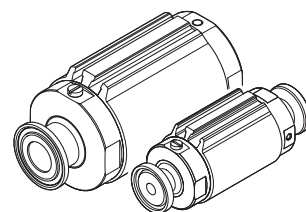
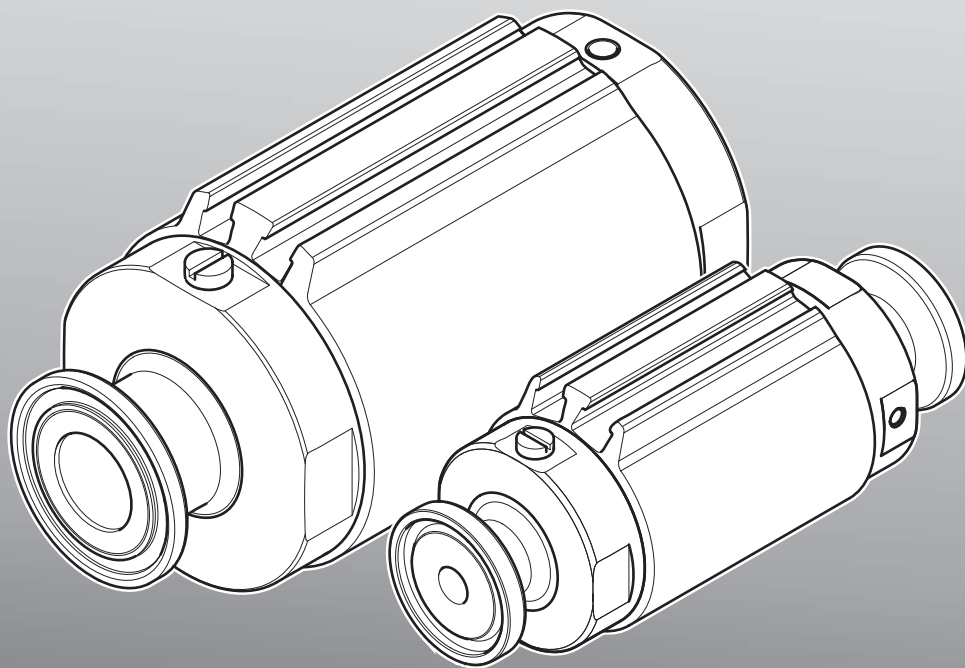


Pinch valve

VZQA-C-M22C

FESTO

**Repair
instructions (en)**



Imprint

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All technical data are subject to change according to technical updates.

Foreword

These repair instructions are valid for the pinch valve listed on the title page to the exclusion of any liability claims.

The general terms and conditions of business (Allgemeinen Geschäftsbedingungen - AGB) of Festo SE & Co. KG apply; these can be read on the Festo website (→ www.festo.com).

Differences compared to the descriptions in these repair instructions may arise depending on the design and/or modification status of the pinch valve. The user must check this prior to carrying out the repair and take the deviations into consideration if necessary.

These repair instructions have been prepared with care.
Festo SE & Co. KG does not, however, accept liability for any errors in these repair instructions or their consequences. Likewise, no liability is accepted for direct or consequential damage resulting from incorrect use of the products.

The relevant regulations on occupational safety, safety engineering, and interference suppression as well as the stipulations contained in these repair instructions must be observed when working on the products.

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1 Important information

1.1 About these repair instructions

This document contains important information about professional repair of the pinch valve of the type VZQA.

Before carrying out a repair, these repair instructions must be read in full and followed.

Other documentation for this product:

- Operating instructions (→ www.festo.com/sp)
- Spare parts documentation (→ www.festo.com/spareparts)

1.2 Symbols used

1.2.1 Danger categories

The following symbol identifies text passages which draw attention to specific hazards.



Warning

Marking special information

The following symbols identify text passages which contain special information.



Note

1.2.2 Repair steps

Familiarise yourself with the meaning of the symbols before starting the repair work.



Reference arrow

Symbol indicating the individual components to be noted.



Linear movement arrow

Carry out a linear movement.



Reference to repair steps

Follow the given repair steps.



Attention

Pay particular attention to notes and information.



Visual inspection

Perform a visual inspection.



Tools

Use suitable tools.



Functional test / start-up

Follow the functional test / start-up information in the brief instructions (→ www.festo.com).

1.2.3 Cleaning and greasing



Cleaning

The components must be thoroughly cleaned to remove all foreign particles, machining residues and old lubricants before they are greased.

Clean with a soft, lint-free cloth and non-abrasive cleaning agents. Check the compatibility of the cleaning agent with the materials to be cleaned.



Extremely thin grease film

A barely continuous film of grease covers the bearing surface so that a continuous film of grease exists; however, there is no detectable darkening due to the grease colour.

Recommendation:

Apply the grease with a paint brush, a fine bristle brush or similar. Remove surplus grease by wiping off once with the respective system components.



Thin grease film

A film of grease covers the bearing surface so that a continuous film of grease exists and the grease colour darkens the surface slightly.

Recommendation:

Apply the grease with a paint brush, a fine bristle brush or similar.



Thin grease film outside

A film of grease covers the outer surface so that a continuous film of grease exists and the grease colour darkens the surface slightly.

Recommendation:

Apply the grease with a paint brush, a fine bristle brush or similar.



Grease reservoir

Grease quantity enclosed between two sealing rings or in the enclosed ring volumes.

1.3 Text designations used in these repair instructions

1.4 General lists

➔ Reference to further information.

Underlined, blue text indicates a cross-reference or hyperlink that you can click on in the PDF.

1.5 Tools

The following standard tools are required for the repair:

- Open-ended spanner
- Torque wrench

2 General safety instructions and information

2.1 General safety instructions



Warning

Read and follow all safety instructions and information. Failure to comply with these safety instructions and information can result in serious injuries.



Note

To achieve ATEX conformity, the toothed discs must be replaced each time after loosening the corresponding screws or bolts. Note the given tightening torque when screwing back in.

- Repair work may only be carried out by authorised and trained personnel acting in accordance with the requirements in these repair instructions and the device-related documentation.
- Pay attention to cleanliness while repairing the pinch valve. Do not allow dirt particles to get into the pinch valve.
- The pinch valve must be shut down before carrying out repair work.
- Before carrying out the repair work, any attachments present must be dismantled.
- Use original spare parts only for the repair.
- Wear the necessary personal protective equipment.
- In the event of damage caused by
 - unauthorised manipulation,
 - non-intended use or
 - use of non-original spare partsall warranty and liability claims against the manufacturer expire.
- The technical documentation required for installation and start-up (functional test) must be available.

2.2 General information

- Standard tools are needed to repair the pinch valve, which must be available in a service workshop (→ [Chapter 1.5 on page 5](#)).
- Components and equipment replaced during repair must be disposed of in accordance with the relevant local environmental protection regulations.
- Where possible the repair should be carried out on a stable and flat work surface with space for small parts.

3

Sizes, part numbers and component lists with bills of material

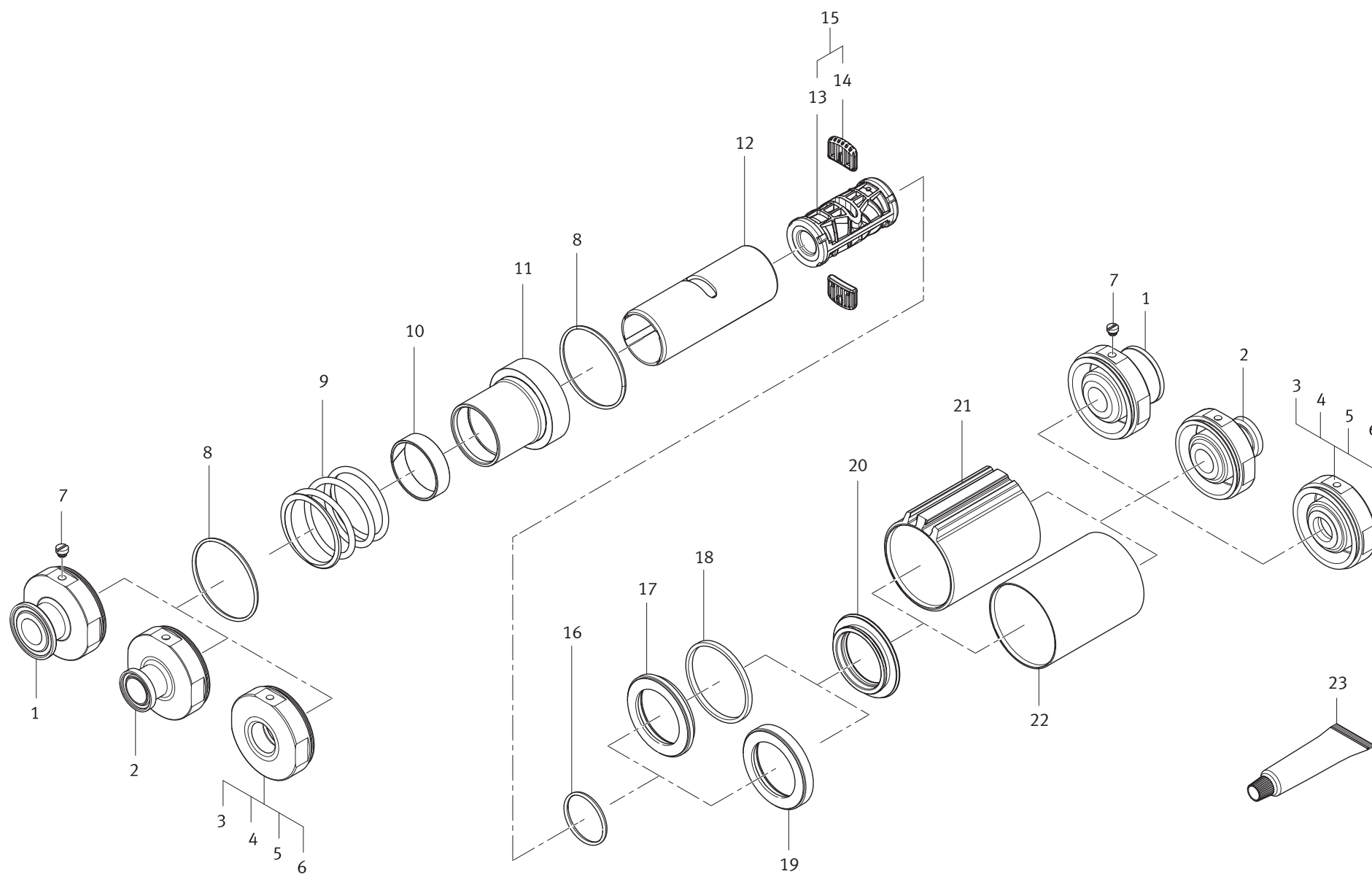
The component lists with corresponding bills of materials for the following quarter-turn actuators are listed on the following pages:

Size	Part number	Components list	Bill of materials
VZQA-C-M22C-6	3174282	→ Chapter 3.1 on page 8	→ Chapter 3.1.1 on page 9
VZQA-C-M22C-15		→ Chapter 3.2 on page 10	→ Chapter 3.2.1 on page 11



The following diagrams are intended only to provide an overview of the individual components. To order spare and wearing parts, and sets of wearing parts please use the online spare parts catalogue on the Festo website (→ www.festo.com/spareparts).

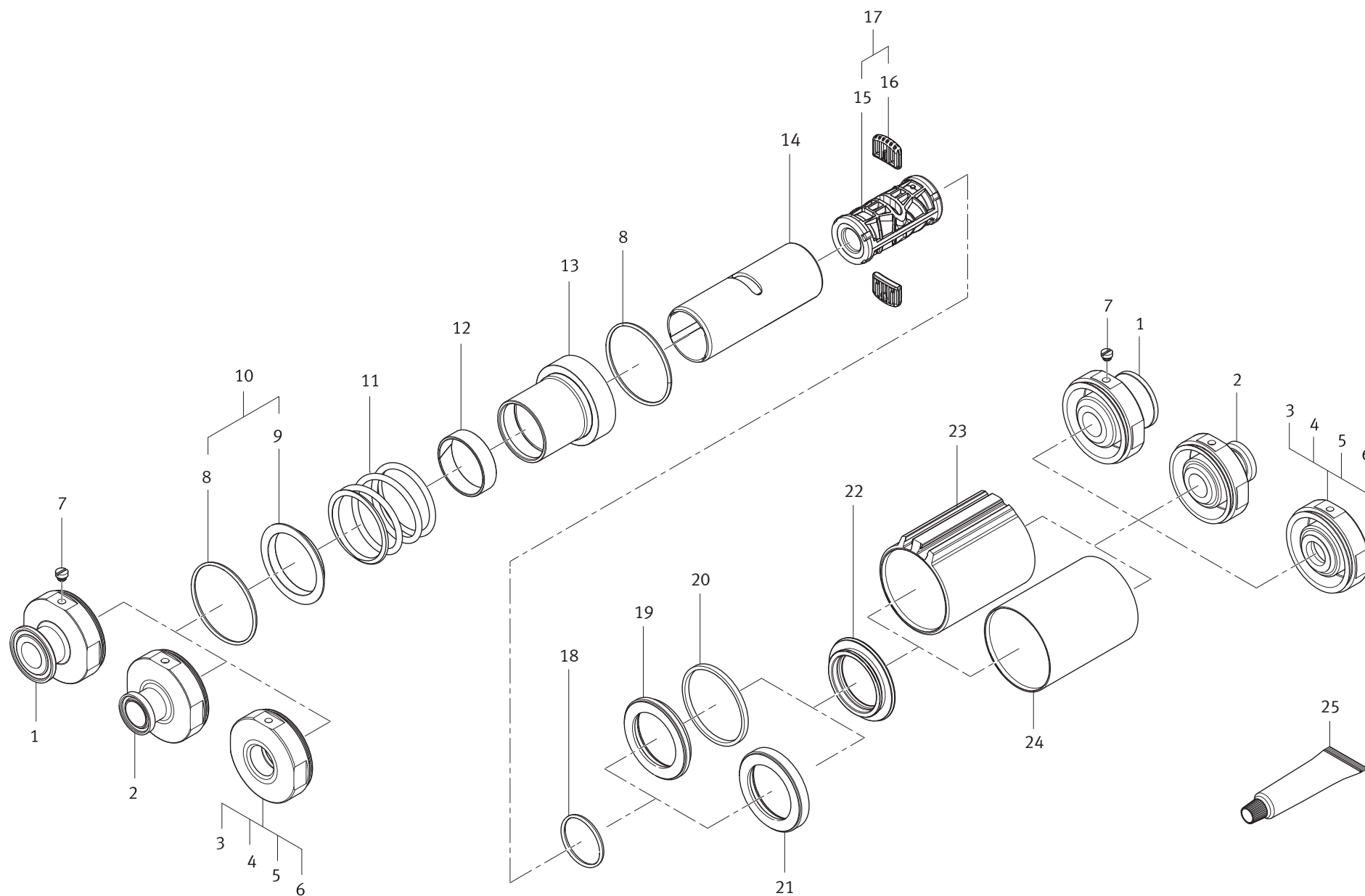
3.1 Components overview VZQA-C-M22C-6-...



3.1.1 Parts list VZQA-C-M22C-6-...

No.	Designation, type
1	Cover S5, stainless steel V4
2	Cover S1, stainless steel V4
3	Cover G, aluminium
4	Cover G, stainless steel V4
5	Cover T, aluminium
6	Cover T, stainless steel V4
7	Plug screw
8	O-ring, 28.3×1.78-N-FPM70
9	Compression spring
10	Guiding Band
11	Return piece
12	Guide tube
13	Pinch valve sleeve
14	Stamp
15	Seal cartridge
16	O-ring, 14×1.78-N-FPM70
17	Piston
18	Magnet
19	Piston
20	Sealing ring, SBFC1-20X32×6.5-FPM
21	Pipe, aluminium
22	Pipe, stainless steel V2
23	Lubricating grease, LUB-KL5

3.2 Components overview VZQA-C-M22C-15-...

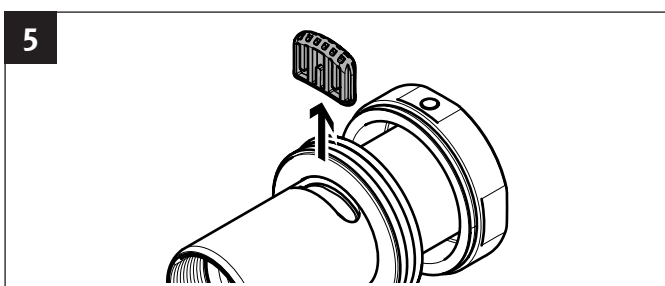
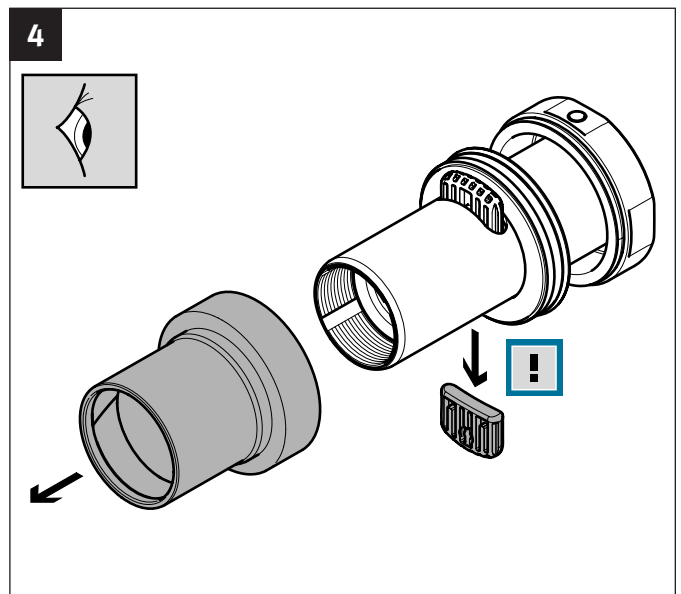
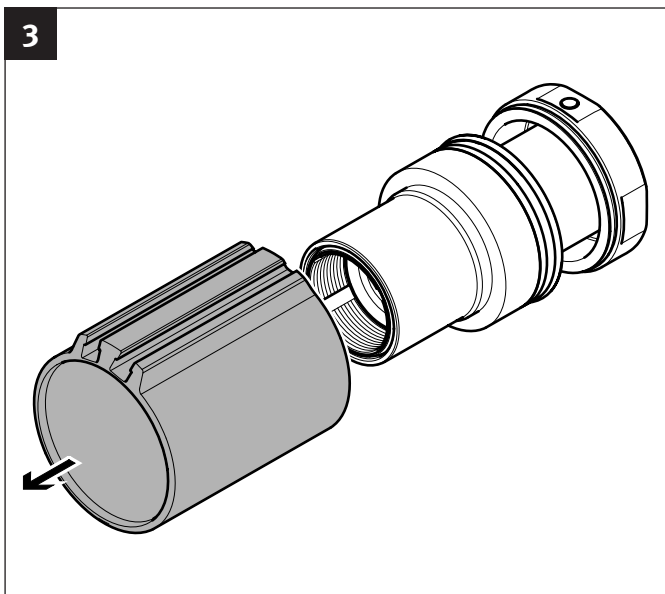
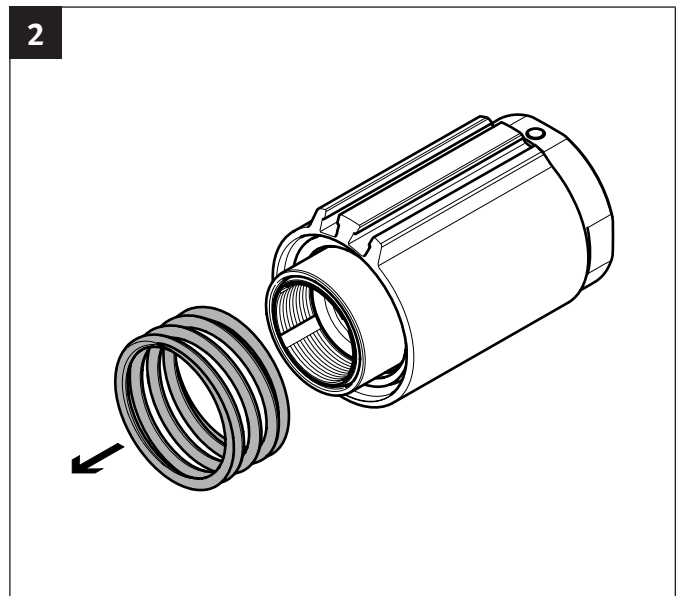
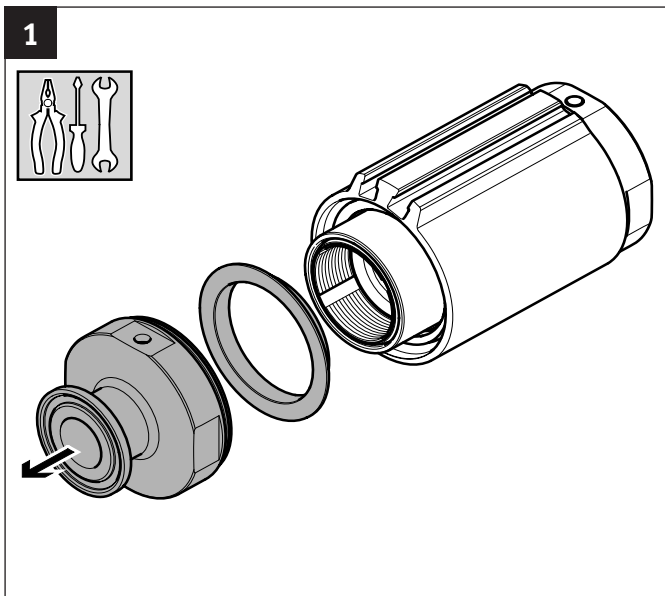


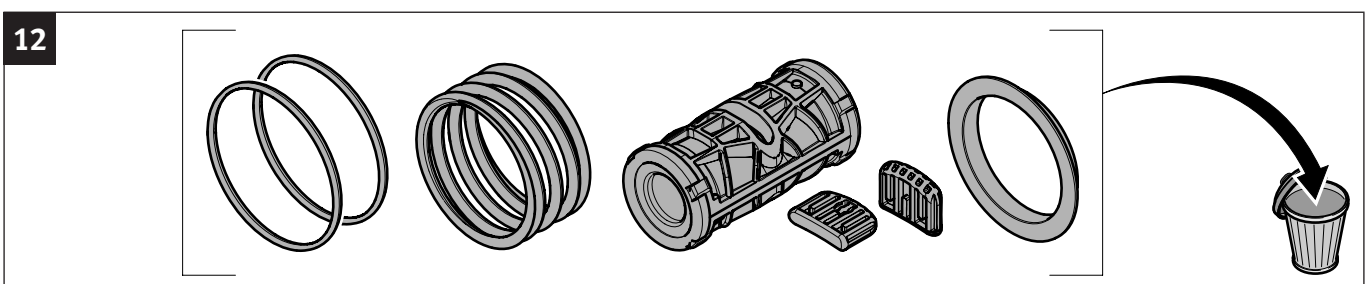
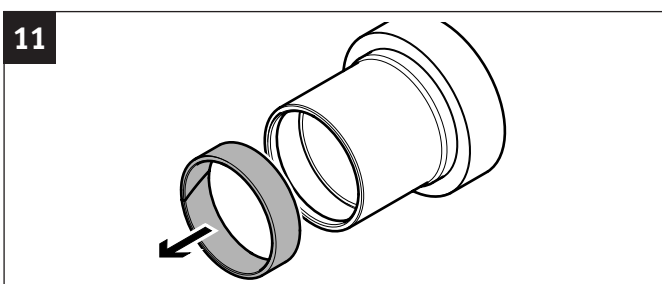
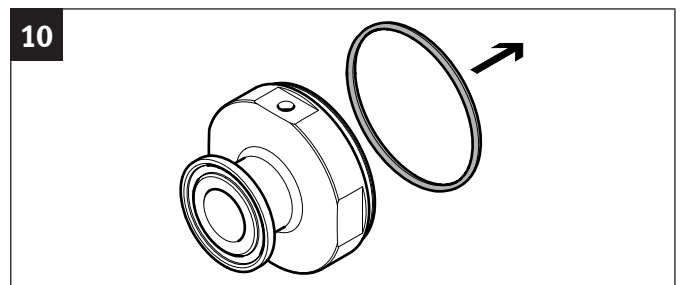
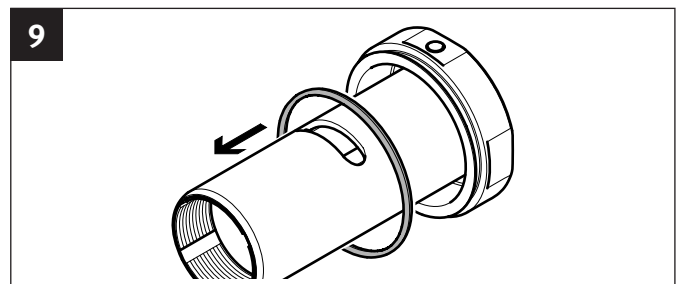
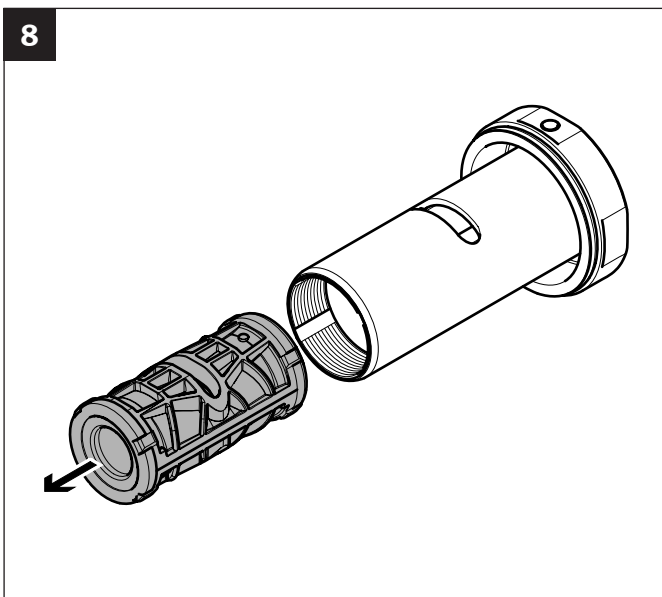
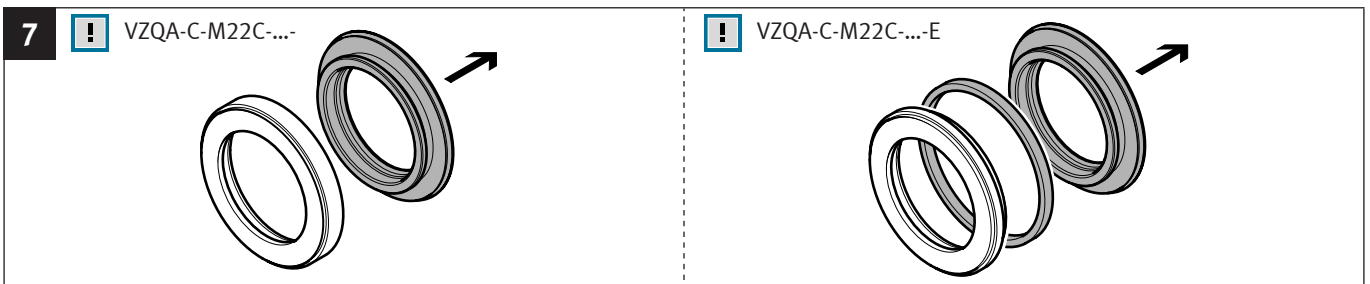
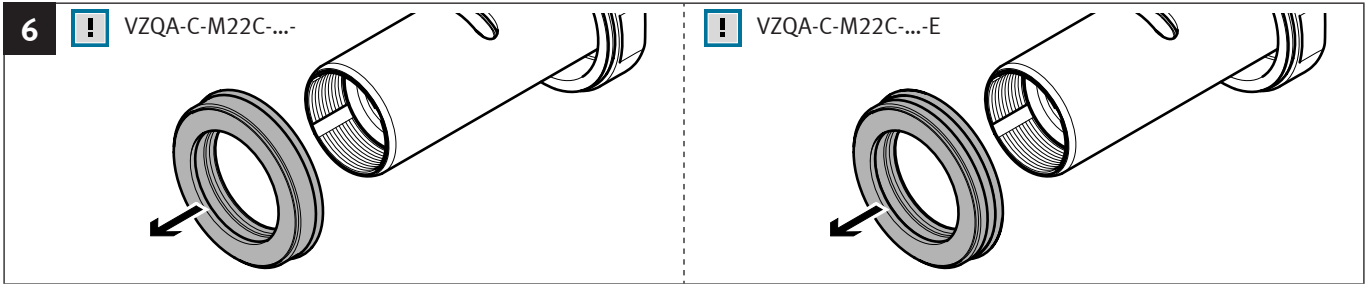
3.2.1 Parts list VZQA-C-M22C-15-...

No.	Designation, type
1	Cover S5, stainless steel V4
2	Cover S1, stainless steel V4
3	Cover G, aluminium
4	Cover G, stainless steel V4
5	Cover T, aluminium
6	Cover T, stainless steel V4
7	Plug screw
8	O-ring, 45×2-N-FPM70
9	Sleeve
10	Sleeve module
11	Compression spring
12	Guiding Band
13	Return piece
14	Guide tube
15	Pinch valve sleeve
16	Stamp
17	Seal cartridge
18	O-ring, 28×2-N-FPM70
19	Piston
20	Magnet
21	Piston
22	Seal
23	Pipe, aluminium
24	Pipe, stainless steel V2
25	Lubricating grease, LUB-KL5

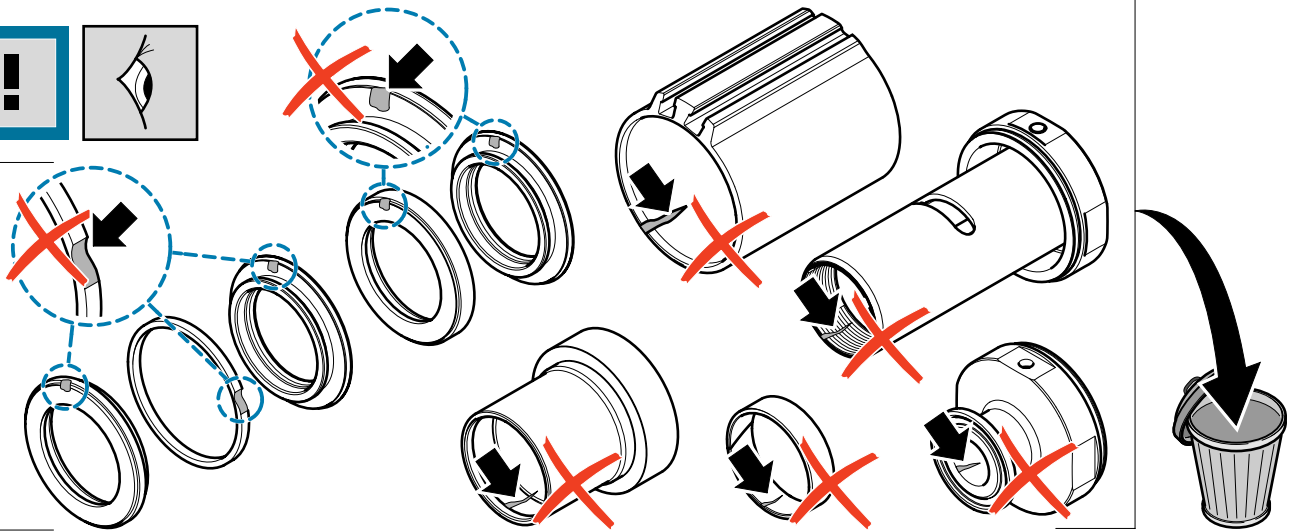
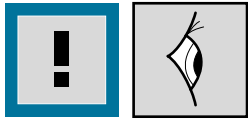
4 Repair steps

4.1 Dismantling



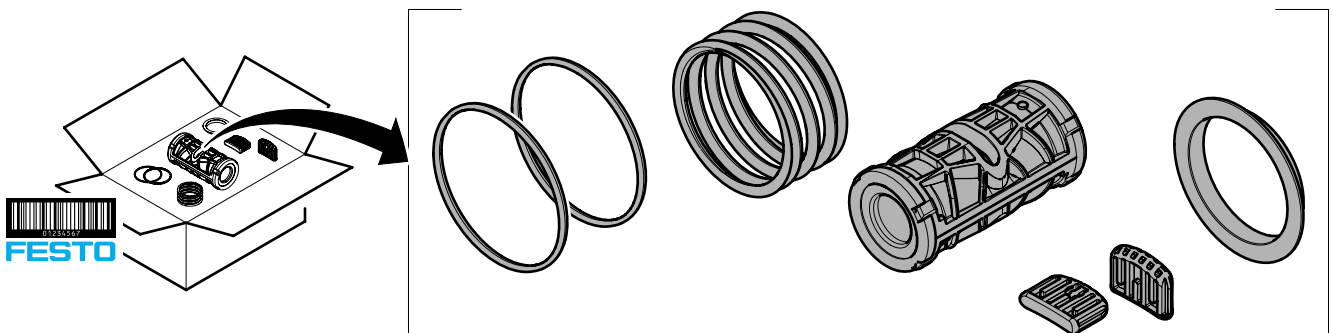


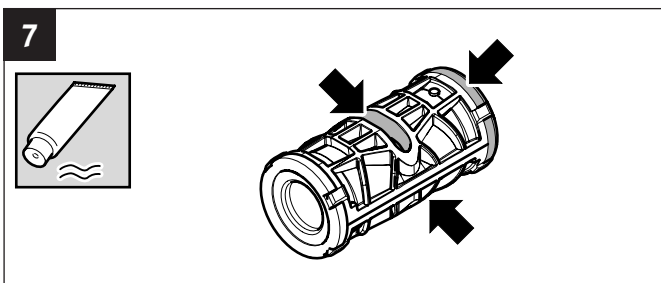
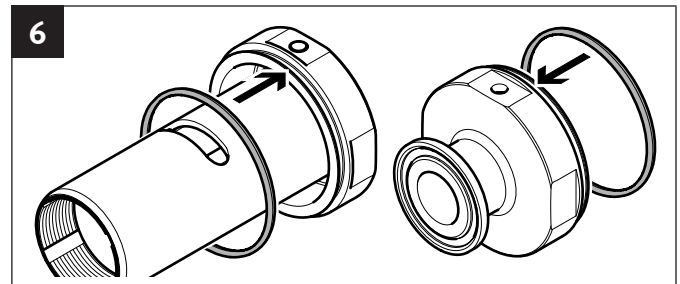
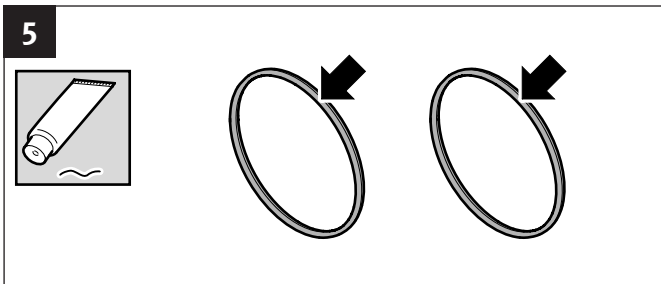
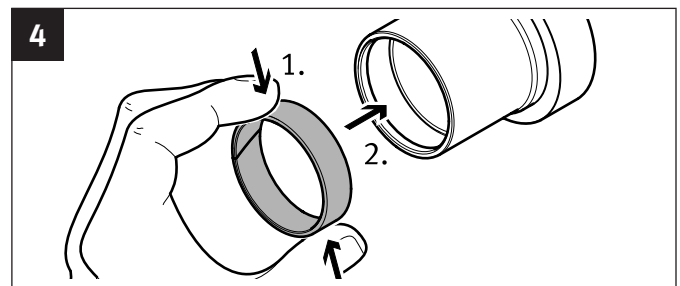
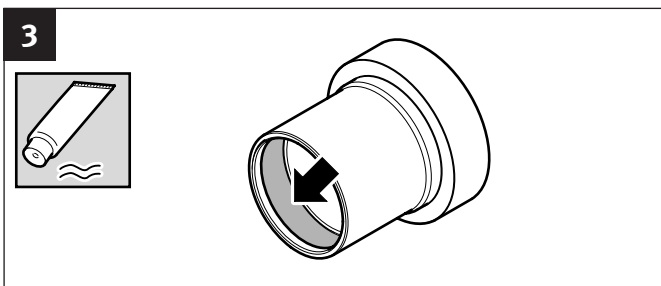
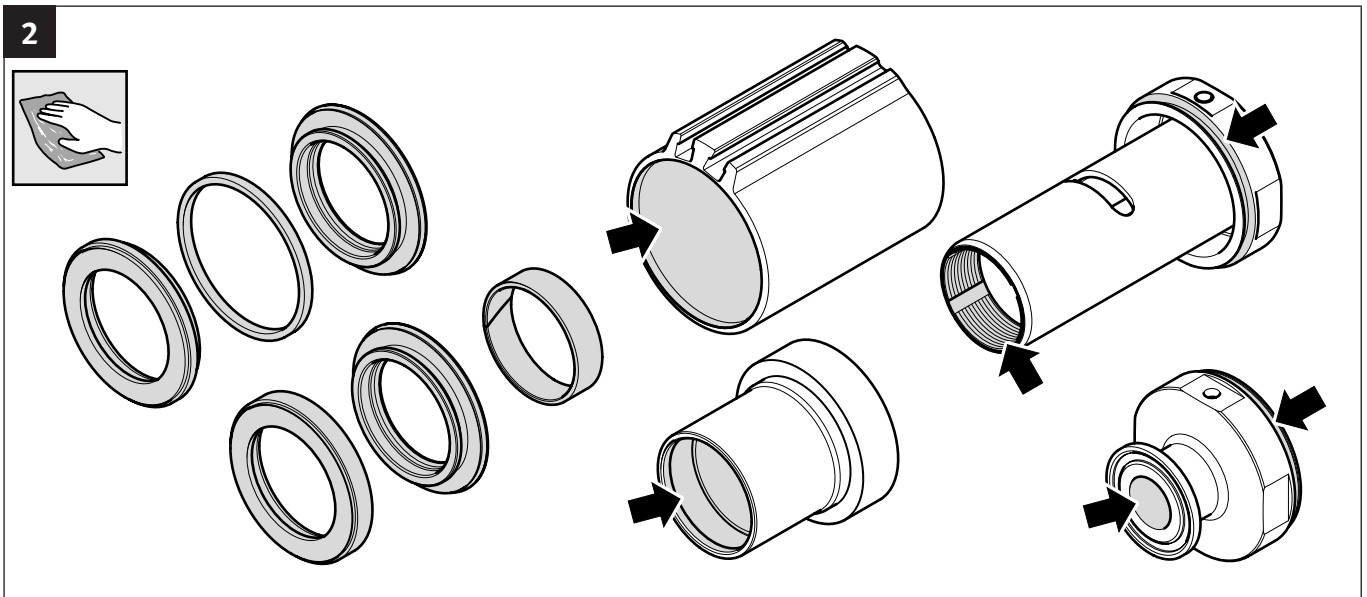
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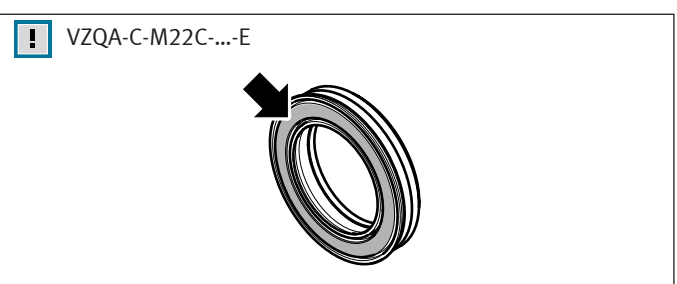
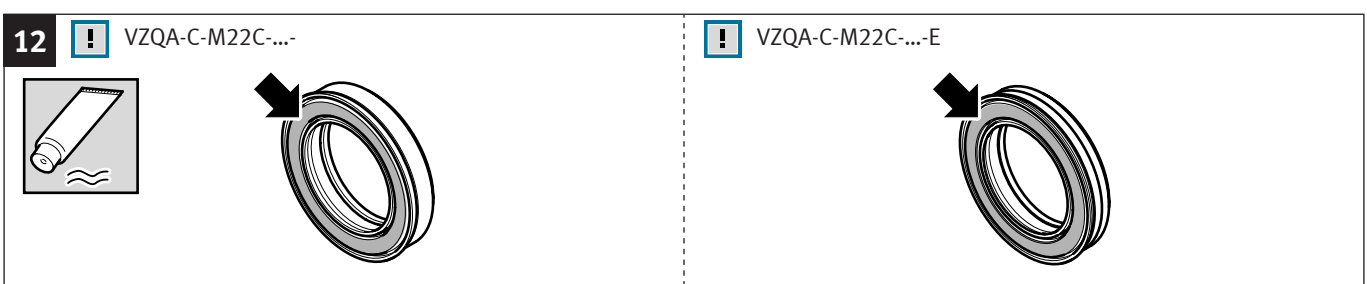
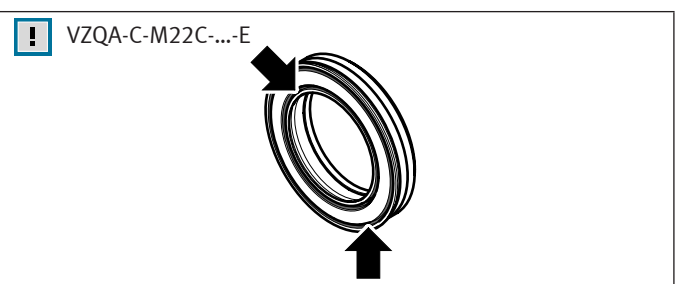
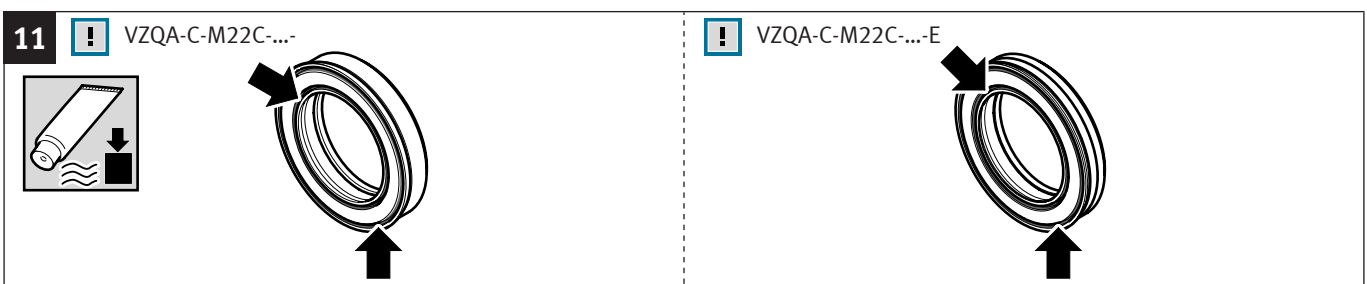
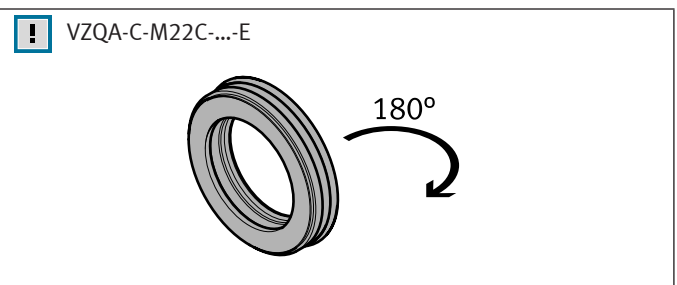
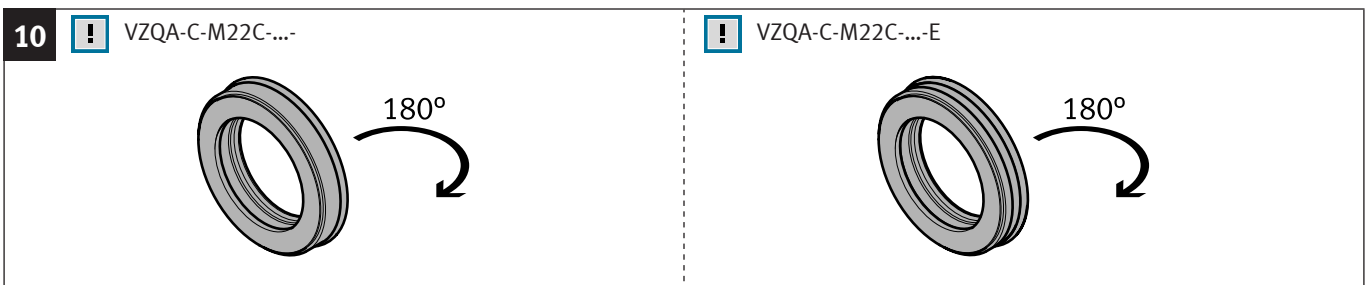
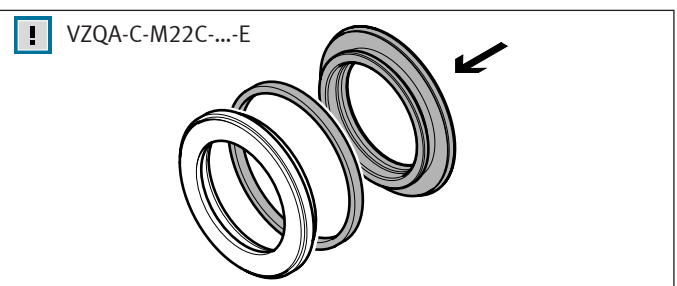
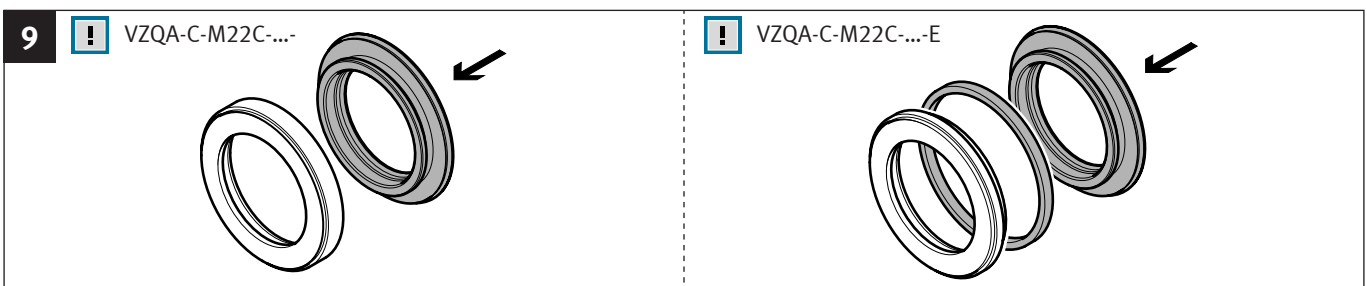
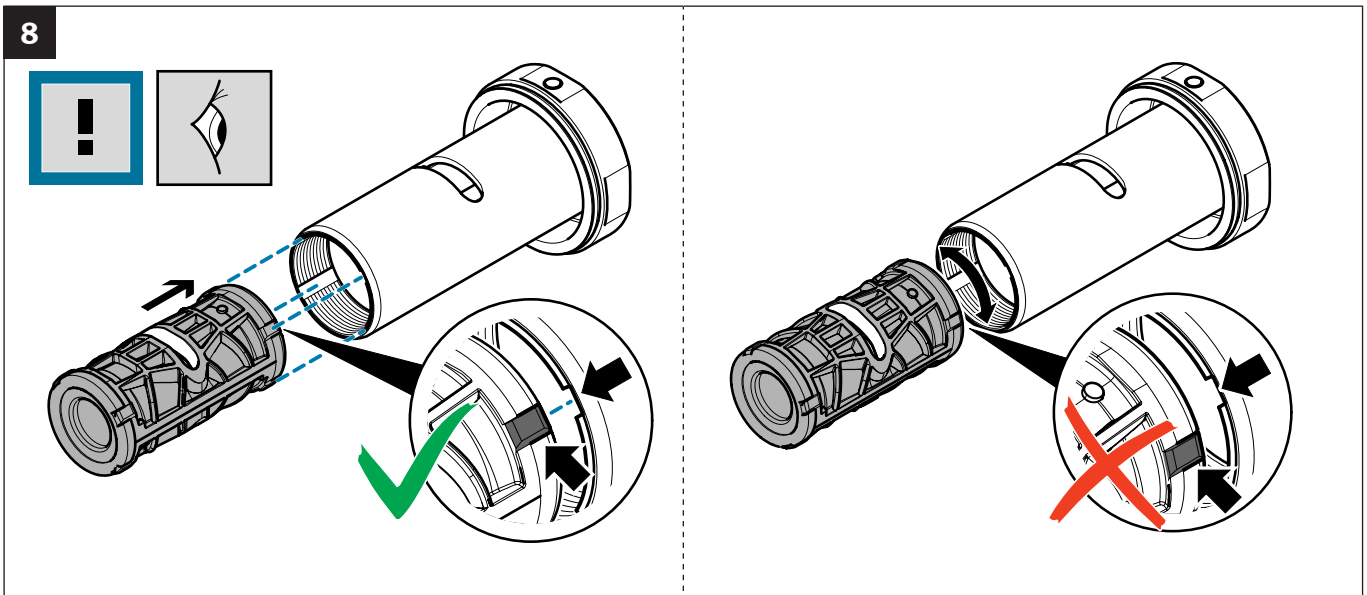


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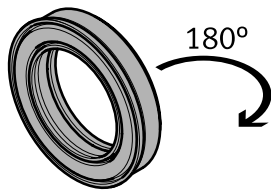
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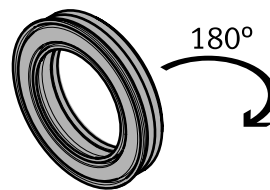




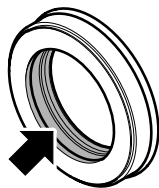
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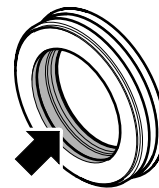
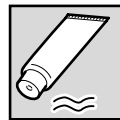
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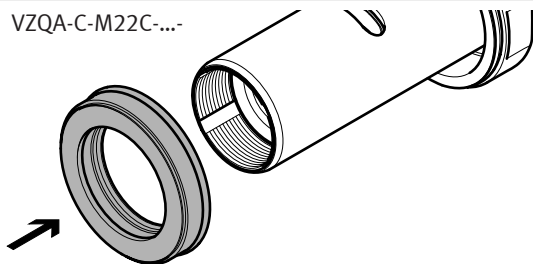
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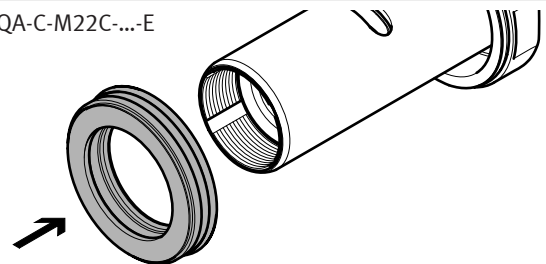
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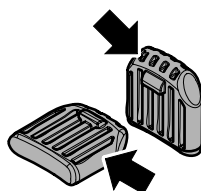
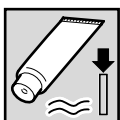
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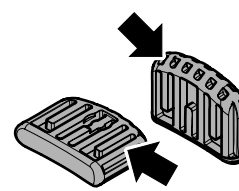
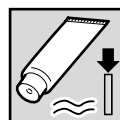
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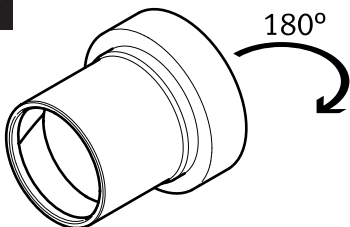
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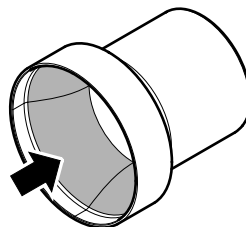
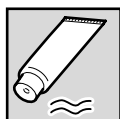
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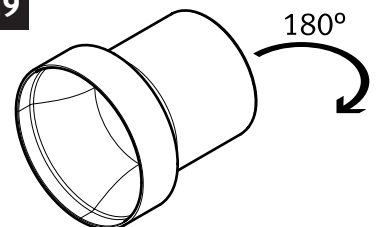
17 180°



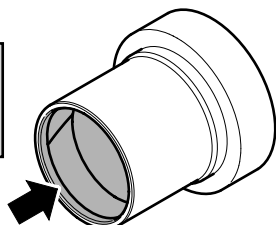
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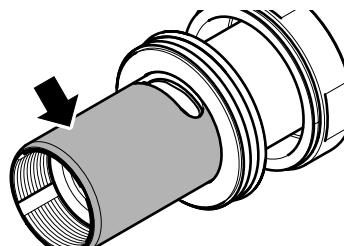
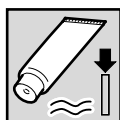
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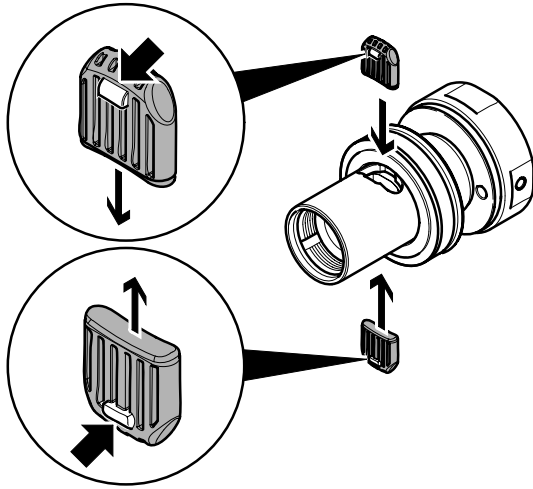


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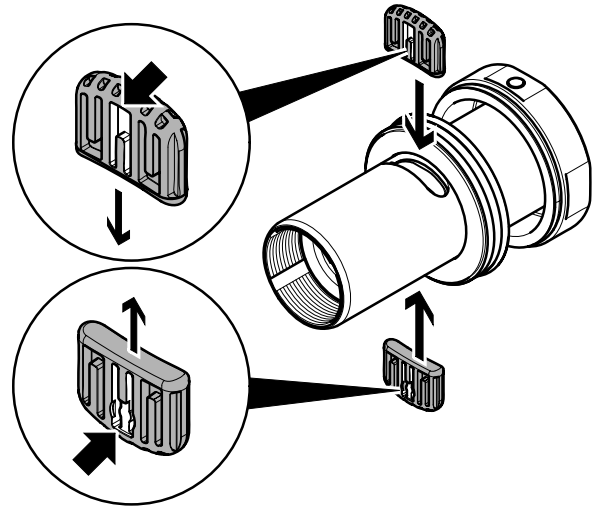
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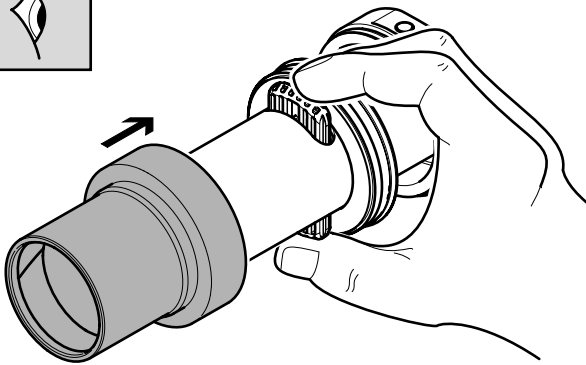


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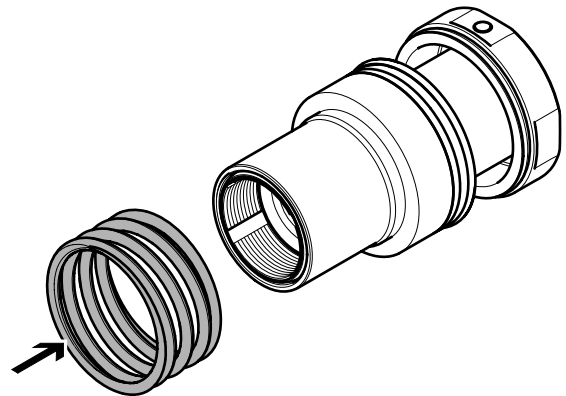
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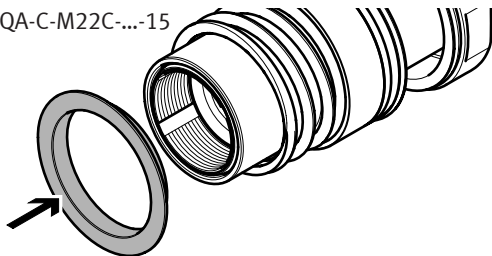


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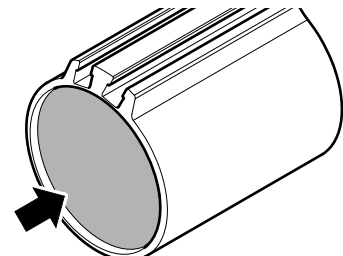
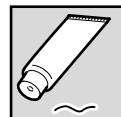


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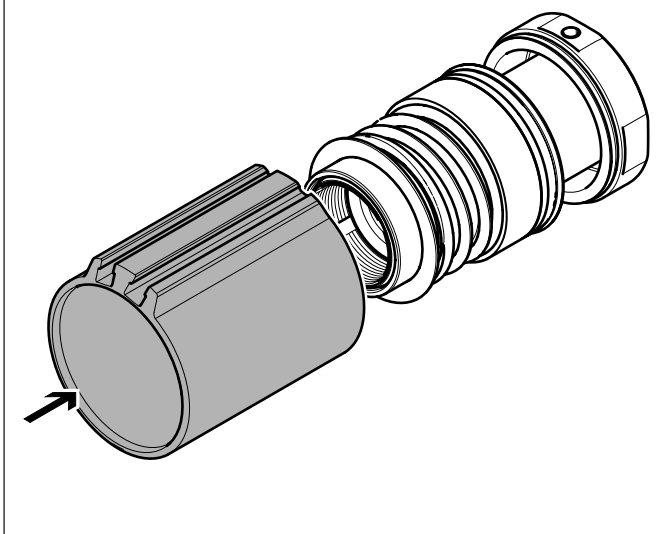
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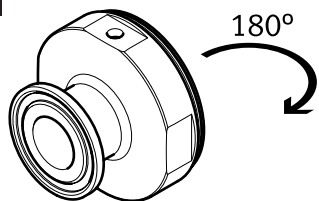
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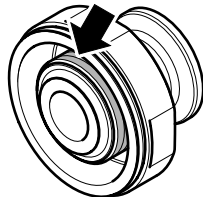
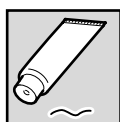
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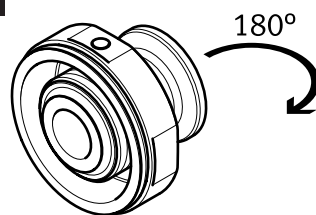
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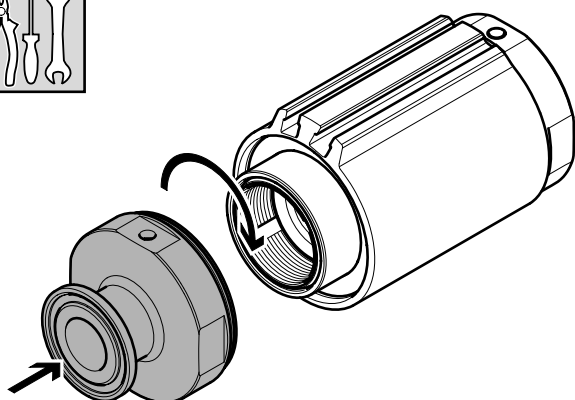
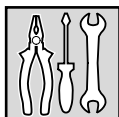
29





30

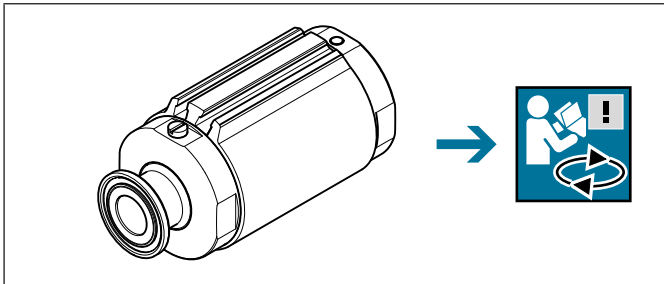


31



	 Nm	VZQA-...-...V4	VZQA-...-...AL
6	32	15 ± 10 %	5 ± 10 %
15	50	40 ± 10 %	40 ± 10 %

5 Start-up



Conditions of use for “Electronic documentation”

I. Protection rights and scope of use

The file of your choice is subject to protective provisions. Festo or third parties have protective rights to this electronic documentation, which Festo provides both on portable data storage devices (diskettes, CD ROM, removable disks) as well as on the Internet and/or intranet, referred to as electronic documentation below. In so far as third parties have whole or partial right of access to this electronic documentation, Festo has the appropriate rights of use. Festo permits the user the use under the following conditions:

1. Scope of use

- a) The user of the electronic documentation is allowed to use this documentation for his own, exclusively company-internal purposes on any number of machines within his business premises (location). This right of use includes exclusively the right to save the electronic documentation on the central processors (machines) used at the location.
- b) The electronic documentation may be printed out on a printer at the location of the user as often as desired, providing this printout is printed with or kept in a safe place together with these conditions of use and other user instructions.
- c) With the exception of the Festo logo, the user has the right to use pictures and texts from the electronic documentation for creating his own machine and system documentation. The use of the Festo logo requires written consent from Festo. The user is responsible for ensuring that the pictures and texts used match the machine/system or the product.
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Copying exclusively for use within the framework of machine and system documentation from electronic documents of all documented supplier components. Demonstrating to third parties exclusively under guarantee that no data material is stored wholly or partly in other networks or other data storage devices or can be reproduced there.

Passing on printouts to third parties not covered by the regulation in item 3, as well as any processing or other use are not permitted.

2. Copyright note

Every “electronic document” receives a copyright note. This note must be included on every copy and every printout.

Example: E 2003, Festo SE & Co. KG, D-73726 Esslingen

3. Transferring the authorisation of use

The user can transfer the authorization of use in the scope of and with the limitations of the conditions in accordance with items 1 and 2 completely to a third party. The third party must be made explicitly aware of these conditions of use.

II. Exporting the electronic documentation

When exporting the electronic documentation, the licence holder must observe the export regulations of the exporting country and those of the purchasing country.

III. Warranty

1. Festo products are being continuously developed with regard to hardware and software. The hardware status and, where applicable, the software status of the product can be found on the name plate of the product. If the electronic documentation, in whatever form, is not supplied with the product, i.e. is not supplied on a data storage device (diskettes, CD ROM, removable disk) as a delivery unit with the relevant product, Festo does not guarantee that the electronic documentation corresponds to every hardware and software status of the product. In this case, the printed documentation from Festo accompanying the product alone is decisive for ensuring that the hardware and software status of the product matches that of the electronic documentation.
2. The information contained in this electronic documentation can be amended by Festo without prior notice and does not commit Festo in any way.

IV. Liability/limitations on liability

1. Festo provides this electronic documentation in order to assist the user in creating his machine and system documentation. In the case that electronic documentation in the form of data storage devices (diskettes, CD ROM, removable disk) does not accompany a product, i.e. is not automatically supplied together with that product, Festo does not guarantee that the electronic documentation separately available/supplied matches the product actually used by the user.

The latter applies particularly to extracts of the documents for the user's own documentation. The guarantee and liability for separately available/supplied portable data storage devices, i.e. with the exception of electronic documentation provided on the Internet/intranet, are limited exclusively to proper duplication of the software, whereby Festo guarantees that in each case the relevant portable data

storage device or software contains the latest status of the documentation. In respect of the electronic documentation available on the Internet/Intranet, there is no guarantee that it will have the same version status as the last printed edition.

2. Furthermore, Festo cannot be held liable for the lack of economic success or for damage or claims by third parties resulting from the use of the documentation by the user, with the exception of claims arising from infringement of the protection rights of third parties concerning the use of the electronic documentation.

3. The limitations on liability as per paragraphs 1 and 2 do not apply if, in cases of intent or gross negligence or lack of warranted quality, a compulsory liability exists. In such a case, Festo's liability is limited to the damage discernable by Festo when the concrete circumstances are made known.

V. Safety guidelines/documentation

Warranty and liability claims in conformity with the aforementioned regulations (points III. and IV) may be raised only if the user has observed the safety guidelines of the documentation in conjunction with the use of the machine and its safety guidelines. The user himself is responsible for ensuring that the electronic documentation, when not supplied with the product, matches the product actually used by the user.