

Instruction Sheet

Shrink disc

Information on corrosion resistant gearboxes



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1 About this manual

These instructions describe the mounting on a gearbox with blind hollow shaft / hollow shaft / hollow shaft interface. It is an amendment to the standard operating manual. Contradictory specifications in the standard manual thereby become void.

The operator must ensure that all persons assigned to install, operate, or maintain the gearbox have read and understood these instructions in full.

Store these instructions within reach of the gearbox.

Inform colleagues who work in the area around the machine about the **safety and warning notices** to avoid injuries.

The original instructions were prepared in German; all other language versions are translations of these instructions.

1.1 Information symbols and cross references

The following information symbols are used:

- Indicates an action to be performed
- ➞ Indicates the results of an action
- ⓘ Provides additional information about the action

A cross reference refers to the chapter number and the header of the target section (e. g. 2.1 "Intended use").

A cross reference on a table refers to the table number (e. g. Table "Tbl-15").

1.2 Scope of delivery

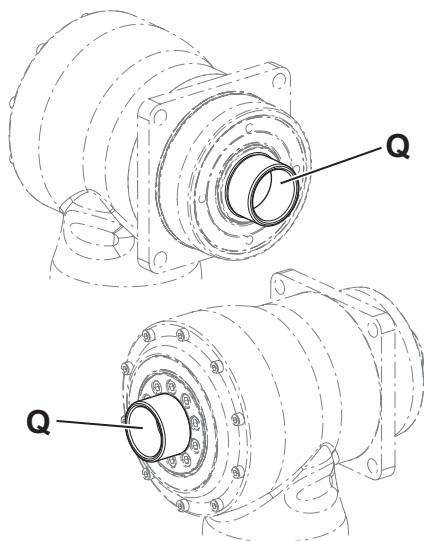
- Check the completeness of the delivery against the delivery note.
 - ⓘ Missing parts or damage must be notified immediately in writing to the carrier, the insurance company, or **WITTENSTEIN alpha GmbH**.

2 Safety

These instructions, especially the safety instructions and the rules and regulations valid for the operating site, must be observed by all persons working with the gearbox.

In addition to the safety instructions in this manual and in the standard manual, also observe any (legal and otherwise) applicable environmental and accident prevention rules and regulations (e.g. personal safety equipment).

2.1 Intended use



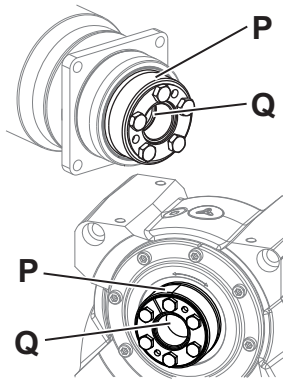
The shrink disc serves to mount a gearbox with blind hollow shaft / hollow shaft / hollow shaft interface [Q] to a load shaft.

In areas coming into contact with the product in the food processing / pharmaceutical / cosmetics industry, the shrink disc may only be used next to or under the product area.

The shrink disc has been constructed according to current technological standards and accepted safety regulations.

- To avoid danger to the operator or damage to the machine, employ the shrink disc only for its intended use and in a technically flawless and safe state.

3 Assembly



- If a different shrink disk is used, observe the instructions of the manufacturer.
- If you have questions about correct mounting, consult our Customer Service department.

The slip-on shaft / hollow shaft / hollow shaft interface [Q] is axially secured to the load shaft by means of a shrink disk connection. If a gearbox with shrink disk [P] was ordered, then it is already mounted.

3.1 Preparations

	NOTICE		
	<p>Dirt can inhibit transmission of the torque.</p> <ul style="list-style-type: none"> • Do not disassemble the shrink disk prior to installation. • De-grease the load shaft and the blind hollow shaft bore in the area of the shrink disk seat, leaving no residual traces. 		

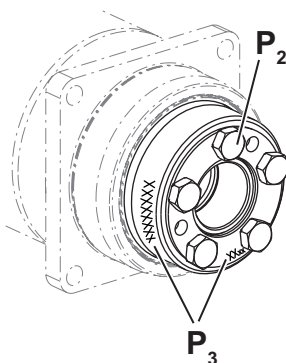
ⓘ Only the exterior surface of the blind hollow shaft / hollow shaft / hollow shaft interface may be greased in the area of the shrink disk seat.

Depending on the material of the shrink disk, the load shaft has to meet the following conditions:

	Material of the shrink disk		
	Standard (steel)	nickel-plated*	stainless steel*
Minimum yield stress [N/mm²]	≥ 385	≥ 260	≥ 260
Surface roughness Rz [µm]	≤ 16		
Tolerance	h6		

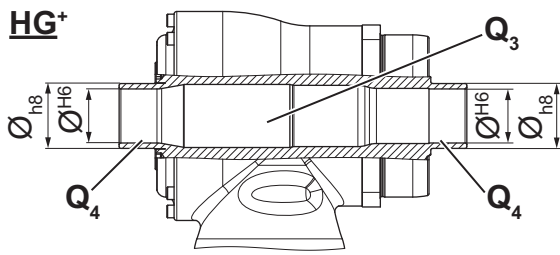
* Observe the instructions given in Chapter 3.2 "Information on corrosion resistant gearboxes".

Tbl-1: Features of the load shaft



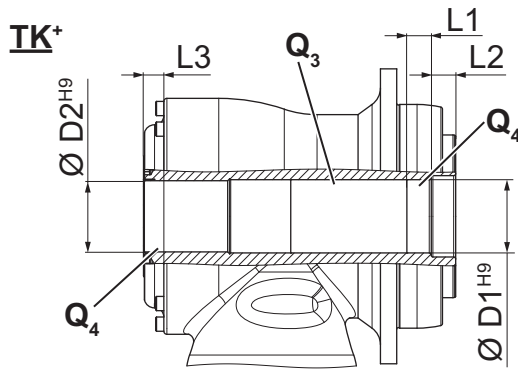
- ⓘ The material of the shrink disk can be determined via the material number [P₃] (see Chapter 4.3 "Specifications on the shrink disk").
- ⓘ The material number is located, depending on the design, on the front side or the circumference of the shrink disk.

3.2 Information on corrosion resistant gearboxes



In the hollow shaft / hollow shaft interface, unprotected parts [Q₃] need to be protected against aggressive media.

- ① We recommend a two-sided sealing by O-rings made of a suitable material in the area of the fit bore [Q₄] (shaft dimensions: HG⁺, VH⁺, NVH and CVH see catalog; TK⁺ see table "Tbl-2").
- Check the firmness of the load shaft in the area of the O-ring groove.



Gearbox size TK ⁺	ØD1 x L1* [mm] x [mm]	L2 [mm]	ØD2 x L3* [mm] x [mm]
004	Ø19 x 8	9	Ø17 x 11
010	Ø25 x 10	14	Ø25 x 15.5
025	Ø36 x 12	12	Ø35 x 16
050	Ø50 x 25	7	Ø50 x 20
110	Ø72 x 10	20	Ø70 x 23

* L1, L3 = Fitting length

Tbl-2: Shaft dimensions TK⁺

3.3 Mounting with shrink disk

- ① If a separately supplied shrink disk is to be mounted, read the information in Chapter 3.4 "Installing the shrink disk".

NOTICE

The forces of the shrink disk can deform the blind hollow shaft / hollow shaft / hollow shaft interface.

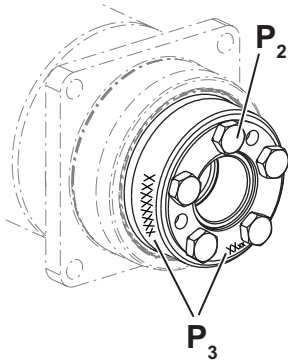
- Always install the load shaft first before tightening the clamping screws of the shrink disk.

Incorrectly aligned shafts can lead to damage.

- Ensure that the blind hollow shaft / hollow shaft / hollow shaft interface are aligned with the load shaft.
- Mount the blind hollow shaft / hollow shaft / hollow shaft interface onto the load shaft without using force.
- Never attempt to assemble by hammering or applying pressure.

- Slide the blind hollow shaft / hollow shaft / hollow shaft interface onto the load shaft by hand, taking into account the minimum clamping length and the maximum permissible depth.

① With the recommended fit size h6 for the load shaft, it must be possible to push the disk on without exerting force, but without a noticeable fit tolerance. The required dimensions for the slip-on shaft / hollow shaft / hollow shaft interface are found in the catalog (see also Chapter 4.1 "Dimensions and performance data").



- Read the material number [P₃] and determine the specified tightening torque, see Chapter 4.3 "Specifications on the shrink disk".
- Tighten the clamping screws [P₂] slightly by hand and align the shrink disk.
- Tighten the clamping screws in stages, one after another in multiple circular passes.
- Tighten the individual clamping screws only up to the maximum permitted tightening torque.

- Check the clamping screws [P₂] one after the other with the maximum permitted tightening torque.

3.4 Installing the shrink disk

① A removed shrink disk does not need to be disassembled and regreased prior to bracing it again. It is only necessary to disassemble and clean the shrink disk if it is dirty.

	NOTICE
	<p>A cleaned shrink disk can have another coefficient of friction. This can lead to damage during assembly.</p> <ul style="list-style-type: none"> • Lubricate the inner smooth surfaces of the shrink disk using a solid lubricant with a coefficient of friction of $\mu = 0.04$.

① The following lubricants are permitted for relubricating the shrink disk:

Lubricant	Commercial form	Manufacturer
Molykote 321 R (lubricating varnish)	Spray	DOW Corning
Molykote Spray (powder spray)	Spray	DOW Corning
Molykote G Rapid	Spray or paste	DOW Corning
Aemasol MO 19 P	Spray or paste	A. C. Matthes
Unimoly P 5	Powder	Klüber Lubrication

Tbl-3: Approved lubricants for relubricating the shrink disk

- Loosen the clamping screws by one revolution.
 - Push the shrink disk onto the blind hollow shaft / hollow shaft / hollow shaft interface.
- ① Only the exterior surface of the blind hollow shaft / hollow shaft / hollow shaft interface may be greased in the area of the shrink disk seat.
- Observe the further instructions given in Chapter 3.3 "Mounting with shrink disk".

4 Appendix

4.1 Dimensions and performance data

The dimensions, the maximum permissible speeds and torques, and information on the service life can be found

- in our catalog,
- at www.wittenstein-alpha.de,
- in the specification software **cymex**[®],
- in the respective customized performance data (X093–D...).

① Consult our Customer Service department if the gearbox is older than a year. The user will then receive the valid performance data.

4.2 Storage

Store the shrink disk in a dry area in the closed original packaging. Store the shrink disk for a **maximum of 6 months**. Consult our Customer Service department if conditions are different. For storage logistics, we recommend the "first in - first out" method.

4.3 Specifications on the shrink disk

Material number	Designation	Material of the shrink disk	Tightening torque [Nm]	Clamping screw thread
20000744	SD 018x044 S2	Standard (steel)	12	M6
20001389	SD 024x050 S2	Standard (steel)	12	M6
20001391	SD 036x072 S2	Standard (steel)	30	M8
20001394	SD 050x090 S2	Standard (steel)	30	M8
20001396	SD 068x115 S2	Standard (steel)	30	M8
20001397	SD 075x138 S2	Standard (steel)	59	M10
20003159	SD 100x170 S2	Standard (steel)	59	M10
20020687	SD 030x060 S2V	Standard (steel)	13	M6
20020688	SD 036x072 S2V	Standard (steel)	30	M8
20020689	SD 050x090 S2V	Standard (steel)	34	M8
20020690	SD 062x110 S2V	Standard (steel)	34	M10
20023267	SD 125x215 S2	Standard (steel)	100	M12
20035055	SD 036x072 E2	stainless steel	16	M8
20043198	SD 024x050 E2	stainless steel	7.5	M6
20047530	SD 036x072 N2V	nickel-plated	34	M8
20047860	SD 062x110 E2	stainless steel	16	M10
20047885	SD 030x060 E2	stainless steel	6.8	M6
20047927	SD 062x110 N2	nickel-plated	34	M10
20047934	SD 030x060 N2	nickel-plated	14	M6

Material number	Designation	Material of the shrink disk	Tightening torque [Nm]	Clamping screw thread
20047935	SD 050x090 N2V	nickel-plated	34	M8
20047937	SD 050x090 E2	stainless steel	16	M8
20047957	SD 024x050 N2	nickel-plated	7.5	M6
20048491	SD 018x044 E2	stainless steel	7.5	M6
20048492	SD 068x115 E2	stainless steel	16	M8
20048496	SD 018x044 N2	nickel-plated	7.5	M6
20048497	SD 036x072 N2	nickel-plated	34	M8
20048498	SD 050x090 N2	nickel-plated	34	M8
20048499	SD 068x115 N2	nickel-plated	34	M8
20050257	SD 020x047 S2V	Standard (steel)	13	M6
20050261	SD 068x115 S2V	Standard (steel)	34	M8

Tbl-4: Specifications on the shrink disk

4.4 Cleaning agents and cleaning process

- Use only **halogen-free** (especially **chloride-free**) cleaning agents for cleaning.

4.5 Supplementary information

- For further information, please visit our website at www.wittenstein-alpha.de. Or contact our Customer Service department at service@wittenstein-alpha.de

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Revision history

Revision	Date	Comment	Chapter
01	05.03.2018	New version	All
02	06.03.2019	V-Drive	3.3
03	09.01.2020	ATEX	2.1, 3
04	26.09.2022	general revision	All



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