Series DWF 4505
232 PSI

1) Connect the stand grounding tab to a suitable earth ground point.

Switch lever standard in the front.
2) On request: The switch lever can be moved to backside of the changeover valve, opposite to the inlet and outlet. Please specify this configuration on the order.

Position I: Filter 1 in operation
Position II: Filter 2 in operation

Dimensions:

<table>
<thead>
<tr>
<th>DWF 4505</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>weight lbs.</th>
<th>volume tank</th>
</tr>
</thead>
<tbody>
<tr>
<td>connection 5&quot;</td>
<td>53.22</td>
<td>51.85</td>
<td>19.40</td>
<td>15.56</td>
<td>25.31</td>
<td>51.02</td>
<td>49.09</td>
<td>31.33</td>
<td>13.62</td>
<td>5.31</td>
<td>14.56</td>
<td>2x 26 Gal.</td>
<td></td>
</tr>
<tr>
<td>connection 6&quot;</td>
<td>53.22</td>
<td>51.85</td>
<td>19.40</td>
<td>17.32</td>
<td>25.31</td>
<td>52.20</td>
<td>50.23</td>
<td>32.52</td>
<td>14.80</td>
<td>8.15</td>
<td>16.92</td>
<td>1521 2x 26 Gal.</td>
<td></td>
</tr>
<tr>
<td>connection 8&quot;</td>
<td>55.31</td>
<td>53.93</td>
<td>20.47</td>
<td>20.47</td>
<td>27.36</td>
<td>54.37</td>
<td>52.40</td>
<td>34.68</td>
<td>16.97</td>
<td>9.61</td>
<td>21.33</td>
<td>2x 26 Gal.</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions: inches

Designs and performance values are subject to change.
Duplex Pressure Filter
Series DWF 4505
232 PSI

Description:
Duplex filter series DWF 4505 have a working pressure up to 232 PSI. 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 filters can be installed as a suction filter, pressure filter or return line filter.

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. Additionally, the depth filter has a metal outer core to protect the filter media. The flow direction is from outside to inside.

For cleaning the stainless steel mesh element or changing the glass fiber 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 25 μm, use the disposable elements made of microglass. Filter elements as fine as 3 μm are available; finer filter elements are available upon request.

Eaton filter elements are known for high intrinsic stability and an excellent filtration capability, a high dirt-retaining capacity and a long service life.

Ship classifications available upon request.

Type index:

Complete filter: (ordering example)


1 2 3 4 5 6 7 8 9 10 11

KH. OE

1 series:
DWF = double welded filter, according to ASME-code

2 nominal size: 4505

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:
10 = Δp 145 PSI

5 filter element design:
E = without by-pass
S = with by-pass valve Δp 29 PSI

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

7 filter element specification:
- = standard
VA = stainless steel
IS06 = for HFC application, see sheet-no. 31601

8 process connection:
FS = SAE-flange 3000 PSI (only with connection 5")
FA11 = flange ANSI CLASS 150 PSI, sealing surface Rz = 160 μm (not finer than 40 μm)
FA12 = flange ANSI CLASS 150 PSI, sealing surface Rz = 16 μm

9 process connection size:
C = 5"
D = 6" (standard)
E = 8"

10 filter housing specification:
- = standard
IS12 = internal parts of change over armature stainless steel, see sheet-no. 41028

11 specification pressure vessel:
IS21 = ASME VIII Div.1 with U-stamp, see sheet-no. 43415

12 shut-off :
- = without
KH = with shut-off ball valve

13 clogging indicator or clogging sensor:
- = without
AE = visual-electrical, see sheet-no. 1609
OP = visual, see sheet-no. 1614
OE = visual-electrical, see sheet-no. 1614
VS5 = sensor, 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.

Filter element: (ordering example)

01E. 1501.10VG. 10. E. P. -

1 2 3 4 5 6 7

1 series:
01E = filter element according to company standard

2 nominal size: 1501

3 - 7 see type index-complete filter

Accessories:
- drain- and bleeder connection, see sheet-no. 1651
- lifting mechanism, see sheet-no. 1662
Technical data:

- **design temperature:** 14 °F to +212 °F
- **operating temperature:** 14 °F to +176 °F
- **operating medium:** mineral oil, other media on request
- **max. operating pressure:** 232 PSI
- **test pressure acc. to ASME VIII Div. 1:** \( 1.3 \times \text{operating pressure} = 302 \text{ PSI} \)
- **test pressure acc. to API 614, Chapter 1:** \( 1.5 \times \text{operating pressure} = 348 \text{ PSI} \)
- **standard process connection:** flange ANSI B16.5 CLASS 150 PSI
- **housing material:** carbon steel (ASTM)
- **housing material change over:** EN-GJS-400-18-LT
- **sealing material:** Nitrile (NBR) or Viton (FPM), other materials on request
- **installation position:** vertical
- **drain- and bleeder connections:** NPT ½”
- **measure connections:** BSPP ¼”
- **operating pressure adapter flanges:** according to B16.5 CLASS 150 PSI

Classified under the Pressure Equipment Directive 2014/68/EC for mineral oil (fluid group 2), Article 4, Para. 3. Classified under ATEX Directive 2014/34/EC 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:

\[
\Delta p_{\text{assembly}} = \Delta p_{\text{housing}} + \Delta p_{\text{element}}
\]

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

\[
\Delta p_{\text{element}} (\text{PSI}) = Q (\text{GPM}) \times \frac{\text{MSK}}{1600} \left( \frac{\text{PSI}}{\text{GPM}} \right) \times \nu(SUS) \times \frac{\rho}{0.876} \left( \frac{\text{kg}}{\text{dm}^3} \right)
\]

For ease of calculation, our Filter Selection tool is available online at: [www.eatonpowersource.com/calculators/filtration/](http://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>DWF</th>
<th>VG</th>
<th>G</th>
<th>API</th>
</tr>
</thead>
<tbody>
<tr>
<td>4505</td>
<td>6VG</td>
<td>25G</td>
<td>25 API</td>
</tr>
<tr>
<td>0.064</td>
<td>0.045</td>
<td>0.029</td>
<td>0.025</td>
</tr>
</tbody>
</table>

\[
\Delta p = f(Q) - \text{characteristics according to ISO 3968}
\]

The material gradient coefficients apply to mineral oil (HLP) with a density of 0.876 kg/dm³. The pressure drop changes proportionally to the density. The flow curves for 5” and 8” available on request.
Symbols:

- without indicator
- with shut-off ball valve
- with electric indicator AE 30 and AE 40
- with visual-electric indicator AE 50 and AE 62
- with visual-electric indicator AE 70 and AE 80
- with visual indicator OP
- with visual-electric indicator OE
- with electronic sensor VS5

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>6</td>
<td>filter element</td>
<td>01E.1501...</td>
<td>307588 (NBR) 307589 (FPM)</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>O-ring</td>
<td>35 x 5</td>
<td>347921 (FPM)</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>O-ring</td>
<td>14.975” ID x 0.210 CS 2379017953 (BUNA-N)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>gasket kit of change over UKK 5”</td>
<td>5” (DN125)</td>
<td>347921 (FPM)</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>screw plug</td>
<td>NPT 1½”</td>
<td>ST200235</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>clogging indicator, visual-electric</td>
<td>AE</td>
<td>see sheet-no. 1609</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>clogging indicator, visual</td>
<td>OP</td>
<td>see sheet-no 1614</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>clogging indicator, visual-electric</td>
<td>OE</td>
<td>see sheet-no 1614</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>clogging sensor, electronic</td>
<td>VS5</td>
<td>see sheet-no 1641</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
<td>O-ring</td>
<td>14 x 2</td>
<td>304342 (NBR) 304722 (FPM)</td>
</tr>
<tr>
<td>11</td>
<td>1</td>
<td>O-ring</td>
<td>22 x 2</td>
<td>304708 (NBR) 304721 (FPM)</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

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