Series TEF 41
145 PSI

Weight: approx. 1.76 lbs.

Dimensions: inches

Designs and performance values are subject to change.

EDV 10/18
Return Line Filter
Series TEF 41
145 PSI

Description:

Return-line filter series TEF 41 have a working pressure up to 145 PSI. Pressure peaks will be absorbed by a sufficient margin of safety.

The TEF-filters are directly mounted to the reservoir and connected to the return-line.

The filter element consists of a 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 is from outside to inside.

For cleaning the stainless steel mesh element 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.

Filters finer than 40 µm use the disposable elements made of paper or microglass. Filter elements as fine as 5 µm(c) are available; finer filter elements on request.

Eaton filter elements are known as stable elements which have excellent filtration capabilities and a high dirt retaining capacity, therefore having a long service life. Due to its practical design, the return-line filter is easy to service.

Eaton filter can be used for petroleum-based fluids, HW emulsions, water glycols, most synthetic fluids and lubrication fluids. Consult factory for specific fluid applications.

When changing the filter element, a detachable connection between the filter head and the filter bowl prevents dirty oil from flowing into the tank.

1. Type index:

1.1. Complete filter: (ordering example)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TEF. 41. 10VG. 16. S. P. -</td>
<td>41</td>
<td>80G, 40G, 25G stainless steel wire mesh</td>
<td>16 = 01E.41 for ( p \leq 232 ) PSI (standard with by-pass valve)</td>
<td>S = with by-pass valve (01E.41) ( p \leq 29 ) PSI</td>
<td>P = Nitrile (NBR)</td>
<td>UG = thread connection</td>
<td>3 = - 8 SAE</td>
</tr>
<tr>
<td>TEF. 41. 10VG. 30. E. P. -</td>
<td>60</td>
<td>25VG, 16VG, 10VG, 6VG, 3VG microglass</td>
<td>30 = 01E.60 for ( p \leq 435 ) PSI (standard without by-pass valve)</td>
<td>E = without by-pass valve (01E.60)</td>
<td>V = Viton (FPM)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.2. Filter element: (ordering example)

<table>
<thead>
<tr>
<th>Series</th>
<th>Nominal Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>01E. 41. 10VG. 16. S. P. -</td>
<td>41</td>
</tr>
<tr>
<td>01E. 60. 10VG. 30. E. P. -</td>
<td>60</td>
</tr>
</tbody>
</table>

To add an indicator to your filter, use the corresponding indicator data sheet to find the indicator details and add them to the filter assembly model code.
Technical data:
operating temperature: 14 °F to +212 °F
operating medium: mineral oil, other media on request
max. operating pressure: 145 PSI
opening pressure by-pass valve: 29 PSI
process connection: thread connection
housing material: Al-cast, glass fiber reinforced polyamide (screw plug, filter bowl)
sealing material: Nitrile (NBR) or Viton (FPM), other materials on request
installation position: vertical
volume tank: .05 Gal

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:

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

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

$\Delta p_{\text{element}} (\text{PSI}) = Q (\text{GPM}) \times \frac{\text{MSK}}{1000} \times \nu (\text{SUS}) \times \frac{\rho}{0.876} \left( \frac{\text{kg}}{\text{dm}^3} \right)$

For ease of calculation our Filter Selection tool is available online at www.eatonpowersource.com/calculators/filtration/

Material gradient coefficients (MSK) for filter elements
The material gradient coefficients in psi/gpm apply to mineral oil (HLP) with a density of 0.876 kg/dm³ and a kinematic viscosity of 139 SUS (30 mm²/s). The pressure drop changes proportionally to the change in kinematic viscosity and density.

<table>
<thead>
<tr>
<th>TEF</th>
<th>VG</th>
<th>G</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>3VG</td>
<td>6VG</td>
<td>10VG</td>
<td>16VG</td>
</tr>
<tr>
<td>41 (without bypass)</td>
<td>6.748</td>
<td>4.685</td>
<td>2.999</td>
</tr>
<tr>
<td>41 (with bypass)</td>
<td>6.748</td>
<td>4.685</td>
<td>2.999</td>
</tr>
</tbody>
</table>

$\Delta p = f(Q) - \text{characteristics according to ISO 3968}$
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.
Symbols:

- without indicator
- with by-pass valve
- visual O
- electric contact maker E1
- electric contact breaker E5
- electric contact maker/breaker E2

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>1</td>
<td>filter element with by-pass</td>
<td>01.E41…</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>filter element without by-pass</td>
<td>01.E60…</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>filter head</td>
<td>TEF 41-55</td>
<td>308646</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>filter cover</td>
<td>M60 x 2</td>
<td>303621</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>filter bowl</td>
<td>TEF 41</td>
<td>306673</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>O-ring</td>
<td>56 x 3</td>
<td>305072 (NBR) 305322 (FPM)</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>O-ring</td>
<td>50 x 2,5</td>
<td>305239 (NBR) 305321 (FPM)</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>O-ring</td>
<td>22 x 3,5</td>
<td>304341 (NBR) 304392 (FPM)</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>spring</td>
<td>DA = 40</td>
<td>304982</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>clogging indicator visual</td>
<td>O</td>
<td>301721</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>clogging indicator electric</td>
<td>E1, E2 or E5</td>
<td>see sheet-no. 1616</td>
</tr>
</tbody>
</table>

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