

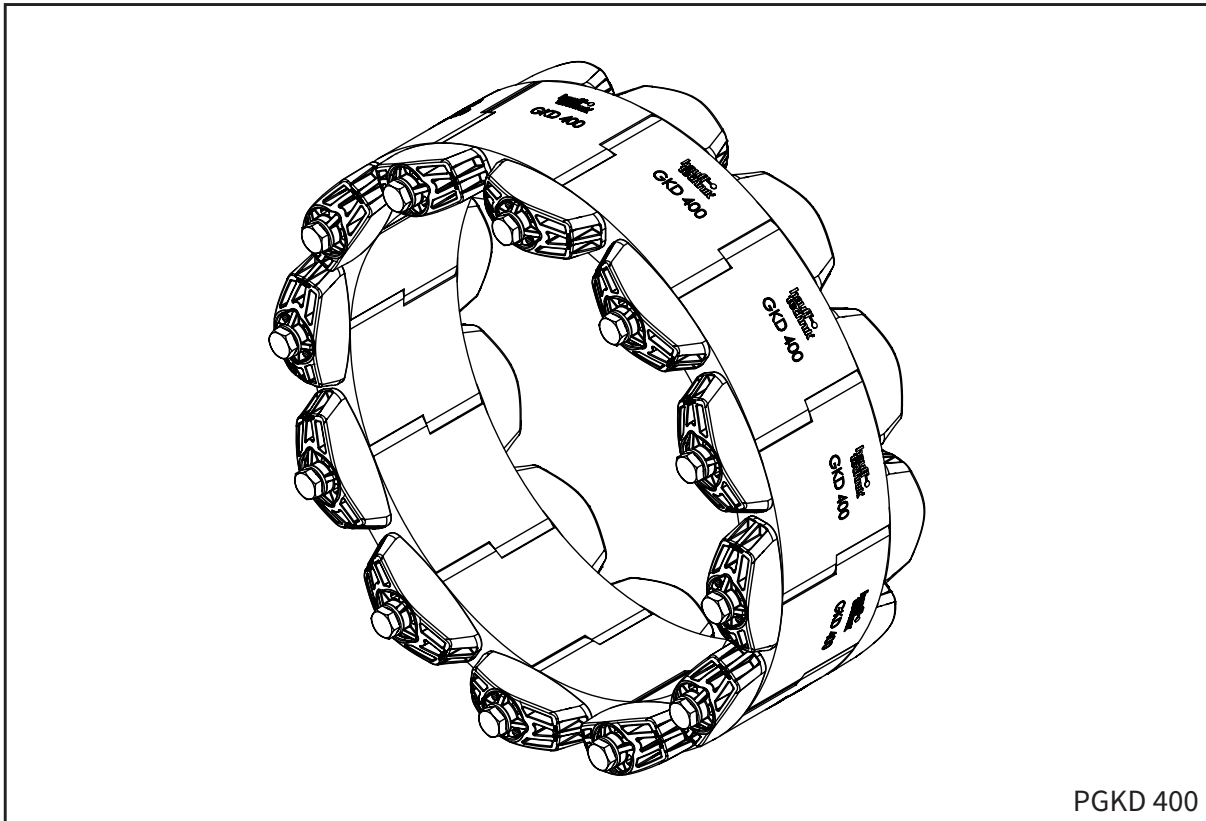
Always. Reliable. Tight.

Polywater[®]

hauff
technik



Assembly instruction - **PGKD modular seal**



American Polywater Corporation

11222 60th Street North
Stillwater, MN 55082
support@polywater.com
www.polywater.com



Contents

1	Publishing notes	1
2	Explanation of symbols	1
3	Required tool and auxiliaries	1
4	Description	2
5	Preparing for assembly	2
6	Remove PGKD-Elastomer segment (Example PGKD 400)	3
7	Add GKD-Elastomer segment (Example PGKD 400)	4
8	Mount the PGKD modular seal	6
9	Disassemble the PGKD modular seal	6
10	Technical Specifications - Dimensions	7
11	Dimensions	7
12	Troubleshooting	8

2 Explanation of symbols

- 1** Work stages
 - ▶ Effect/result of a work step
- ① Reference numerals in drawings

1 Publishing notes

Copyright © 2019 by

American Polywater Corporation

11222 60th Street North
Stillwater, MN 55082

Tel.: 651-430-2270

E-mail: support@polywater.com

Internet: www.polywater.com

Reproduction of these assembly instructions – even in extracts – in the form of reprint, photocopy, on electronic data media or using any other method requires our written consent.

All rights reserved.

Subject to technical alterations at any time and without prior announcement.

These assembly instruction is component of the product.

3 Required tool and auxiliaries

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

- 1 Reversible ratchet 400 mm long
- 1 Allen head socket 6 mm
- 1 External hexagon socket 17 mm
- 1 External hexagon socket 19 mm
- 1 External hexagon socket 24 mm
- 1 Extension 125 mm

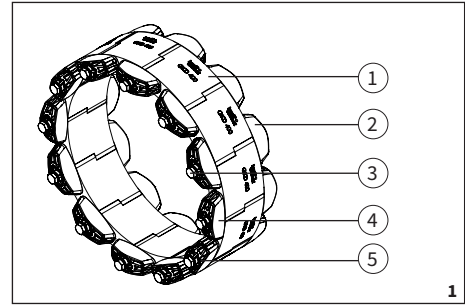


4 Description

Description: PGKD 400 (figure 1).

Legend for fig.: 1

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



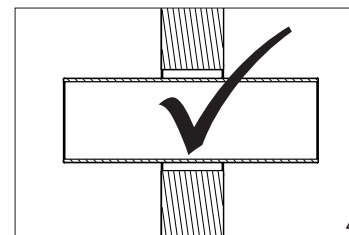
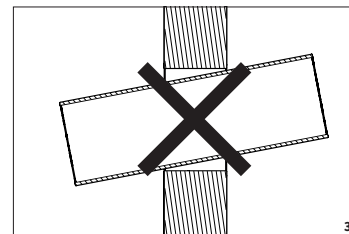
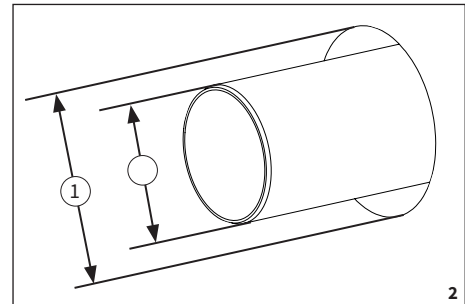
5 Preparing for assembly

- 1 Measure the diameter (**D**) of the core drilling/wall sleeve as well as the diameter (**d**) of the carrier/medium pipe. Compare these with dimensions of the modular seal listed in Table 2.

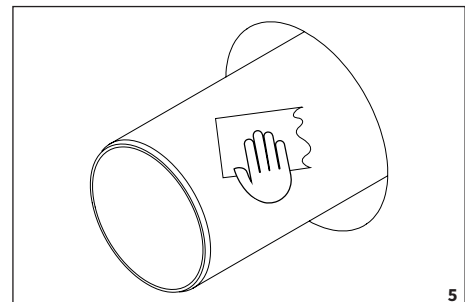
Should the annular space or the pipe diameter not fall within the range, please check the same online with the calculation programme or contact us.
(Configurator – to be found at <https://www.hauff-technik.de/en/products/1/3/press-seals-1/-07d51354a6/>)

Legend for fig.: 2

- 1 Diameter (**D**) of the core drilling/wall sleeve
- 2 Diameter (**d**) of the carrier/medium pipe




- 2 Clean the core drilling/wall sleeve as well as the carrier/medium pipe in the area where the PGKD modular seal will be installed (figure 5)





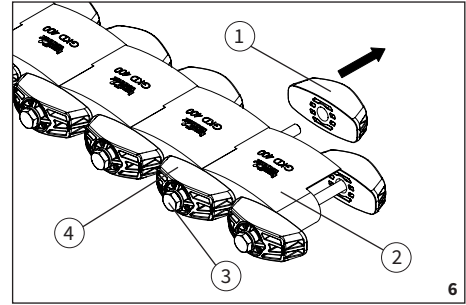
6 Remove PGKD-Elastomer segment (Example PGKD 400)

1 Count the elastomer segments to be removed. Loosen the rear press plate of the last elastomer segment to be removed and remove (figure 6)

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

Legend for fig.: 6

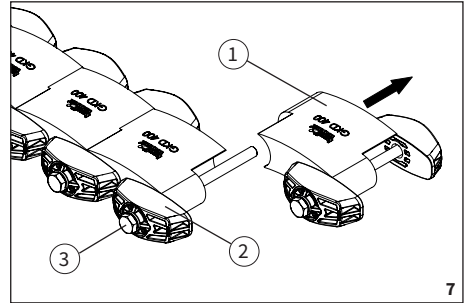
- 1 Rear press plate
- 2 Elastomer segment
- 3 Allen screw
- 4 Front press plate



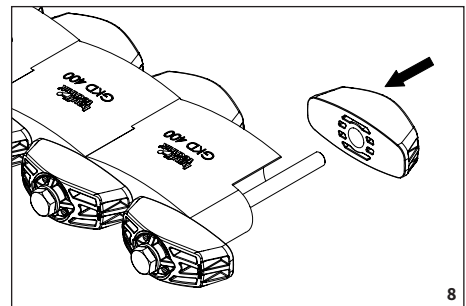
2 Then remove the elastomer segment to be removed with screw, press plates (and nuts). Do not remove the front press plate and screw from the elastomer segment (figure 7)

Legend for fig.: 7

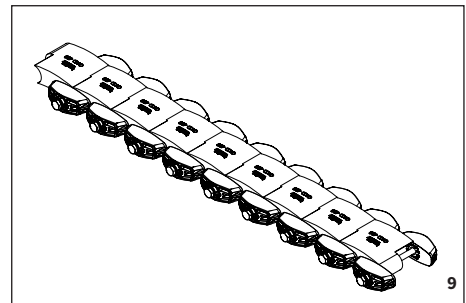
- 1 Elastomer segment to be removed
- 2 Front press plate
- 3 Allen screw



3 Then mount the previously removed press plate (and nut) again (figure 8)




► Fully mounted modular seal for further assembly see (figure 9)





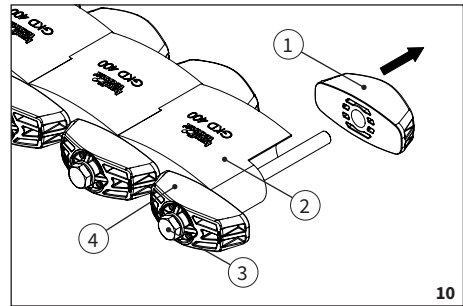
7 Add PGKD-Elastomer segmet (Example PGKD 400)

1 Loosen the rear press plate and remove (figure 10)

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

Legend for fig.: 10

- 1 Rear press plate
- 2 Elastomer segment
- 3 Allen screw
- 4 Front press plate



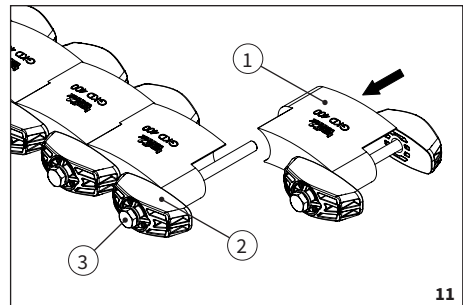
2 Then add the desired number of elastomer segments with screw, press plates (and nuts).

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

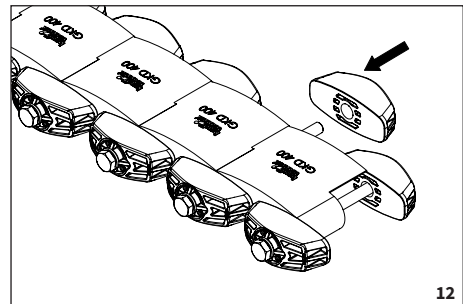
Do not remove the front press plate and screw from the elastometer segment (figure 11)

Legend for fig.: 11

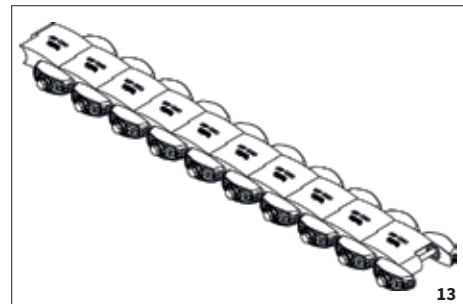
- 1 Additional elastomer segment
- 2 Front press plate
- 3 Allen screw



3 Then mount the previously removed press plate (and nut) again figure 12



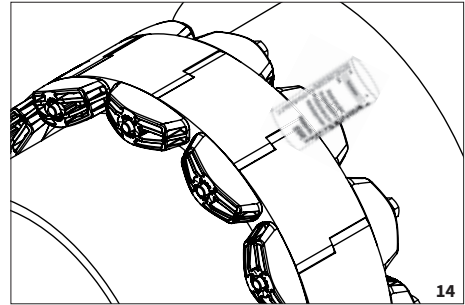
► Fully mounted modular seal for further assembly (figure 13)



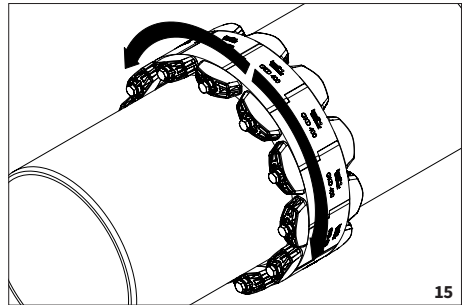


8 Mount the PGKD modular seal

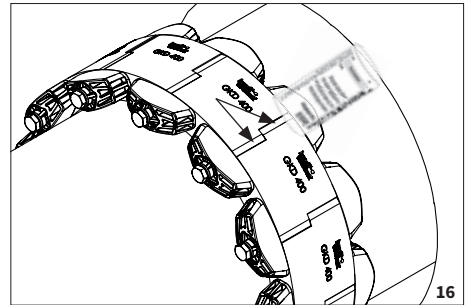
1 Place the open modular seal, centered and reversed, over the carrier/medium pipe and apply a light coat of lubricating stick PGM to the transitions/cut surfaces of the individual elastomer segments (figure 14)



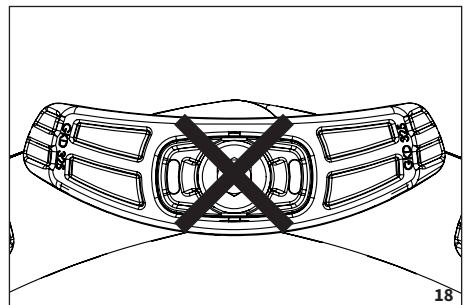
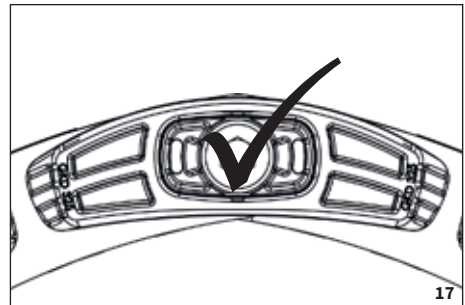
2 Turn over the open modular seal again and place it around the medium pipe so that the screw heads point in the installation direction (figure 15)



3 Apply a light coat of lubricating stick PGM to the transitions of the individual elastomer segments on the outside of the seal (figure 16)



4 On all PGKD types **PGKD 300**, **PGKD 315**, **PGKD 325** and **PGKD 425**, the individual press plates must be aligned before the modular seal is closed (figures 17 and 18)

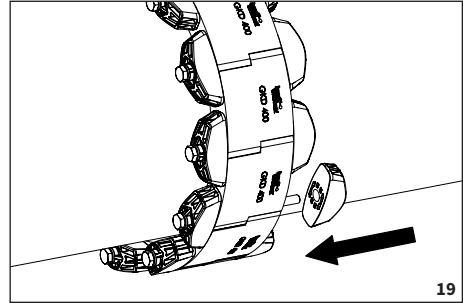




PGKD modular seal

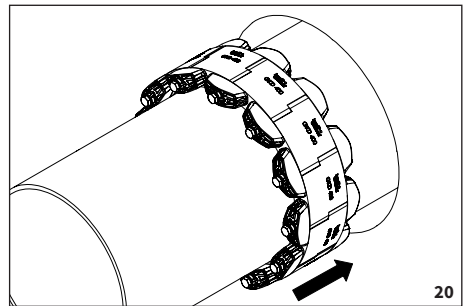
- 5** Next, remove one pressure plate at the end of the modular seal and join the two ends to form a closed ring. Then reattach the previously removed press plate (see fig.: 19).

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



- 6** Then slide the closed modular seal into the annular space completely (figure 20)

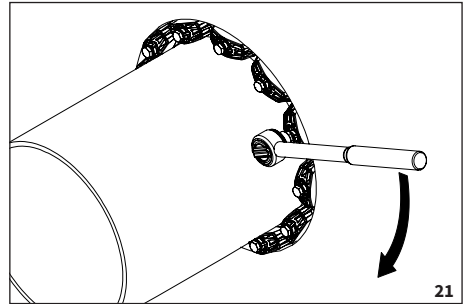
*ⓘ The modular seal must sit in the wall opening to such an extent that the outer press plates protrude **at least halfway** into the wall opening and cannot rotate.*



- 7** Now, moving in a clockwise direction, tighten each screw in succession no more than 5 turns at a time (see fig.: 21), starting at the 12 o'clock position (do not tighten out of order or crosswise!) continuing around the clock (multiple passes are needed) until a solid yellow background is visible in the installation control inspection windows.

ⓘ

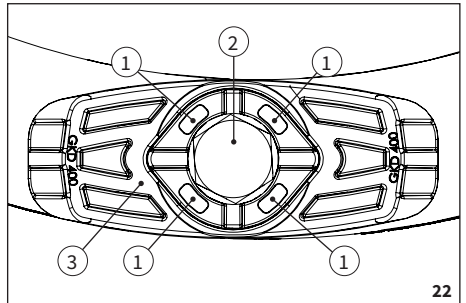
- Retightening of the screws is not necessary.
- Refer to Table 1 below for the appropriate socket sizes.



- Fully assembled PGKD modular seal with the installation control inspection windows in detail (figure 22)

Legend for fig.: 22

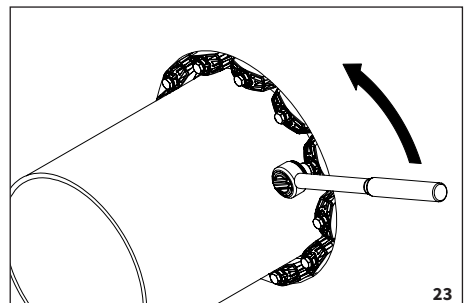
- 1 4x inspection window with solid yellow background
- 2 Allen screw
- 3 Front press plate



9 Disassembling the PGKD modular seal

- 1** Disassembly takes place in reverse order to assembly (figure 23)

- 2** After disassembly, the modular seal must be dismantled into its individual components and recycled according to the valid environmental regulations.





10 Table 1 Technical Specifications - Dimensions

Type	min. required wall thickness (mm)	Allen screw (mm)	Hexagon Screw (mm)	Spannersize SW (mm)	max. tightening torque
PGKD 300	100 (3.937 inch)	M8		6	6 foot lbs. or 71 inch lbs. (8 Nm)
PGKD 315	100 (3.937 inch)	M8		6	6 foot lbs. or 71 inch lbs. (8 Nm)
PGKD 325	110 (4.331 inch)	M8		6	6 foot lbs. or 71 inch lbs. (8 Nm)
PGKD 400	150 (5.906 inch)		M10	17	20 foot lbs. or 240 inch lbs. (27 Nm)
PGKD 425	125 (4.921 inch)		M10	17	20 foot lbs. or 240 inch lbs. (27 Nm)
PGKD 440	150 (5.906 inch)		M10	17	20 foot lbs. or 240 inch lbs. (27 Nm)
PGKD 475	150 (5.906 inch)		M10	17	20 foot lbs. or 240 inch lbs. (27 Nm)
PGKD 500	165 (6.229 inch)		M12	19	48 foot lbs. or 575 inch lbs. (65 Nm)
PGKD 525	165 (6.229 inch)		M12	19	48 foot lbs. or 575 inch lbs. (65 Nm)
PGKD 575	165 (6.229 inch)		M12	19	48 foot lbs. or 575 inch lbs. (65 Nm)
PGKD 615	205 (8.071 inch)		M16	24	81 foot lbs. or 974 inch lbs. (110 Nm)
PGKD 650	165 (6.229 inch)		M12	19	48 foot lbs. or 575 inch lbs. (65 Nm)

Table 1

11 Table 2 Dimensions

Type	ANNULAR TYPE inch (mm)		CARRIER PIPE OD inch (mm)		INSTALLATION DEPTH inch (mm)
	min.	max	min	max	
PGKD 300	0.728 (18.5 mm)	0.906 (23 mm)	2.283 (58 mm)	18.228 (463 mm)	3.937 (100 mm)
PGKD 315	0.915 (23.25 mm)	1.024 (26 mm)	2.374 (60.3 mm)	18.228 (463 mm)	3.937 (100 mm)
PGKD 325	0.945 (24 mm)	1.181 (30 mm)	5.992 (152.2 mm)	28.189 (716 mm)	4.331 (110 mm)
PGKD 400	1.437 (36.5 mm)	1.693 (43 mm)	6.626 (168.3 mm)	48.425 (1230 mm)	5.906 (150 mm)
PGKD 425	1.142 (29 mm)	1.417 (36 mm)	7.000 (177.8 mm)	48.425 (1230 mm)	4.921 (125 mm)
PGKD 440	1.772 (45 mm)	2.047 (52 mm)	6.626 (168.3 mm)	48.425 (1230 mm)	5.906 (150 mm)
PGKD 475	1.626 (41.3 mm)	1.909 (48.5 mm)	4.252 (108 mm)	48.425 (1230 mm)	5.906 (150 mm)
PGKD 500	2.441 (62 mm)	2.815 (71.5 mm)	6.142 (156 mm)	48.425 (1230 mm)	6.496 (165 mm)
PGKD 525	2.283 (58 mm)	2.500 (63.5 mm)	7.000 (177.8 mm)	48.425 (1230 mm)	6.496 (165 mm)
PGKD 575	1.969 (50 mm)	2.283 (58 mm)	5.984 (152 mm)	48.425 (1230 mm)	6.496 (165 mm)
PGKD 615	3.543 (90 mm)	3.937 (100 mm)	11.969 (304 mm)	118.110 (3000 mm)	8.071 (205 mm)
PGKD 650	3.031 (77 mm)	3.307 (84 mm)	7.000 (177.8 mm)	79.528 (2020 mm)	6.496 (165 mm)

Table 2



12 Troubleshooting

Problem	Cause	Remedy by skilled experts
The modular seal cannot be installed fully in the wall sleeve/ core drilling.	One or more press plates is protruding.	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 carrier/medium pipe.
The surface structure of the elastomer is uneven.	The modular seal was stored or installed at too high a temperature.	The modular seal must be exchanged.
The inspection windows of the modular seal are filled unevenly or not filled.	The modular seal was or individual elements were already installed once before.	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.
The inspection windows of the modular seal are not filled.	The modular seal was stored or installed at too low a temperature 41°F (<5°C).	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.
The inspection windows of the modular seal are filled unevenly.	The modular seal was tightened unevenly.	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.

Table 3

Subject to change.



Safety instructions and information

Target group

The installation may only be carried out by technical experts.

- Qualified and trained individuals carrying out installation must have
- knowledge of general safety and accident prevention regulations as amended,
 - knowledge of how to use safety equipment,
 - knowledge of how to use hand tools and electric tools,
 - knowledge of the relevant standards and guidelines for laying pipes/cables and for backfilling utility trenches, as amended,
 - knowledge of the regulations and installation guidelines of the supply company as amended,
 - knowledge of the impermeable concrete directive and building waterproofing standards as amended.

General information and intended use

According to their intended use, our products have been designed exclusively for installation in buildings made from state-of-the-art construction materials. We do not accept liability for use deviating from or beyond this unless our express written confirmation has been obtained in advance.

For warranty conditions, please see our current General Terms and Delivery Conditions. The PGKD modular seal is intended to provide an entry for round, pressure-stable individual pipes in core drillings/wall sleeves and reliable sealing of annular spaces. PGKD modular seals are not fixed settlement points or bearings and therefore cannot absorb any mechanical forces. Any anticipated reductions must be compensated for by the installation of centering guides in the conduits or core drillings and/or by spacers.

Safety

This section provides an overview of 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.

PGKD modular seal installation must comply with the relevant professional associations regulations, federal, state and local 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.

The following instructions are to be observed prior to installation of the PGKD 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 PGKD 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.
 - All applicable laying and filling regulations for pipes and cables are to be observed at all times.
 - Seal the underground and cable substructure well prior to laying pipes/cables so that the latter cannot subside.



NOTE!

No sealing due to incorrect assembly!

Improper installation can result in damage.

- 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 system cover. We recommend using cable cleaner KR M.TX or Polywater® Type HP.
- Ensure that the carrier/medium pipe is centred and horizontal in the core drilling/wall sleeve (see fig.: 3 and 4)
- Sealing of helically corrugated pipe is not possible.
- For details of other accessories and further information, see www.polywater.com and the technical specification sheets.
- Do not apply the special lubricant PGM to the outer sealing surface of the PGKD modular seal. This must be clean, dry and free of grease.
- With a permanent dynamic pressure, the modular seal must be secured against sliding out of 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.
- Depressurise the core drill hole/wall sleeve.

Personnel requirements

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.

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 work assigned, independently identifying and avoiding potential hazards.

Transport, packaging, scope of delivery and storage

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.

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
- Make a note of the extent of damage in the transport documentation or delivery note provided by the transporter.

Scope of delivery

The scope of delivery of the press seal includes:

- 1 PGKD modular seal ...
- 1 Lubricating stick PGM



The number and size of the elastomer segments required to seal the carrier/medium pipes are taken from our calculation program. Please contact us directly if you need assistance.

Storage

NOTE!

Damage due to improper storage!

Significant damage can occur in the event of improper storage.

- Protect the PGKD modular seal from damage, damp and soiling prior to installation. Only intact components may be installed.
- The PGKD modular seal must be stored in such a way that it is not exposed to low temperatures 40°F (<5° C), high temperatures 85 °F (>30° C) or direct sunlight.

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.

Important Notice:

The statements here are made in good faith based on tests and observations we believe to be reliable. However, the completeness and accuracy of the information is not guaranteed. Before using, the end-user should conduct whatever evaluations are necessary to determine that the product is suitable for the intended use. American Polywater expressly disclaims any implied warranties and conditions of merchantability and fitness for a particular purpose. American Polywater's only obligation shall be to replace such quantity of the product proven to be defective. Except for the replacement remedy, American Polywater shall not be liable for any loss, injury, or direct, indirect, or consequential damages resulting from product's use, regardless of the legal theory asserted.



A series of horizontal lines for writing, starting below the header and extending to the bottom of the page.