PSI FLANGE ISOLATION ACCESSORIES

- Prevents contact corrosion
- Available in different sizes, pressure rates and materials
- Electrical isolation

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Flange connection as electrical separation point prevents contact corrosion

Apart from new installations, PSI flange isolations offer the option of converting existing flange connections into a point of electric separation. In doing so, it is not necessary to make any mechanical changes to the flange connection.

The PSI flange isolation sets are available for all popular standards, sizes and pressure rates.

PSI flange isolations can be supplied as individual gasket or complete flange isolation kit. An isolation set DW consists of one isolation sleeve, 2 isolation washers as well as 2 steel washers for each bolt hole.

Isolation sets are also available in special sizes.

Double isolation washer set (DW)

The double isolation washer set is used for added protection against short circuit currents at the nuts and bolts.

When using the double isolation washer set, nuts and bolts are electrically insulated on both sides of the flange.

Another important reason is to prevent contact corrosion through flange isolation at flanges out of different metals.
TECHNICAL INFORMATION

Advantages

• Optimal electrical separation
• Extreme strength
• No increase of bolt diameter
• Ideal for on-site application

Use isolation bolts for flange isolations for applications up to 200 °C (isolation bolts for flange isolations for applications up to 290 °C upon request).

Bolts according to DIN 2510, special bolts upon request.
Bolt dimensions in line with DIN/ANSI flange requirements.
Bolt materials: Quality grade 5.6, 8.8 CK35, 42 CrMo4, UNC - special materials upon request.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Test Method</th>
<th>Unit</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Epoxy/Glass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>white/yellow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass threads per cm</td>
<td></td>
<td>N/cm</td>
<td>&gt;2000</td>
</tr>
<tr>
<td>Breaking load in B state</td>
<td></td>
<td>N/cm</td>
<td>&gt;2500</td>
</tr>
<tr>
<td>Breaking load after curing</td>
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<td>min.</td>
<td></td>
</tr>
<tr>
<td>Elasticity module</td>
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<td>Mpa</td>
<td>approx. 50.000</td>
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<tr>
<td>Continuous operating temperature</td>
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<td>°C</td>
<td>180</td>
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<tr>
<td>spec. volume resistance</td>
<td>IEC168</td>
<td>Ω/cm</td>
<td>1x10^{14}</td>
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<tr>
<td>Isolation resistance when submersed in water</td>
<td>ISO 62/1</td>
<td>Ohm</td>
<td>1x10^{12}</td>
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<tr>
<td>Water absorption</td>
<td></td>
<td>mg</td>
<td>&lt;20</td>
</tr>
</tbody>
</table>

Production

The bolt is lathed off to the permitted diameter and covered with an epoxy resin glass fiber coating afterwards. Heat treatment hardens the epoxy glass fiber coating and adjusts it to the nominal dimension.
ISOLATION SLEEVES

Isolation sleeves are available in the following materials:

- Mylar (standard version)
- Nomex 410
- G-10 (fiber glass composite laminate)

The isolation sleeves are designed for all flange types to be easily inserted into the bolt holes. PSI isolation sleeves have a wall thickness of 0.3 - 0.8 mm and are installed together with isolation and steel washers. They are available for standard American bolt sizes from 1/2" (12.7 mm) to 3 1/2" (88.9 mm) as well as metric bolt sizes from M12 to M52. Further sizes upon request.

INDIVIDUAL COMPONENTS

**Mylar**

- **Version:** Standard version for GLV-UniSeal® T and GGr
- **Spiral wound polyester film**
- **Dielectric strength:** DIN/VDE 0303 T2/IEC 243 280.000 V/mm
- **Water absorption:** DIN 53495 0.8%
- **Temperature range:** DIN VDE 0304 part 2 -60 °C to +130 °C

**Nomex 410**

- **Special version:** Arimid spiral wound paper
- **Dielectric strength:** DIN/VDE 0303 T2/IEC 243 22.500 V/mm
- **Water absorption:** DIN 53495 0.1%
- **Temperature range:** DIN VDE 0304 part 2 -196 °C to +220 °C

**G10 (only inch sizes)**

- **Standard version for VCFS**
- **Glass silicone composite laminate**
- **Dielectric strength:** ASTM D149 15.700 V/mm
- **Water absorption:** ASTM D229 0.10%
- **Temperature range:** ASTM D229 -150 °C to +150 °C
ISOLATION WASHERS

Isolation washers are available in the following materials:

- G-10 (fiber glass composite laminate) (standard)
- G-7 (glass silicone composite laminate)
- HCS proprietary Diamond-Hyde™ coating

PSI isolation washers have excellent isolation properties. The fit is designed so that the isolation sleeve can be inserted through the isolation washer. They are available for standard American bolt sizes from 1/2" (12.7 mm) to 3 1/2" (88.9 mm) as well as metric bolt sizes from M12 to M52. Further sizes upon request.

INDIVIDUAL COMPONENTS

**Isolation washer G10**

- **Version:** Glass silicone composite laminate
- **Dielectric strength:** DIN/VDE 0303 part2/IEC 243 20.000 V/mm
- **Water absorption:** DIN 53495 < 1.0%
- **Temperature range:** DIN VDE 0304 part 2 -60 °C to +130 °C

**HCS isolation washer**

- **Version:** proprietary Diamond-Hyde™ coating
- **Dielectric strength:** 39.400 V/mm
- **Temperature range:** -45 °C to +218 °C

**Isolation washer G7**

- **Version:** Special version: Glass silicone composite laminate
- **Dielectric strength:** DIN/VDE 0303 T2/IEC 243 10.100 V/mm
- **Water absorption:** DIN 53495 < 0.13 %
- **Temperature range:** DIN VDE 0304 part 2 -60 °C to +180 °C
**STEEL WASHERS**

Steel washers are designed in a way that the isolation sleeve can be inserted through them. Steel washers are available in the following materials:

- Hot-rolled steel ST 37, galvanized (standard version)
- Hot-rolled stainless steel S316/V4A (special version)

**INDIVIDUAL COMPONENTS**

Steel washer

- Standard version: Carbon steel hot rolled galvanized steel
- Special version: S316 (V4A) Hot rolled stainless steel

The ID of the steel washers corresponds to the OD of the isolation sleeves. Flange gaskets, sleeves and washers can be combined with each other according to temperature range.

**Standard isolation set DW**

- Isolation sleeve: Mylar
- Isolation washers: Laminated phenolic resin
- Washer: galvanized steel

**Special isolation set DW**

- Isolation sleeve: Mylar/Nomex
- Isolation washers: G10/G7
- Washer: galvanized steel S304/V2A

Thickness depending on nominal size ND 2-7 mm