T3</td>
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</tr>
</tbody>
</table>

2) nominal size: 630

3) 7 see type index-complete filter

Accessories:
- SAE-counter flanges, see sheet-no. 1652
- drain- and bleeder connection, see sheet-no. 1659
Technical data:

- **operating temperature:** -10°C to +100°C
- **operating medium:** mineral oil, other media on request
- **max. operating pressure (pressure vessel):** 40 bar
- **test pressure acc. to ASME VIII Div. 1:** 1.3 x operating pressure = 52 bar
- **test pressure acc. to API 614, Chapter 1:** 1.5 x operating pressure = 60 bar
- **process connection system:** SAE-flange 3000 PSI or ANSI-flange B16.5 CLASS 150/300 PSI
- **housing material:** stainless steel, see sheet-no. 69578
- **sealing material:** Nitrile (NBR) or Viton (FPM), other materials on request
- **installation position:** vertical
- **bleeder connection:** NPT ½” or ANSI ¾” CLASS 150/300 PSI
- **drain connection clean side:** NPT ½”
- **volume tank:** 2x 6.0 l
- **operating pressure adapter flanges:** according to B16.5 CLASS 150 PSI (FA11/FA12 max. 16 bar) or according to B16.5 CLASS 300 PSI (FA1/FA2 max. 40 bar)

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 $\Delta p$ and the element $\Delta p$ and is calculated as follows:

$$\Delta p_{\text{assembly}} = \Delta p_{\text{housing}} + \Delta p_{\text{element}}$$

$$\Delta p_{\text{housing}} = f(Q) - \text{characteristics}$$

$$\Delta p_{\text{element}} (\text{mbar}) = Q \left( \frac{l}{\text{min}} \right) x \frac{MSK}{10} \left( \text{mbar} l/(\text{min} \cdot \text{m}) \right) x \left( \frac{\text{mm}^2}{s} \right) x \frac{\rho}{0.876} (\text{kg/dm}^3)$$

For ease of calculation our Filter Selection tool is available online at [www.eatonpowersource.com/calculators/filtration/](http://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.

<table>
<thead>
<tr>
<th>EDA</th>
<th>VG</th>
<th>G</th>
<th>API</th>
</tr>
</thead>
<tbody>
<tr>
<td>3VG</td>
<td>6VG</td>
<td>10VG</td>
<td>16VG</td>
</tr>
<tr>
<td>636</td>
<td>0,436</td>
<td>0,303</td>
<td>0,194</td>
</tr>
</tbody>
</table>

$\Delta p=f(Q)$ – characteristic according 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.

![EDA.636 Housing Pressure Drop](image-url)
Symbols:

<table>
<thead>
<tr>
<th>Symbols</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Symbol 1" /></td>
<td>Filter without bypass valve</td>
</tr>
<tr>
<td><img src="image2.png" alt="Symbol 2" /></td>
<td>Filter with bypass valve</td>
</tr>
</tbody>
</table>

Spare parts:

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty.</th>
<th>Designation</th>
<th>Dimension</th>
<th>Article-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>Filtration element</td>
<td>DN10 x 3,5</td>
<td>01.NL310...</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Gaskets for filter housing:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>2</td>
<td>O-ring</td>
<td>120 x 3,5</td>
<td>305146 (NBR) 305202 (FPM)</td>
</tr>
<tr>
<td>2.2</td>
<td>2</td>
<td>O-ring</td>
<td>120 x 3,5</td>
<td>305146 (NBR) 305202 (FPM)</td>
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<tr>
<td>2.3</td>
<td>2</td>
<td>O-ring</td>
<td>85 x 4</td>
<td>305658 (NBR) 310285 (FPM)</td>
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<tr>
<td>2.4</td>
<td>4</td>
<td>O-ring</td>
<td>24.99 x 3,53</td>
<td>304381 (NBR) 305784 (FPM)</td>
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<tr>
<td>3</td>
<td>1</td>
<td>Gasket kit of switching over consisting of:</td>
<td>DN80 (3“)</td>
<td>354246 (NBR) 354249 (FPM)</td>
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<tr>
<td>3.1</td>
<td>4</td>
<td>O-ring</td>
<td>98 x 4</td>
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<tr>
<td>3.2</td>
<td>4</td>
<td>O-ring</td>
<td>110.72 x 3,53</td>
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<tr>
<td>3.3</td>
<td>4</td>
<td>Gasket ring</td>
<td>DN80</td>
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<td>3.4</td>
<td>4</td>
<td>O-ring</td>
<td>34 x 3,5</td>
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<td>3.5</td>
<td>2</td>
<td>Support ring</td>
<td>40 x 34,4 x 5</td>
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<td>3.6</td>
<td>4</td>
<td>O-ring</td>
<td>74 x 3,5</td>
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<td>3.7</td>
<td>4</td>
<td>O-ring</td>
<td>7 x 2</td>
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<td>4</td>
<td>10</td>
<td>Screw plug</td>
<td>NPT 1/2&quot;</td>
<td>307766</td>
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<tr>
<td>5</td>
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<td>Shut-off block</td>
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<tr>
<td>6</td>
<td>1</td>
<td>Clogging indicator, visual-electric</td>
<td>OE</td>
<td>see sheet-no. 1628</td>
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<tr>
<td>7</td>
<td>1</td>
<td>Clogging indicator, visual</td>
<td>OP</td>
<td>see sheet-no. 1628</td>
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<tr>
<td>8</td>
<td>1</td>
<td>Clogging indicator, visual-electric</td>
<td>AE</td>
<td>see sheet-no. 1609</td>
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<tr>
<td>9</td>
<td>1</td>
<td>Clogging sensor, electronic</td>
<td>VS5</td>
<td>see sheet-no. 1641</td>
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<tr>
<td>10</td>
<td>2</td>
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<td>306968</td>
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<td>11</td>
<td>1</td>
<td>Pressure balance valve</td>
<td>DN10</td>
<td>310316</td>
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</tbody>
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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

For more information, please email us at filtration@eaton.com or visit www.eaton.com/filtration

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