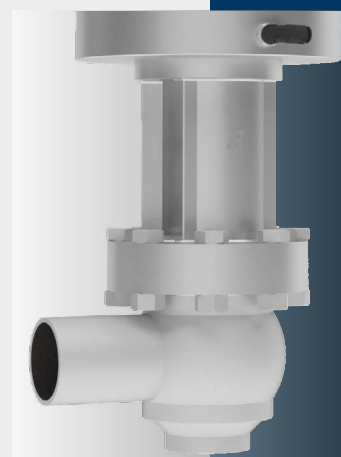
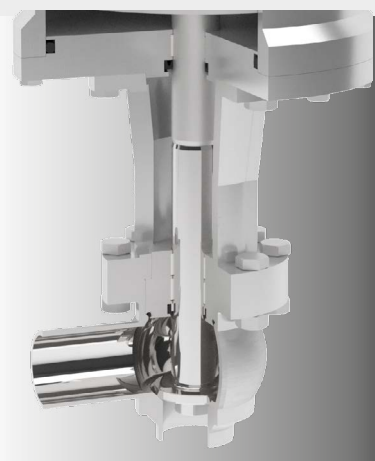


## Instruction, Use and Maintenance Manual



# HIGH-PRESSURE MODULATING VALVE WITH BURKERT POSITIONING

## BBZQM - BBYQM

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| MANUAL REVISION | DATE |
|-----------------|------|
|                 |      |

# INTRODUCTION

This "Instruction, Use and Maintenance Manual" has been prepared to provide guidance and recommendations to assist qualified skilled technicians in the understanding, running and maintenance of the Products supplied.

**It forms an integral part of the Products supplied and must be read prior to any installation, operation and/or maintenance of all types of valves provided.**

**This manual must be saved for future reference and be kept readily available at the unit.**

**With regards to the use of valves compliant with EU Directive 2014/34/UE (ATEX), consultation of a specific manual is mandatory.**

The essential characteristics of all types of valves described herein being consistent, the Manufacturer reserves the right to alter and or complement and or update at any time and with no obligation to notify so in writing, the data and or information relevant to the use of the valves described in this "Instruction, Use and Maintenance Manual".

**A constantly updated version of this "Instruction, Use and Maintenance Manual" is available at the Manufacturer's website [www.bardianivalvole.it](http://www.bardianivalvole.it).**

**Under no circumstance shall the Manufacturer be held liable for consequences resulting from failure and or improper use of the instructions contained in this Manual and relating to the installation, operating, maintenance and storage of the products.**

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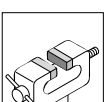
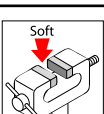
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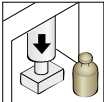
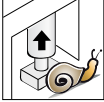
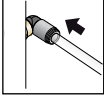
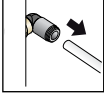
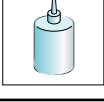


# 1 Safety, Warning and Mandatory Signs

| WARNING SIGNS                                                                      |                                   |                                                                                                                                                                              |
|------------------------------------------------------------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pictogram                                                                          | Description                       | Notes                                                                                                                                                                        |
|   | <b>WARNING General</b>            | This tells the person in question that the operation described involves (when not performed in accordance with the relative safety regulations) the risk of personal injury. |
|   | <b>WARNING Hand crushing</b>      | Exercise caution in executing the procedure<br>Hand crushing hazard<br>Never touch the moving parts if the actuator is supplied with compressed air.                         |
|   | <b>WARNING Heavy loads</b>        | Exercise caution in executing the procedure<br>Heavy suspended loads.                                                                                                        |
|   | <b>WARNING Severe burns</b>       | Heat emission hazard Very hot surface, risk of severe burns                                                                                                                  |
|  | <b>WARNING Risk of explosions</b> | Take Care, risk of explosions                                                                                                                                                |

| MANDATORY SIGNS (FOR THE OPERATOR IN CHARGE OF MECHANICAL MAINTENANCE AND THE OPERATOR IN CHARGE OF ASSEMBLY/DISASSEMBLY) |                           |                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pictogram                                                                                                                 | Description               | Notes                                                                                                                                                                                 |
|                                          | <b>OBLIGATION General</b> | Special instructions must be followed to avoid injury to persons.                                                                                                                     |
|                                          | <b>PROTECTIVE GLOVES</b>  | Protective gloves must be available for handling objects which could cause hand injuries or when there is the possibility of coming into contact with harmful substances..            |
|                                          | <b>HARD HAT</b>           | Hard hats must be available when lifting heavy parts.                                                                                                                                 |
|                                          | <b>FOOTWEAR</b>           | Use safety footwear to protect against injuries caused by falling objects during maintenance operations (particularly when dismantling parts).                                        |
|                                          | <b>SUITABLE CLOTHING</b>  | Suitable clothing such as overalls. It is strictly prohibited to wear clothes with large flapping sleeves and/or other loose items which could easily get caught up in machine parts. |
|                                        | <b>SAFETY GLASSES</b>     | Protective glasses must be available when there is the possibility of contact which harmful substances which could cause eye injuries.                                                |

| OPERATING SIGNS                                                                     |                               |                                                                                                   |
|-------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------------------|
| Pictogram                                                                           | Description                   | Notes                                                                                             |
|  | <b>SKILLED PERSONNEL</b>      | Dismantling/Assembling and maintenance operations must be carried out by expert technicians only. |
|  | <b>NOTE</b>                   | Follow the indicated note with care                                                               |
|  | <b>ENVIRONMENTAL NOTE</b>     | Follow the regulations in force in the country of used governing waste disposal.                  |
|  | <b>CLAMP</b>                  | Use of a clamp                                                                                    |
|  | <b>CLAMP WITH SOFT JAWS</b>   | Use of a clamp with jaws made from soft material                                                  |
|  | <b>See Instruction manual</b> | See the instruction manual                                                                        |

| OPERATING SIGNS                                                                     |                                           |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------|
| Pictogram                                                                           | Description                               | Notes                                                                               |
|    | <b>PRESS</b>                              | Use of a press                                                                      |
|    | <b>PRESS (release)</b>                    | Use of a press Gradual release of the pressure force                                |
|    | <b>ELECTRICAL CONNECTION</b>              | Electrical connection to the positioner (consult the relative instruction manual).  |
|    | <b>ELECTRICAL DISCONNECTION</b>           | Electrical disconnection from positioner (consult the relative instruction manual). |
|    | <b>PNEUMATIC CONNECTION</b>               | Connection of the air to the valve.                                                 |
|   | <b>PNEUMATIC DISCONNECTION</b>            | Disconnection of the air from the valve                                             |
|  | <b>APPLICATION OF FOODSAFE GREASE</b>     | Use CIP-FILM grease only or similar                                                 |
|  | <b>APPLICATION OF FOODSAFE GREASE</b>     | Use FOODLUBE Multi-paste grease only or similar                                     |
|  | <b>APPLICATION OF MULTIPURPOSE GREASE</b> | Use AGIP GREASE MU EP 2 SE only or similar                                          |
|  | <b>THREADLOCK APPLICATION</b>             | Use SPEED BOND M500 threadlock only or similar                                      |
|  | <b>ASSEMBLY / DISASSEMBLY SEQUENCE</b>    | Sequence of assembly disassembly operations                                         |
|  | <b>OPTIONAL</b>                           |                                                                                     |

## 1.1 Operator training



Tutte le persone che dovranno operare sulla valvola devono avere la qualifica per svolgere le mansioni di manutenzione sulla valvola.

Devono essere informati sui possibili pericoli e devono osservare le istruzioni sulla sicurezza riportate in questo manuale.

Consentire solo a personale qualificato di agire sui componenti elettrici.

## 2 Safety

### 2.1 General safety warnings

**Intended use**

Bardiani valves are intended exclusively for the handling of fluids and powders.

**Prohibited use**

The valve must not be used:

- for any operations different to those described under the heading “Intended Use”,
- for handling fluids different to the type specified by the manufacturer and indicated in the valve's technical data;
- for moving fluids at different pressures to those envisaged by the manufacturer and indicated in the valve's technical data.

**Limitations on valve use**

It is forbidden to:

- use the valve in a construction configuration different to the one envisaged by the manufacturer.
- use the valve where there is a risk of explosion and/or fire, unless envisaged by the manufacturer (if the valves are certified in accordance with Directive 2014/34/EU, please refer to the ATEX Manual)-;
- integrate other systems and/or equipment which were not considered by the manufacturer during the executive design phase,
- use the valve for purposes other than those specifically envisaged by the manufacturer.

**WARNING**

The machine may not be used inside premises where there is a potentially explosive atmosphere or risk of fire unless otherwise stated by the manufacturer (in the case of valves certified in accordance with Directive 2014/34/EU please refer to the ATEX Manual).



**BARDIANI VALVOLE S.p.A. declines all liability for installation, use or maintenance which fails to comply with the indications provided in this manual!**

### 3 Technical Data

| VALVE DATA                                  |                                                                                                    |                                                     |
|---------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Maximum pressure (PN)                       | 150 bar (2173 psi) DN25 -80 / 1" - 3"                                                              | Maximum value based on type of fittings/connections |
|                                             | 55 bar (798 psi) DN100 / 4"                                                                        |                                                     |
| Maximum seal pressure                       | See catalogue                                                                                      |                                                     |
| Storage temperature                         | from -10°C to +25°C                                                                                |                                                     |
| Material in contact with the product        | AISI 316L (1.4404). Check the resistance to corrosion in relation to products and detergents       |                                                     |
| Gasket material in contact with the product | EPDM, FKM, P.T.F.E. and other gaskets on request. Check compatibility with products and detergents |                                                     |
| Surface finish in contact with the product  | Ra 0.8 µm. Other finishes available on request                                                     |                                                     |

| VAPOUR BARRIER DATA       |               |
|---------------------------|---------------|
| Connectors                | 1/8" BSPP     |
| Steam maximum temperature | 130°C (266°F) |
| Gaskets material          | FKM           |

| PNEUMATIC ACTUATOR DATA |                                                |
|-------------------------|------------------------------------------------|
| Connectors              | 1/8" BSPP                                      |
| Pipe dimensions         | 6 mm external diameter, 4 mm internal diameter |
| Air pressure            | from 6 bar (87 psi) to 7 bar (101 psi)         |
| Air quality             | Class 2, 4, 3 ISO8573-1                        |
| External material       | AISI 304L (1.4307)                             |
| Seals                   | NBR                                            |
| Noise levels            | 76 dB                                          |

| GASKET MATERIALS COMPATIBILITY      |                      |                      |
|-------------------------------------|----------------------|----------------------|
| Product                             | EPDM                 | FKM                  |
| Temperature (applications with air) | from -10°C to +140°C | from -10°C to +200°C |
| Caustic soda 2%                     | 60°C                 | 30°C                 |
| Nitric Acid 2%                      | 60°C                 | 80°C                 |
| Saturated steam 125°C               | Suitable             | To be checked        |
| Greases                             | Unsuitable           | Suitable             |
| Alcohols                            | Suitable             | Unsuitable           |



**The valve complies with PED 2014/68/EU directive, with special reference to Annex III, Module A, concerning internal manufacturing checks as indicated in the Conformity Assessment Procedures.**

Valves with DN equal or smaller than DN32 are not included in compliance with Article 4, paragraph 3.

Valves designed for use with gases, liquefied gases, gases dissolved under pressure, vapours and also those liquids whose vapour pressure at the maximum allowable temperature is greater than 0,5 bar above normal atmospheric pressure (1 013 mbar) are included within the following limits:

- valves with DN40 or bigger with group 2 fluids.

The end user must carry out noise assessment testing once the valve has been installed in the plant.

In the event of any doubt, please contact Bardiani Valvole S.p.A.

## 4 Checking / Unpacking / Lifting

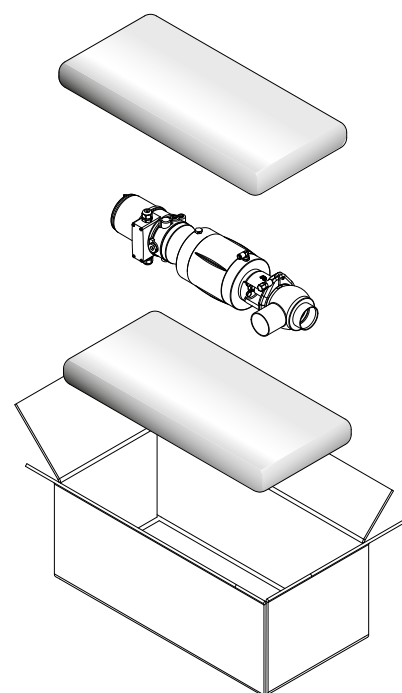
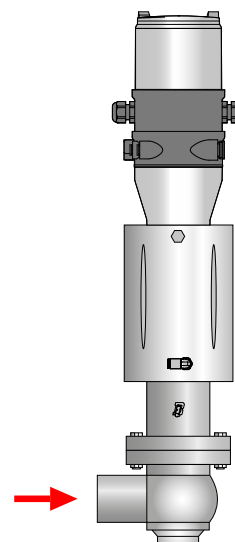
### 1. CHECK:

- Check the valve show no signs of damage caused during transport and that it corresponds with the order;
- Check the inside of the valve.



### 2. UNPACKING:

The valve packaging is made up of cardboard, wood and plastic. The valve is mainly made up of metal materials. The gaskets are usually made from elastomers. Disposal must be in compliance with local legislation.

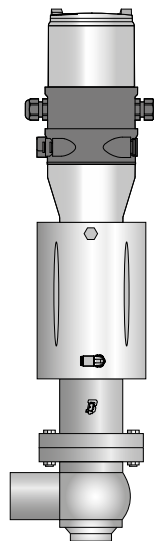
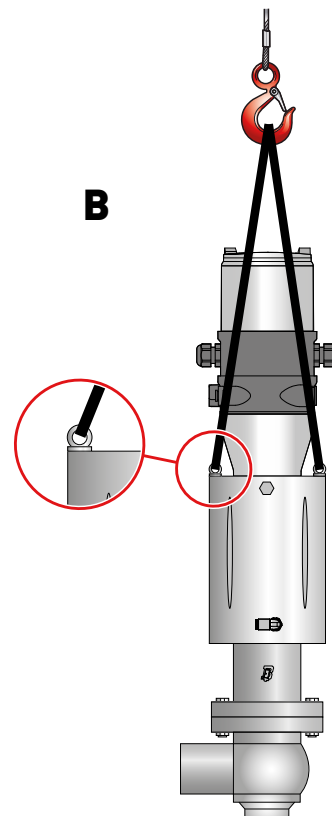


**3. VALVE LIFTING:**

Take care as to the type of valve you are handling. Based on the size there are two different lifting procedures.

**CAUTION!**

Before lifting the valve, make sure there are no disassembled or separate valve parts which could fall off causing injury to persons and damage to the valve.

**A****B****CAUTION!**

The figures above are used purely to represent the methods and procedures for hoisting the valves. Handle the device according to the regulations in force in the country of use.

Bardiani Valvole S.p.A. declines all liability for any damage to things and/or injuries to persons caused by improper and/or incorrect hoisting of the valve.



## 5 Installation



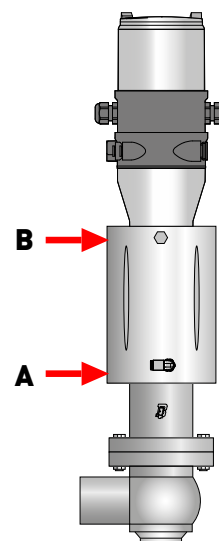
### 1. ELECTRICAL AND PNEUMATIC ENERGY SUPPLY

- Use expert personnel for installation/uninstallation operations;
- Check that the air pressure and quality are correct (see "Technical Data");
- Check the power supply to the positioner (consult the relative instruction manual).

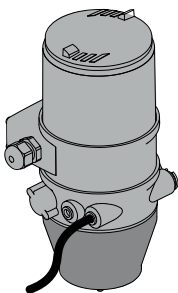
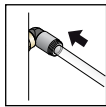
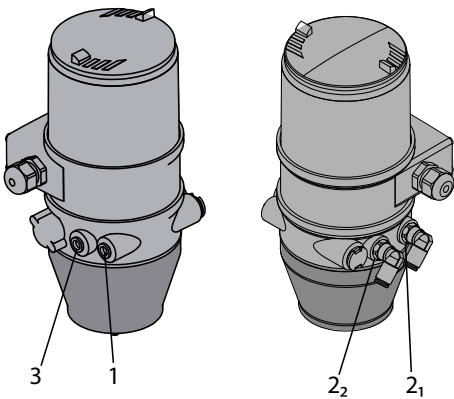
A = Upward movement of the valve member

B = Downward movement of the valve member

In single acting valves there is only one of the aforementioned commands.

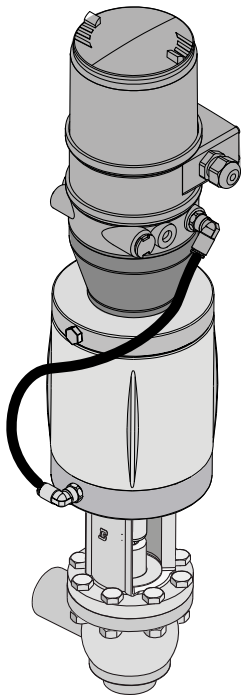


2.1 BURKERT

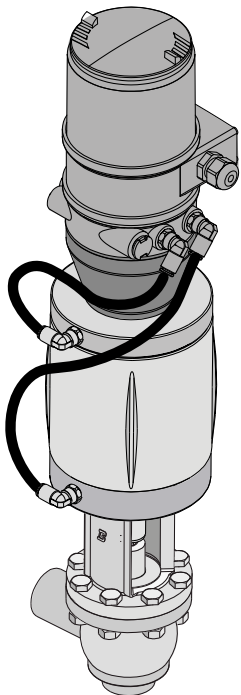


| Port           | CONNECTION                |
|----------------|---------------------------|
| 1              | Inlet air                 |
| 2 <sub>1</sub> | Outlet air                |
| 2 <sub>2</sub> | Outlet air for double act |
| 3              | Exhaust air               |

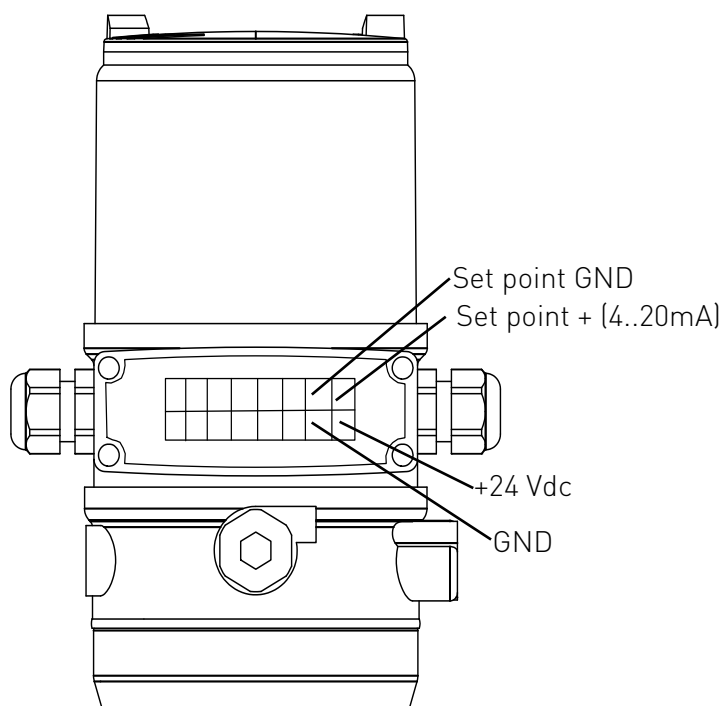
2.2 Simple act



2.3 Double Act



## 2.4 Electrical connections



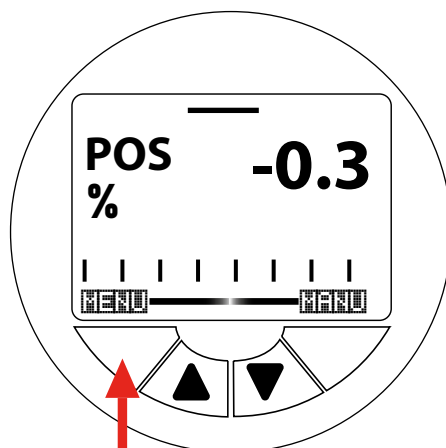
**Warning: Do not remove the display from the positioner with power supply present!**

## 2.5 SETTING PARAMETERS

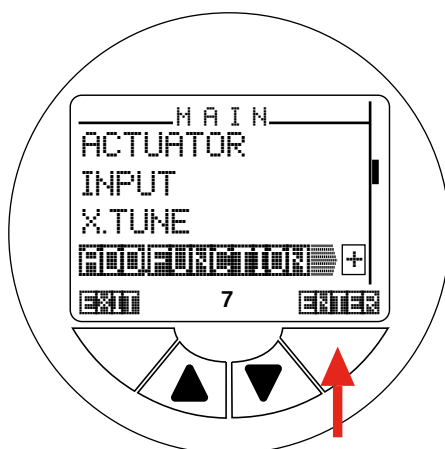
The following parameters are set in the positioner by Bardiani Valvole S.p.A.

Turn on the electrical and pneumatic power supply to the positioner  
Press and hold the MENU button until the display bar joins up

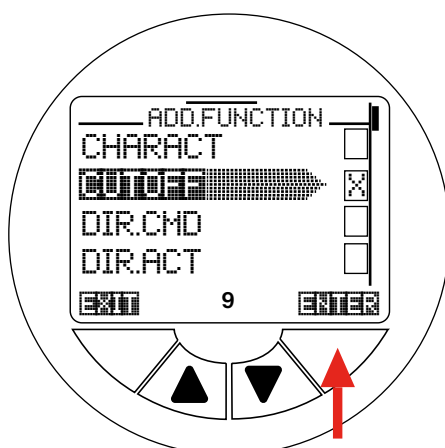
1



Use the arrow at the bottom ▲ ▼ to select the ADD.FUNCTION and press ENTER 2

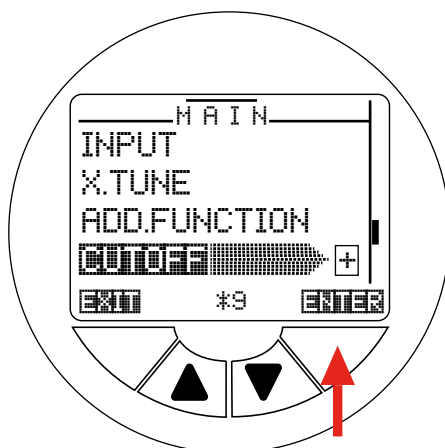


Use the arrow at the bottom to select CUTOFF and activate it by pressing ENTER 3



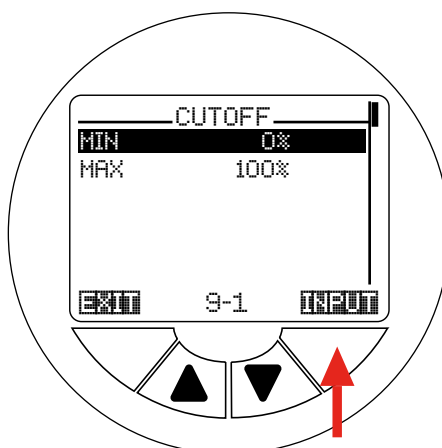
Press EXIT to return to the MAIN menu

Use the arrow at the bottom to select CUTOFF and activate it by pressing ENTER 4



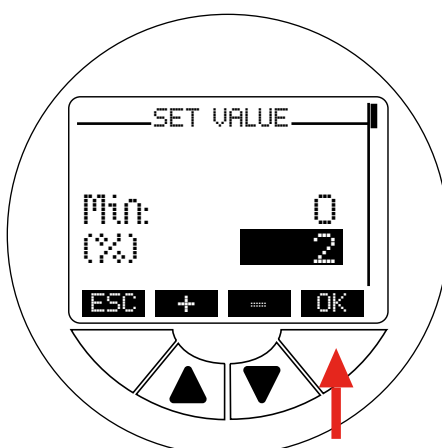
Select Min and press INPUT

5



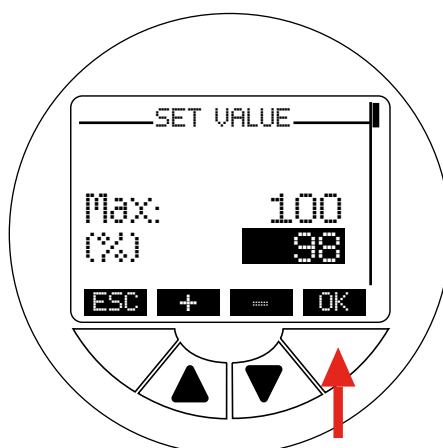
Press + until 2 appears, and then press OK

6



Move to Max using the buttons  , then press INPUT, press "-" until 98 appears, then press OK.

7



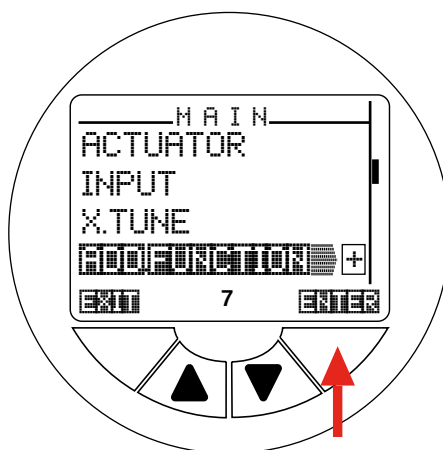
Press EXIT to return to the MAIN menu

8

If using an Normally Open or double acting Normally Open valve, continue otherwise go to point (15)

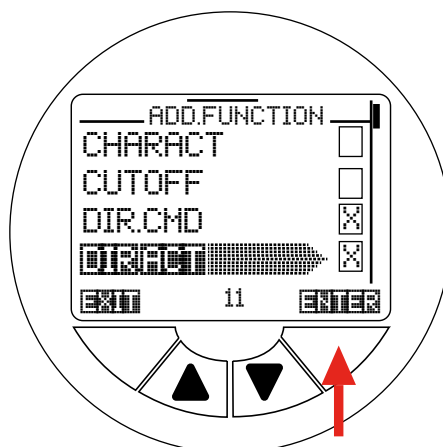
9

Scroll the menu using the buttons ▲ ▼ to ADD FUNCTION and press ENTER



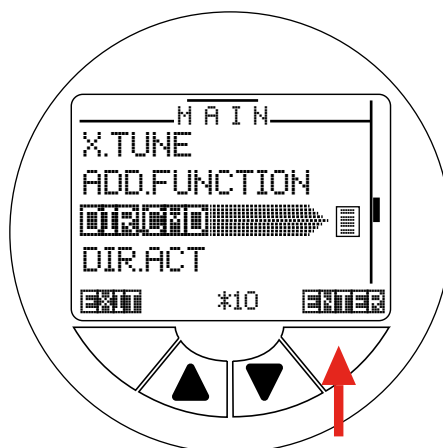
Scroll the menu to DIR.CMD and DIR.ACT and activate them both pressing ENTER, then press EXIT to return to the previous menu

10



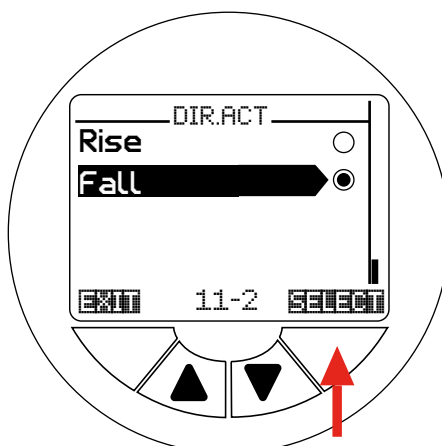
Scroll the menu to CMD DIR and press ENTER

11



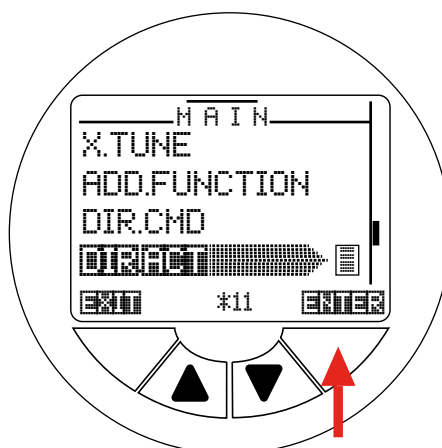
Scroll down to the FALL option and press SELECT, then exit the menu by pressing EXIT

12



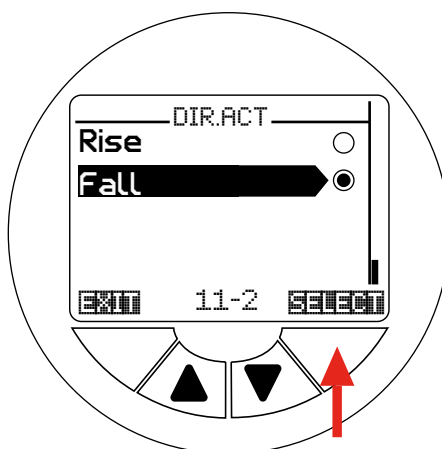
Scroll the menu to DIR.ACT using the buttons   and press ENTER

13



Go down to the FALL option and press SELECT, then exit the menu by pressing EXIT

14



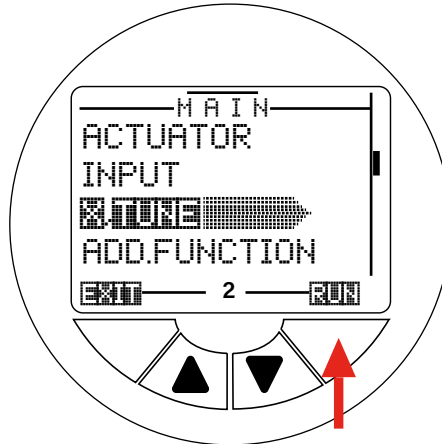
## 2.6 CALIBRATION

This procedure must be done every time the positioner is mounted

Move the cursor onto X.TUNE. Use the arrow at the bottom to select the menu.

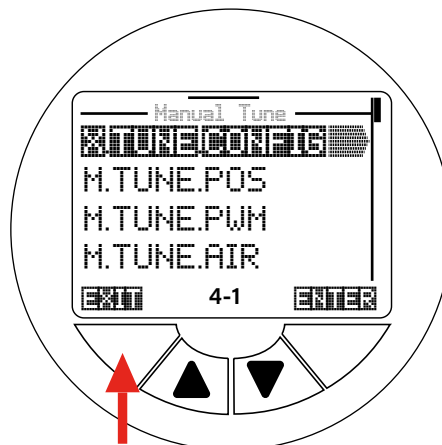
Press RUN until the display bar joins up

15



If you release the RUN button before the bar has joined up, you must press EXIT.

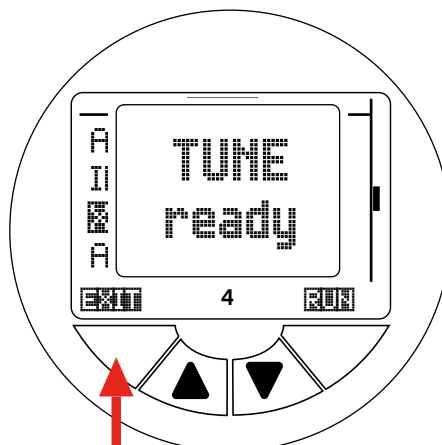
16



If the RUN button is pressed correctly the calibration operation commences automatically.

When TUNE ready appears, press EXIT.

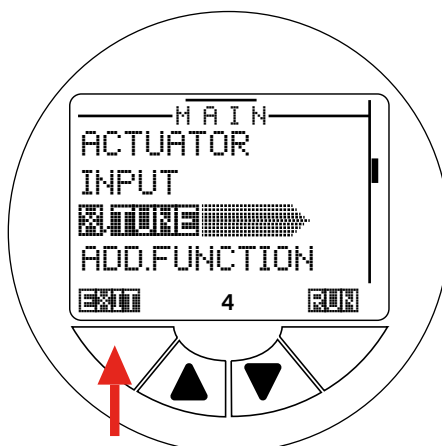
17





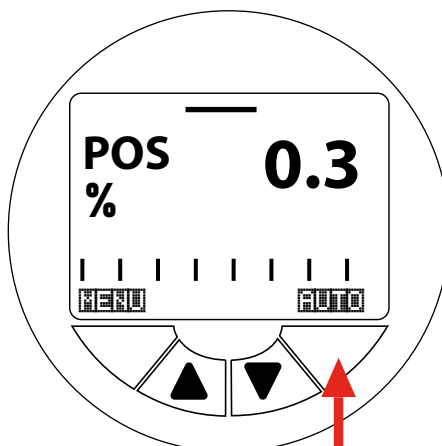
Press EXIT again.

18



Press the AUTO button to activate the automatic function.

19



| Parameters set with valve normally closed or double acting normally closed |
|----------------------------------------------------------------------------|
| CUTOFF min 2%                                                              |
| CUTOFF Max 98%                                                             |
|                                                                            |
|                                                                            |

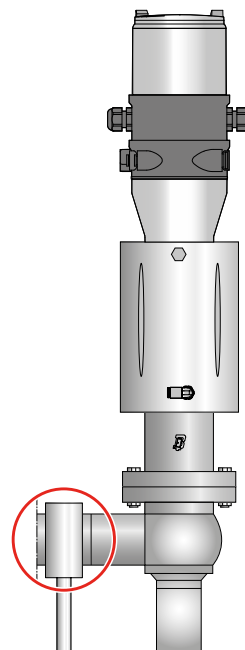
| Parameters set with valve normally open or double acting normally open |
|------------------------------------------------------------------------|
| CUTOFF min 2%                                                          |
| CUTOFF Max 98%                                                         |
| DIR CMD Fall                                                           |
| DIR ACT Fall                                                           |

**3. REDUCING THE STRESS TO WHICH THE VALVE IS SUBJECTED:**

- Vibrations;
- Thermal expansion of the piping;
- Excessive welding;
- Overload.

**CAUTION!**

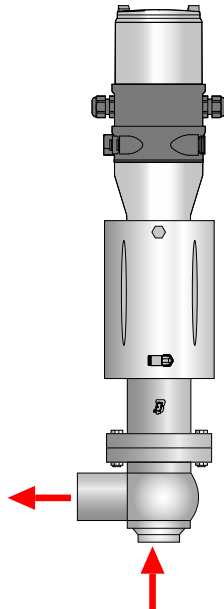
The seal seats may become deformed or cause valve malfunctioning.





#### 4. CORRECT DIRECTION OF FLOW:

Flow in the opposite direction to valve closure minimizes water hammer.



#### 5. VALVE CONNECTIONS/CONNECTORS:

If the valve is fitted with connectors, you may proceed with installation. Correctly insert the gaskets and tighten the connectors.



#### CAUTION!

Bardiani Valvole S.p.A. declines all liability for any damage to things and/or injuries to persons caused by any failure to correctly follow the installation procedures.



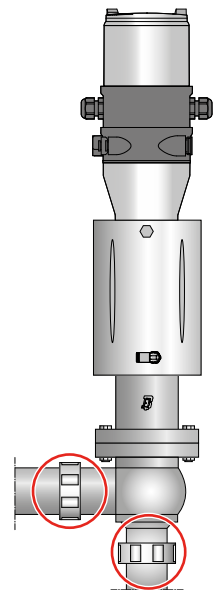
#### 6. WELDING THE VALVE BODY ONTO PIPING:

Remove the body from the rest of the valve before proceeding with welding operations. Please refer to the following pages in this manual.



#### CAUTION!

Hand crushing hazard. During operation there is a risk of crushing inside the valve body in the area between the actuator and the valve body.





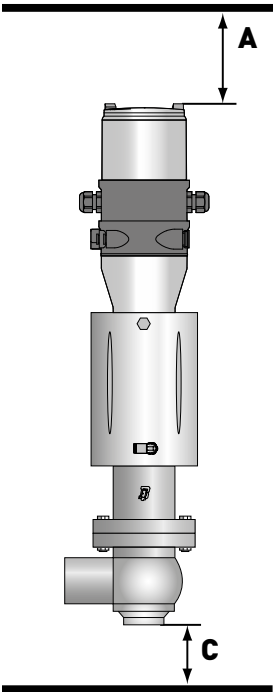
**7. MINIMUM MAINTENANCE CLEARANCES:**

Make sure there is enough room around the valve for it to be disassembled (with the control unit installed).



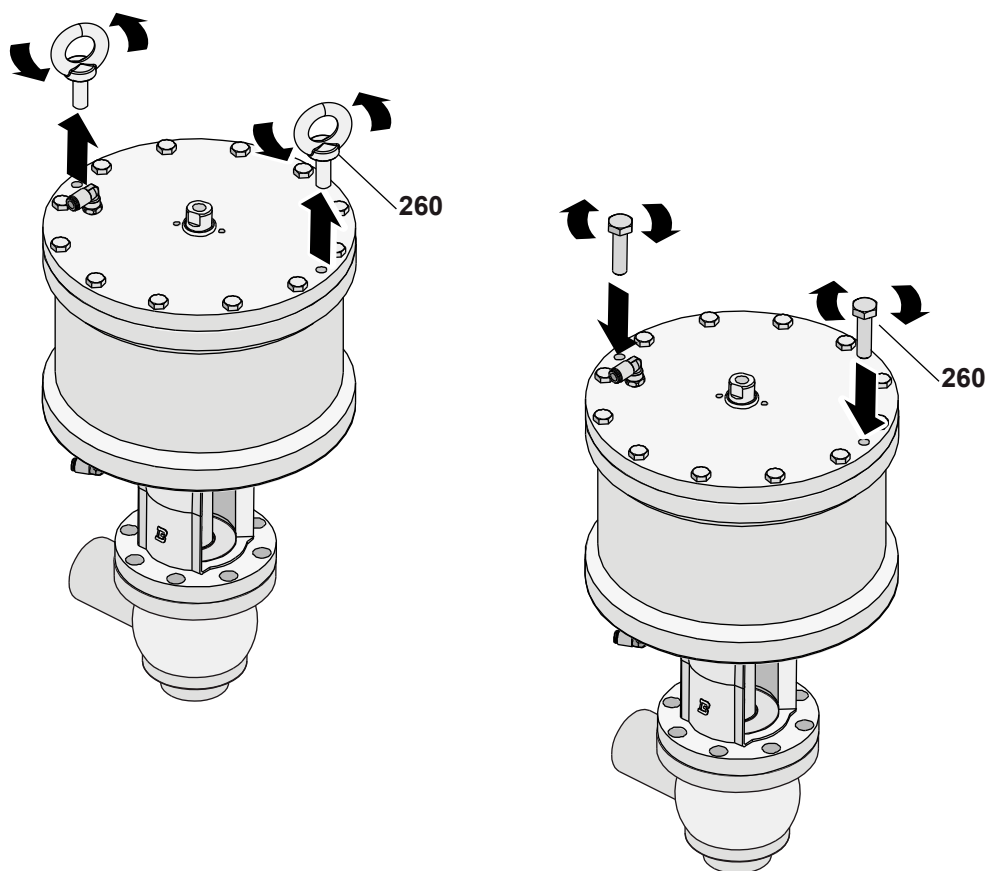
**CAUTION!**

Bardiani Valvole S.p.A. declines all liability for any damage to things and/or injuries to persons caused by any failure to correctly follow the installation procedures.



| BBZQM- BBYQM |        |        |        |
|--------------|--------|--------|--------|
| DN           | A (mm) | B (mm) | C (mm) |
| 10-25        | 240    | 240    | 240    |
| 32-40        | 240    | 240    | 255    |
| 50           | 240    | 240    | 270    |
| 65           | 240    | 240    | 285    |
| 80           | 240    | 240    | 300    |
| 100          | 240    | 240    | 315    |

Once valve installation has been completed, remove the eyebolts and put the screws back in

**CAUTION!**

Bardiani Valvole S.p.A. declines all liability for any damage to things and/or injuries to persons caused by any failure to correctly follow the installation procedures.

## 6 Operation



### 1. VALVE INSPECTION BEFORE OPERATION:

- Supply air to the actuator;
- Power the valve (via the control unit);
- Open and close the valve several times;
- Check that the valve works correctly and accurately.

A = Upward movement of the valve member

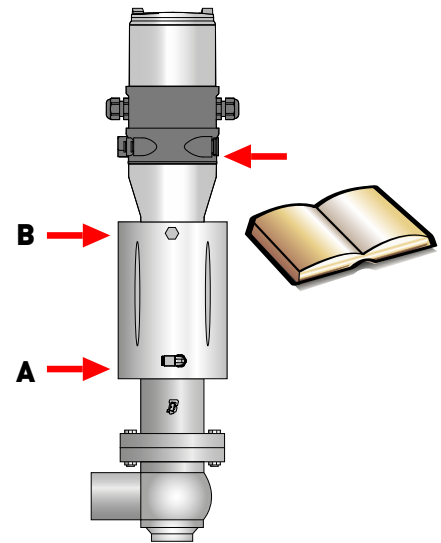
B = Downward movement of the valve member

In single acting valves there is only one of the aforementioned commands.



### CAUTION!

Hand crushing hazard. During operation there is a risk of crushing inside the valve body in the area between the actuator and the valve body.



## 7 Troubleshooting



| PROBLEM                                             | POSSIBLE CAUSE                                                                     | POSSIBLE SOLUTION                                                    |
|-----------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| External leak                                       | Worn gasket                                                                        | Replace the seal                                                     |
| Leaks inside the closed valve caused by normal wear |                                                                                    |                                                                      |
| External leak                                       | Excessive pressure                                                                 | Replace with a gasket of a different type of elastomer               |
|                                                     | Excessive temperature                                                              |                                                                      |
| Premature leaks inside the closed valve             | Aggressive fluids                                                                  | Modify the operating conditions                                      |
|                                                     | Too many commands active                                                           |                                                                      |
| Difficulty opening and closing                      | Difficulty opening and closing<br>Incorrect type of elastomer used for the gaskets | Replace with a gasket of a different type of elastomer               |
|                                                     | Incorrect positioning of the actuator                                              | Install the actuator correctly                                       |
|                                                     | Incorrect operation of the actuator                                                | Change from normally open (NO) to normally closed (NC) or vice versa |
|                                                     | Impurities in the actuator                                                         | Actuator inspection and maintenance                                  |
|                                                     | Incorrect valve body positioning                                                   | Disassemble and correctly reposition the valve body                  |
| positioner malfunction                              | positioner fault                                                                   | please refer to the positioner manual.                               |
| incorrect valve adjustment                          |                                                                                    |                                                                      |

## 8 Cleaning



### 1. VALVE CLEANING WITH DETERGENTS:

The system in which the valve is installed must be cleaned by expert personnel in observance of the following:

- Abide by the indicated detergent concentration values;
- Observe the instructions provided by the detergent manufacturer.
- Always wear protective safety glasses and gloves.



### IMPORTANT!

- Accurately dose detergents to avoid excessive concentration;
- Always rinse thoroughly with clean water after washing.
- Check compatibility of valve materials.



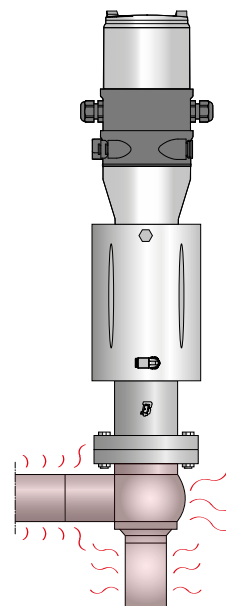
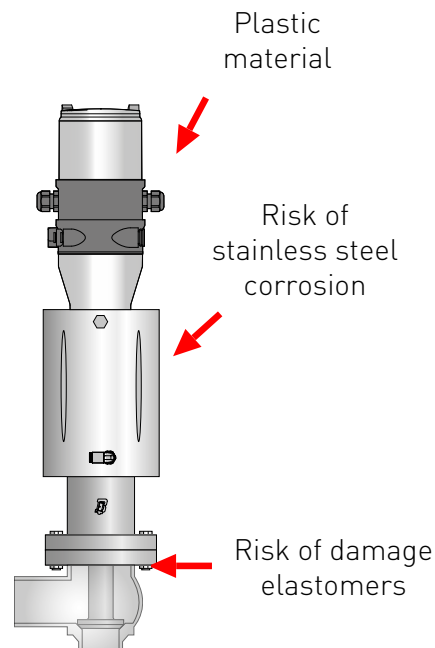
### CAUTION!

Burns hazard. The valves and piping may be very hot. Wear protective gloves



### WARNING

After installing a new or serviced valve, perform an internal washing cycle before using the piping for food liquids. If there has been any welding work, passivation treatment must be carried out.



EXAMPLE OF INTERNAL WASHING CYCLE (CIP)

| Phases             | Temperature °C | Washing product                   |
|--------------------|----------------|-----------------------------------|
| Initial rinse      | Environment    | Chlorine- and chloride-free water |
| Washing            | 70 °C          | Caustic soda (NaOH) at 1%         |
| Intermediate rinse | Environment    | Chlorine- and chloride-free water |
| Washing            | 70 °C          | Nitric acid (HNO3) at 0.5%        |
| End rinse          | Environment    | Chlorine- and chloride-free water |

Recommended washing product velocity = 2m/s



|                     | EPDM   | FKM   |
|---------------------|--------|-------|
| <b>Product</b>      |        |       |
| Max temperature     | 95°C   | 95°C  |
| Minimum temperature | -20 °C | -5 °C |

|                                                  | EPDM   | FKM    |
|--------------------------------------------------|--------|--------|
| <b>Steam</b>                                     |        |        |
| Max temperature (during working)                 | 130°C  | 120°C  |
| Max temperature (for a period of time 15-20 min) | 150 °C | 140 °C |

|                           | EPDM  | FKM   |
|---------------------------|-------|-------|
| <b>Sodium hydroxide</b>   |       |       |
| Diluted cleaning solution | <5%   | <5%   |
| Minimum temperature       | 1 °C  | 1° C  |
| Max temperature           | 80 °C | 80 °C |

|                                                     | EPDM  | FKM   |
|-----------------------------------------------------|-------|-------|
| <b>Acid ( Nitric / Phosphoric / Peracetic acid)</b> |       |       |
| Diluted cleaning solution                           | <2%   | <2%   |
| Minimum temperature                                 | 1 °C  | 1° C  |
| Max temperature                                     | 40 °C | 65 °C |

|                                                | EPDM  | FKM   |
|------------------------------------------------|-------|-------|
| <b>Disinfection</b>                            |       |       |
| Diluted disinfectant (based on peracetic acid) | <0,7% | <0,7% |
| Minimum temperature                            | 1 °C  | 1° C  |
| Max temperature                                | 30 °C | 30 °C |

## 9 Disposal



At the end of its service life, the device must be recycled in accordance with the legislation in force in the country of valve use.

Any hazardous residues must be taken into consideration and adequately handled.

The valve is made of AISI 316L and AISI 304 stainless steel, elastomers (gaskets), plastic (positioner) and electrical components (positioner).

Adhere to the following steps before disconnecting the valve and refer to the heading "General Maintenance".

- make sure the line on which the valve is installed in is not in use
- empty the line on which the valve is installed and clean if necessary
- disconnect the air supply if it is not required during dismantling
- disconnect the valve from the power supply
- remove the valve from the system
- move the valve in observance of the rules set out in the heading "Lifting"
- to dismantle the valve, refer to the heading "Disassembly"

## 10 Maintenance

### 10.1 General maintenance



#### 1. MAINTENANCE PRECAUTIONS

Maintenance operations must be carried out by expert technicians only.



#### CAUTION!

Maintenance operations must be carried out with the line stopped and all utilities (electricity, compressed air) disconnected.

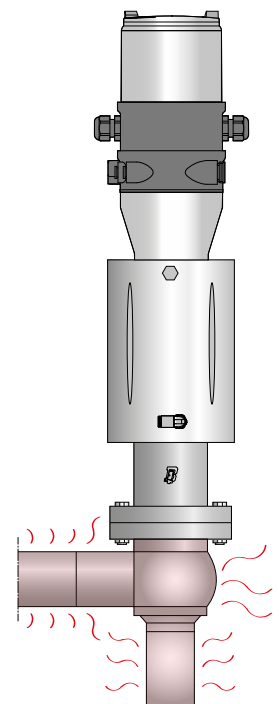
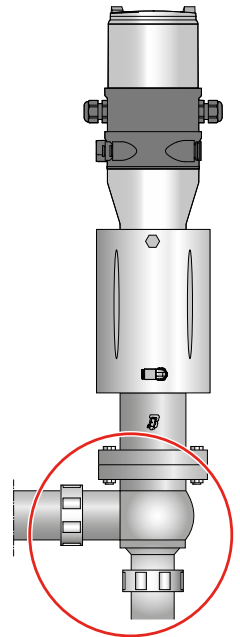


#### CAUTION!

Always discharge the fluid pressure in the valve and piping before disassembling the valve.



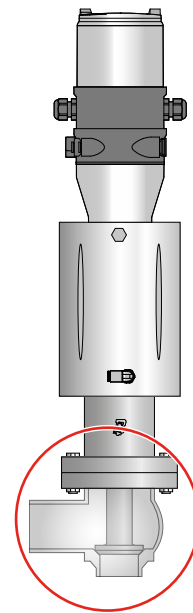
CAUTION! Burns hazard. The valves and piping may be very hot. Wear protective gloves





## 2. CLEANING AWAY DEPOSITS:

- Thoroughly wash and clean all the valve parts before disassembly;
- Pay attention to any possible detergent or other aggressive fluid deposits (see "Cleaning");
- Always use protective safety glasses and gloves when required.



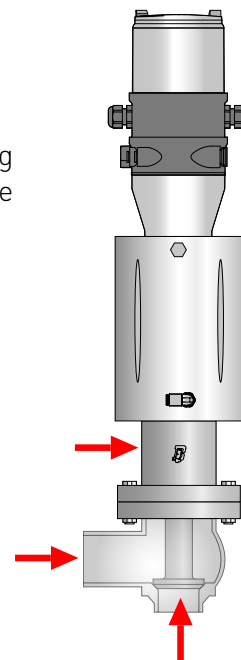
### CAUTION!

Hand crushing hazard. During operation there is a risk of crushing inside the valve body in the area between the actuator and the valve body.



## 3. REPLACEMENT OF WORN VALVE PARTS:

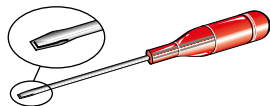
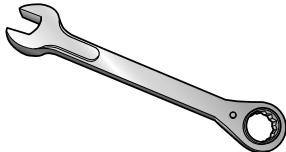
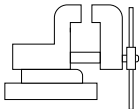
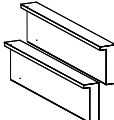
Always use original spare parts



## 10.2 Scheduled maintenance

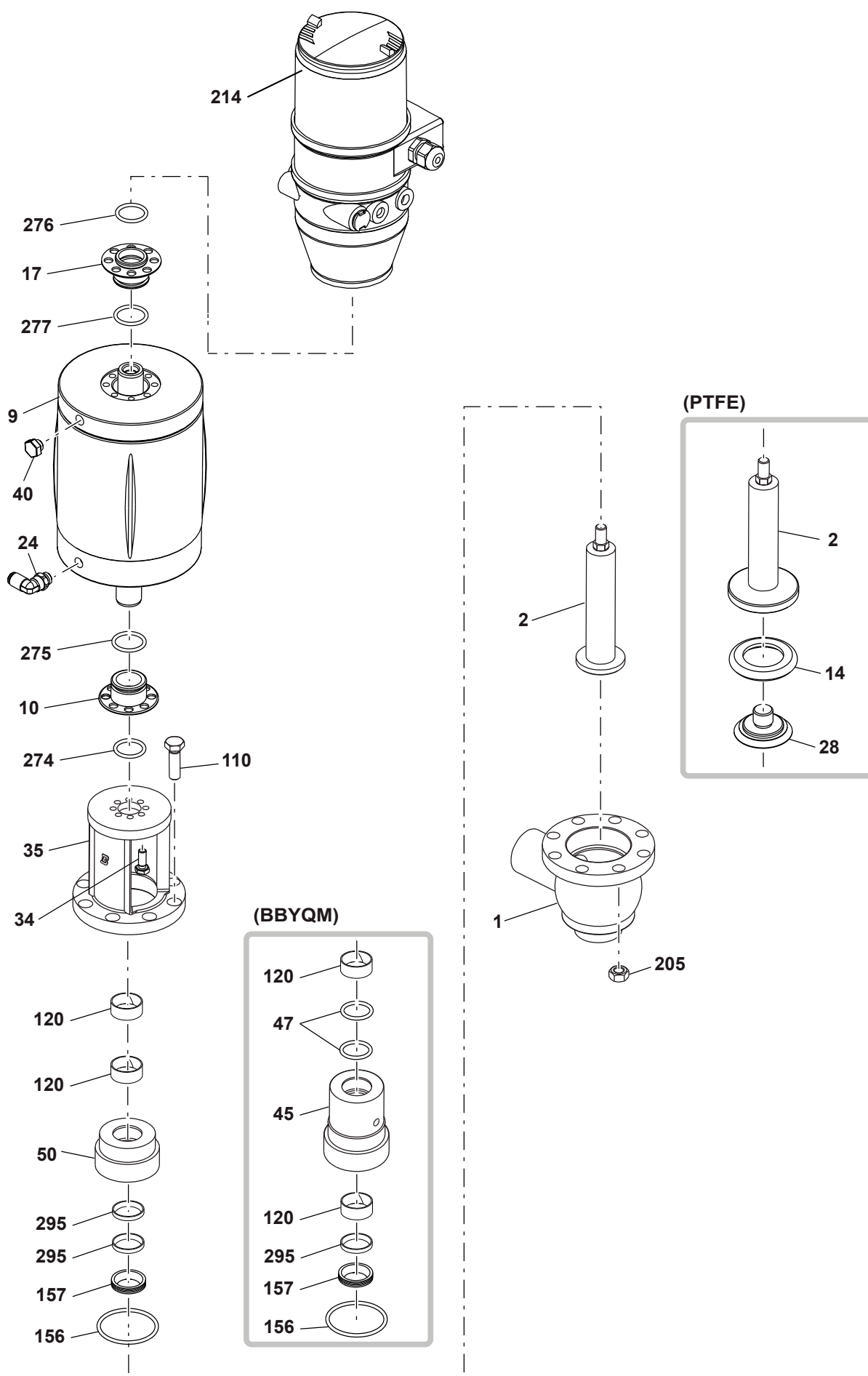
| SCHEDULED MAINTENANCE | VALVE GASKETS                                       | ACTUATOR GASKETS                                    |
|-----------------------|-----------------------------------------------------|-----------------------------------------------------|
| Preventive            | Replace after 12 months                             | Replace after 24 months                             |
| In the event of leaks | Replace at the end of the day                       | Replace in the event of leaks                       |
| Periodical            | Check correct operation and that there are no leaks | Check correct operation and that there are no leaks |
|                       | Record the actions carried out                      | Record the actions carried out                      |

## 10.3 Tools useful for Disassembly/Reassembly

| TOOLS                                                                              | DN25                   | DN32                  | DN40                             | DN50                                | DN65                        | DN80 | DN100 |
|------------------------------------------------------------------------------------|------------------------|-----------------------|----------------------------------|-------------------------------------|-----------------------------|------|-------|
|   | ✓                      |                       |                                  |                                     |                             |      |       |
|   | 4 - 6 - 8              |                       |                                  |                                     |                             |      |       |
|   | 10-12<br>-13-19<br>-24 | 10-12-13-17-<br>19-24 | 10-12-<br>13-15-<br>17-19-<br>24 | 10-12-<br>13-15-<br>17-19-<br>22-24 | 10-12-13-15-<br>19-21-22-24 |      |       |
|   | ✓                      |                       |                                  |                                     |                             |      |       |
|  | ✓                      |                       |                                  |                                     |                             |      |       |

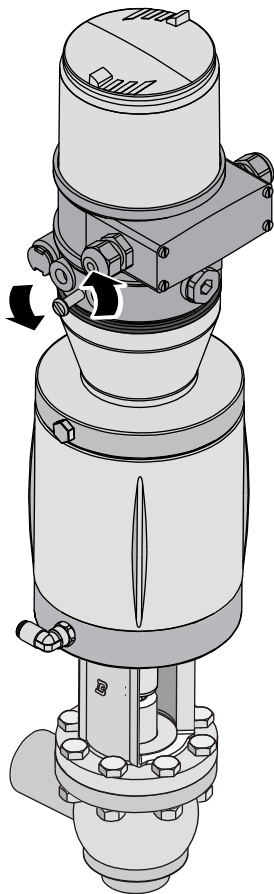
## 10.4 Pneumatic valves BBZQM - BBYQM CYL 108-156

| NO. | DESCRIPTION        |
|-----|--------------------|
| 1   | Lower body         |
| 2   | Shutter            |
| 9   | Cylinder           |
| 10  | Bush               |
| 14  | Sealing ring       |
| 17  | Bush               |
| 24  | Air connector      |
| 34  | Screw              |
| 35  | Assembly           |
| 40  | Cap                |
| 45  | Steam barrier      |
| 47  | Sealing ring       |
| 50  | Gasket holder disc |
| 110 | Screw              |
| 120 | Bush               |
| 156 | Sealing ring       |
| 157 | Sealing ring       |
| 205 | Nut                |
| 214 | Positioner         |
| 274 | Sealing ring       |
| 275 | Sealing ring       |
| 276 | Sealing ring       |
| 277 | Sealing ring       |

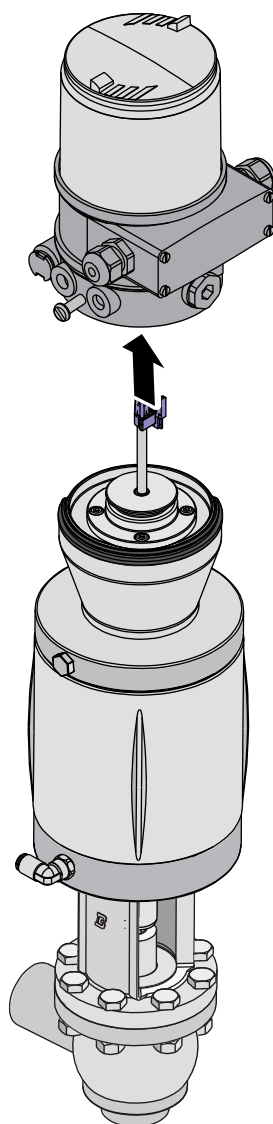


## 10.5 Disassembly of the BBZQM - BBYQM With cil 108-156

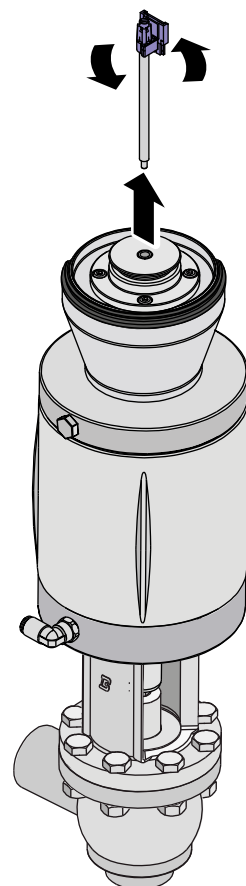
1



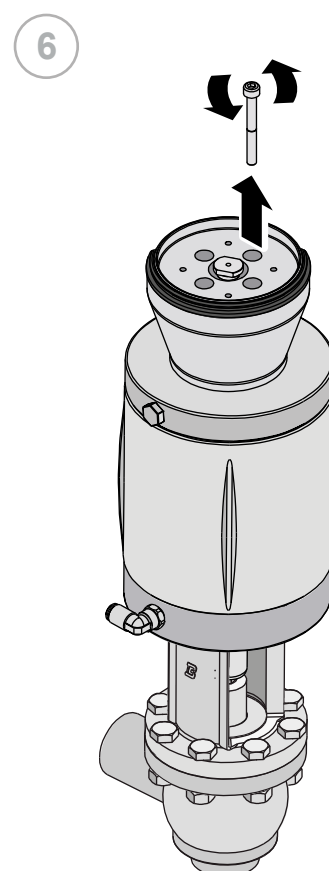
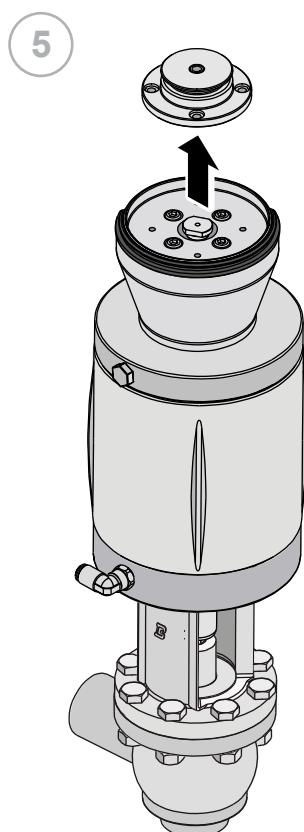
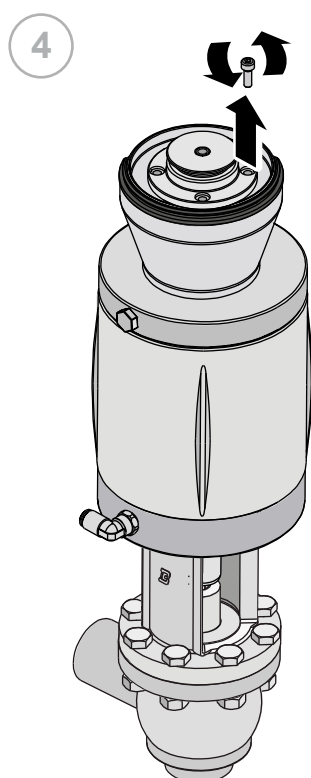
2



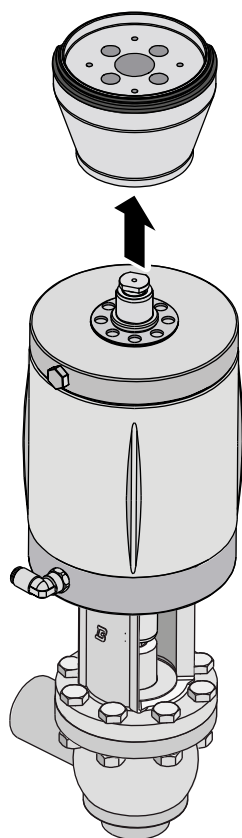
3



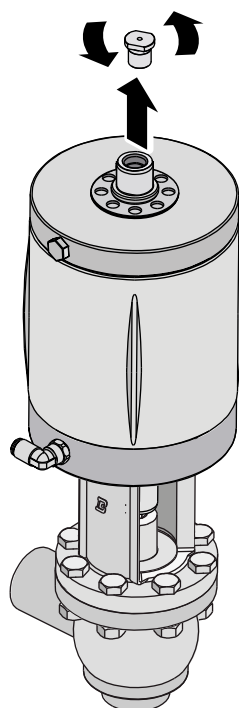




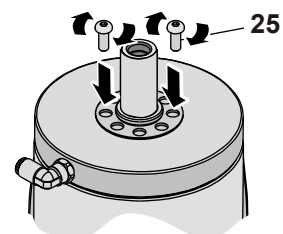
7

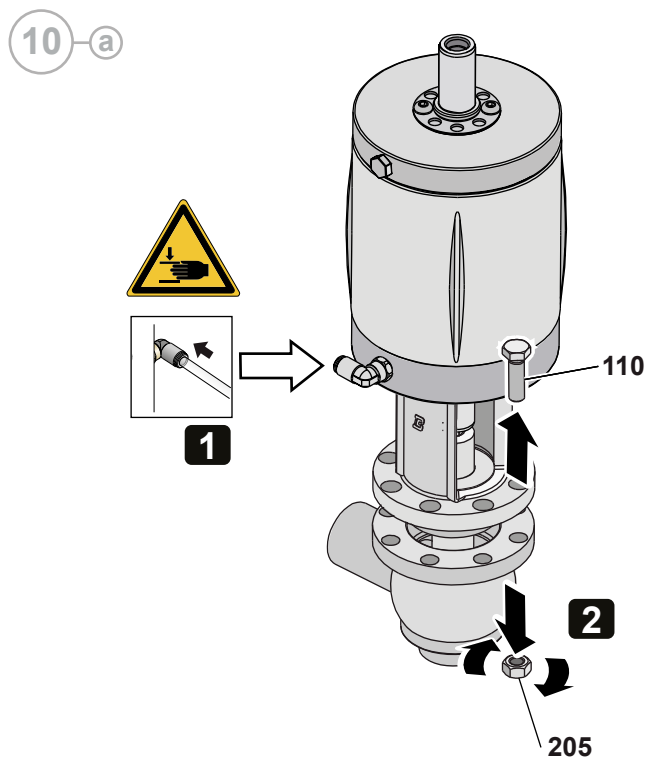


8

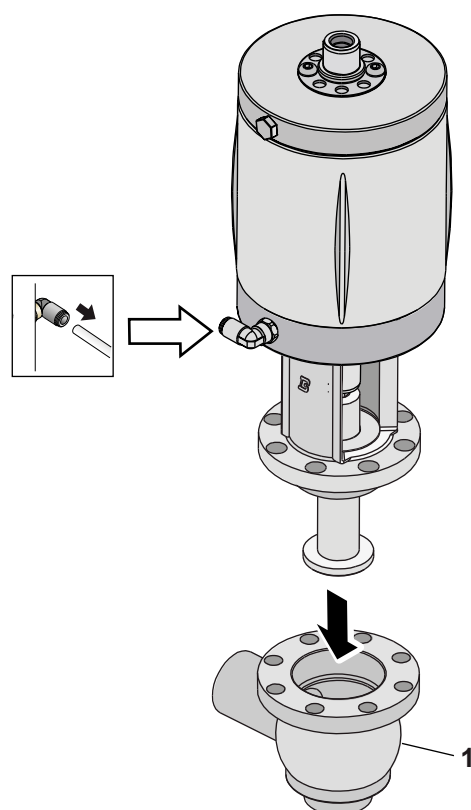


9



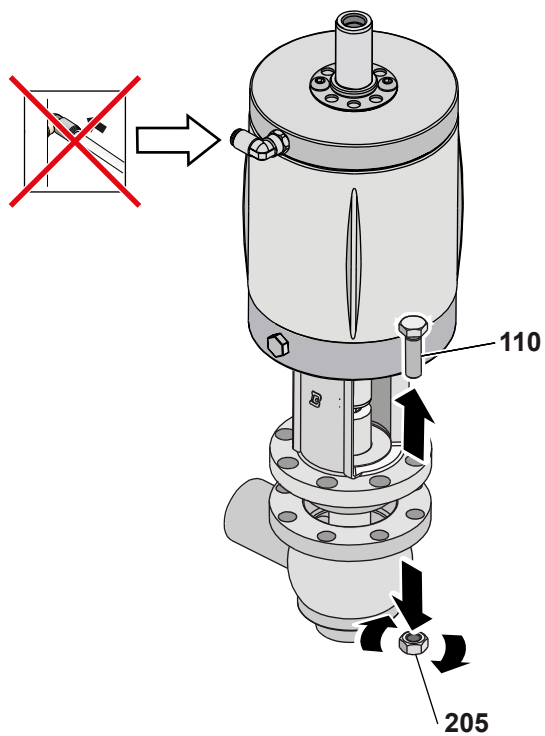
**(Normally closed)**

11-a

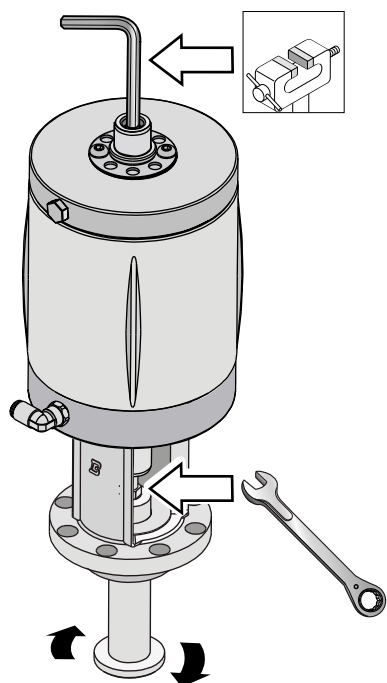


**(Normally open or double acting)**

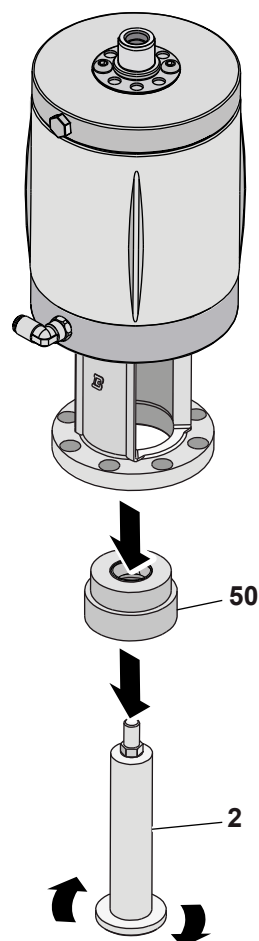
10-b



12

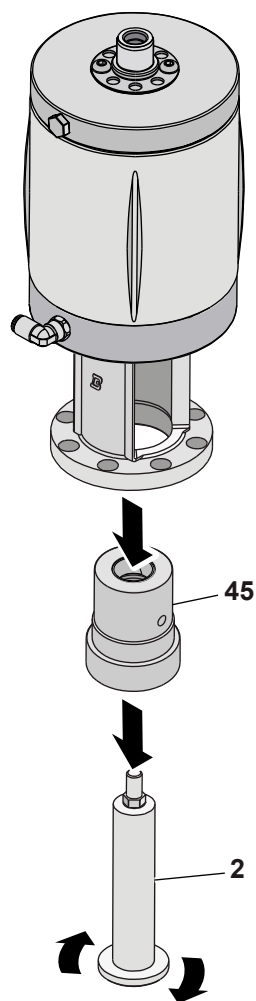


13



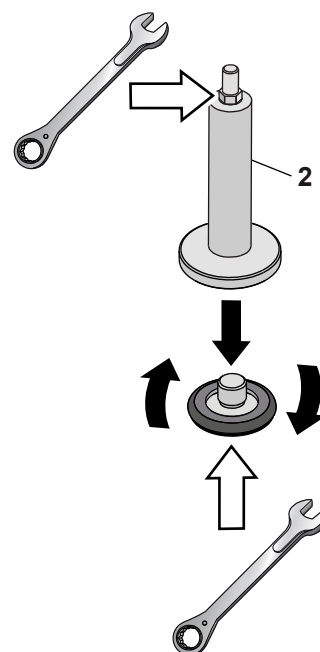
(BBYQM)

14-d

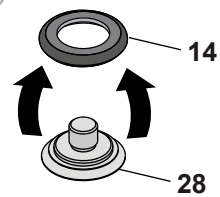


(P.T.F.E.)

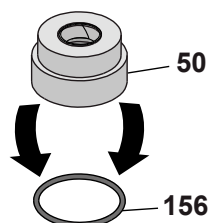
15-e



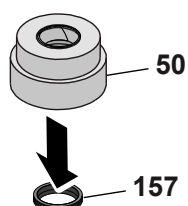
16-e



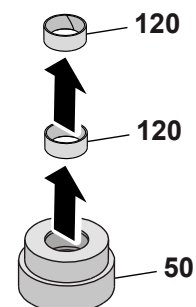
17



18

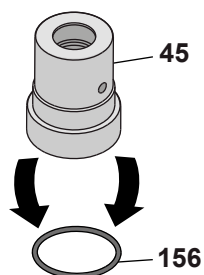


19

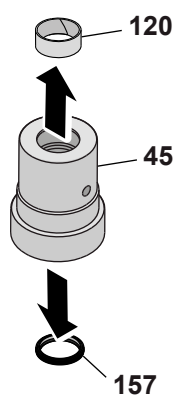


(BBYQM)

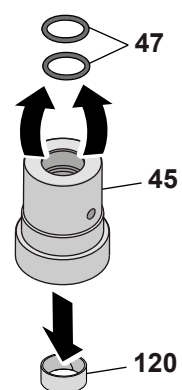
17-d



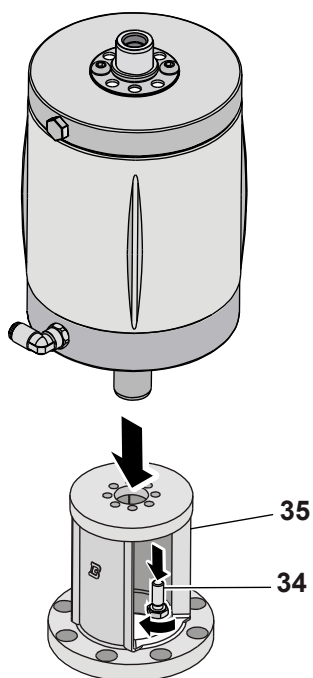
18-d



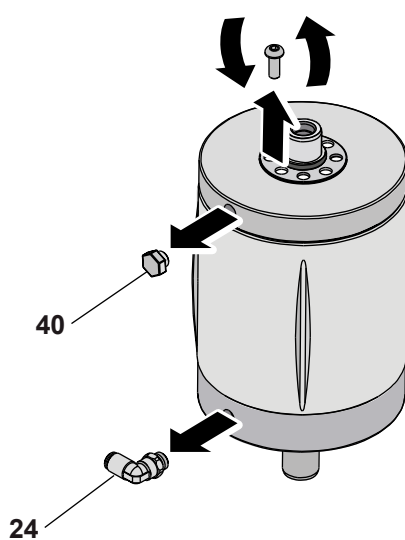
19-d



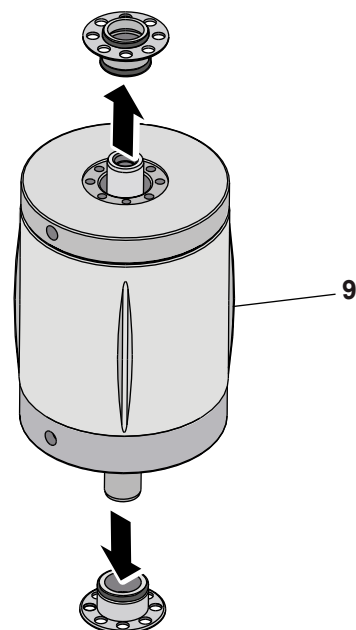
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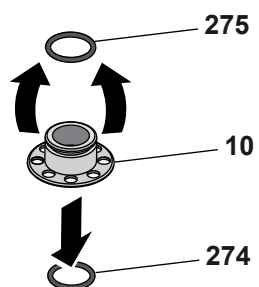
21



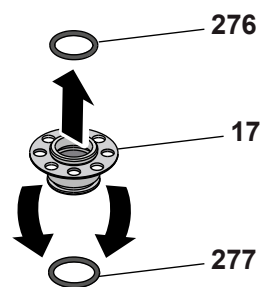
22



23

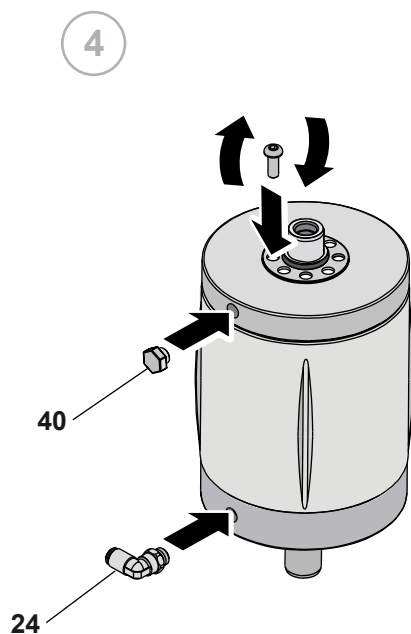
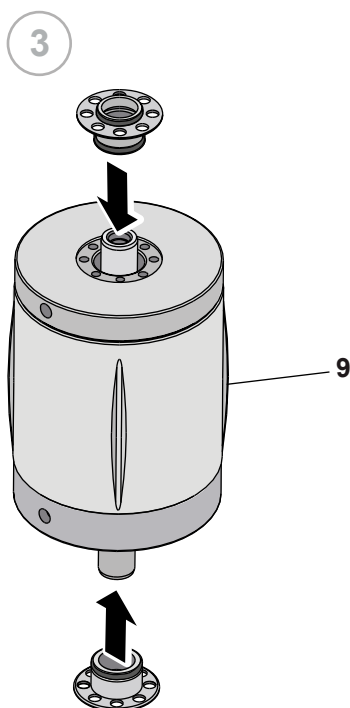
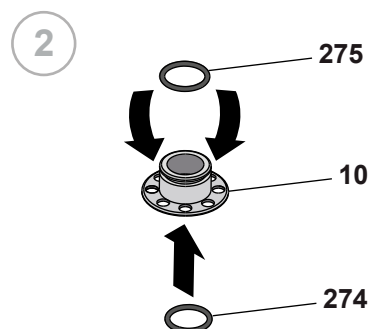
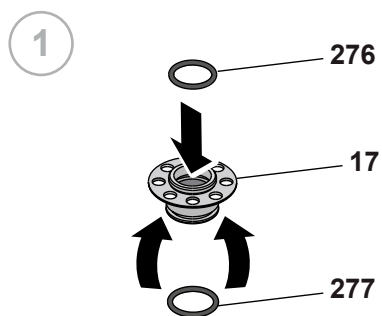


24



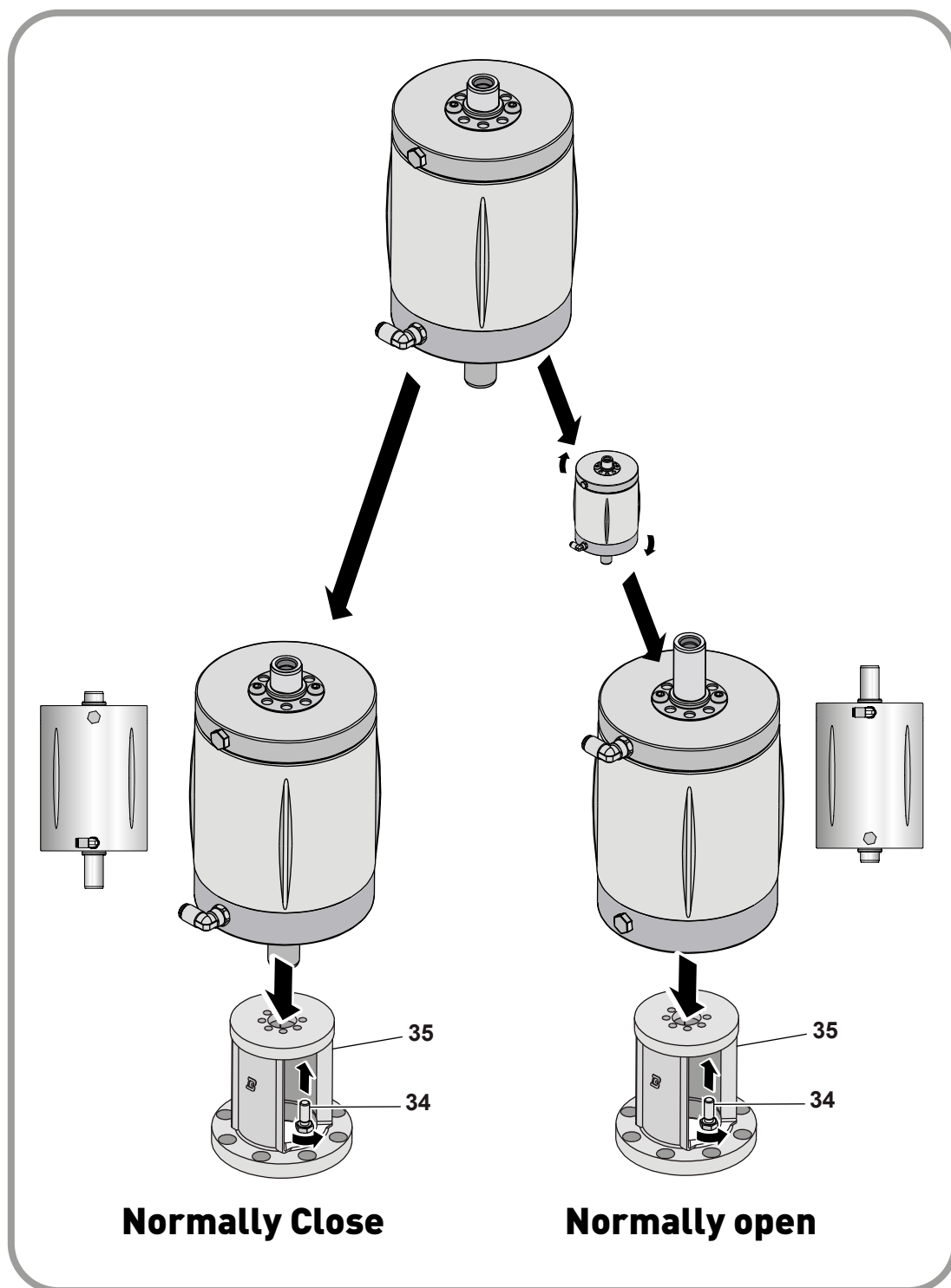


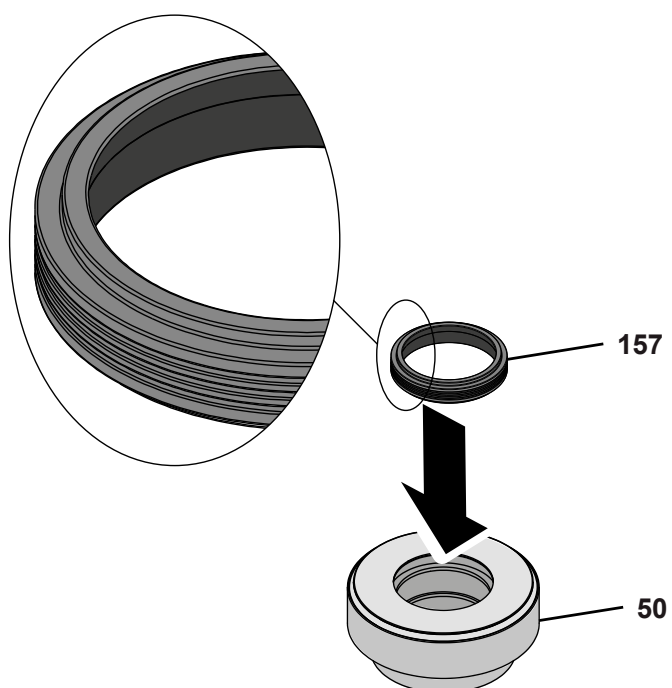
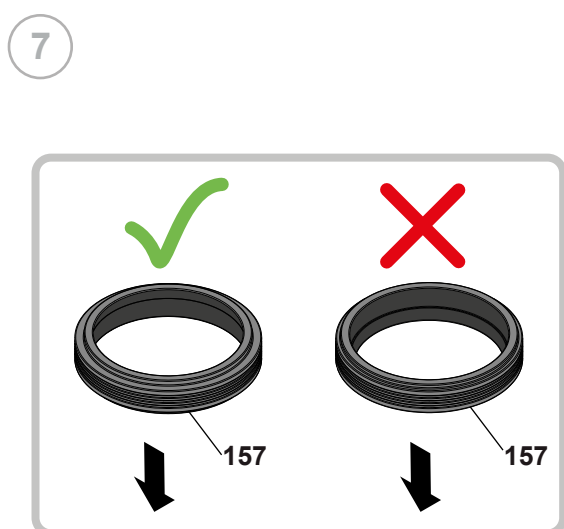
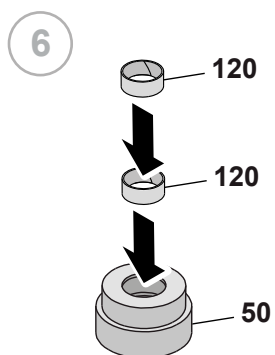
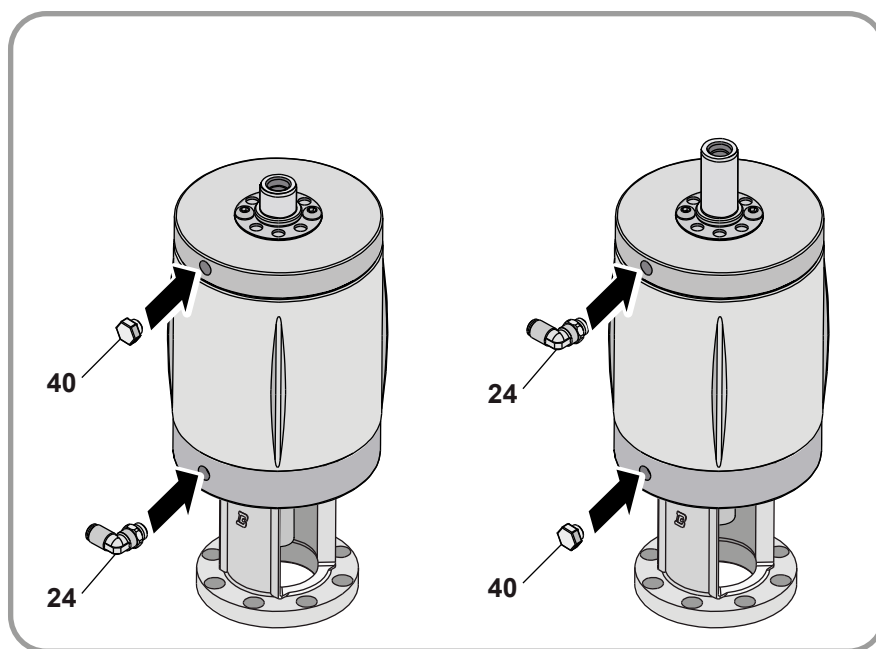
## 10.6 Assembly of the BBZQM - BBYQM cyl 108-156

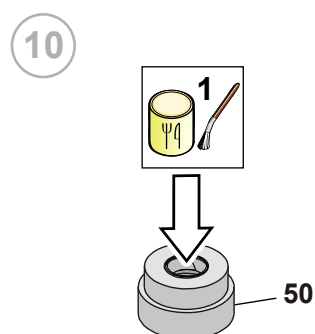
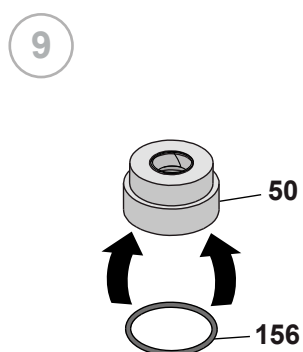
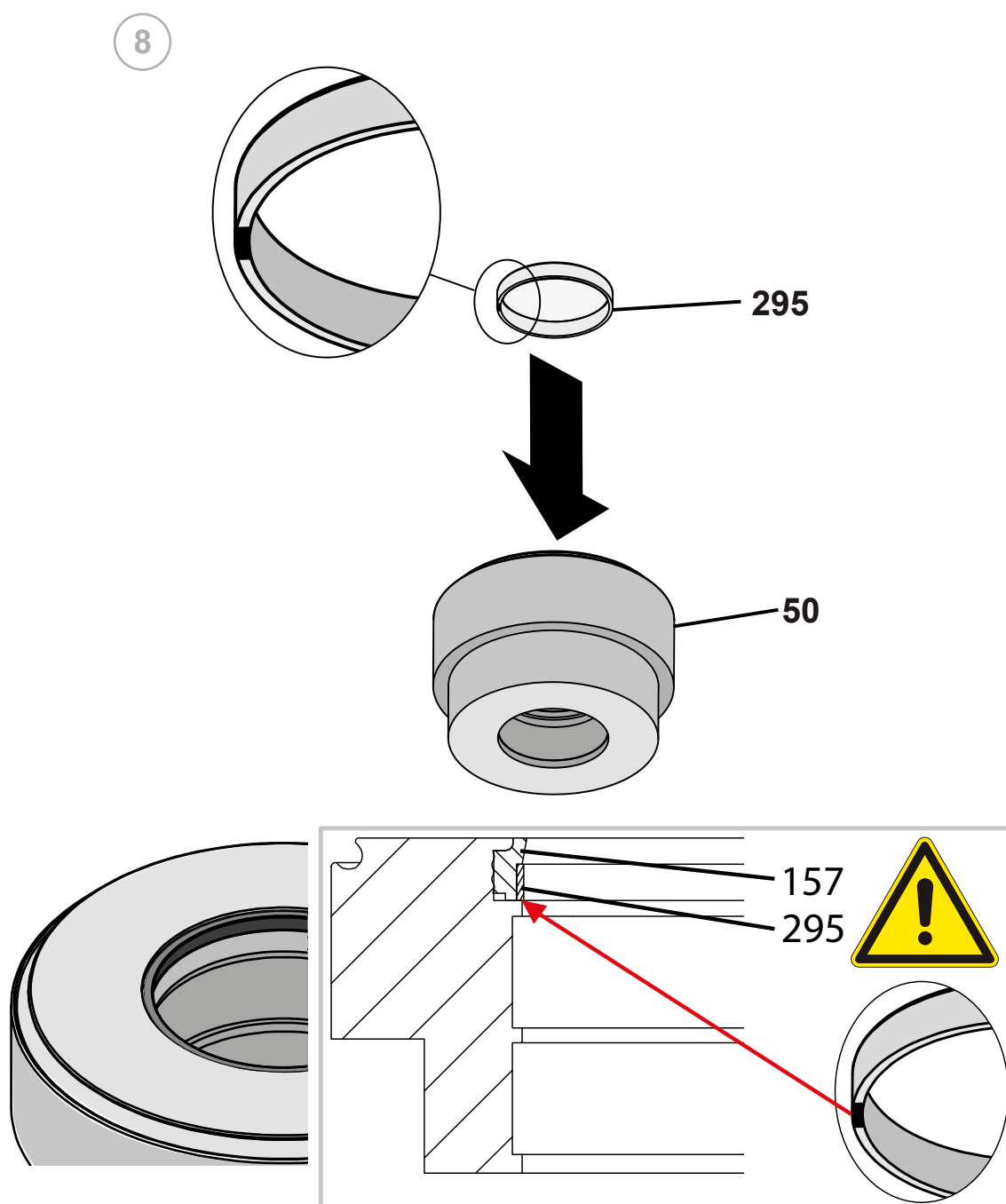


### 10.6.1 Select normally close or normally open cylinder

5

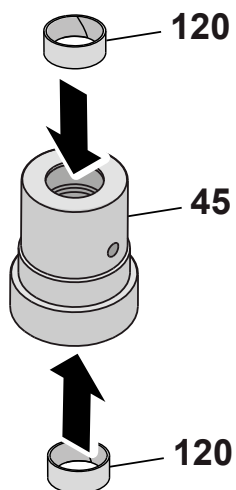




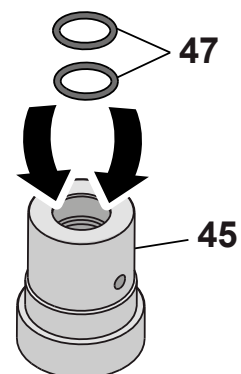


(BBYQM)

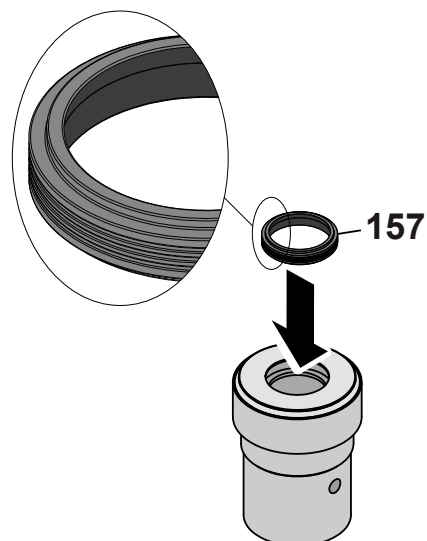
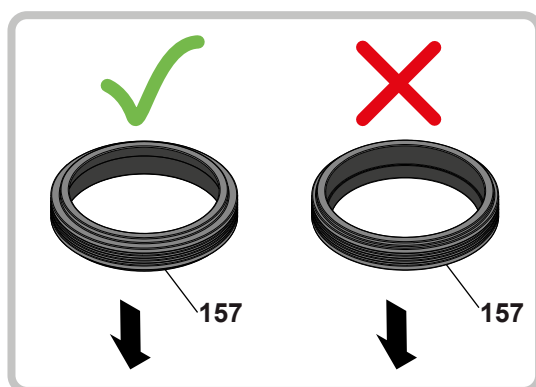
6-d



7-d

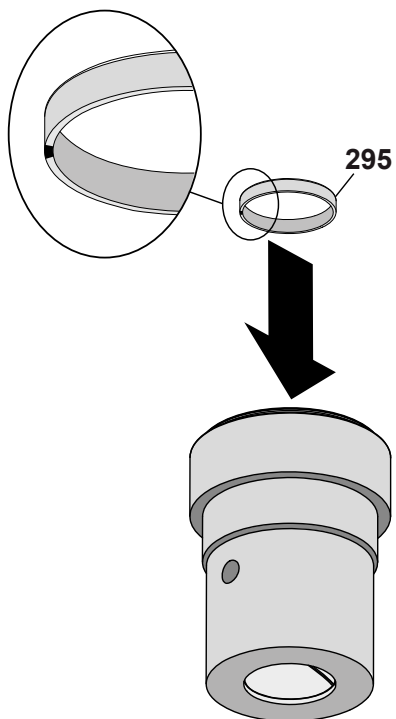


8-d

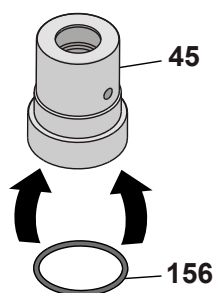


(BBYQM)

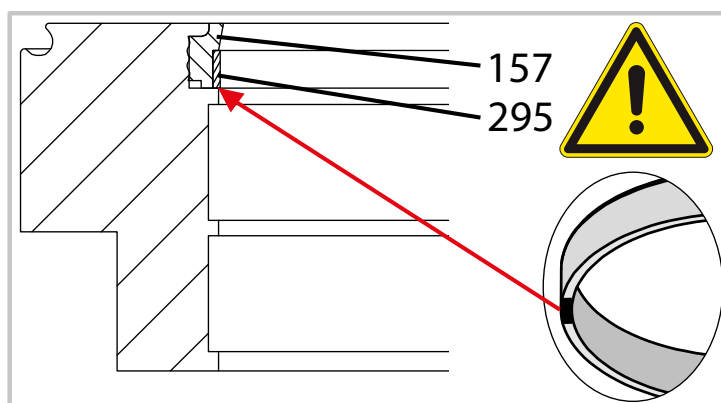
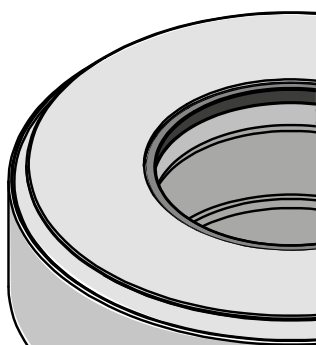
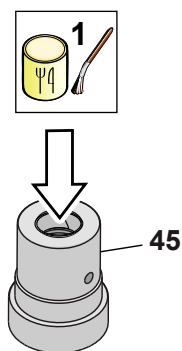
9-d

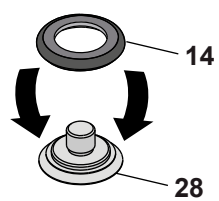
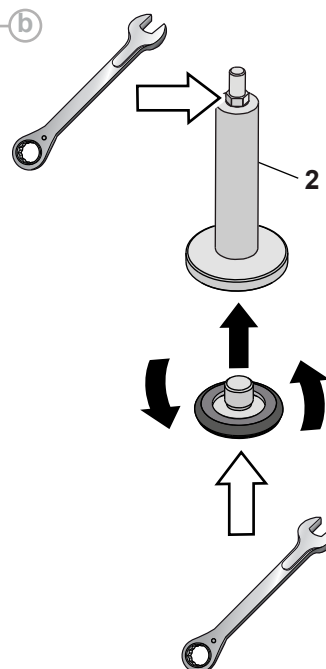


10-d

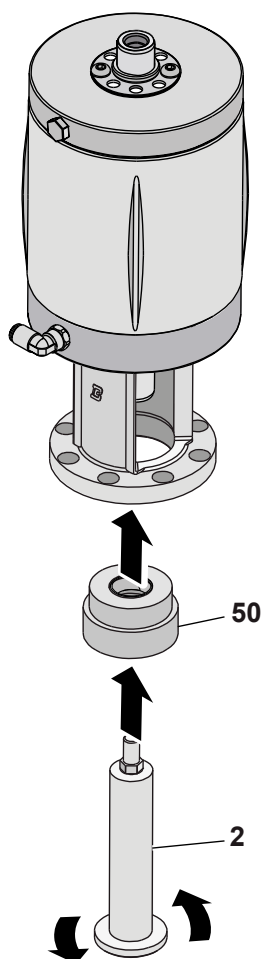


11-d



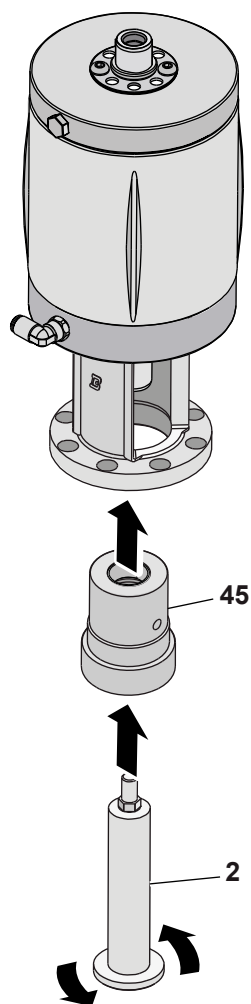
**(P.T.F.E.)****12** **b****13** **b**

14

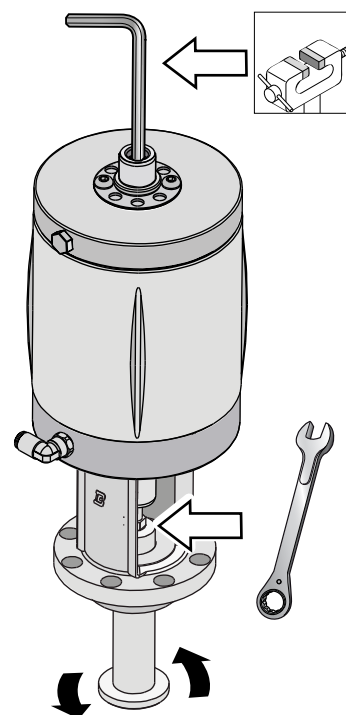


(BBYQM)

14-d



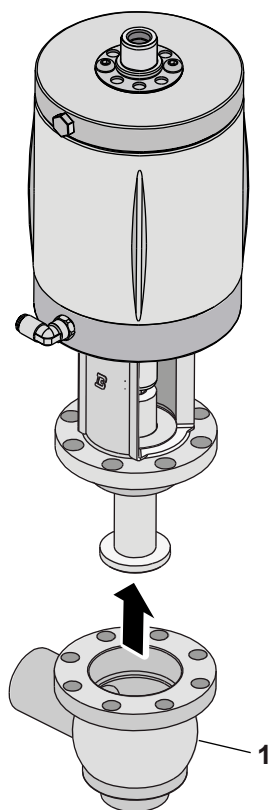
15



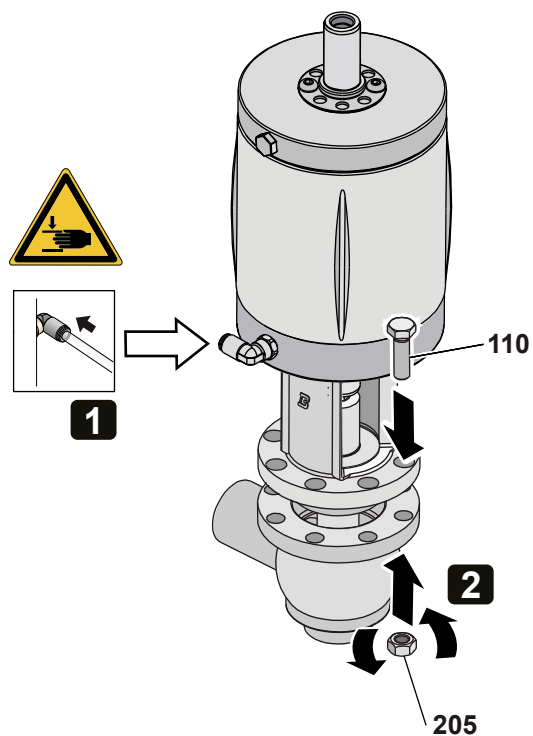


**(Normally closed)**

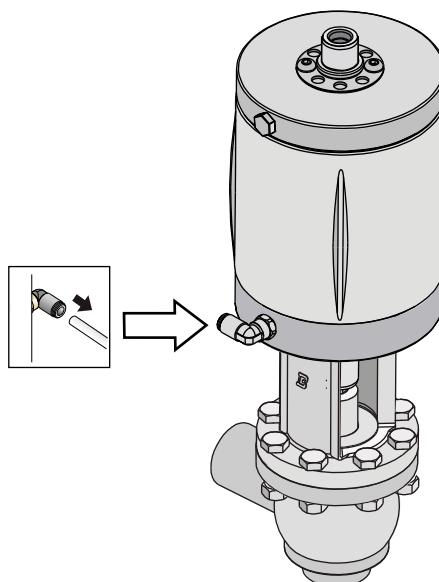
16-a

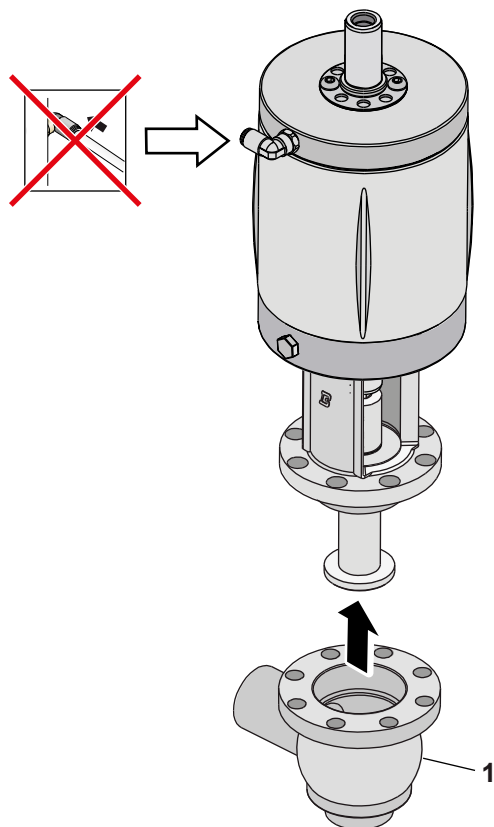


17-a

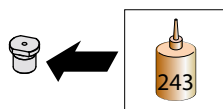


18-a

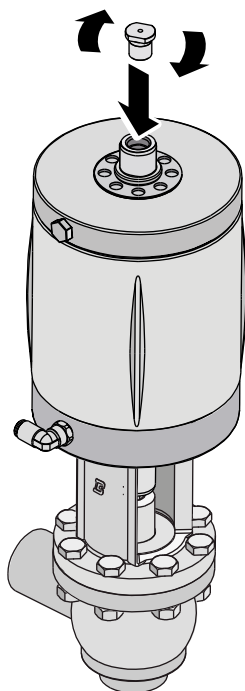


**(Normally open or double acting)****16**—b

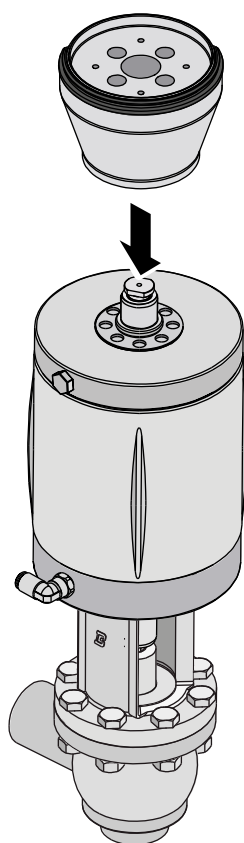
19



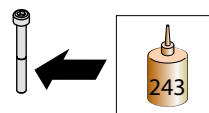
20



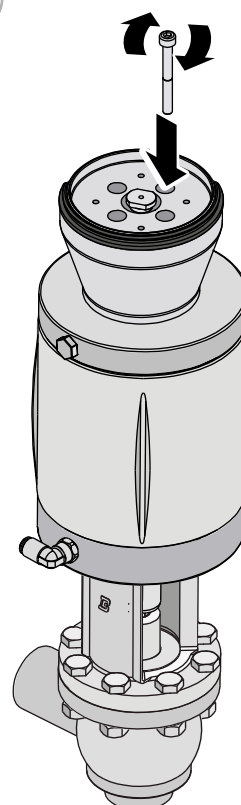
21



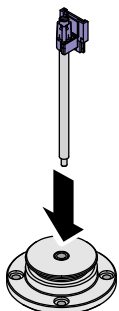
22



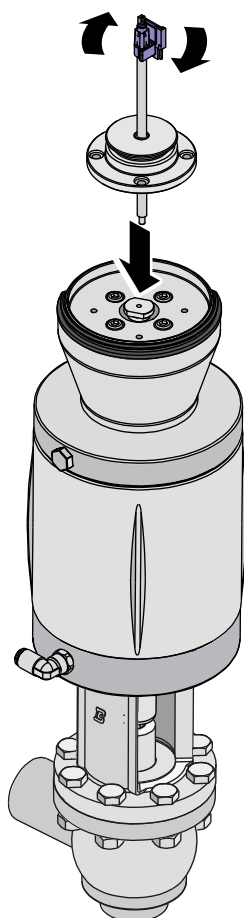
23



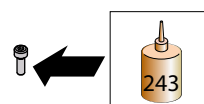
24



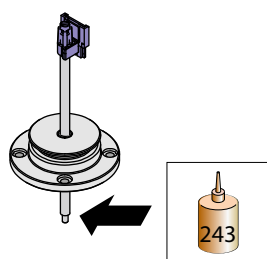
26



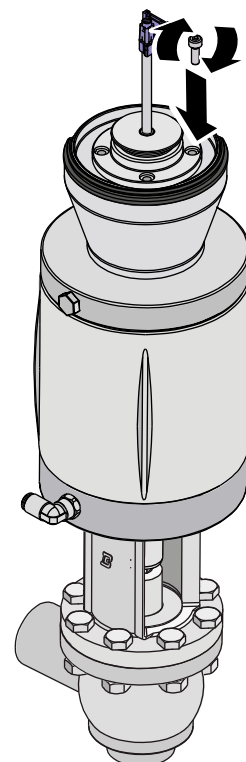
27



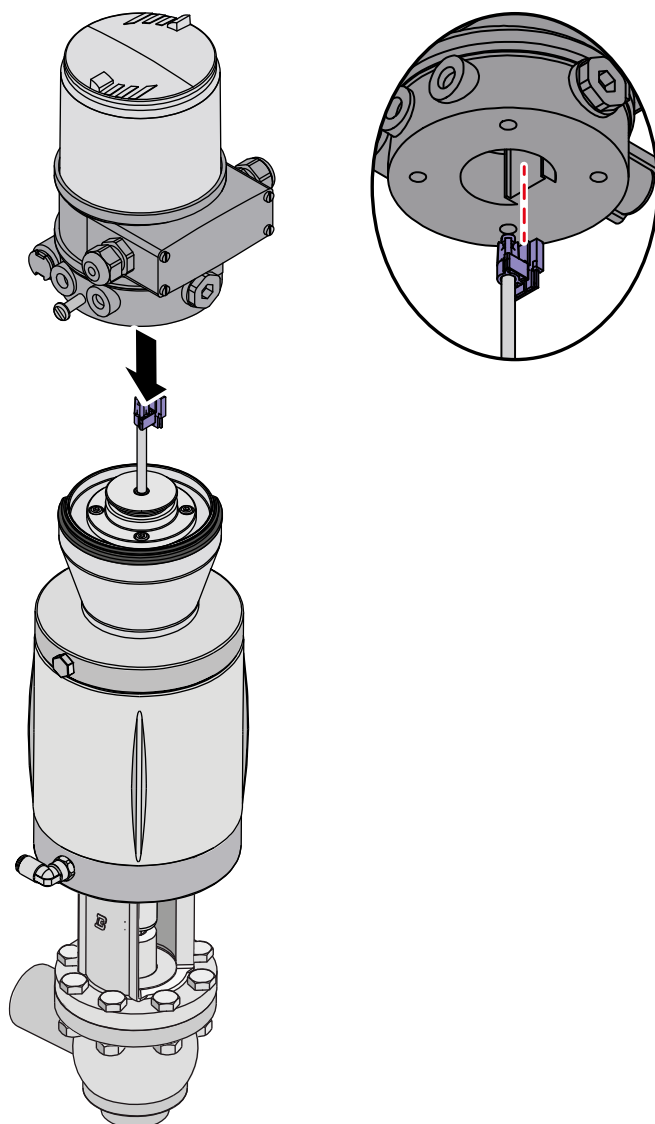
25



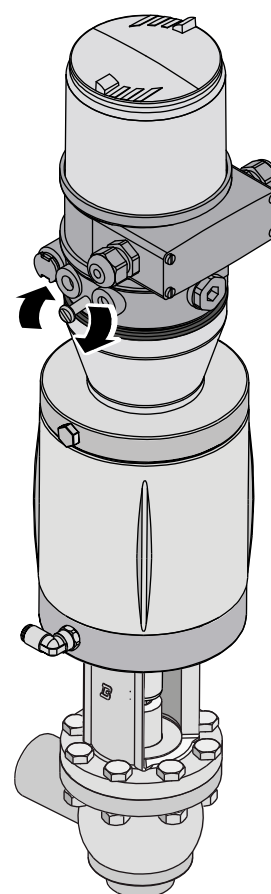
28



29

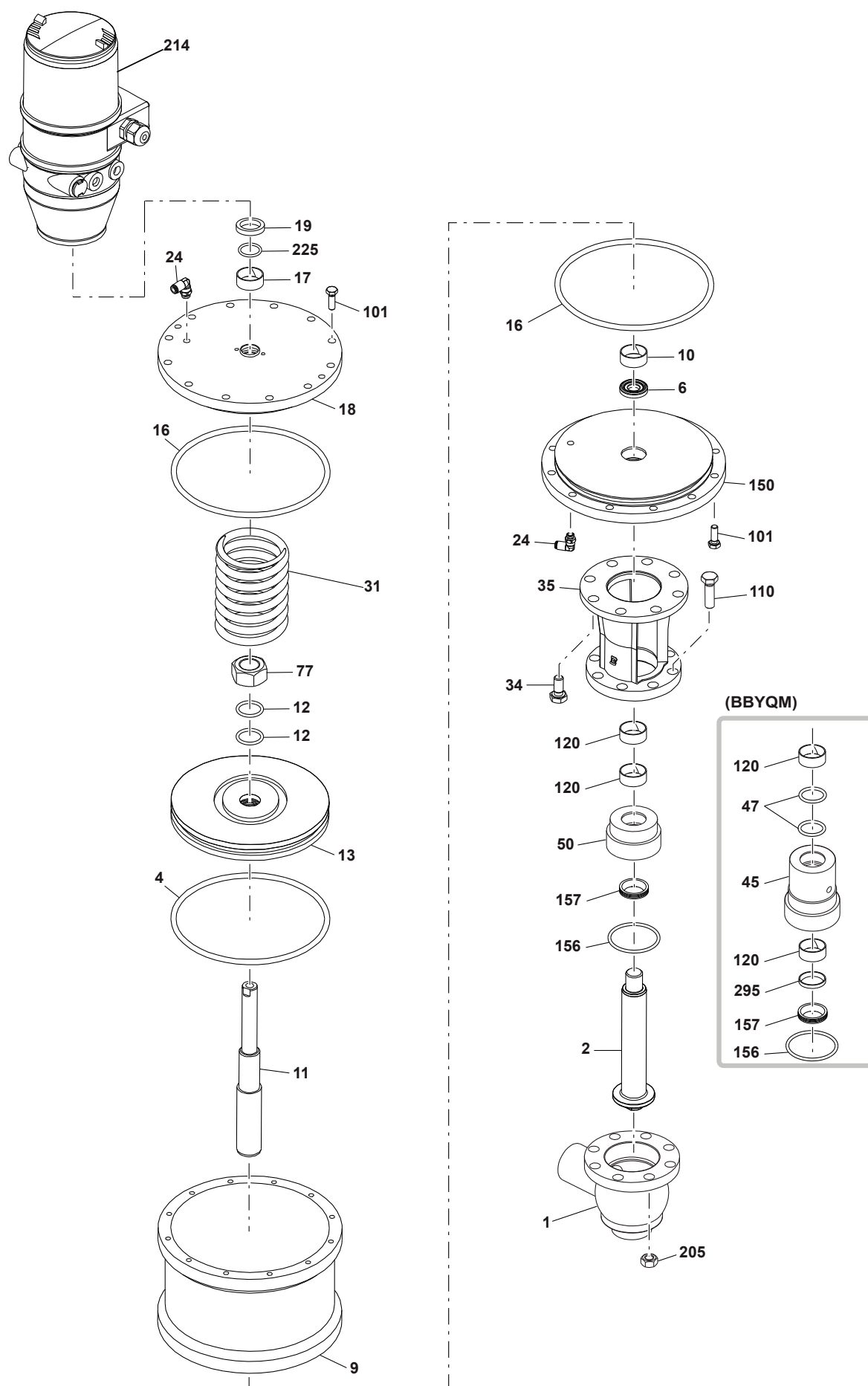


30



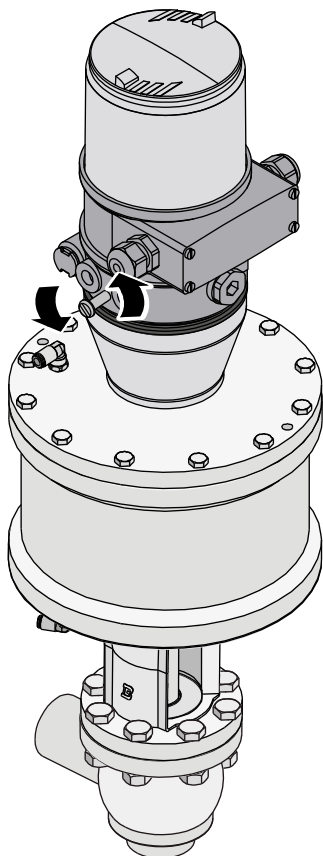
## 10.7 Pneumatic Valve BBZQM - BBYQM cylinder 207-360

| NO. | DESCRIPTION        |
|-----|--------------------|
| 1   | Lower body         |
| 2   | Shutter            |
| 4   | Sealing ring       |
| 6   | Sealing ring       |
| 9   | Cylinder           |
| 10  | Bush               |
| 11  | Pin                |
| 12  | Sealing ring       |
| 13  | Piston             |
| 16  | Sealing ring       |
| 17  | Bush               |
| 18  | Buffer             |
| 19  | Sealing ring       |
| 24  | Air connector      |
| 31  | Spring             |
| 34  | Screw              |
| 35  | Assembly           |
| 45  | Steam barrier      |
| 47  | Sealing ring       |
| 50  | Gasket holder disc |
| 77  | Nut                |
| 101 | Screw              |
| 110 | Screw              |
| 120 | Bush               |
| 150 | Bottom stopper     |
| 156 | Sealing ring       |
| 157 | Sealing ring       |
| 205 | Nut                |
| 214 | Positioner         |
| 225 | Sealing ring       |

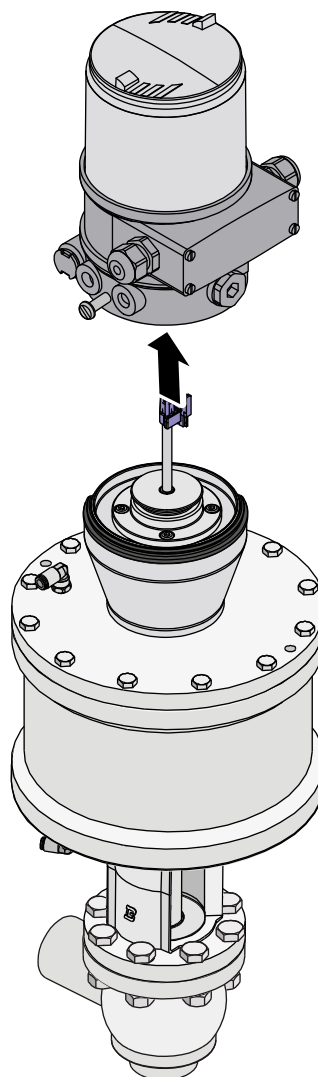


## 10.8 Disassembly of the BBZQM - BBYQM cylinder 207-360

1

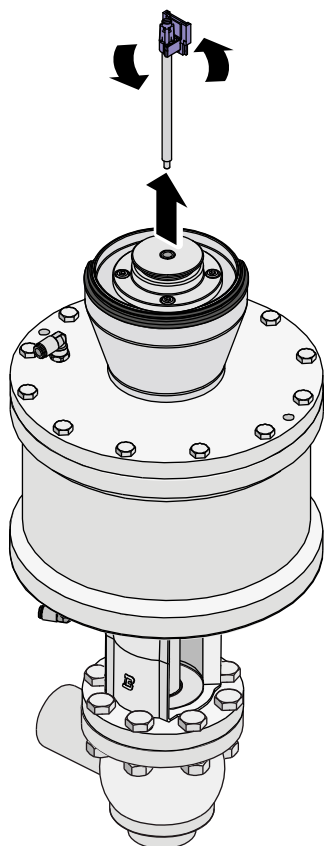


2

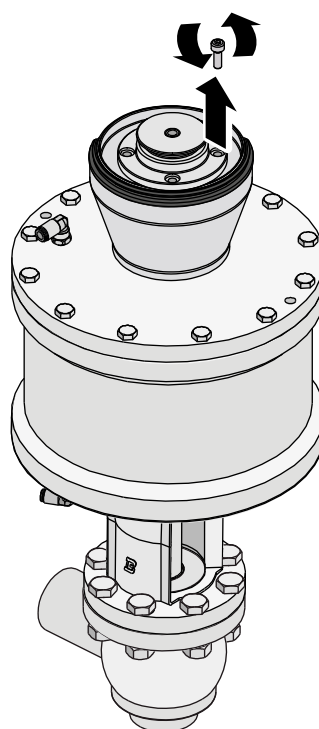


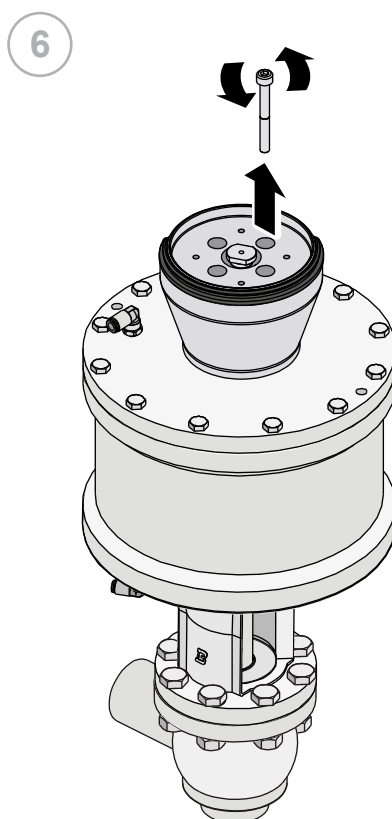
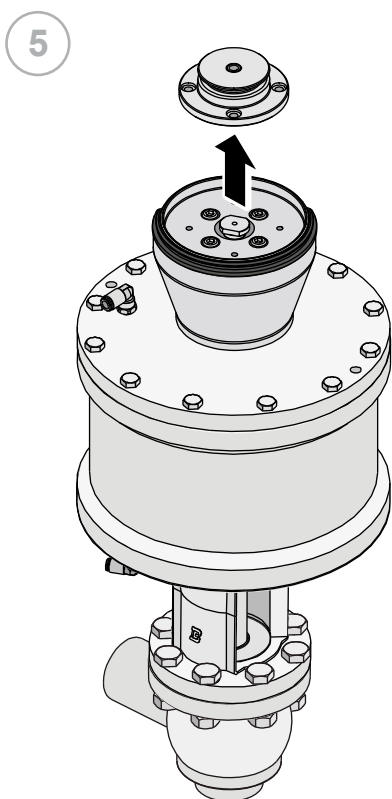


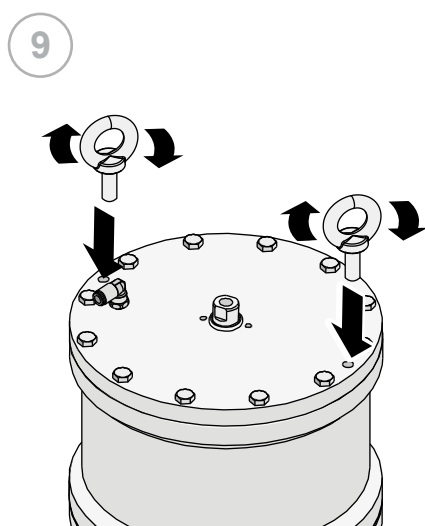
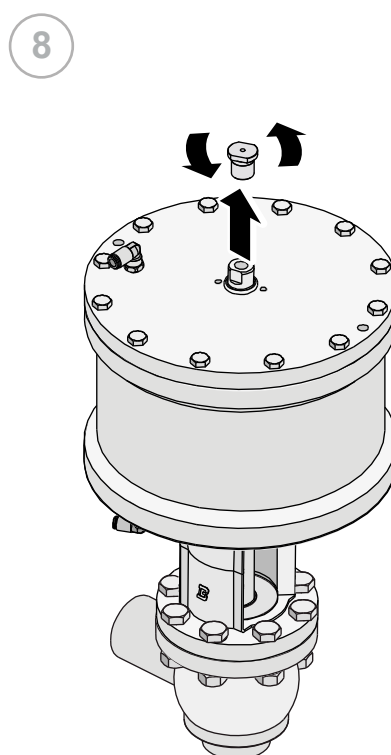
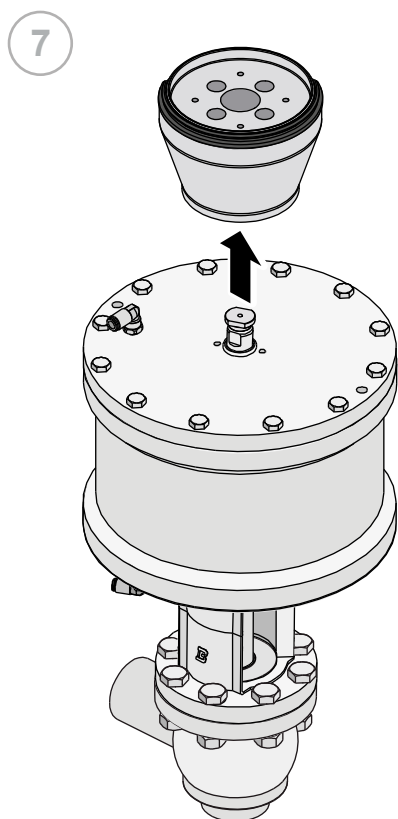
3



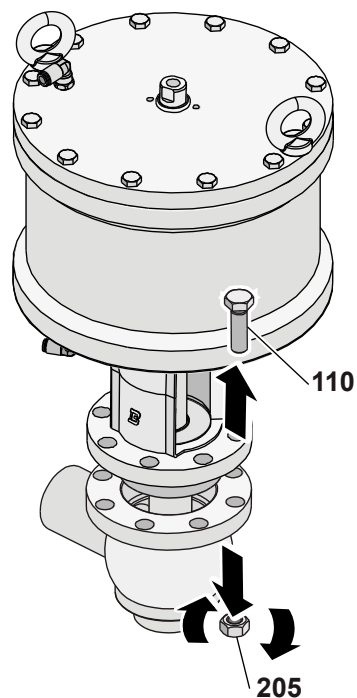
4



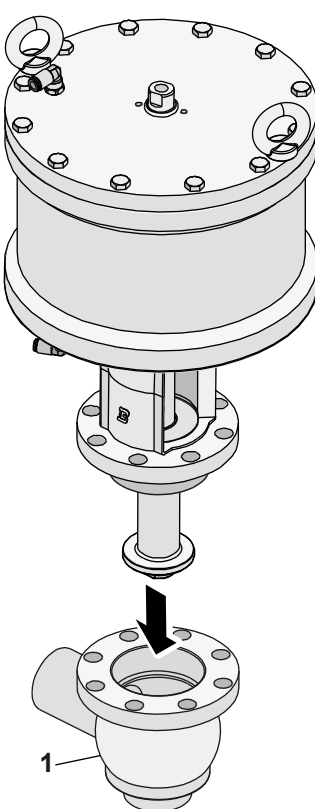




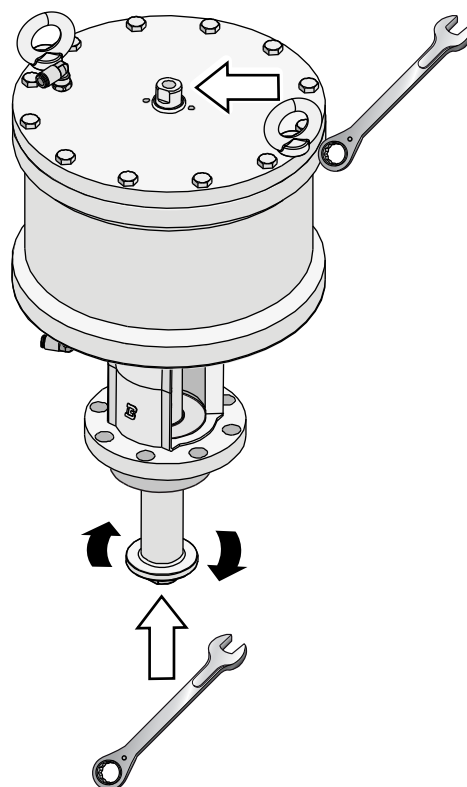
10

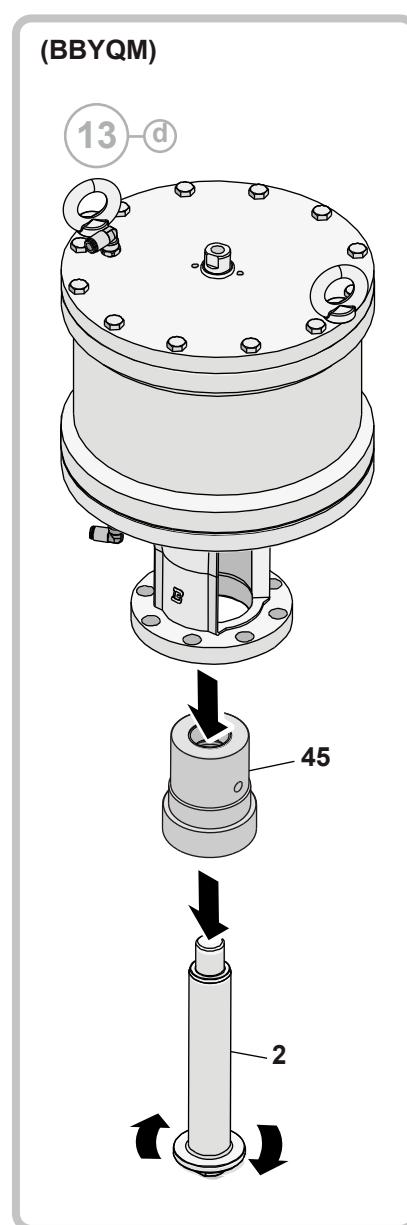
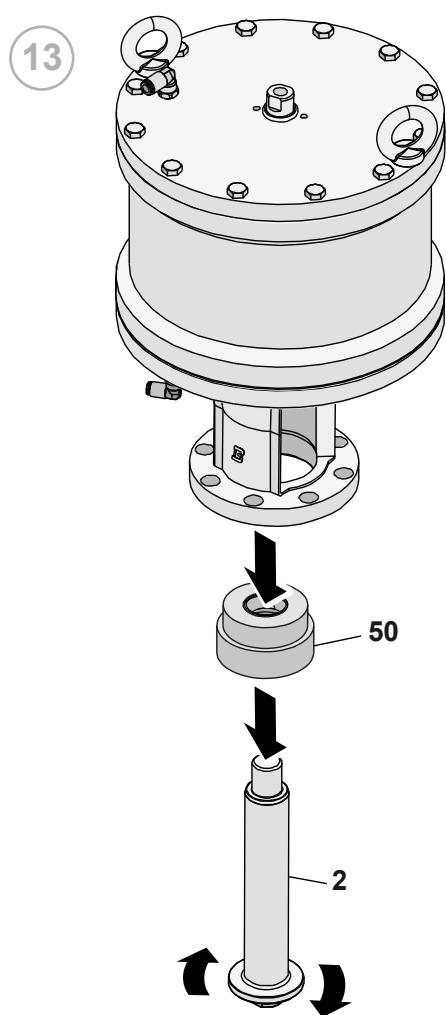


11

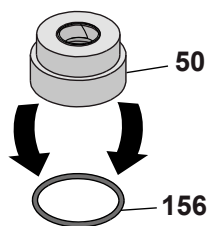


12

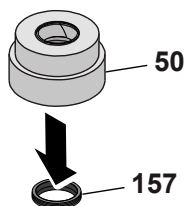




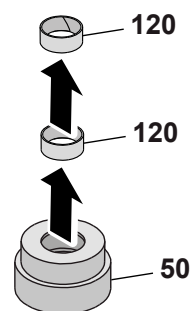
14



15

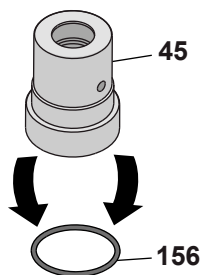


16

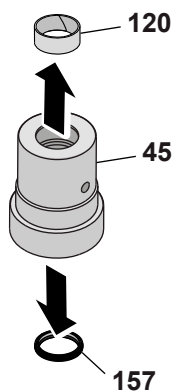


(BBYQM)

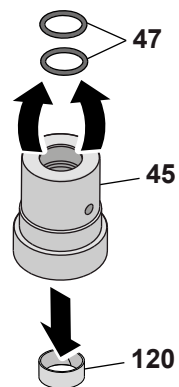
14-d

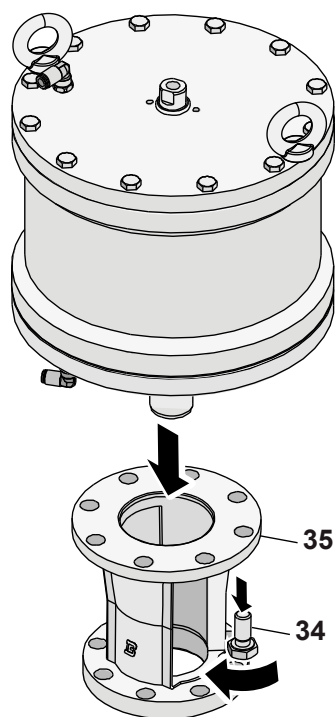
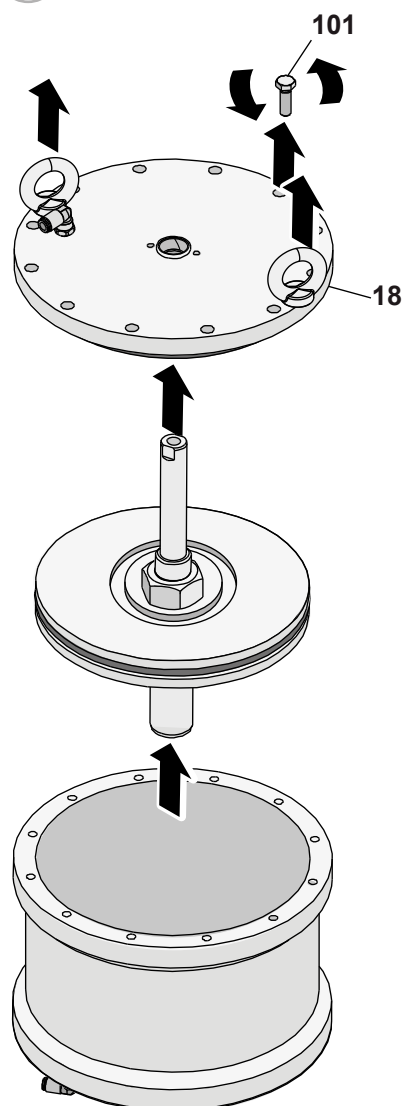
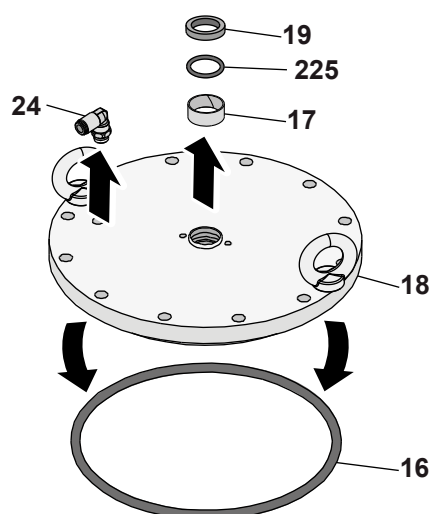


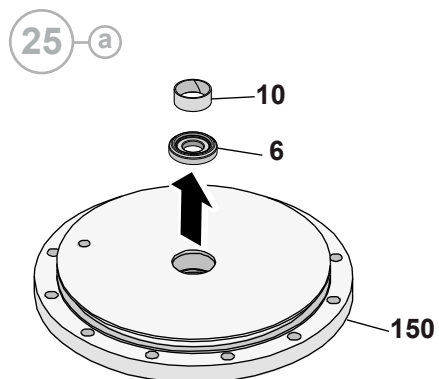
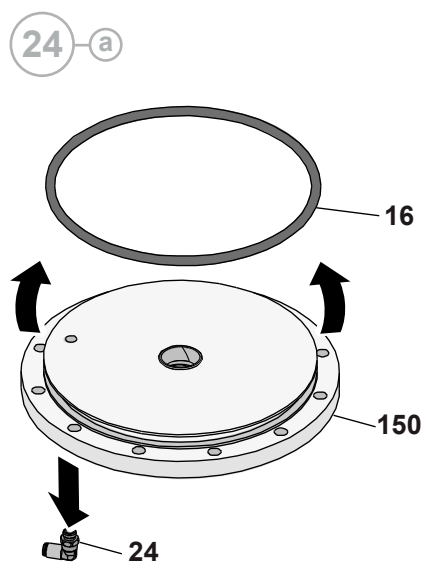
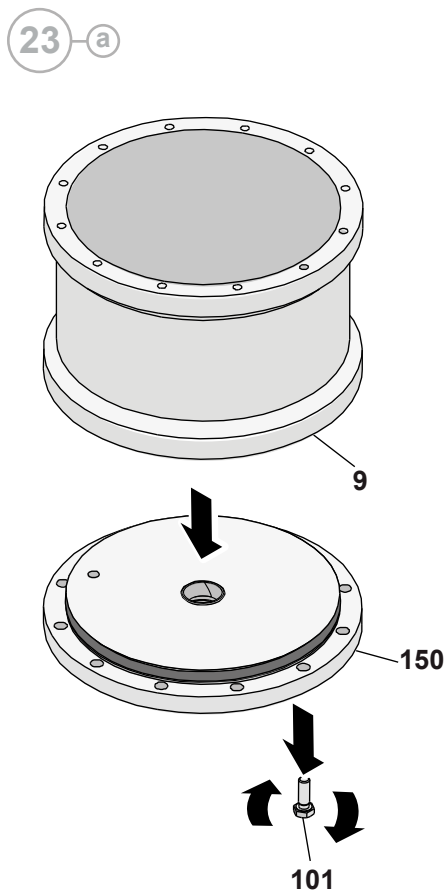
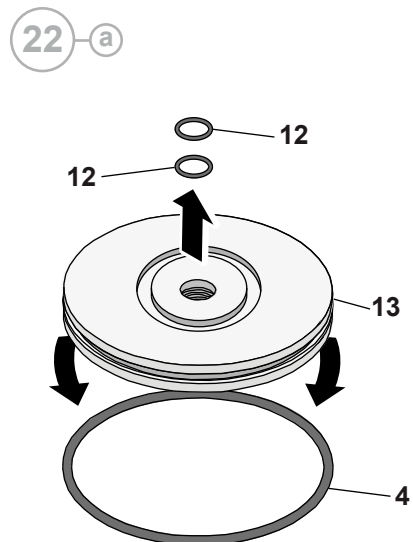
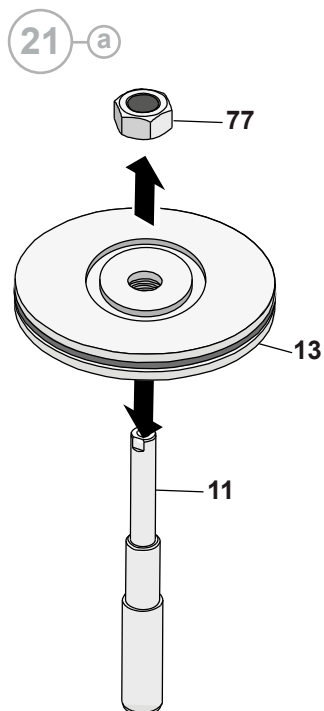
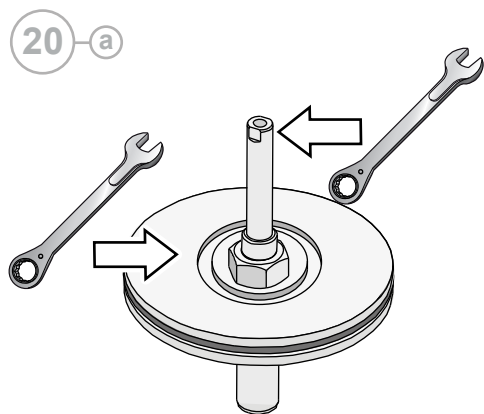
15-d



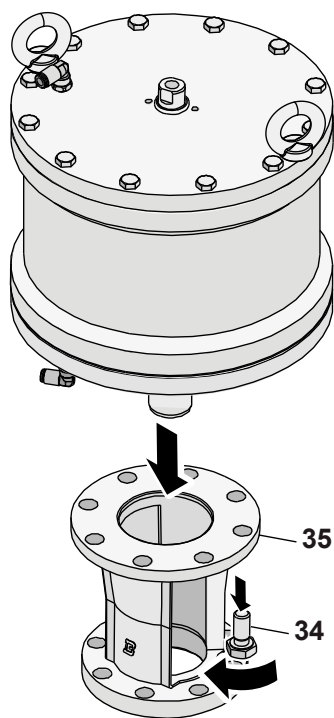
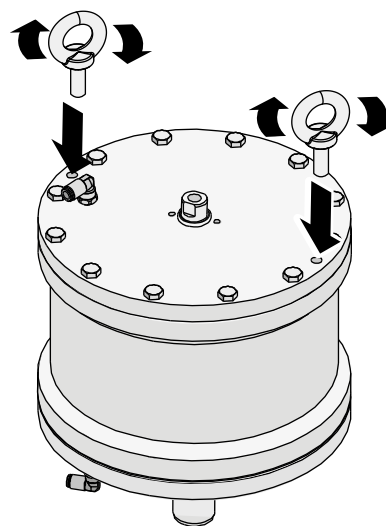
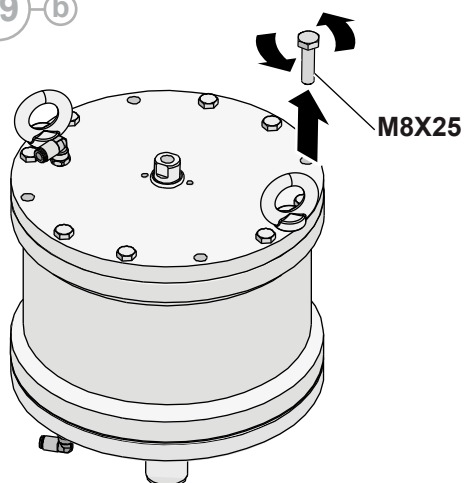
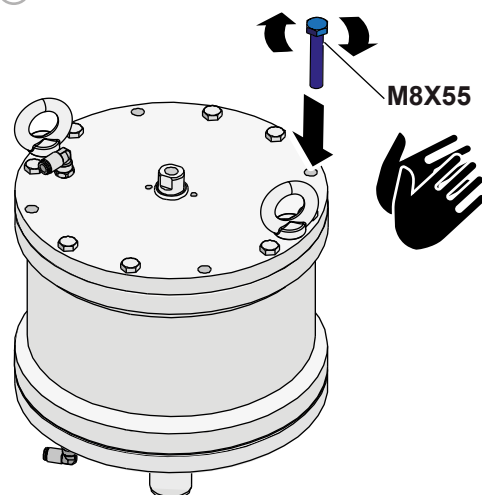
16-d



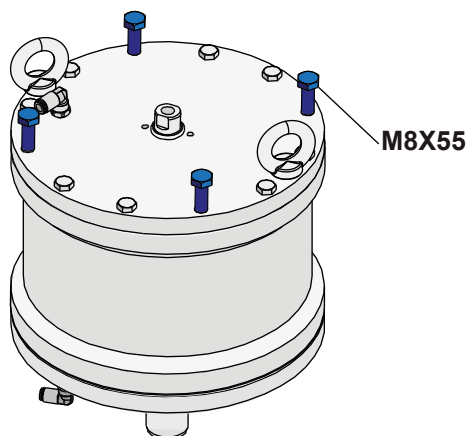
**(Double acting)****17-a****18-a****19-a**



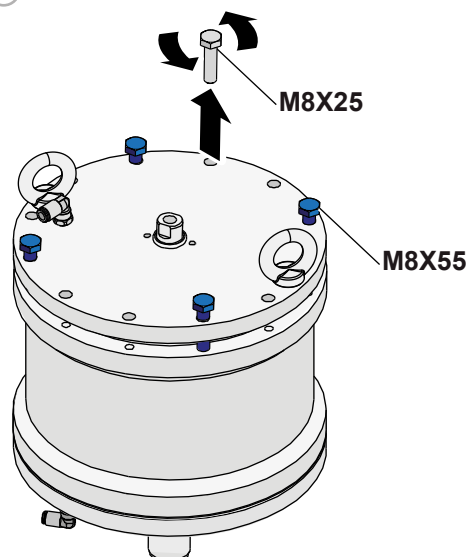
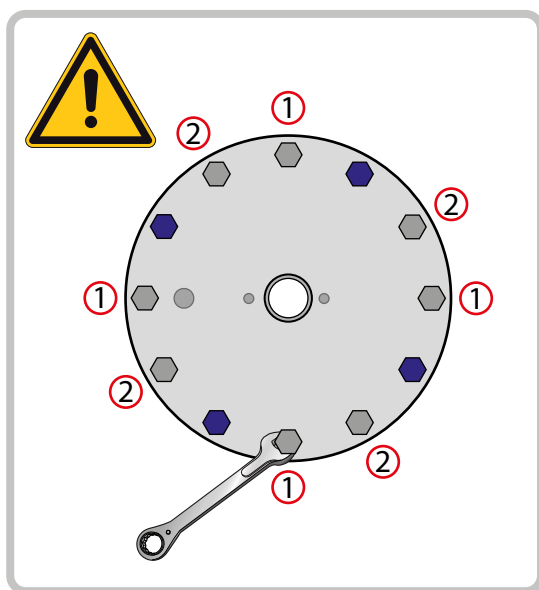


**(Normally closed)****17-b****18-b****19-b****20-b**

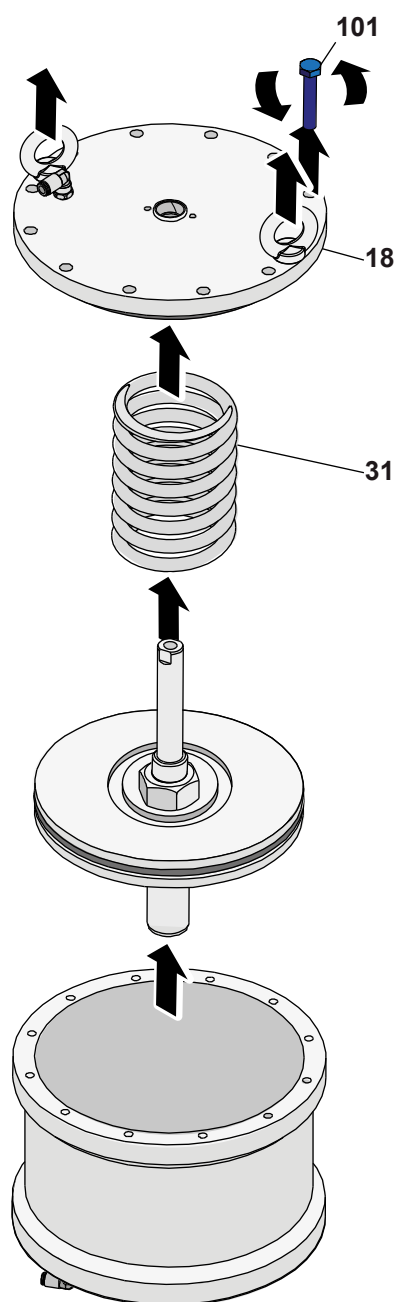
21-b



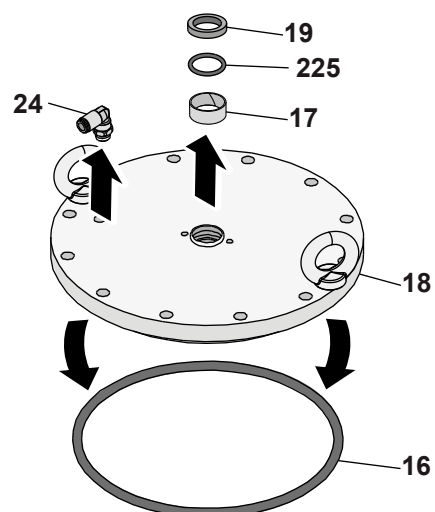
22-b



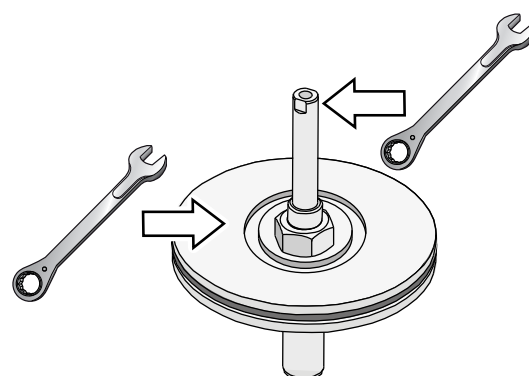
23-b



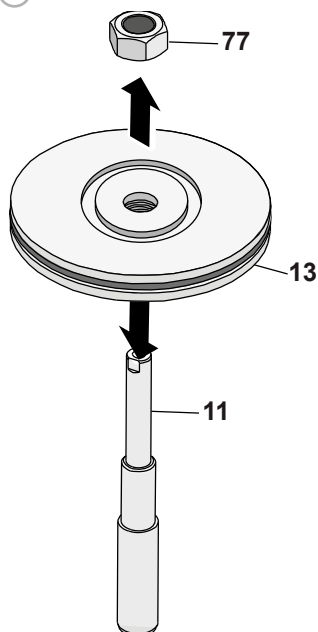
24-b



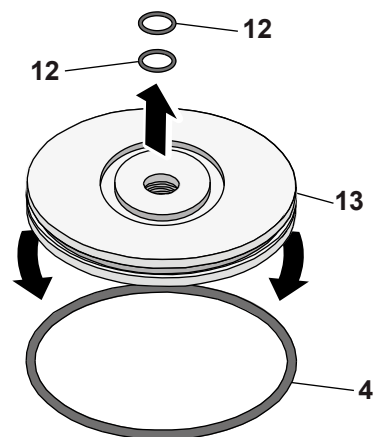
25-b



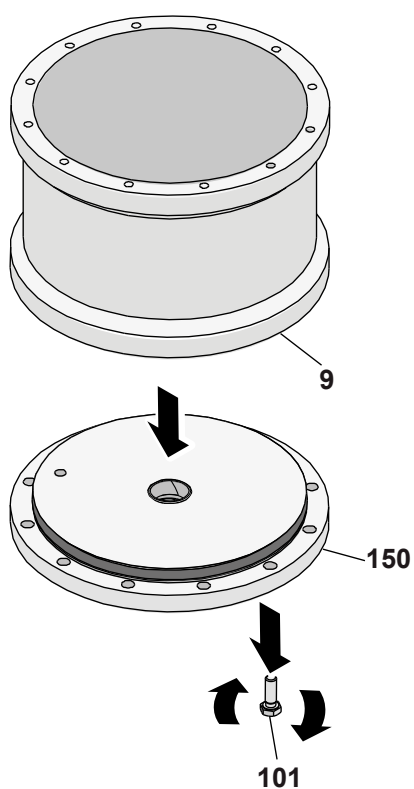
26-b



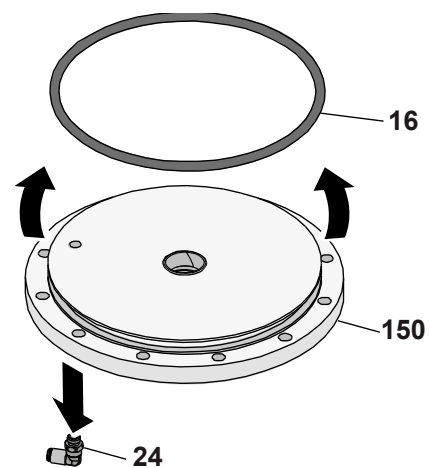
27-b



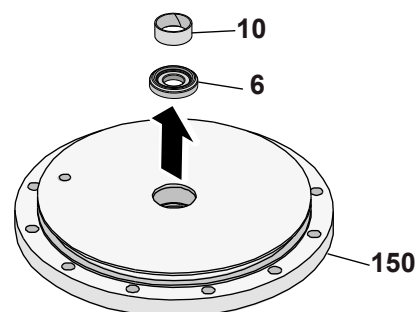
28-b



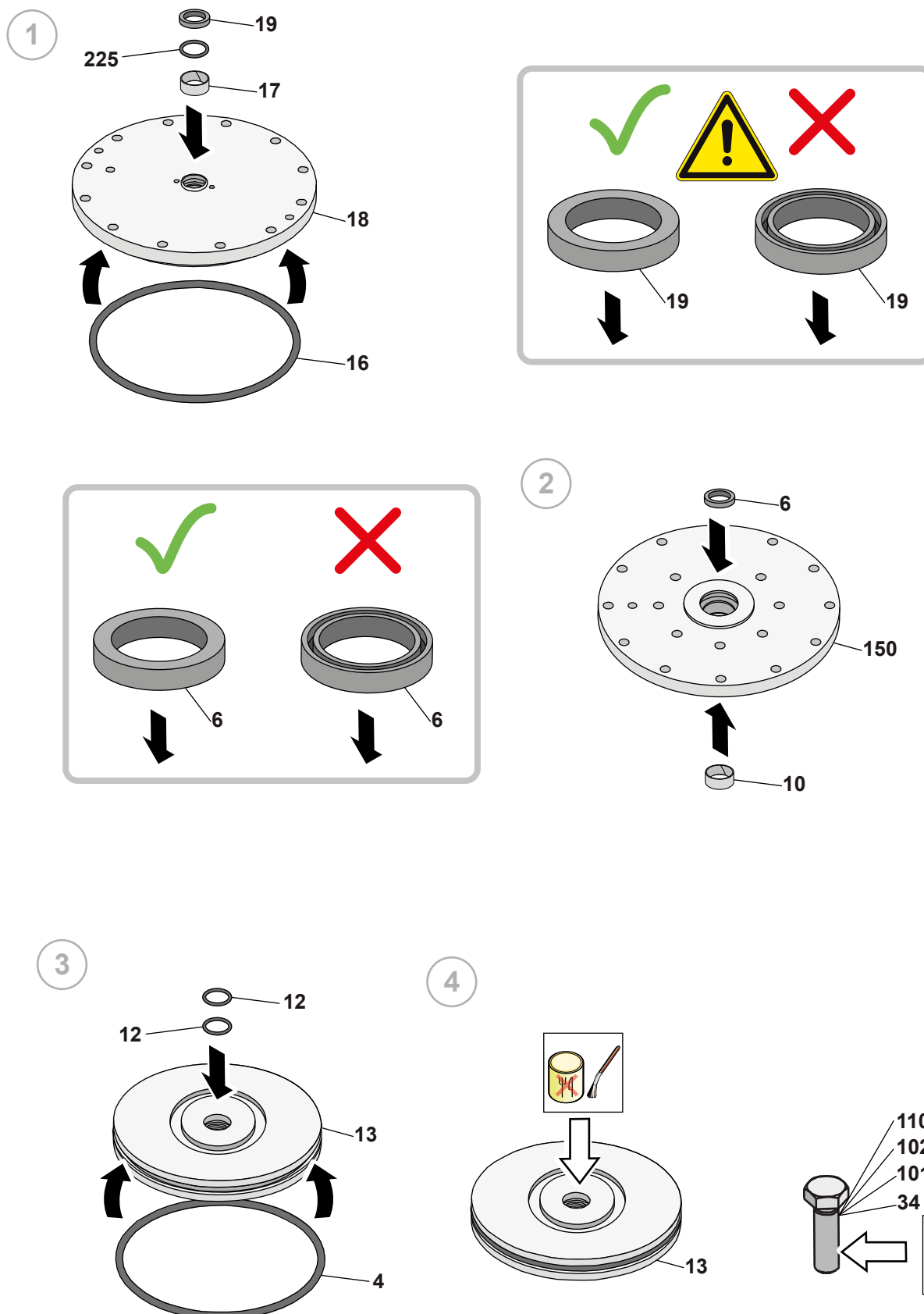
29-b

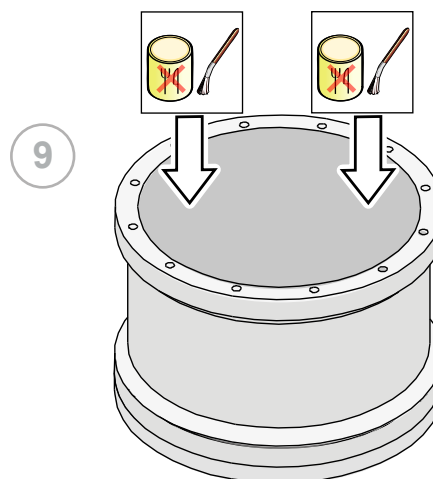
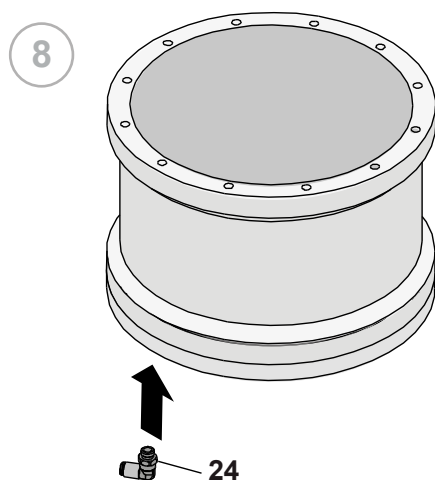
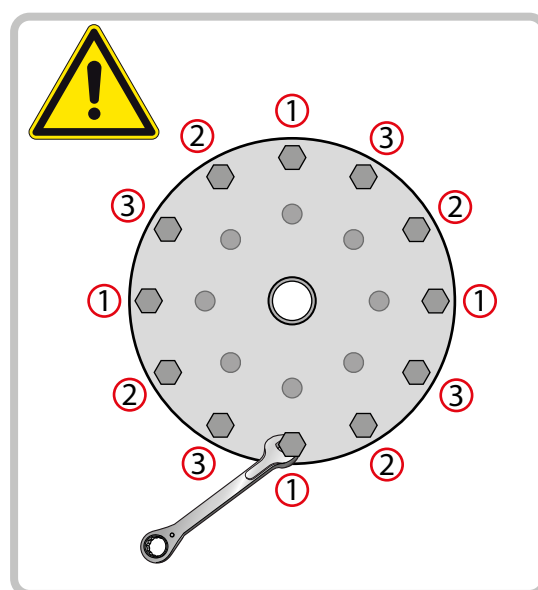
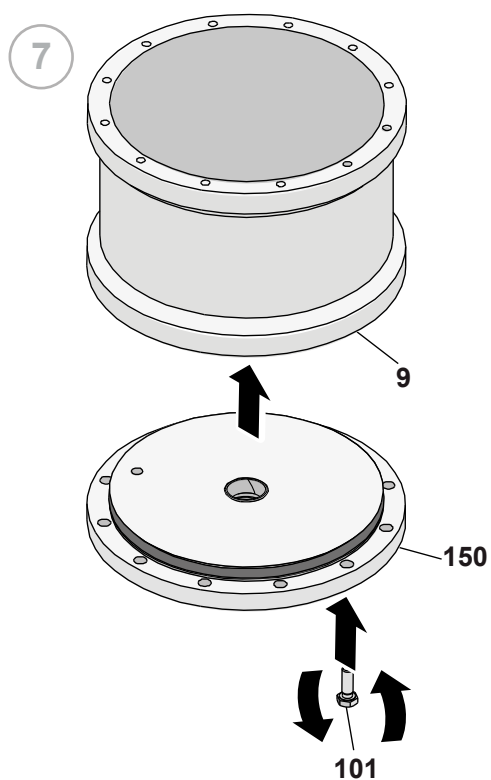
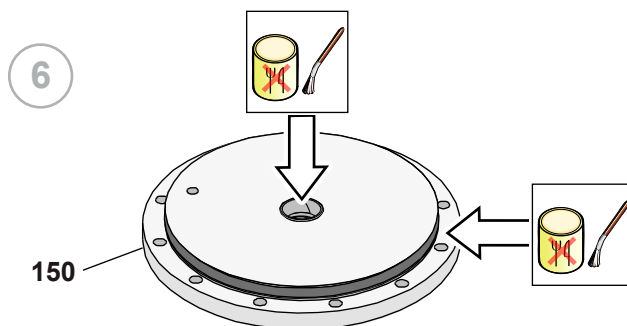
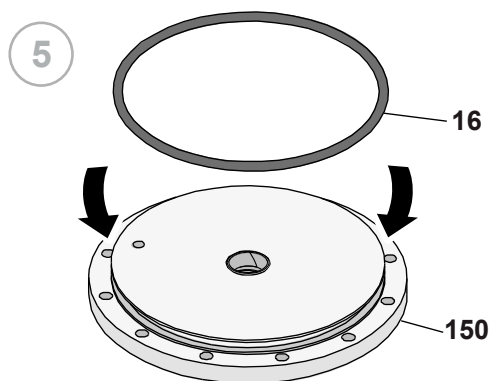


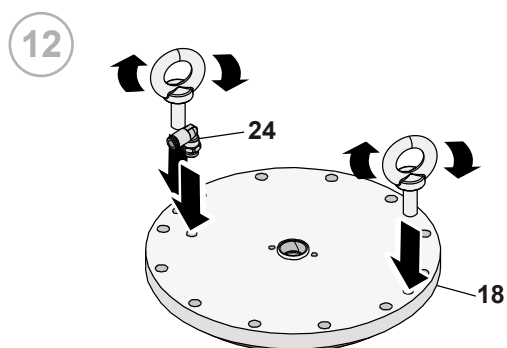
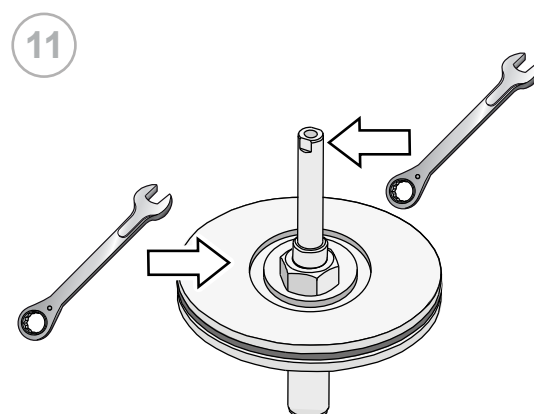
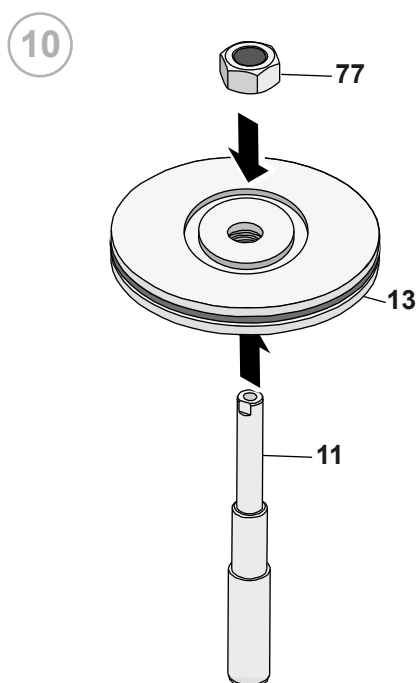
30-b



## 10.9 Assembly of the BBZQM - BBYQM cylinder 207-360

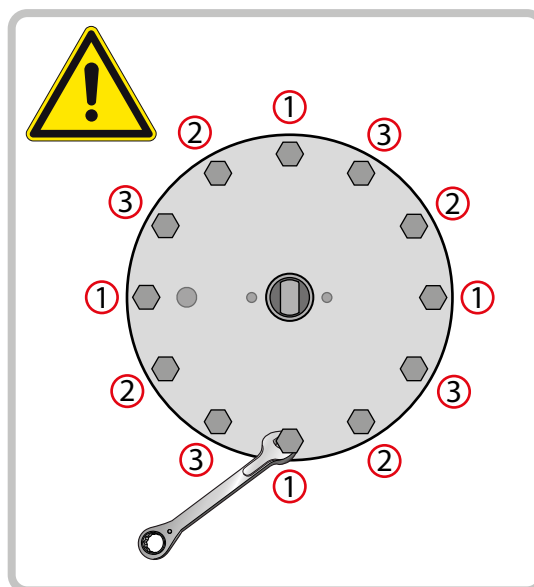
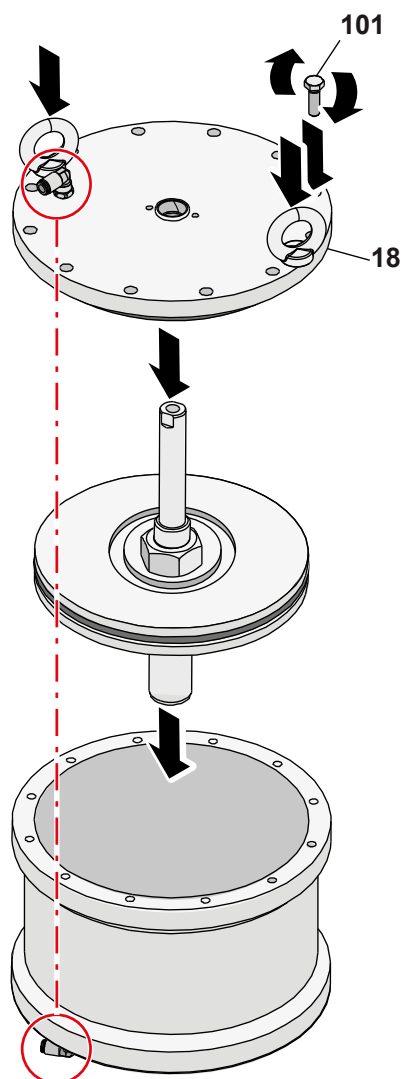






**(Double acting)**

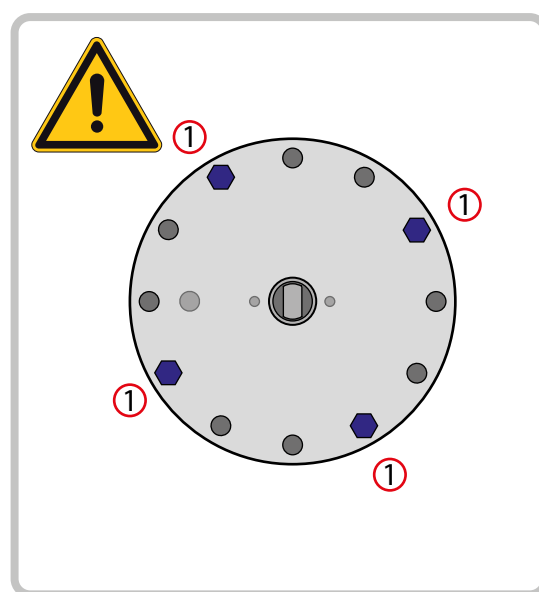
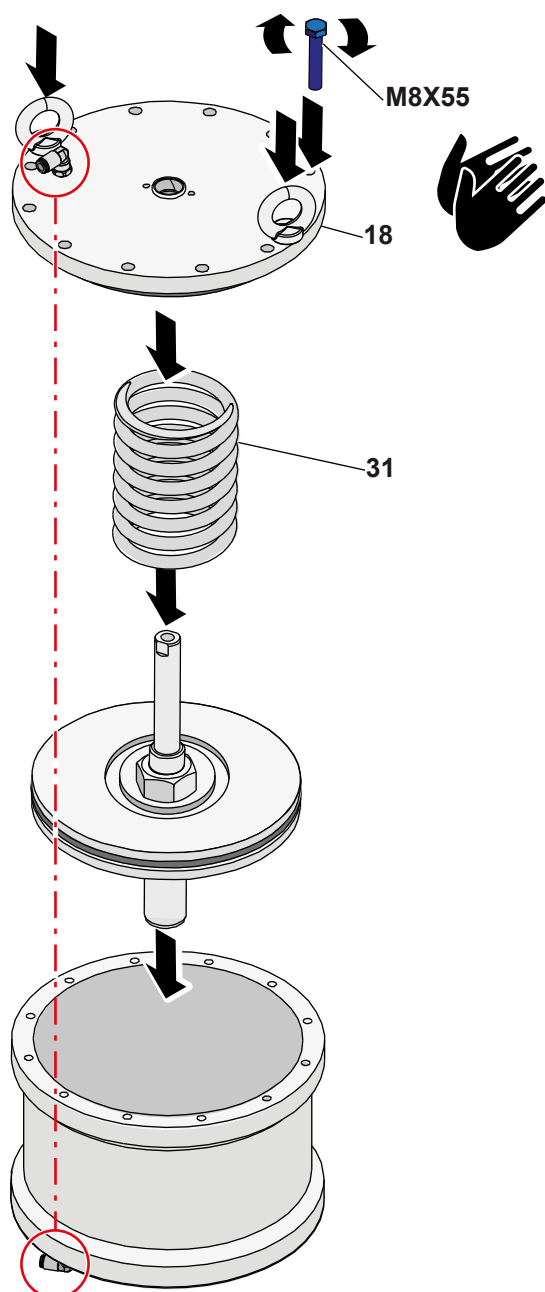
13-a



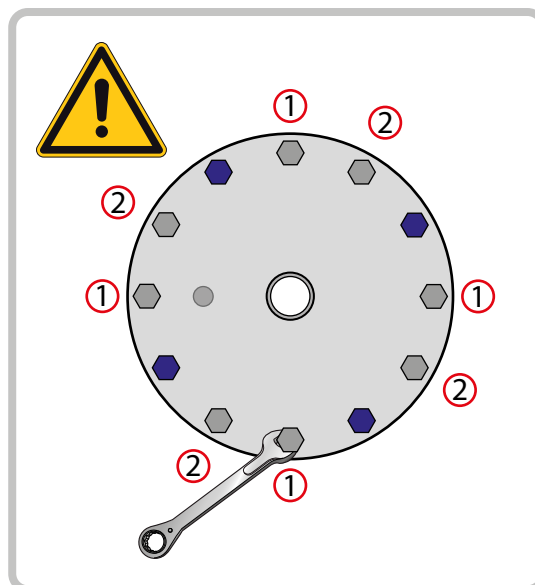
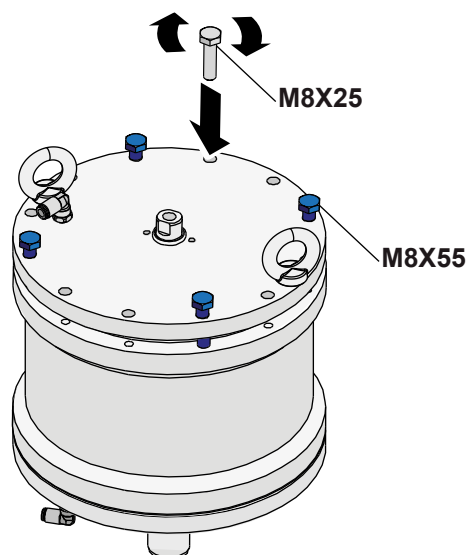


**(Normally closed)**

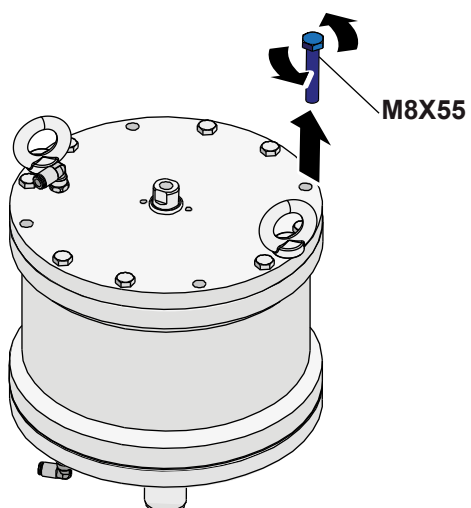
13 (b)



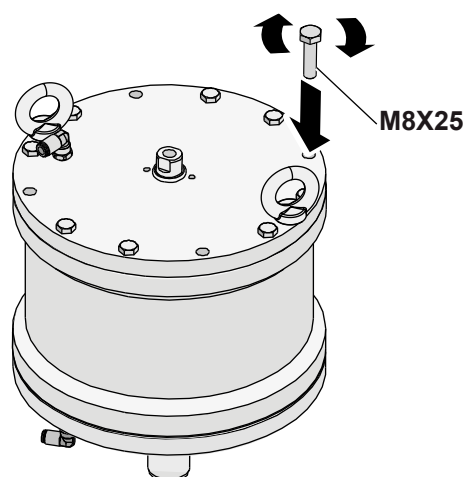
14-b

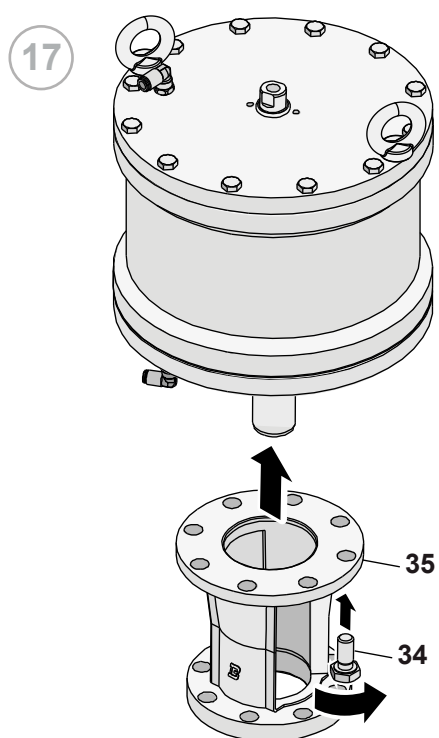


15-b

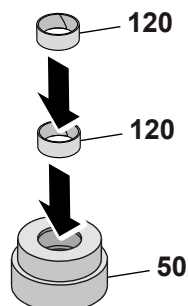


16-b

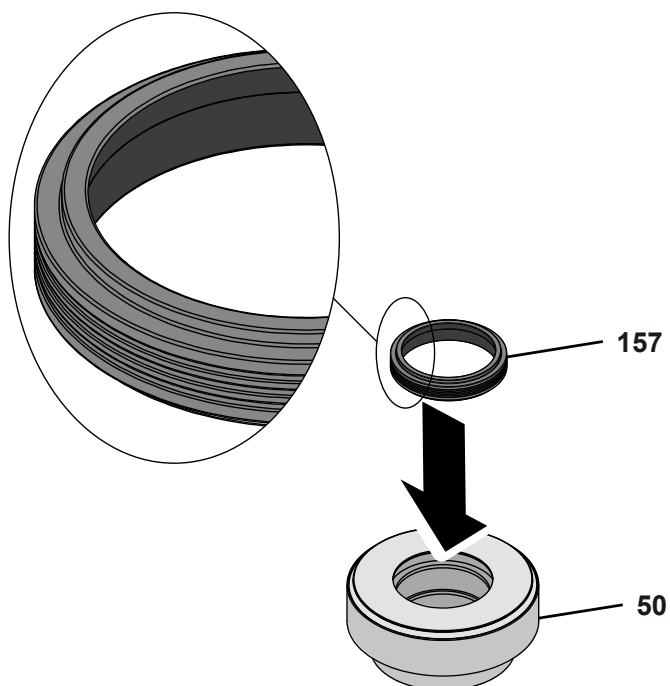
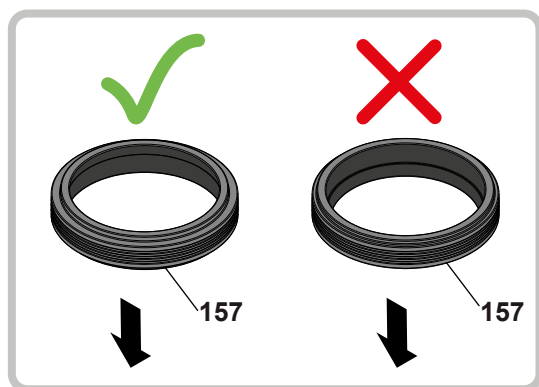




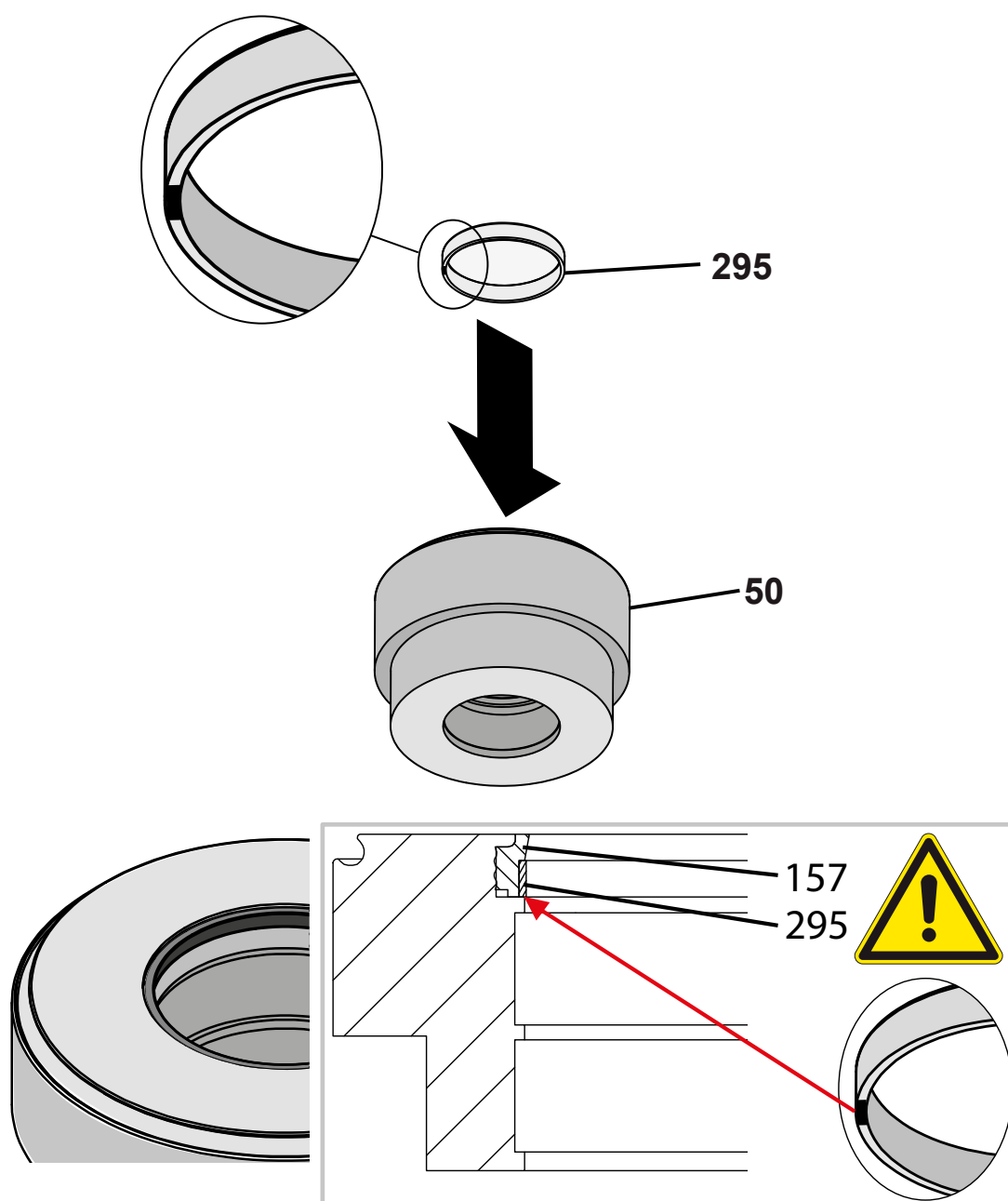
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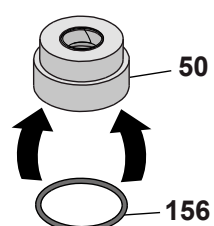
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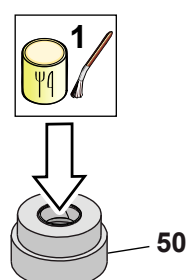
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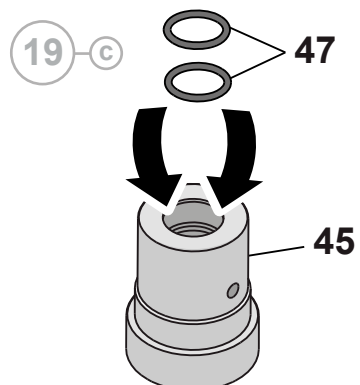
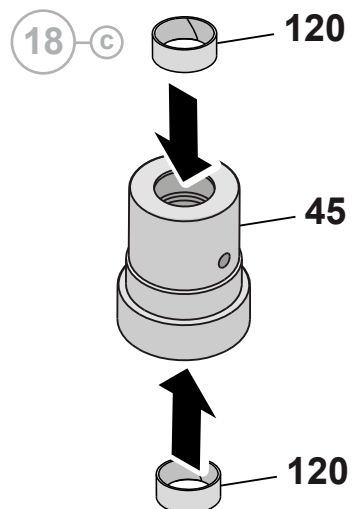
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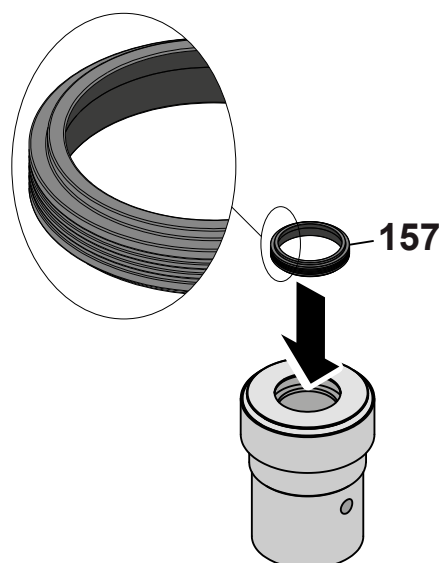
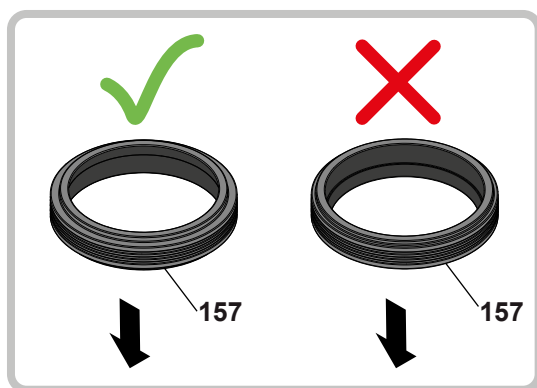
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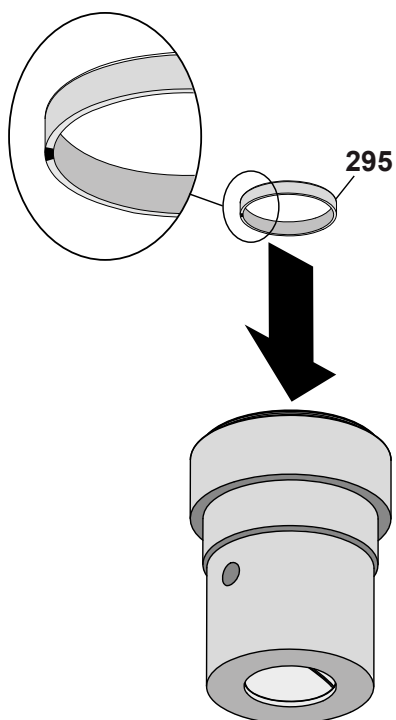


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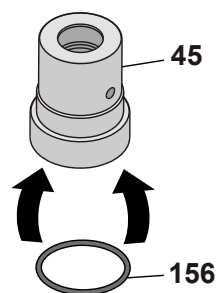


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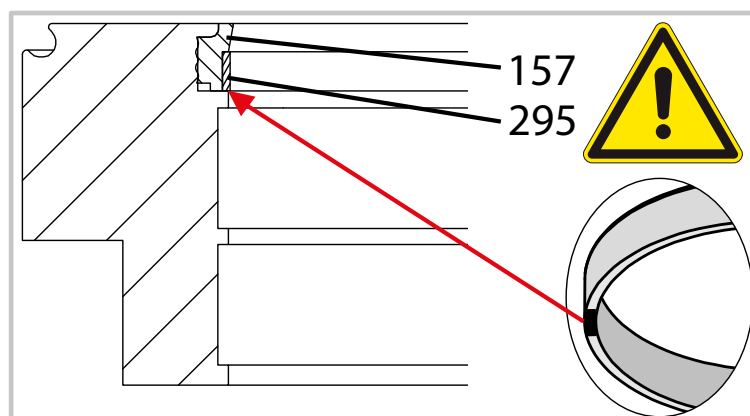
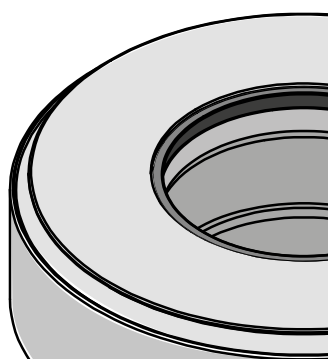
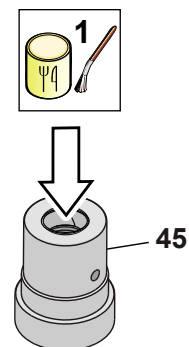
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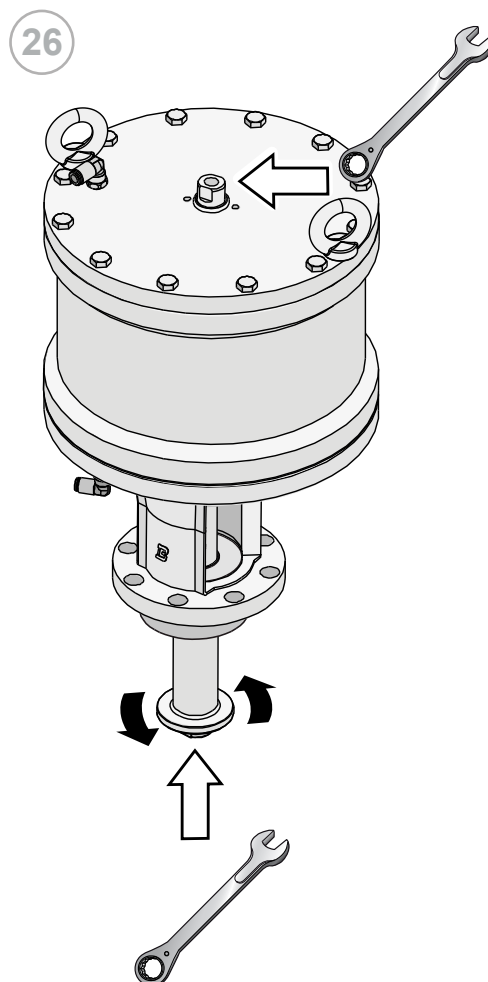
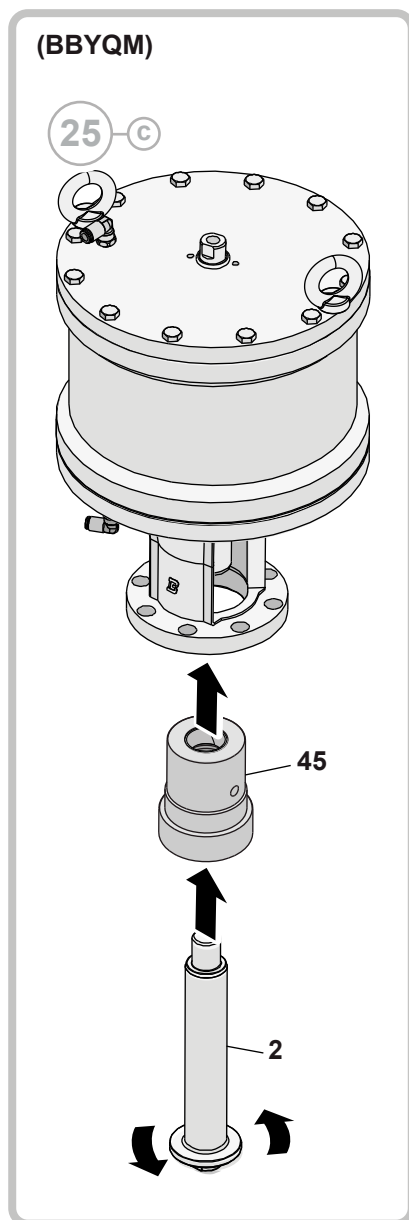
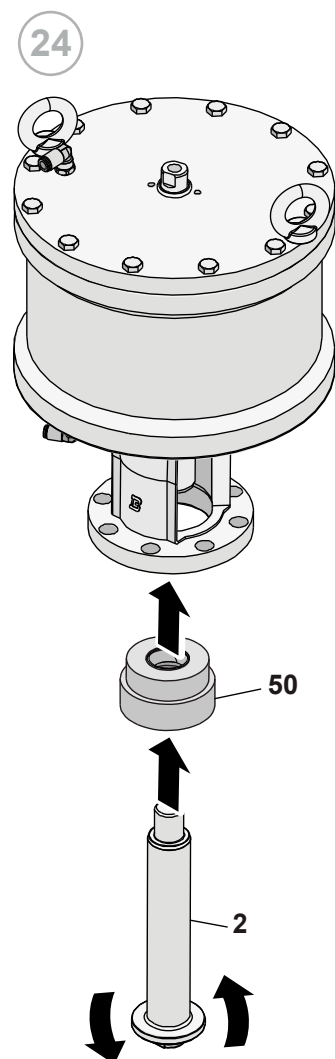


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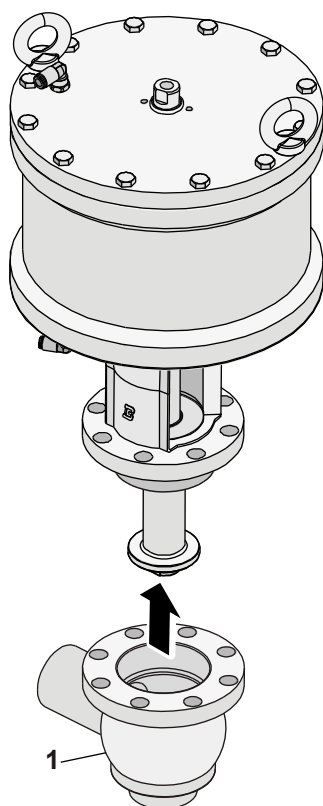
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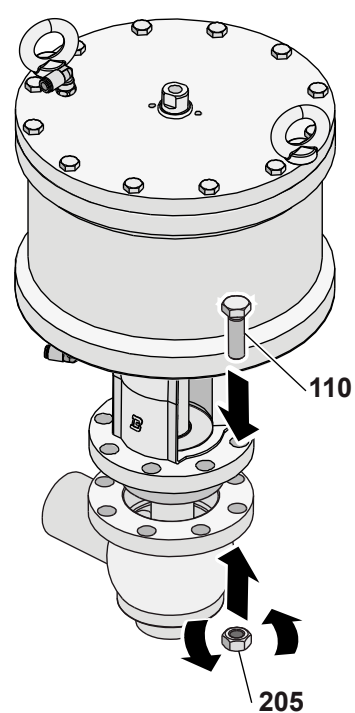




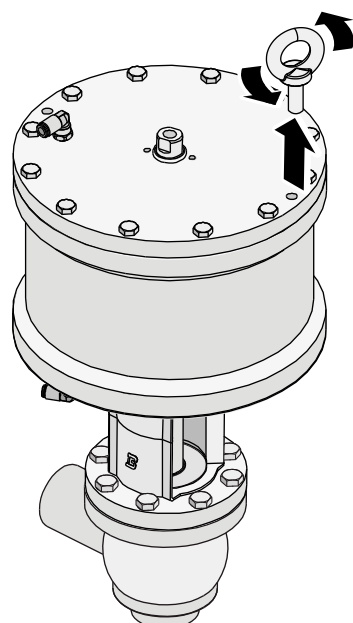
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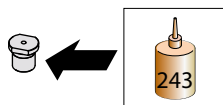
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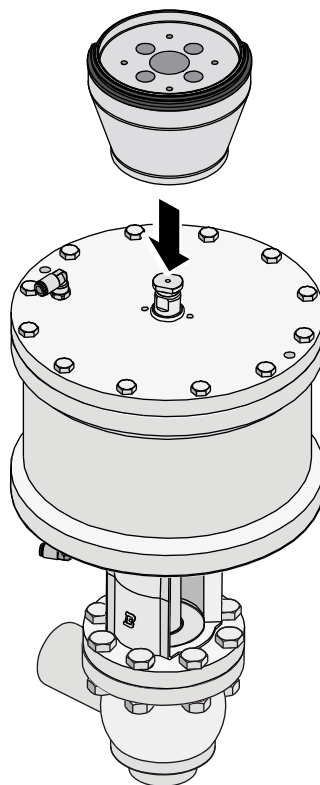
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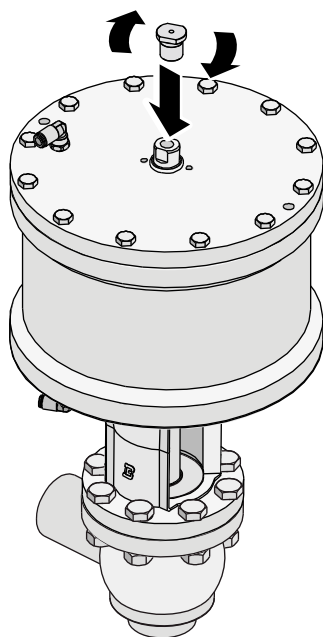
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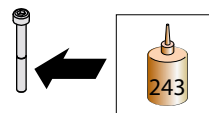
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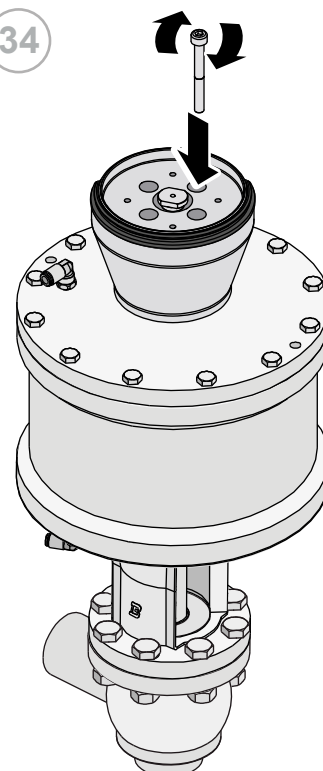
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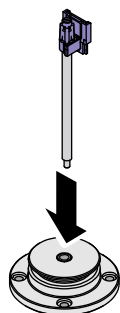
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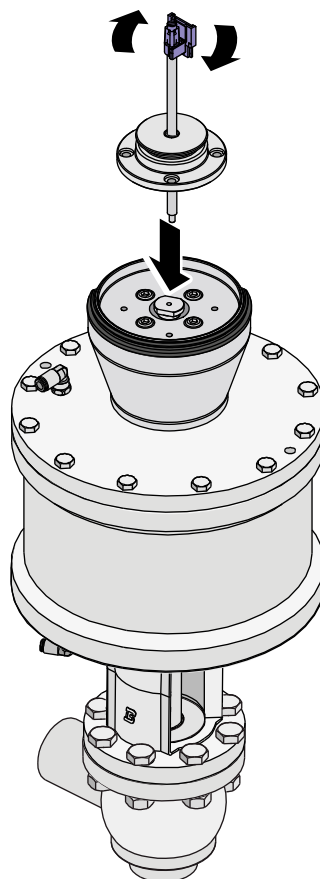
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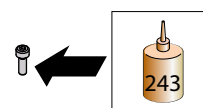
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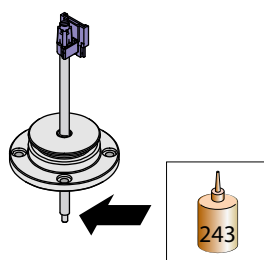
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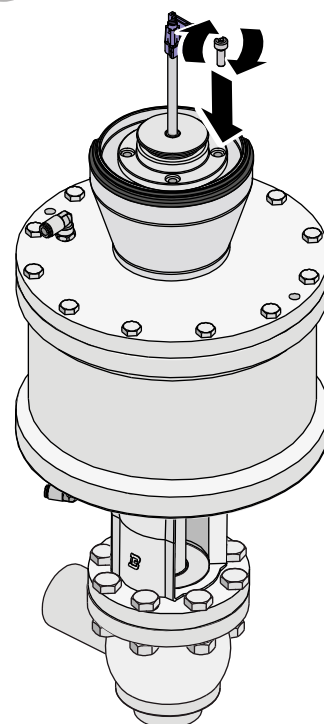
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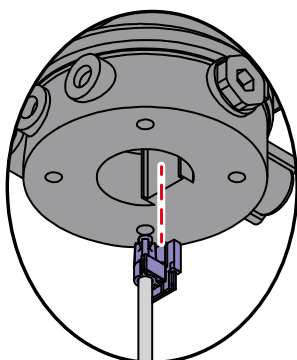
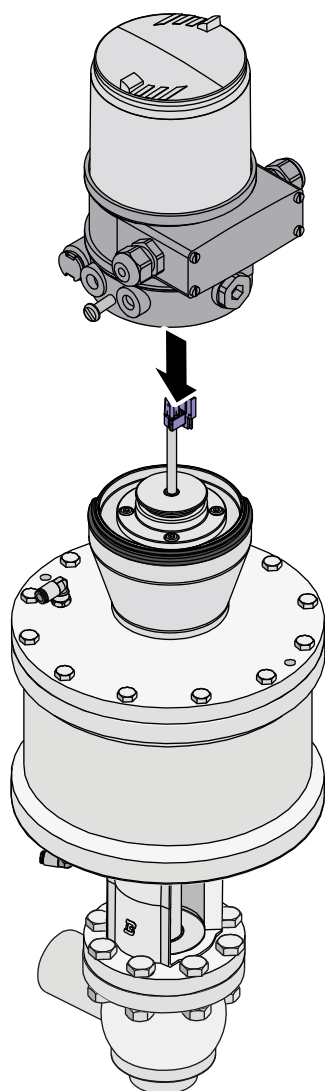
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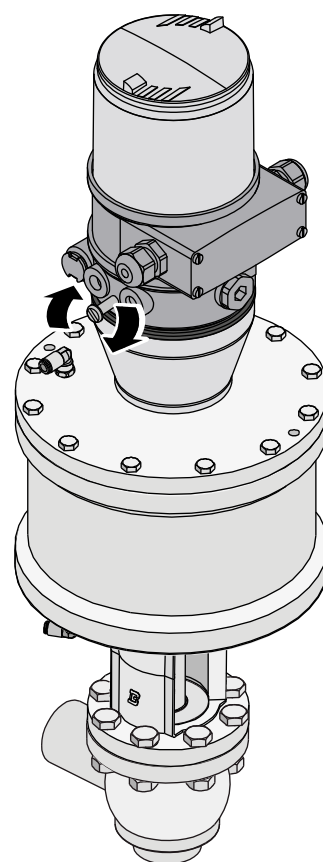
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# 11 Annexes



EC Declaration of Conformity

## EC DECLARATION OF CONFORMITY OF THE MACHINERY

(EC) 2006/42, Annex. II, p. 1 A

### BARDIANI VALVOLE S.p.A.

Via G. di Vittorio 50/52 – 43045 Forno di Taro (Pr) – Italia

#### Declares

*under its own responsibility that the machine:*

|                       |                        |
|-----------------------|------------------------|
| Type:                 | <b>Pneumatic valve</b> |
| Model:                | #####                  |
| Serial number:        | #####                  |
| Function:             | <b>Fluid handling</b>  |
| Year of construction: | ####                   |
| Reference             | #####                  |

complies with all relevant provisions of the following EC directive:

**(EC) 2006/42 MACHINERY**

and also comply with the following EC Directives and Regulations:

**(EU) 2014/30 ELECTROMAGNETIC COMPATIBILITY DIRECTIVE (EMC)**

**(EC) 2023/2006** and subsequent amendments and additions with regard on good manufacturing practices of materials and articles intended to come into contact with food

and the following harmonized standards, rules and / or technical specifications applied:

EN ISO 12100:2010

REGULATION (EC) 1935/2004 and subsequent amendments and additions with regard to steel and elastomers in contact with the product

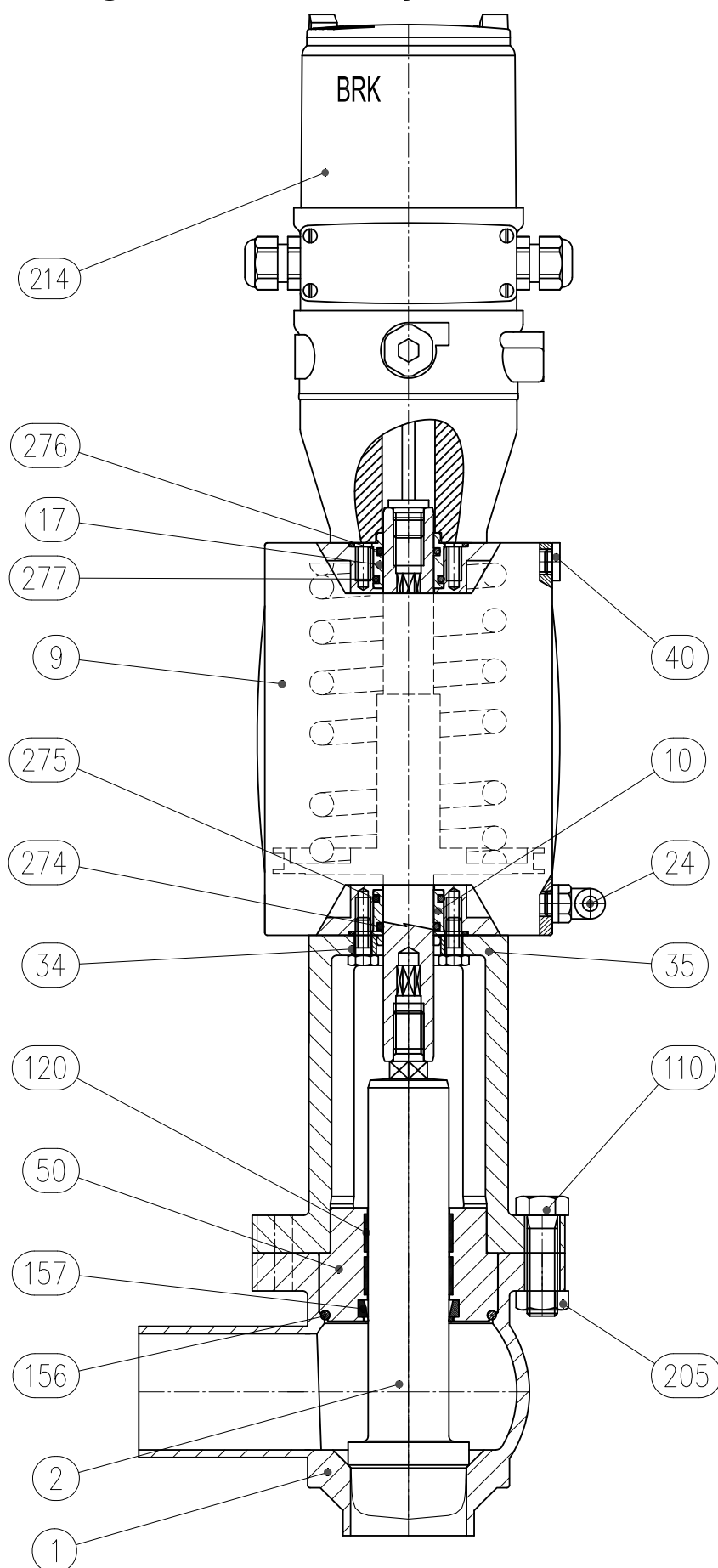
Forno di Taro  
###.###.####

\_\_\_\_\_  
Legal Representative



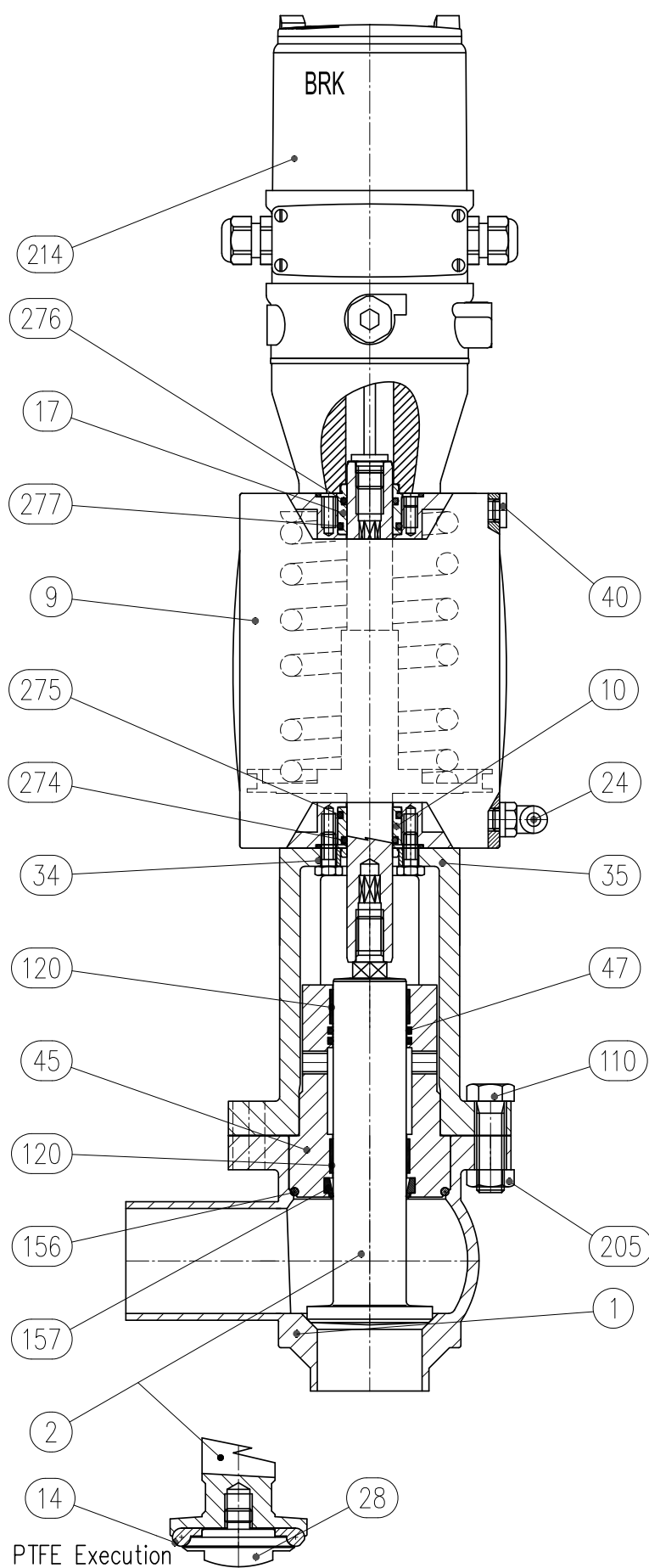
BARDIANI VALVOLE S.p.A.  
Via G. di Vittorio 50/52  
43045 Forno di Taro (Pr) ITALY  
Reg. Impr. Parma, C.F. - P.I.V.A. n. 01511810341  
R.E.A. Parma n. 159144 • Cap. Soc. € 1.186.800 i.v.

## 12 2D diagram BBZQM cyl 108-156



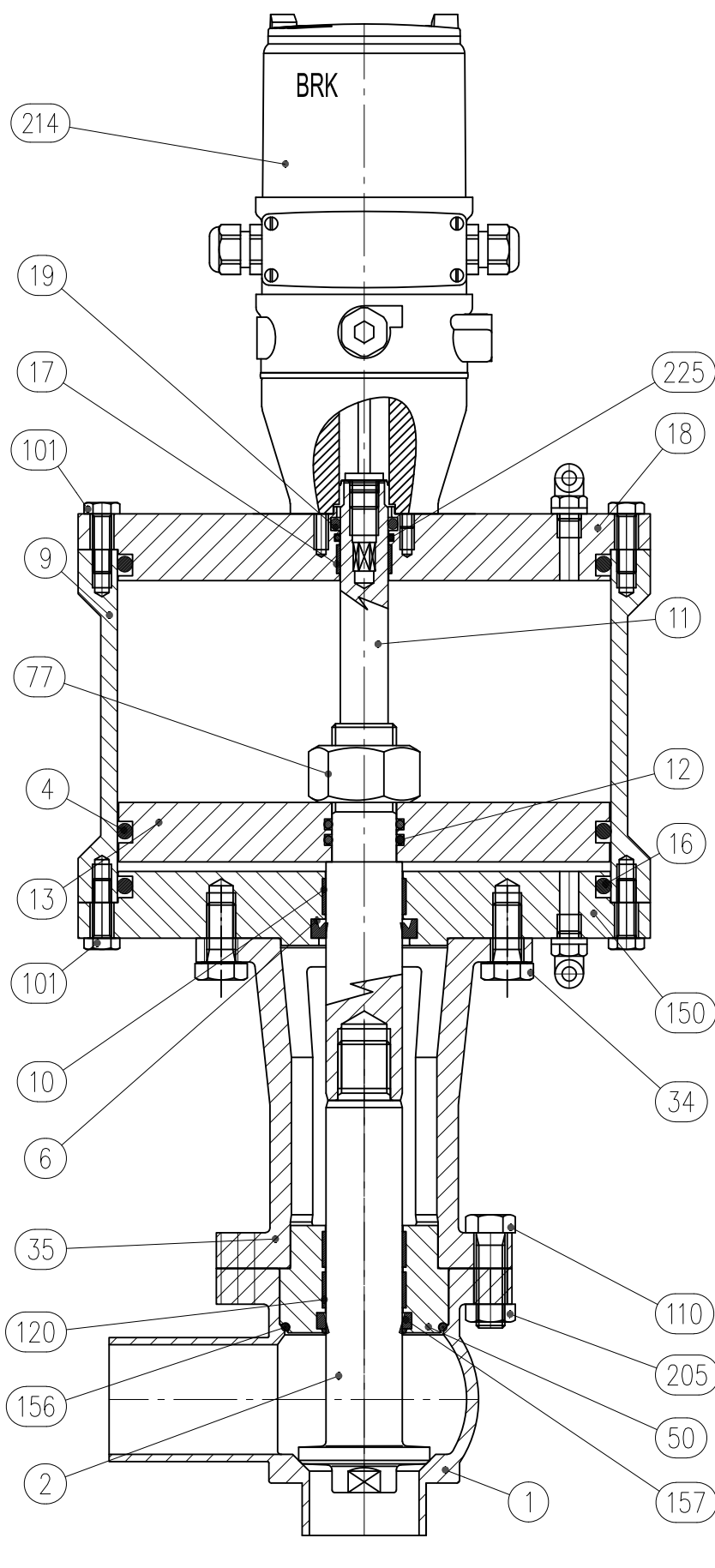
[A S BBZQM-108-156]

# 13 2D diagram BBYQM cyl 108-156



[A S BBZQM-108-156]

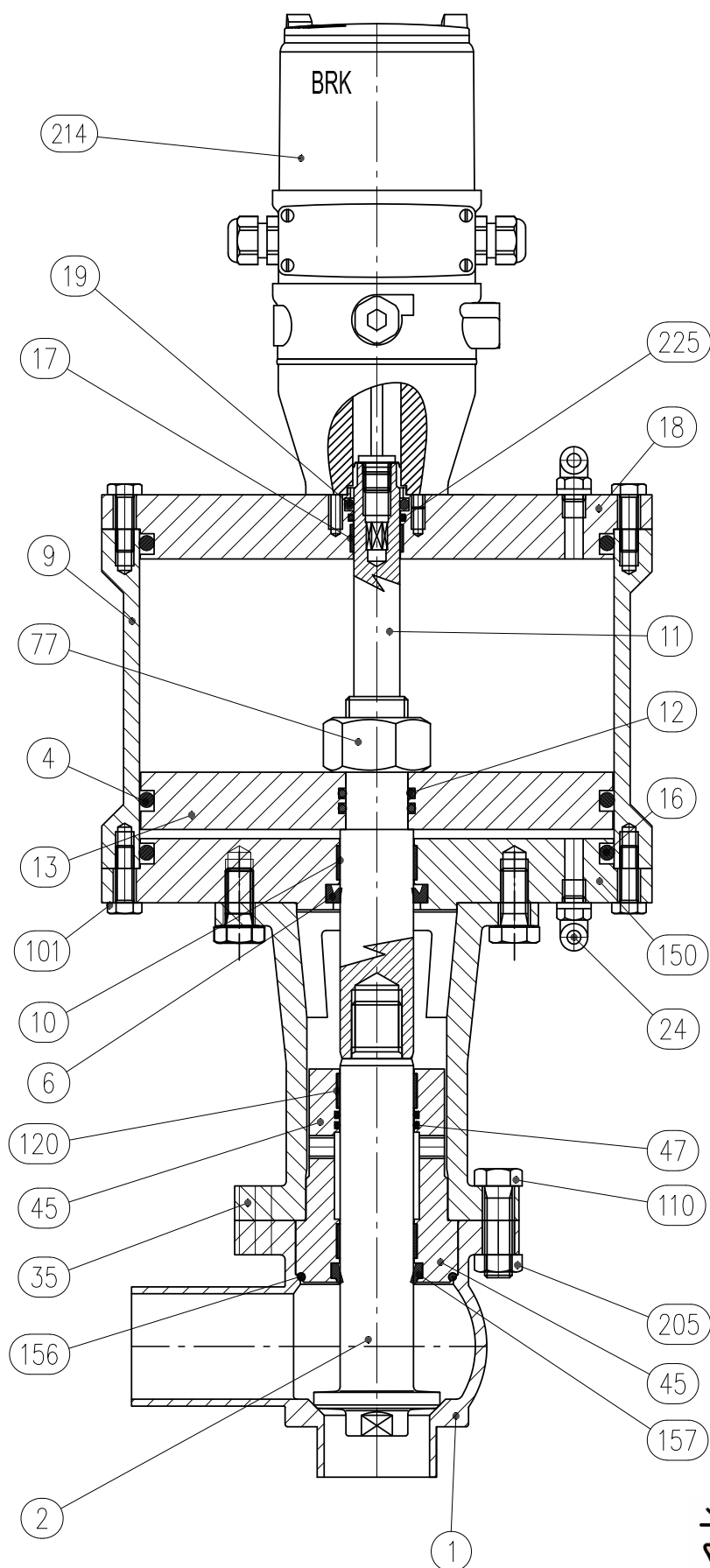
## 14 2D diagram BBZQM cyl 207-360



[A S BBZQM-207-360]



## 15 2D diagram BBYQM cyl 207-360



[A S BBZQM-207-360]

# 16 Warranty

## 1. VALIDITY

Bardiani Valvole's Products are manufactured in compliance with the technical specifications laid out in their "Instruction, Use and Maintenance Manual" and are fully compliant with the directives specifically mentioned in these manuals.

Bardiani Valvole S.p.A. guarantees its own Products against any design and/or construction and/or material defects and/or faults for a period of 12 (twelve) months from the date of delivery.

Notification of any Product defects and/or faults must be sent in writing to Bardiani Valvole S.p.A. within 8 (eight) days from their detection, providing adequate documentation of the defect/fault encountered as evidence.

Services provided in the warranty period shall not result in an extension of the warranty beyond the stipulated 12 (twelve)-month period, as this warranty validity period is to be considered mandatory.

## 2. CONTENTS OF THE WARRANTY

Notwithstanding and without prejudice to the rights of the Buyer, which may be acknowledged by applicable law, this warranty is to be intended as limited, at the discretion of Bardiani Valvole S.p.A., to the repair and/or replacement of the Product and/or part of the Product and/or its components which is/are found to be defective due to design and/or manufacturing and/or material faults.

In the event of repair and/or replacement of the Product and/or any one of its parts and/or components, any returned item/s shall become the property of Bardiani Valvole S.p.A. and the relative shipping costs shall be charged to Bardiani Valvole S.p.A.

Bardiani Valvole S.p.A., shall be under no obligation to compensate for any immaterial and/or indirect damages and shall in no way be held liable for consequential damages and/or losses, such as (by way of example only), damages due to loss of business, contracts, opportunities, time, production, profits, goodwill, image etc.

No retailer or distributor or dealer or agent or representative or employee or person appointed by Bardiani Valvole S.p.A. is authorized to make any amendments and/or integrations and/or extensions to this warranty.

## 3. WARRANTY EXCLUSIONS

- Elastomers are expressly excluded from this warranty.
- This warranty does not cover design faults emerging whenever a Product is manufactured by Bardiani Valvole S.p.A. based on designs and/or technical specifications provided by the Buyer.
- Moreover this warranty excludes the following:
  - faults and/or defects resulting from incorrect and/or unsuitable and/or inadequate transportation of the Product;
  - faults and/or defects resulting from failure to comply with the indications laid out in the "Instruction, Use and Maintenance Manual" with regards to installation of the Product or in any event caused by incorrect and/or unsuitable and/or improper installation;
  - faults and/or defects resulting from failure to comply with indications laid out in the "Instruction, Use and Maintenance Manual" with regards to use and/or maintenance operations and/or storage of the Product or in any event caused by incorrect and/or unsuitable and/or improper use and/or maintenance operations and/or storage;
  - faults and/or defects due to normal wear and tear of the Product and/or its parts and/or its components;
  - faults and/or defects in the Product and/or its parts and/or its components for work and/or repairs being carried out by unskilled staff or staff that has not been authorised by Bardiani Valvole S.p.A.;
  - faults and/or defects in the Product and/or its parts and/or its components due to it/them being dropped and/or banged and/or dented and/or misused and/or tampering and/or breakage and/or accidents or in any event due to negligence and/or carelessness and/or neglect by the Buyer and in general for any causes not attributable to design and/or manufacturing and/or material defects;
  - faults and/or defects in the Product and/or its parts and/or its components caused by other events beyond the control of Bardiani Valvole S.p.A., such as force majeure or unforeseeable circumstances.

## 17 Recommendations

- 1.** 1.Consultation of the "Instruction, Use and Maintenance Manual" is mandatory prior to the installation, use and maintenance of the products of all Products. All the information, indications, specifications, technical details provided herein are based on test data which the Manufacturer Bardiani Valvole S.p.A. holds to be reliable nevertheless the above is not deemed to be assumed as fully exhaustive inasmuch as not every possible use has been envisaged.
- 2.** 2.All the illustrations and drawings provided are to be intended as indicative and therefore not binding, the illustrations being for presentation purposes only.
- 3.** 3.It is the Buyer's duty to assess the suitability of the products for the use he intends to make of the same prior to placing the order as he/she will take the risks and accept liability in case of incorrect choice and use of the Products.
- 4.** 4.The Manufacturer strongly recommends the Buyer to contact their sales team and request any information that might be needed in relation to the specifications and uses of the Products.
- 5.** 5.The information provided in this manual refers to the standard products manufactured by Bardiani Valvole S.p.A. and therefore cannot be assumed to apply to customized products as well.
- 6.** 6.Bardiani Valvole S.p.A. reserves the right to amend and/or integrate and/or update the data and/or information and/or technical details relative to Products at any time and without prior notice. Please visit the website [www.bardiani.com](http://www.bardiani.com), where the latest updated of the "Instruction, Use and Maintenance Manual" can be found".
- 7.** 7.The content and validity of the warranty covering the Products of Bardiani Valvole S.p.A are dealt with in the relevant section in the "Instruction, Use and Maintenance Manual" which constitutes an integral part of the Products themselves.
- 8.** 8.Bardiani Valvole S.p.A., shall not in any way be held liable for immaterial, indirect and consequential damages, such as (by way of example only), damages or loss of business, contracts, opportunities, time, production, profits, goodwill, image etc..

NOTES

NOTES

Bardiani Valvole S.p.A.  
via G. di Vittorio, 50/52 - 43045 Fornovo di Taro (PR) - Italy  
tel. +39 0525 400044 - fax +39 0525 3408  
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