4 Safety

Modular Seals WA-GKD

This section provides an overview of all the main safety aspects for optimum protection of personnel and a safe installation process.

If there is a failure to observe the instructions and safety information set out here, this may result in significant hazards.

GKD modular seal installation must comply with the relevant professional association regulations, VDE provisions, national safety and accident prevention regulations as well as company regulations (work and procedural instructions).

The fitter must wear the relevant protective clothing.

Only intact components may be installed.

4.1 Explanation of symbols

1 Work stages

► Effect/result of a work step

1 Reference numerals in drawings

4.2 Warnings

Warnings are indicated in these assembly instruction by means of symbols. The warnings are preceded by signal words which show the extent of the hazard. It is imperative to observe the warnings and act with care so as to avoid accidents, bodily harm and damage.

DANGER!

… indicates a direct hazard which can result in death or severe injury if not avoided.

WARNING!

… indicates a potential hazard which can result in death or severe injury if not avoided.

CAUTION!

… indicates a potential hazard which can result in negligent or slight injury if not avoided.
4.3 Tips and recommendations

...emphasises tips and recommendations as well as information for successful installation.

5 Personnel requirements

5.1 Qualifications

**WARNING!**
Risk of injury in case of inadequate qualification!

Improper handling can result in significant bodily harm and damage to property.
- Installation may only be carried out by qualified and trained individuals who have read and understood these instructions.

5.2 Skilled experts

Based on their specialist training, skills, experience and familiarity with the relevant provisions, standards and regulations, skilled experts are able to carry out the worked assigned, independently identifying and avoiding potential hazards.

6 Transport, packaging, scope of delivery and storage

6.1 Safety instructions in connection with transport

**NOTE!**
Damage in the event of improper transport!

Significant damage can occur in the event of improper transport.
- When unloading packaging items on delivery and in the course of in-house transport, proceed with care and observe the symbols on the packaging.
6.2 Transport inspection

Inspect the delivery immediately on receipt for completeness and transport damage. In the event of transport damage being visible from the outside, proceed as follows:

- Do not accept the delivery or only do so subject to reservations.
- Make a note of the extent of damage in the transport documentation or delivery note provided by the transporter.

- Submit a claim for every defect as soon as it has been identified.
- Claims for damages can only be asserted within the applicable claim period.

6.3 Scope of delivery

The scope of delivery of the Press seal includes:

1 GKD modular seal ...
1 Lubricating stick GM (Art no.: 0804020000)

6.4 Storage

NOTE!
Damage due to improper storage!

Significant damage can occur in the event of improper storage.

- Protect the GKD modular seal from damage, damp and soiling prior to installation. Only intact components may be installed.
- The GKD modular seal must be stored in such a way that it is not exposed to low temperatures (<5° C), high temperatures (>30° C) or direct sunlight.
7 Disposal

If no return or disposal agreement has been concluded, recycle dismantled components after they have been properly dismantled:
- Metal remains are to be scrapped according to existing environmental regulations.
- Dispose of elastomer segments according to existing environmental regulations.
- Dispose of plastics according to existing environmental regulations.
- Dispose of packaging material according to existing environmental regulations.

8 Description (Example GKD 400)

Legend for fig.: GKD 400

1 Elastomer segment (Grade: EPDM or NBR)
2 Rear press plate
3 Allen screw
4 Front press plate
5 Installation control with inspection window

9 Required tool and auxiliaries

To install the GKD module seal correctly, you will need the following tools and auxiliaries in addition to the usual standard tools:

Tool kit GKD (Art.no.: 1410000000) comprising:
- Reversible ratchet 400 mm lang, 1/2”
- Internal hexagon socket SW6, 1/2”
- External hexagon socket SW 17, 1/2”
- External hexagon socket SW 19, 1/2”
- External hexagon socket SW 24, 1/2”
- Extension 125 mm, 1/2”
10 The following instructions are to be observed prior to installation of the GKD modular seal:

**WARNING!**
Risk of injury in the event of improper installation!

Improper installation can result in significant bodily harm and property damage.
- When mounting large GKD modular seal, a sufficient number of specialist personnel must be in place and suitable lifting equipment must be used (e.g. a crane).
- When installing larger modular seals, ensure that the seal is secured appropriately to prevent that the carrier/medium pipe is falling/moving.
- GKD modular seal installation must comply with the relevant professional association regulations, VDE provisions, national safety and accident prevention regulations as well as company regulations (work and procedural instructions).
- The nationally applicable laying and filling regulations for pipes and cables are to be observed at all times.
- Seal the underground and pipe substructure well prior to laying pipes/cables so that the latter cannot subside.

Prior to installing the cable seal, any existing breaks or blowholes in the cored hole have to be repaired.
- No cleaning agents containing solvent may be used to clean the cable seal. We recommend using cable cleaner KR M.T.X.
- Ensure that the medium pipe is centred and horizontal in the core drilling/wall sleeve (see fig.: 2 and 3).
- Sealing of helically corrugated pipe is not possible.
- For details of other accessories and further information, see [www.hauff-technik.de](http://www.hauff-technik.de) and the technical specification sheets.

11 Preparing for assembly

With the aid of the calculation program (Configurator), compare and check the diameter \(D\) of the core drilling/wall sleeve as well as the diameter \(d\) of the medium pipe with the data for the modular seal (see fig.: 1).

Legend for fig.: 1

1 Diameter \((D)\) of the core drilling/wall sleeve
2 Diameter \((d)\) of the medium pipe
NOTE!
No sealing due to incorrect assembly!

Improper installation can result in damage.
- Ensure that the medium pipe is centred and horizontal in the core drilling/wall sleeve (see fig.: 2 and 3).

2 Clean the core drilling/wall sleeve as well as the medium pipe in the area where the GKD modular seal will be installed (see fig.: 4).

12 Remove GKD-Elastomer segment (Example GKD 400)

1 Count the elastomer segments to be removed.

**Loosen the rear** press plate of the last elastomer segment to be removed and remove (see fig.: 5).

*With GKD 615, the nut of the rear press plate must be loosened separately.*

Legend for fig.: 5
1 Rear press plate
2 Elastomer segment
3 Allen screw
4 Front press plate
Then remove the elastomer segment to be removed with screw, press plates (and nuts).

Do not remove the front press plate and screw from the elastomer segment (see fig.: 6).

Legend for fig.: 6
1 Elastomer segment to be removed
2 Front press plate
3 Allen screw

Then mount the previously removed press plate (and nut) again (see fig.: 7).

Fully mounted modular seal for further assembly (see fig.: 8).

Add GKD-Elastomer segment (Example GKD 400)

Loosen the rear press plate and remove (see fig.: 9).

With GKD 615, the nut on the rear press plate must be loosened separately.

Legend for fig.: 9
1 Rear press plate
2 Elastomer segment
3 Allen screw
4 Front press plate
Then add the desired number of elastomer segments with screw, press plates (and nuts).

The writing on the elastomer segments must always be arranged in the same way.

Do not remove the front press plate and screw from the elastomer segment (see fig.: 10).

Legend for fig.: 10
1  Additional elastomer segment
2  Front press plate
3  Allen screw

Then mount the previously removed press plate (and nut) again (see fig.: 11).

▶ Fully mounted modular seal for further assembly (see fig.: 12).

14 Mount the GKD modular seal

Place the open modular seal, centered and reversed, over the medium pipe and apply a light coat of lubricating stick GM to the transitions/cut surfaces of the individual elastomer segments (see fig.: 13).
NOTE!
Incorrect use of the lubricating stick GM!

Improper installation can result in damage.
- Do not apply the special lubricant GM to the outer sealing surface of the GKD modular seal. This must be clean, dry and free of grease.

2 **Turn over** the open modular seal again and place it around the medium pipe so that the screw heads point in the installation direction (see fig.: 14).

3 Apply a light coat of lubricating stick GM to the transitions of the individual elastomer segments on the *outside* of the seal (see fig.: 15).

4 On types **GKD 300, GKD 315, GKD 325** and **GKD 425**, the individual press plates must be aligned before the modular seal is closed (see fig.: 16 and 17).
Next, remove one pressure plate at the end of the modular seal and join the two ends to form a closed ring.

Then reattach the previously removed press plate (see fig.: 18).

*Slight sagging of the modular seal is normal. It is not necessary to remove individual sealing modules.*

Then slide the closed modular seal into the annular space completely (see fig.: 19).

*The modular seal must sit in the wall opening to such an extent that the outer press plates protrude at least halfway into the wall opening and cannot rotate.*

Now, moving in the clockwise direction, tighten each screw in succession 5 turns (see Fig.: 20), starting at the 12 o’clock position *(do not tighten crosswise!)* until a solid yellow background is visible in the installation control inspection windows (see fig.: 21).

*Retightening of the screws is not necessary.*

*Refer to Table 1 below for the appropriate socket sizes.*

► Fully assembled GKD modular seal with the installation control inspection windows in detail (see fig.: 21).

**Legend for fig.: 21**

1. 4x inspection window with solid yellow background
2. Allen screw
3. Front press plate
15 Disassemble the GKD modular seal

**WARNING!**
Risk of injury due to dynamic pressure on the modular seal during disassembly!

If the modular seal slips out under pressure, it can result in significant bodily harm and property damage.
- Depressurise the core drill hole/wall sleeve.
- The modular seal must be secured against sliding out of the core drill hole/wall sleeve before starting disassembly.

Disassembly takes place in reverse order to assembly (see fig.: 22).

After disassembly, the modular seal must be dismantled into its individual components and recycled according to the valid environmental regulations.
### Technical specifications - Dimensions

<table>
<thead>
<tr>
<th>Type</th>
<th>min. required wall thickness (mm)</th>
<th>Allen screw</th>
<th>Hexagon screw</th>
<th>Spanner-size SW</th>
<th>max. tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>GKD 300</td>
<td>100</td>
<td>M8</td>
<td></td>
<td>6</td>
<td>8 Nm</td>
</tr>
<tr>
<td>GKD 315</td>
<td>100</td>
<td>M8</td>
<td></td>
<td>6</td>
<td>8 Nm</td>
</tr>
<tr>
<td>GKD 325</td>
<td>110</td>
<td>M8</td>
<td></td>
<td>6</td>
<td>8 Nm</td>
</tr>
<tr>
<td>GKD 400</td>
<td>150</td>
<td>M10</td>
<td>17</td>
<td>27 Nm</td>
<td></td>
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<tr>
<td>GKD 425</td>
<td>125</td>
<td>M10</td>
<td>17</td>
<td>27 Nm</td>
<td></td>
</tr>
<tr>
<td>GKD 440</td>
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<td>17</td>
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<tr>
<td>GKD 500</td>
<td>165</td>
<td>M12</td>
<td>19</td>
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</tr>
<tr>
<td>GKD 525</td>
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<tr>
<td>GKD 575</td>
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<td>M12</td>
<td>19</td>
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<td></td>
</tr>
<tr>
<td>GKD 615</td>
<td>205</td>
<td>M16</td>
<td>24</td>
<td>110 Nm</td>
<td></td>
</tr>
<tr>
<td>GKD 650</td>
<td>165</td>
<td>M12</td>
<td>19</td>
<td>65 Nm</td>
<td></td>
</tr>
</tbody>
</table>

Table 1
## What to do if...

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Remedy by skilled experts</th>
</tr>
</thead>
<tbody>
<tr>
<td>The modular seal cannot be installed fully in the wall sleeve/core drilling.</td>
<td>One or more press plates is protruding.</td>
<td>The press plates must be aligned. Depending on the type, certain press plates have a radius. In this case, the radius must be in contact with the medium pipe.</td>
</tr>
<tr>
<td>The surface of the elastomer has irregularities.</td>
<td>The modular seal was stored or installed at too high a temperature.</td>
<td>The modular seal must be exchanged.</td>
</tr>
<tr>
<td>The inspection windows of the modular seal are filled unevenly or not filled.</td>
<td>The modular seal was or individual elements were already installed once before.</td>
<td>The yellow installation control functions only once. If the seal is being installed a 2nd time, a torque spanner must be used. The corresponding torques for a repeated installation are listed in Table 1.</td>
</tr>
<tr>
<td>The inspection windows of the modular seal are not filled.</td>
<td>The modular seal was stored or installed at too low a temperature (&lt; 5°C).</td>
<td>The modular seal must be installed with a torque spanner. The corresponding torques for installation of elastomers subjected to cold are listed in Table 1.</td>
</tr>
<tr>
<td>The inspection windows of the modular seal are filled unevenly.</td>
<td>The modular seal was tightened unevenly.</td>
<td>The modular seal must be loosened again and installed with a torque spanner. The corresponding torques for a repeated installation are listed in Table 1.</td>
</tr>
</tbody>
</table>

Table 2


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