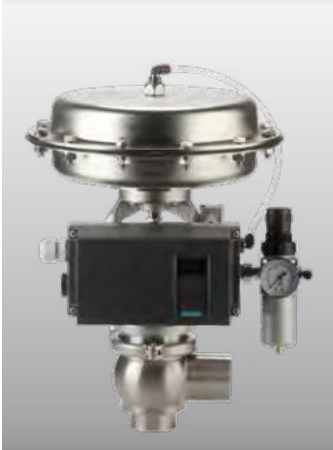


**Instruction, Use and Maintenance Manual**



**MODULATING VALVE**

**BBZK - BBYK -  
BBWK1**

**Bardiani Valvole S.p.A.**

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MANUAL REVISION	DATE

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# INTRODUCTION

This "Instruction, Use and Maintenance Manual" has been drawn up expressly for expert technical personnel. Consequently any information which can easily be deduced from reading the text and/or examining the illustrations and/or drawings provided herein shall not be the object of further explanation.

**This "Instruction, Use and Maintenance Manual" forms an integral part of the valve. Before proceeding with installation, use or maintenance of each type of valve it is compulsory to read and understand this manual.**

**This manual must be kept for all future reference**

**When using valves in compliance with Directive 2014/34/EU (ATEX) it is mandatory to consult a specific manual.**

It being understood that the essential characteristics of the valve type described herein shall remain the same, the manufacturer reserves the right to amend and/or integrate and/or update the data and/or information relative to use of the valve provided in the "Instruction, Use and Maintenance Manual", at any time and without prior notice.






**The latest, updated version of the "Instruction, Use and Maintenance Manual" is always available at [www.bardiani.com](http://www.bardiani.com)**






**The manufacturer shall not in any way be held liable for any consequences resulting from a failure to correctly observe the prescriptions provided in the relative manual concerning installation, use, maintenance and care of the product.**







All rights reserved. It is prohibited, without prior written authorization from the manufacturer, to totally and/or partially reproduce and/or transmission and/or record any part of this "Instruction, Use and Maintenance Manual" using any means and/or support, including IT and/or electronic and/or mechanical and/or paper formats, or by means of any other system to save and/or reuse it for purposes different to the exclusive use by the purchaser.








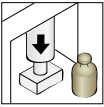



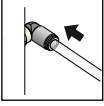
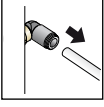



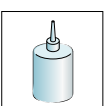



# 1 Safety, Warning and Mandatory Signs

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 Hand crushing hazard Never touch moving parts if the actuator is supplied with compressed air.
	<b>WARNING Heavy loads</b>	Exercise caution in executing the procedure 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 ASSEMBLY/DISASSEMBLY)		
Pictogram	Description	Notes
	<b>OBLIGATION General</b>	Special instructions must be followed to avoid injury to persons.
	<b>PROTECTIVE GLOVES</b>	Safety gloves must be available for handling objects which could cause hand injuries.
	<b>HARD HAT</b>	A hard hat must be worn during machine lifting operations to protect against hazards generated by suspended loads.
	<b>FOOTWEAR</b>	Use safety footwear to protect against the risks of falling objects during operations to transport the machine.
	<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.

MANDATORY SIGNS (FOR THE OPERATOR IN CHARGE OF MECHANICAL MAINTENANCE)		
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

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 control unit (consult the relative instruction manual).
	<b>ELECTRICAL DISCONNECTION</b>	Electrical disconnection from the control unit (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 FOODLUBE HI-TEMP 2 15254 grease or equivalent
	<b>APPLICATION OF FOODSAFE GREASE</b>	Use FOODLUBE Multi-paste grease or equivalent
	<b>APPLICATION OF MULTIPURPOSE FOODSAFE GREASE</b>	Use AGIP GREASE MU EP 2 SE grease or equivalent
	<b>THREADLOCK APPLICATION</b>	Use SPEED BOND threadlock or similar
	<b>AIR PRESSURE</b>	Refer to the table on page 10 in the "Servo-control pressure range" section.
	<b>SEQUENCE OF OPERATIONS</b>	Sequence of assembly and disassembly operations
	<b>OPTIONAL</b>	

## 1.1 Operator training



All persons who have to work on the valve must be qualified to carry out the relative maintenance tasks.

They must be informed as to the possible hazards involved and must observe all the safety instructions set out in this manual.

Allow expert personnel only to work on the electrical components.

## 2 Safety

### 2.1 General safety warnings



#### **Intended use**

Bardiani valves are dedicated exclusively to fluid handling applications.

#### **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;
- 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 any installation, use or maintenance which fails to comply with the indications provided in this manual!**

### 3 Technical data

VALVE DATA	
Maximum pressure	10 bar
Storage temperature	From -10°C to +25-C
Servo-control pressure range	3 - 15 psi (0.21 - 1.05 bar) 6 - 18 psi (0.42 - 1.25 bar) 6 - 30 psi (0.42 - 2.07 bar) 9 - 32 psi (0.62 - 2.21 bar)
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, HNBR, 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
Pneumatic actuator stroke	15 - 20 mm

VAPOUR BARRIER DATA	
Connectors	1/8" BSP
Steam maximum temperature	130°C
Seals	FKM

GASKET MATERIALS COMPATIBILITY				
Product	EPDM	FKM	HNBR	MVQ
Temperature (applications with air)	From -10 to +140°C	From -10 to +200°C	From -10 to +130°C	From -70 to +230°C
Caustic soda 2% *	60°C	30°C	To be checked	Unsuitable
Nitric Acid 2% *	60°C	80°C	To be checked	Unsuitable
Saturated steam 125°C	Suitable	To be checked	Suitable	Unsuitable
Greases	Unsuitable	Suitable	Suitable	Unsuitable
Alcohols	Suitable	Unsuitable	Suitable	Suitable



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

The valves with DN equal or lower than DN25 are not included in compliance with Article 4, paragraph 3.

Valves designed for use with gas, liquid gas, gases dissolved under pressure, steam and those liquids with a vapour pressure at maximum admissible temperature exceeding 0.5 bar at normal atmospheric pressure (1.013 mbar) are included within the following limits:

- The valves with DN ranging from 32 to 100 (included) with Group 1 fluids;
- The valves with DN equal or higher than DN125 with Group 2 fluids.

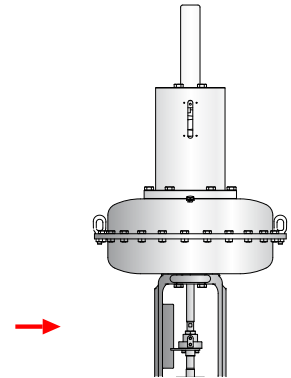
The end user must carry out noise assessment testing once the valve has been installed in the plant.

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

## 4 Checking / Unpacking / Lifting

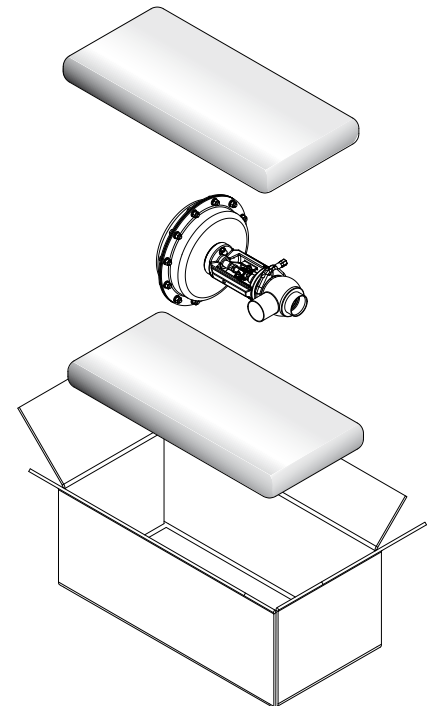
### 1. CHECK:

- 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.

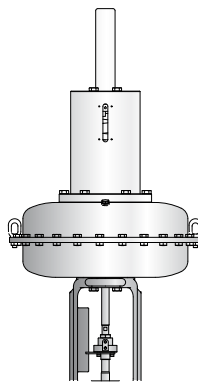


**WARNING!**

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.

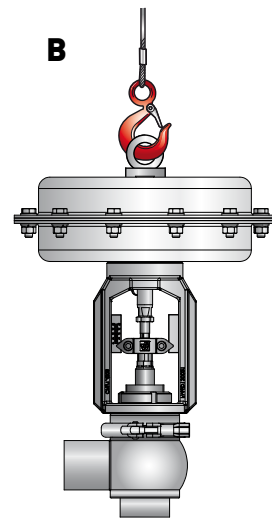
BBZK	
Size DN	Lifting method
10-25	A
40	A
50	A
65	A
80	B
100	B
125	B
150	B

**A**



Weight up to 25 kg

**B**



Weight between 25 kg and 50 kg



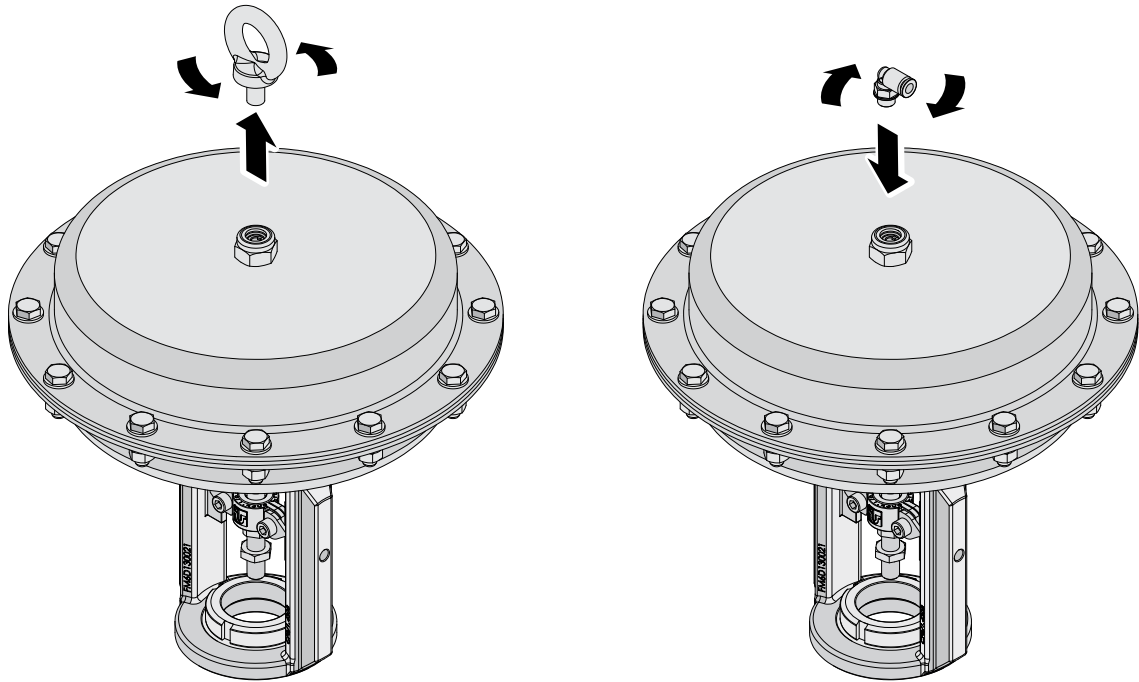
**WARNING!**

The figures above are used purely to represent the methods and procedures for hoisting the valves. 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

Once the valve has been installed, remove the eyebolts and install the air fitting.



### **WARNING!**

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.



### 1. ELECTRICAL AND PNEUMATIC ENERGY SUPPLY

- Use expert personnel for installation/uninstallation operations;
- Check the power supply to the positioner is correct (consult the relative instruction manual).

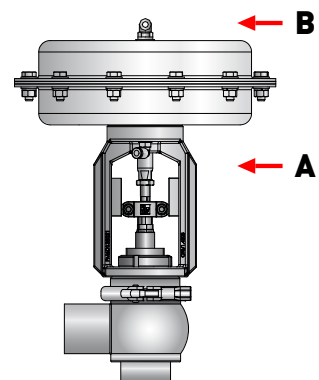
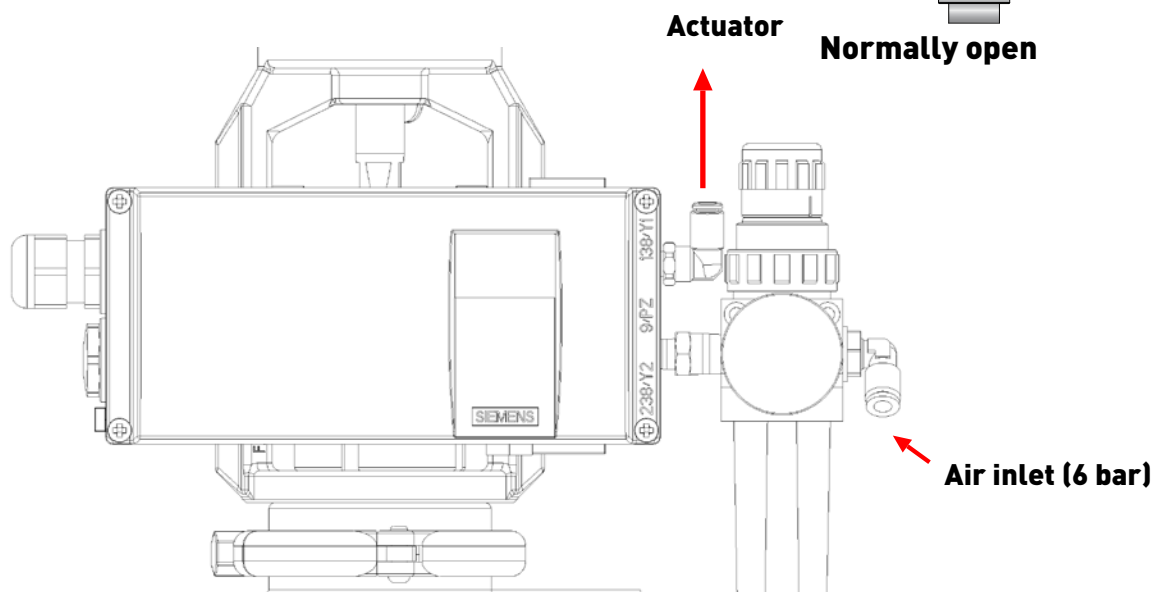
A = Pneumatic power supply  
 B = Air vent



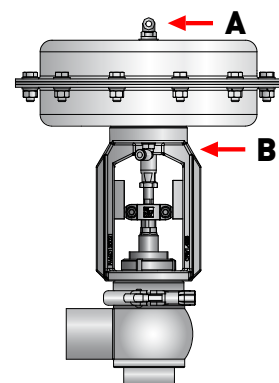
Check the supply pressure on the valve head is correct.



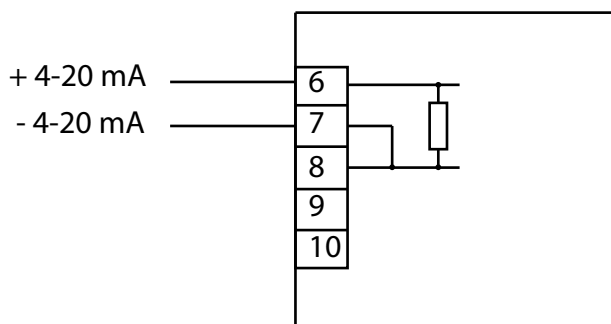
### 2. CONNECTIONS



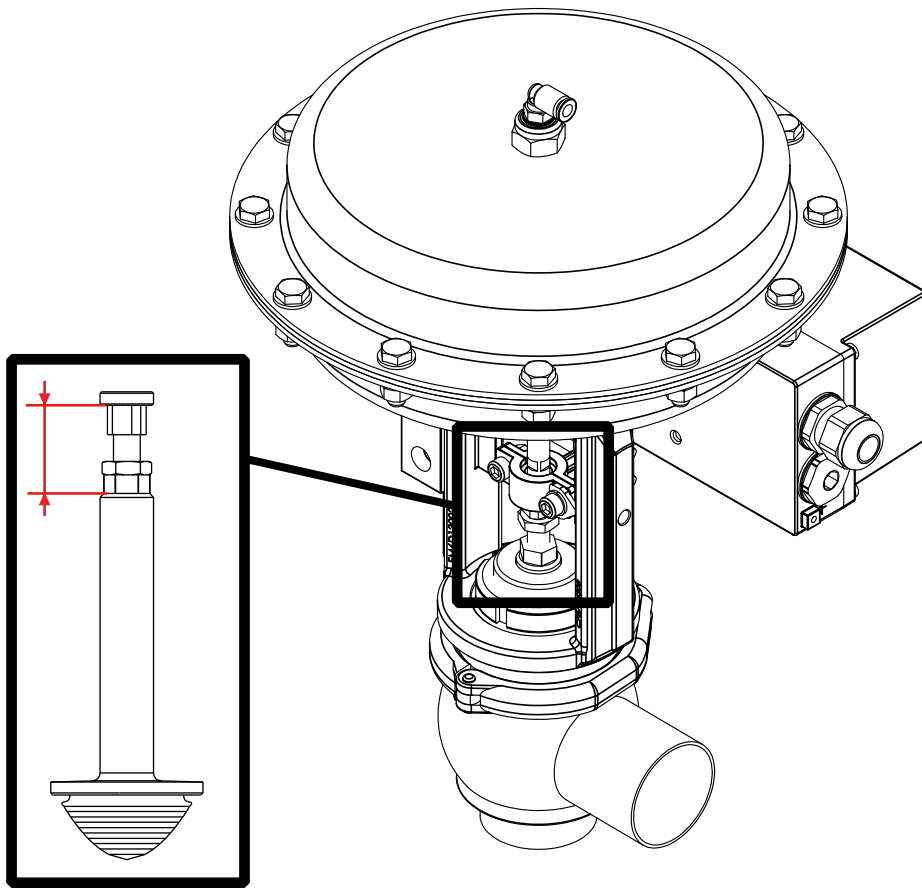
**Normally closed**



**Normally open**

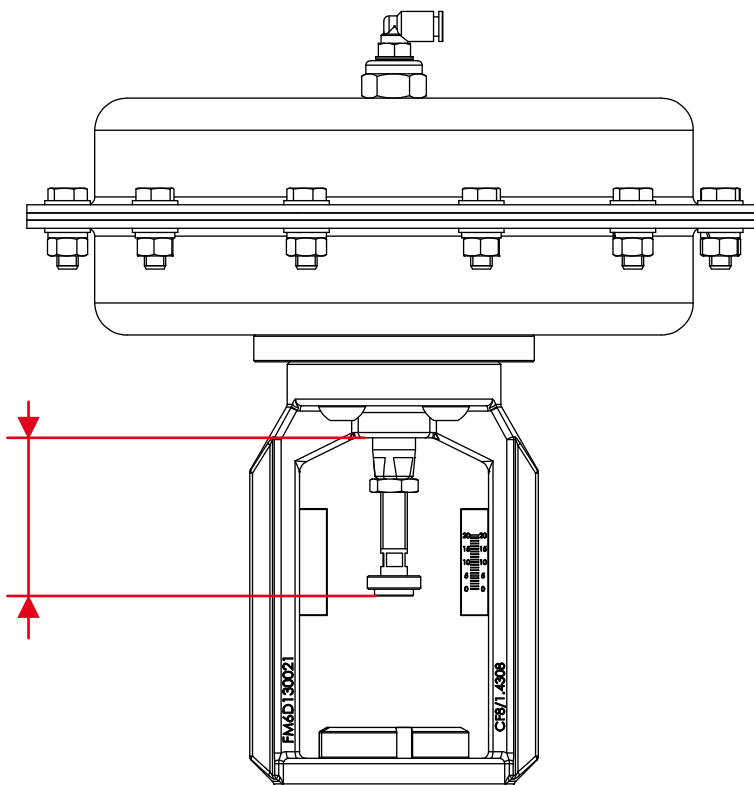


**3. CORRECT VALVE MEMBER ADJUSTMENT**



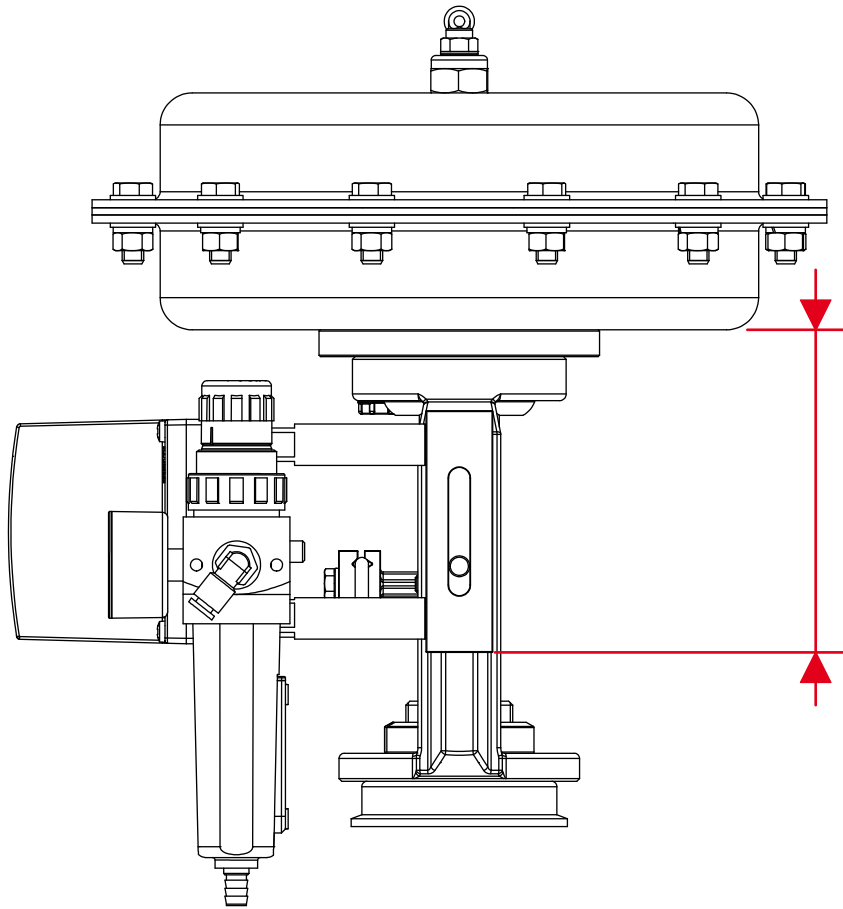
DN		PNEUMATIC ACTUATOR								
		NC						NO		
		T200 3-15psi	T200 6-30psi	T275 3-15psi	T275 9-32psi	T360 3-15psi	T360 9-32psi	T200 6-18psi	T275 3-15psi	T360 3-15psi
┌	3.2	29	32	32	32	32	32	28	28	28
	4.7	32	32	32	32	32	32	28	28	28
	6.3	32	32	32	32	32	32	28	28	28
	9.5	32	32	32	32	32	32	28	28	28
	12.7	32	32	32	32	32	32	28	28	28
	19	32	32	32	32	32	32	28	28	28
	25	30	30	30	30	30	32	34	30	-
	32	36	36	35	35	-	-	-	35	35
	40	36	36	35	35	35	-	36	35	35
	50	35	35	36	36	35	35	-	35	35
	2"1/2	-	-	24	24	24	24	-	24	24
	65	-	-	24	24	24	28	-	24	24
	3"	-	-	31	31	30	30	-	31	30
	80	-	-	31	31	30	30	-	31	30
100	-	-	36	36	36	36	-	37	37	

**4. CORRECT ACTUATOR STEM ADJUSTMENT**



DN	PNEUMATIC ACTUATOR									
	NC						NO			
	T200 3-15psi	T200 6-30psi	T275 3-15psi	T275 9-32psi	T360 3-15psi	T360 9-32psi	T200 6-18psi	T275 3-15psi	T360 3-15psi	
└	3.2	69	66	66	66	66	66	47	47	47
	4.7	66	66	66	66	66	66	47	47	47
	6.3	66	66	66	66	66	66	47	47	47
	9.5	66	66	66	66	66	66	47	47	47
	12.7	66	66	66	66	66	66	47	47	47
	19	66	66	66	66	66	66	47	47	47
	25	66	64	64	64	66	66	41	45	-
	32	63	63	68	68	64	-	-	40	39
	40	60	63	71	68	64	-	40	40	39
	50	63	63	68	68	64	64	-	40	40
	2"1/2	-	-	66	66	68	68	-	39	39
	65	-	-	66	66	68	68	-	38	38
	3"	-	-	67	67	66	66	-	39	39
	80	-	-	67	67	66	66	-	39	39
	100	-	-	64	64	64	64	-	39	39


**5. CORRECT FASTENING OF SIEMENS POSITIONER**



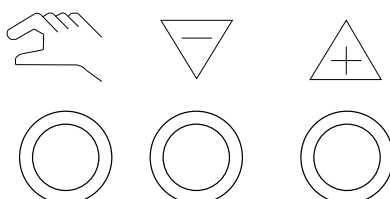
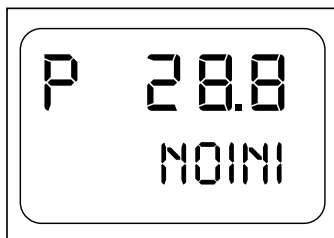
DN		PNEUMATIC ACTUATOR								
		NC						NO		
		T200 3-15psi	T200 6-30psi	T275 3-15psi	T275 9-32psi	T360 3-15psi	T360 9-32psi	T200 6-18psi	T275 3-15psi	T360 3-15psi
└	3.2	125	120	120	120	120	120	136	136	136
	4.7	120	120	120	120	120	120	136	136	136
	6.3	125	120	120	120	120	120	136	136	136
	9.5	120	120	120	120	120	120	136	136	136
	12.7	120	120	120	120	120	120	136	136	136
	19	120	120	120	120	120	120	136	136	136
	25	115	120	120	120	120	120	136	136	-
	32	115	115	115	115	-	-	-	122	122
	40	115	115	115	115	115	-	-	122	122
	50	115	115	115	115	115	115	-	122	122
	2"1/2	-	-	115	115	115	115	-	122	122
	65	-	-	115	115	115	115	-	122	122
	3"	-	-	115	115	115	115	-	122	122
	80	-	-	115	115	115	115	-	122	122
	100	-	-	115	115	115	115	-	122	122

### 6. ENTERING 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  to enter programming mode

1

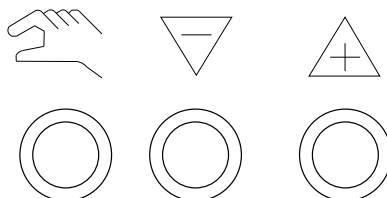
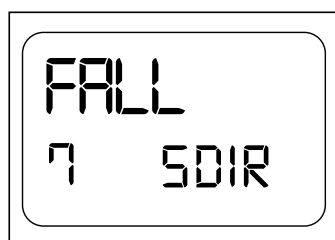


If a Normally Open head is being used, proceed to the next step, otherwise skip to point (4).

Press  to reach parameter 7 (SDIR).


Press  to set it to FALL

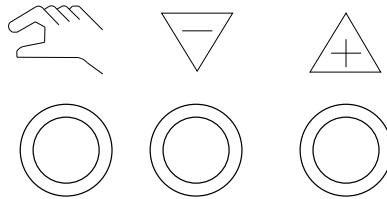
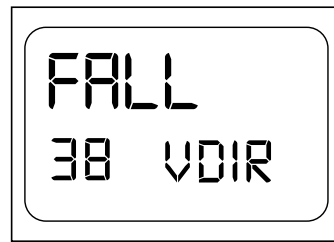
2




Press  to reach parameter 38 (YDIR).


3

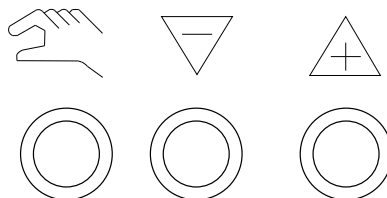
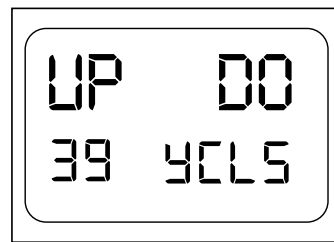
Press  to set it to FALL




Press  to reach parameter 39 (YCLS).

4


Press  to set it to uP do



Press and hold  to exit the programming menu.

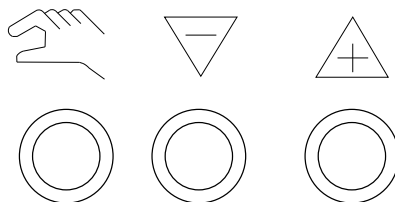
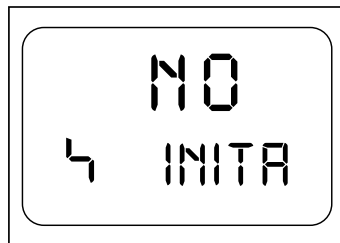
### 7. CALIBRATION


This procedure must be carried out every time the valve is disassembled.

Press and hold  to enter programming mode

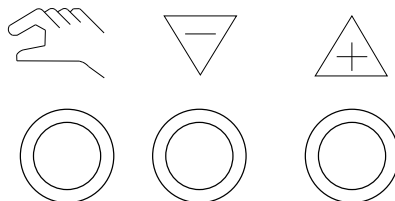
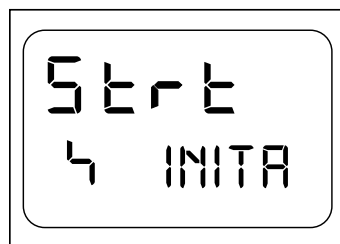
Press  to reach parameter 4 (INITA).

1



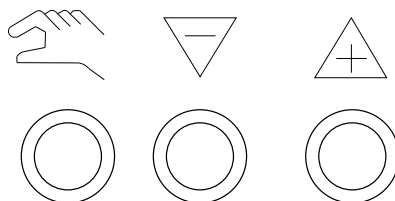
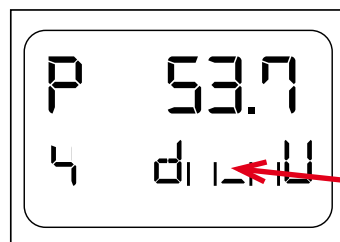
Press and hold  until self-calibration commences

2



If the positioner stops with the message (number 53.7 is an example, it may be different),

3





Move the ring nut indicated in the figure using a screwdriver

4



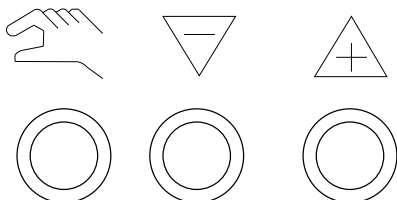
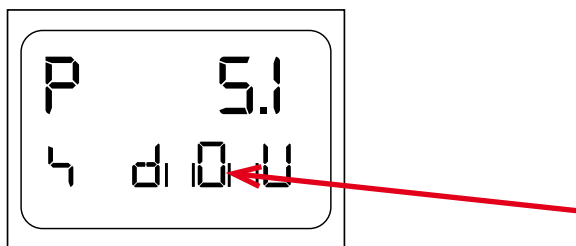
Turn the black ring nut on the side of the positioner

5



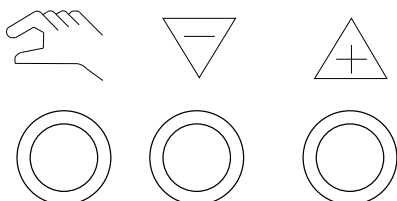
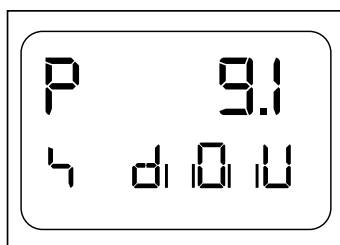
When the message becomes (an 0 must appear in the text in the second row),

6



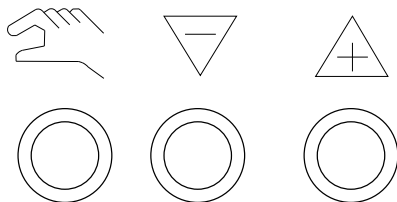
Press  to restart self-calibration

7



When **FINISH** appears on the display, calibration has been completed (number 53.7 is an example, it may be different)

8



Press




Press and hold

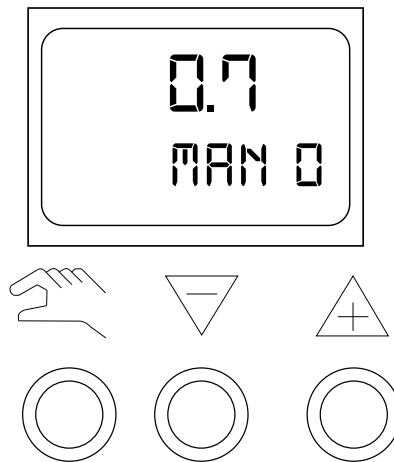


to exit the programming menu

9

Press  to set automatic operating mode

10



Move the ring nut left with a screwdriver

11



Parameters set for NC actuators
39 YCLS UP DO

Parameters set for NO actuators
7 SDIR FALL
38 YDIR FALL
39 YCLS UP DO



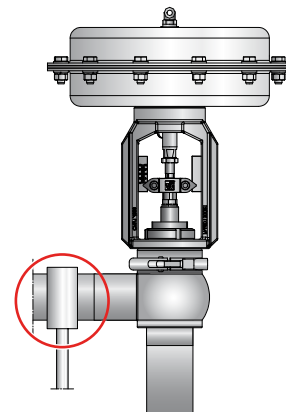
**7. REDUCING THE STRESS TO WHICH THE VALVE IS SUBJECTED:**

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



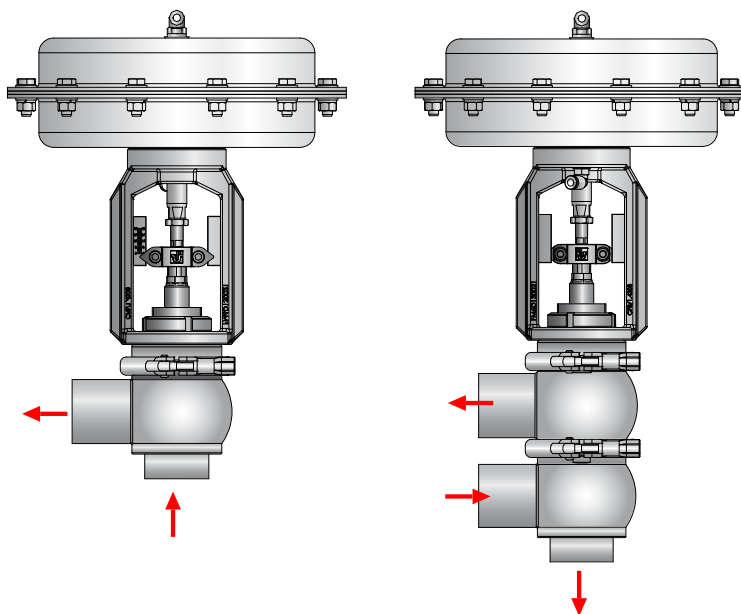
**WARNING!**

The seal seats may become deformed or cause valve malfunctioning.



**8. CORRECT DIRECTION OF FLOW:**

Flow in the opposite direction to valve member closure guarantees optimum modulating valve operation and regulation.



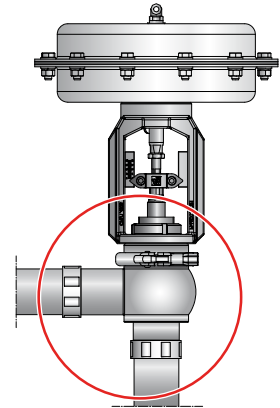
**WARNING!**

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.



**9. VALVE CONNECTIONS/CONNECTORS:**

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



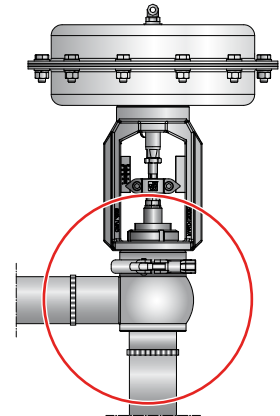
**10. WELDING THE VALVE BODY ONTO PIPING:**

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



**WARNING!**

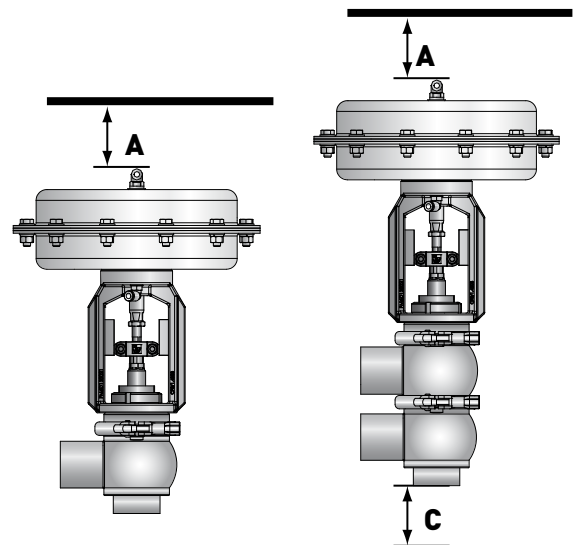
Hand crushing hazard. During operation there is a risk of crushing inside the valve body in the area between the actuator and the valve body.



**11. MINIMUM MAINTENANCE CLEARANCES:**

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

Valve dimension (DN)	BBZK A (mm)	BBYK A (mm)	C (mm)
10-25	255	255	240
40	280	280	255
50	290	290	270
65	300	300	285
80	315	315	300
100	340	340	315

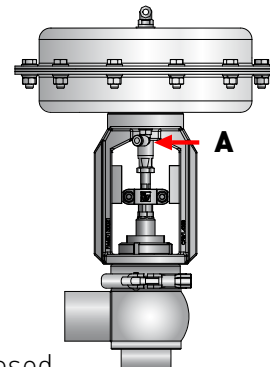


## 6 Operation

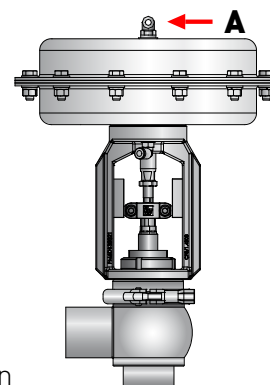


### 1. VALVE INSPECTION BEFORE OPERATION:

- Supply air to the actuator;
- Open and close the valve several times;
- Check that the valve works correctly and accurately.



Normally closed



Normally open

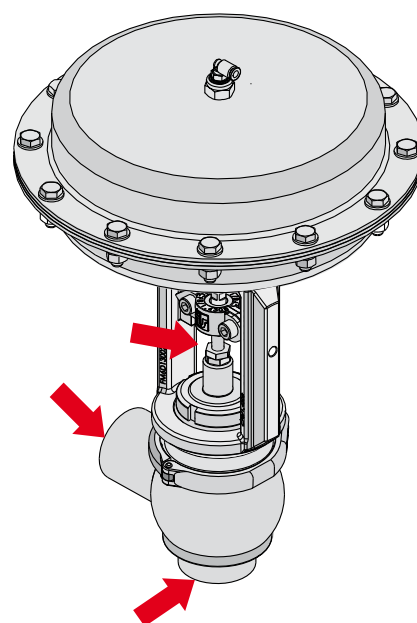


### WARNING!

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.



Check the supply pressure on the valve head is correct.



## 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 gaskets made from 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	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
	Impurities in the actuator	Actuator inspection and maintenance
	Incorrect valve body positioning	Disassemble and correctly reposition the valve body

# 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.



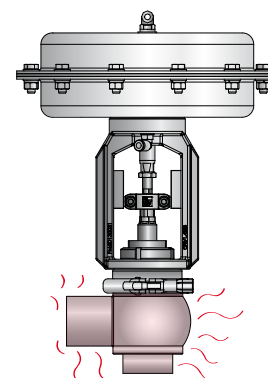
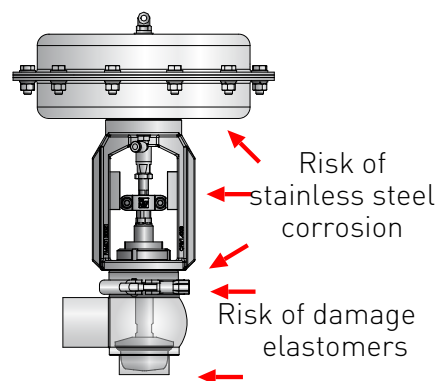
### WARNING!

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



### CAUTION

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



## 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.



#### **WARNING!**

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



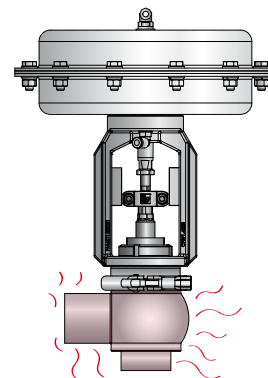
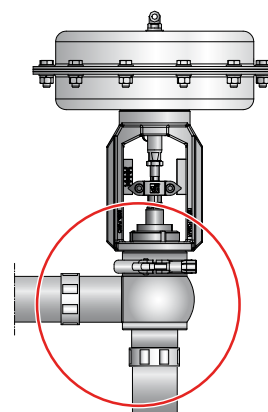
#### **WARNING!**

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



#### **WARNING!**

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.
- 



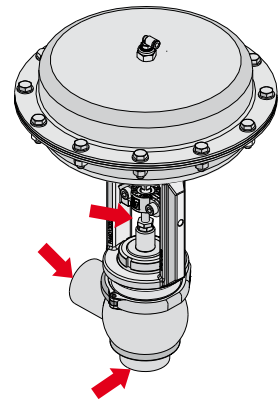
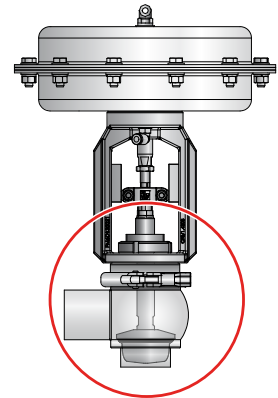
**WARNING!**

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:**

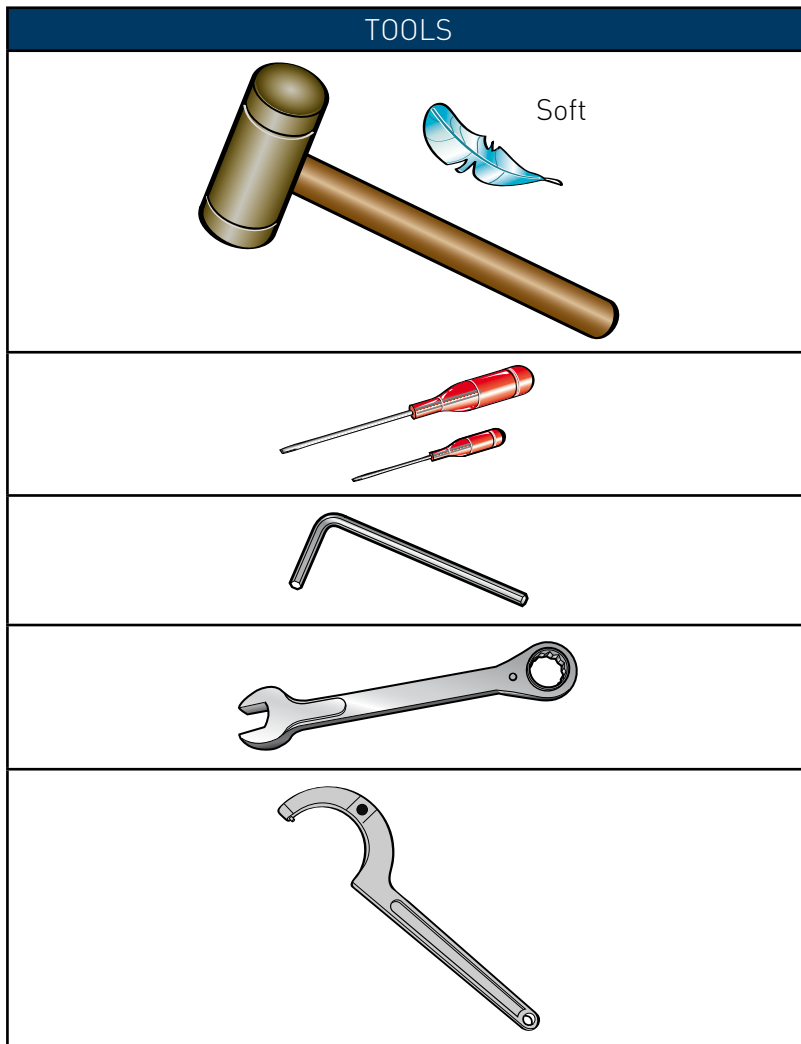
Always use original spare parts



**10.2 Scheduled maintenance**

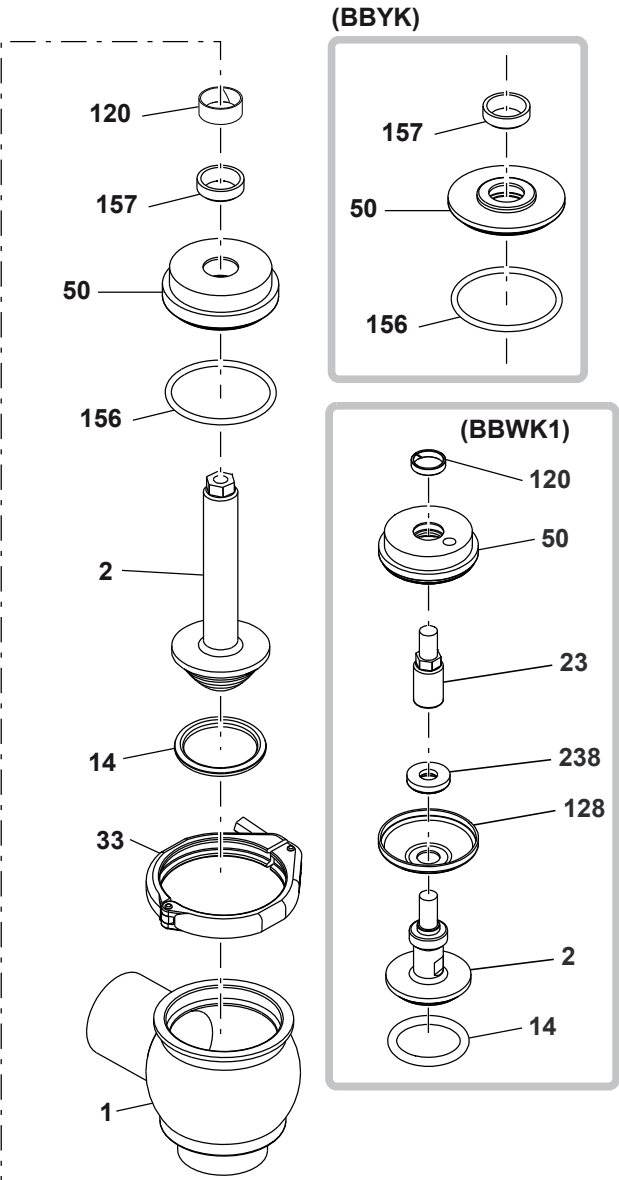
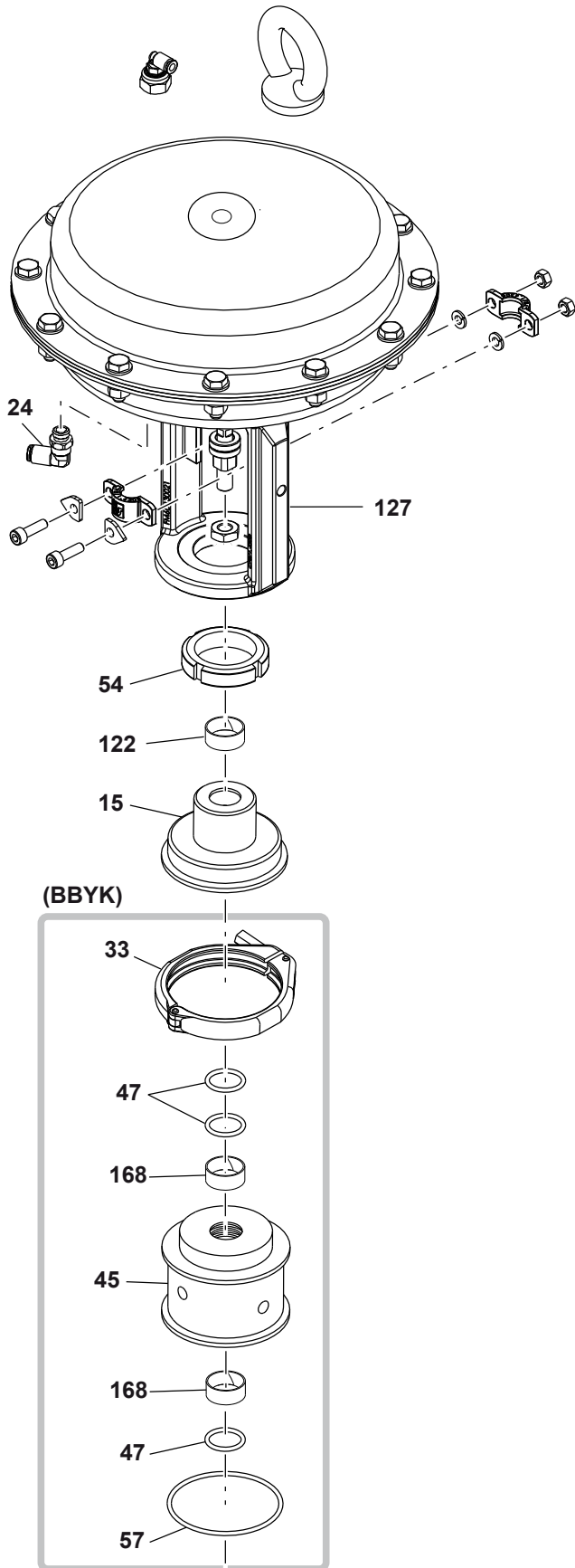
SCHEDULED MAINTENANCE	VALVE GASKETS	ACTUATOR GASKETS
Preventive	Replace after 12 months	Replace after 24 months
In the event of leaks	Replace at the end of the day	Replace in the event of leaks
Periodical	Check correct operation and that there are no leaks	Check correct operation and that there are no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

### 10.3 Tools useful for Disassembly/Reassembly

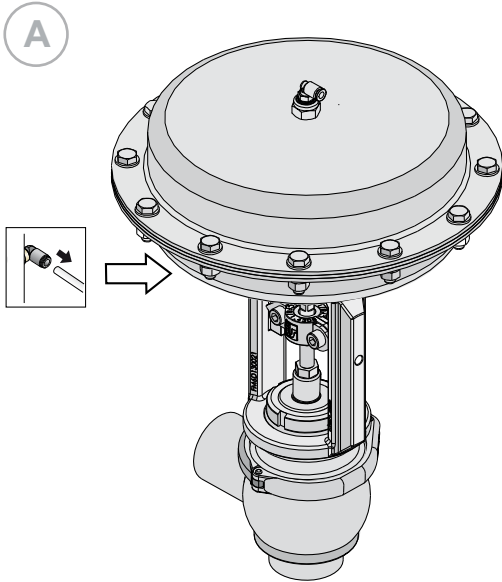


## 10.4 Modulating valve BBZK - BBYK - BBWK1

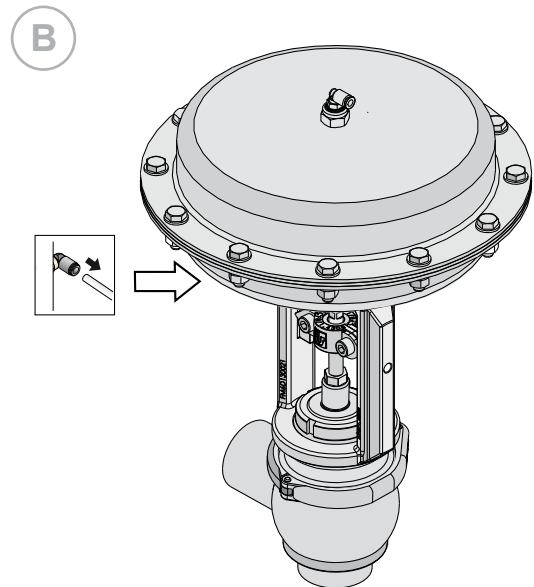
NO.	DESCRIPTION
1	Lower body
2	Valve member
14	Sealing ring
15	Yoke
23	Pin
24	Air coupling
33	Clamp
45	Steam barrier
47	Sealing ring
50	Gasket holder disc
54	Ring nut
57	Sealing ring
77	Nut
120	Bush
122	Bush
127	Pneumatic actuator
128	Diaphragm
156	Sealing ring
157	Sealing ring
168	Bush
238	Diaphragm nut



# 10.5 Disassembly of the BBZK - BBYK - BBWK1



[A S BBZK]

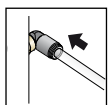


[B S BBWK1]

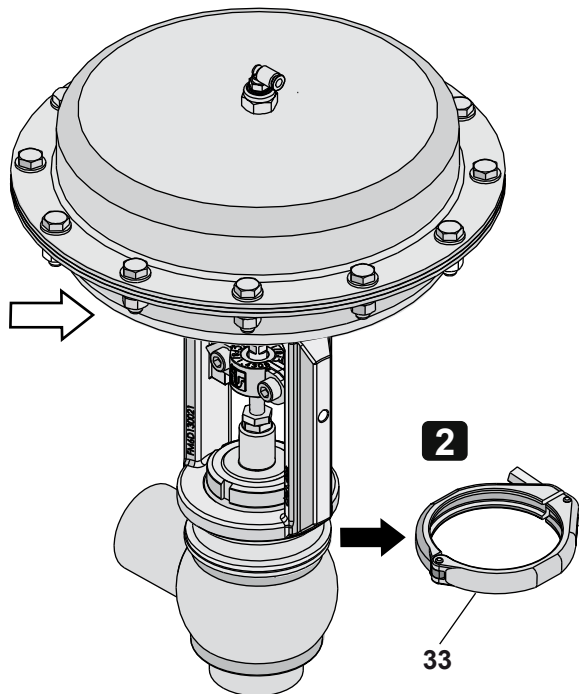
# A Disassembly of the BBZK - BBYK

(Normally closed)

1 a1

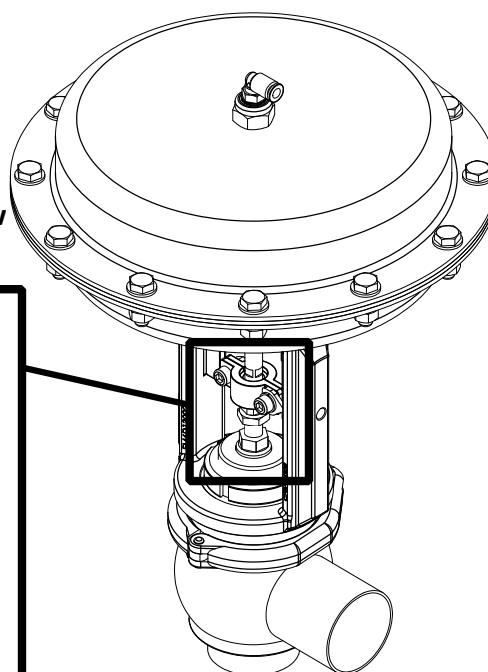
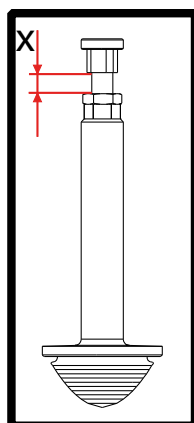


1

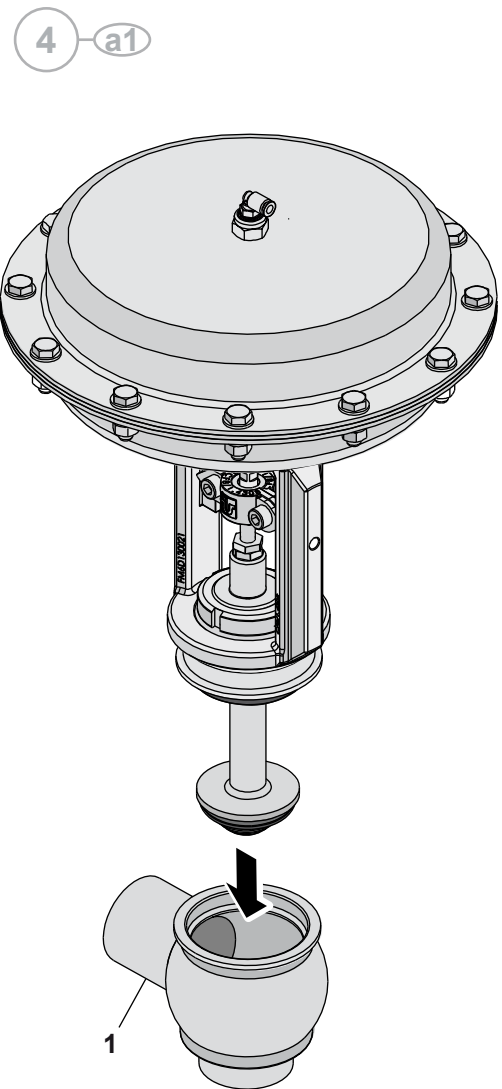
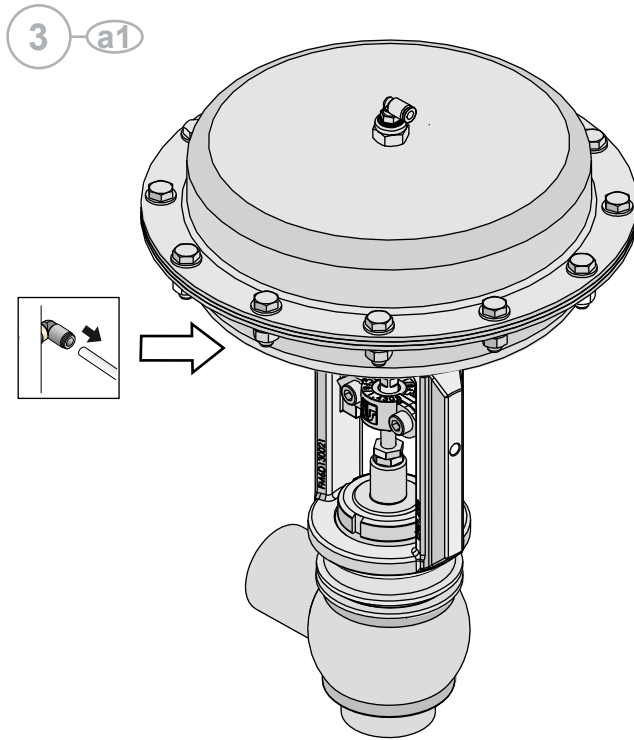


2 a1

Note the distance like show in the picture

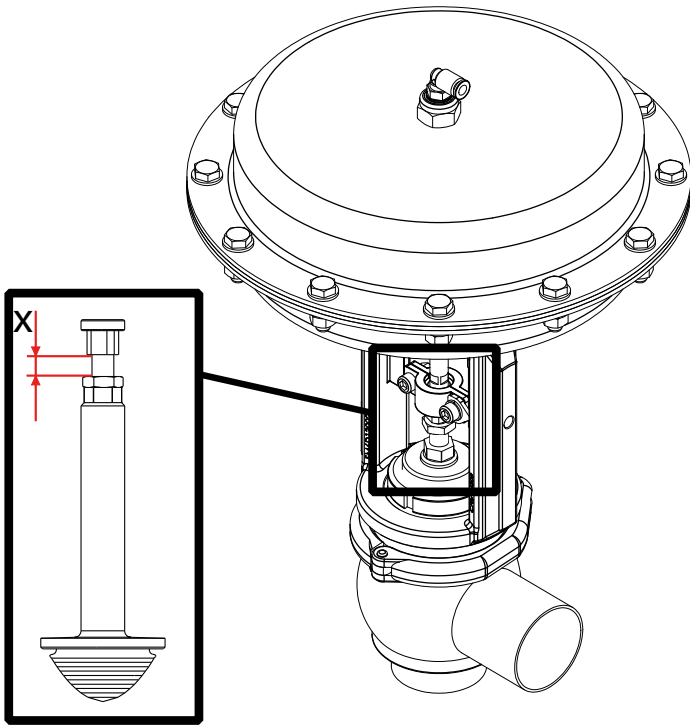






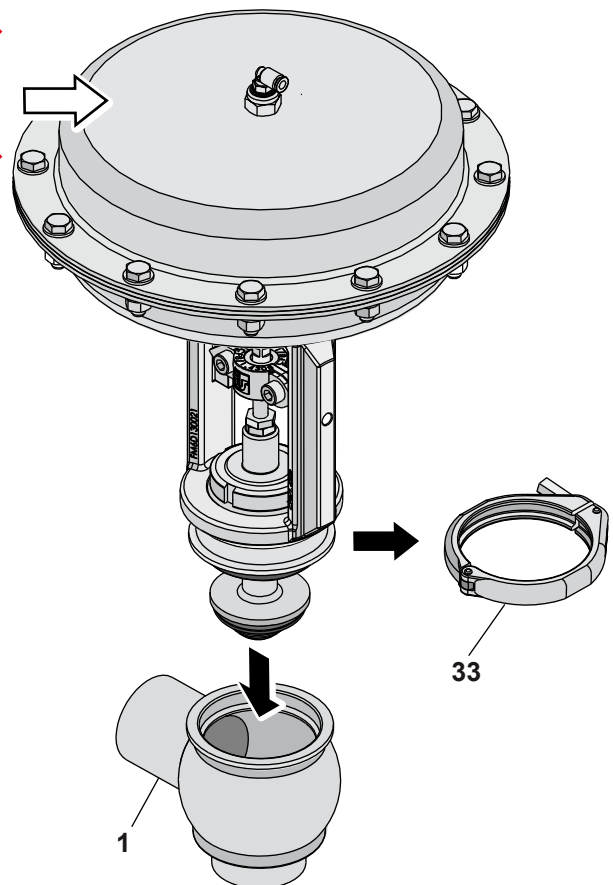
**(Normally open)**

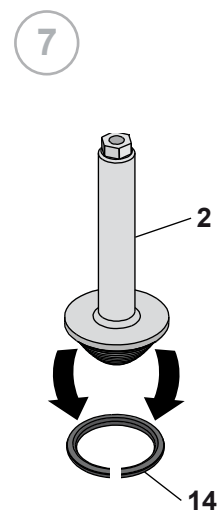
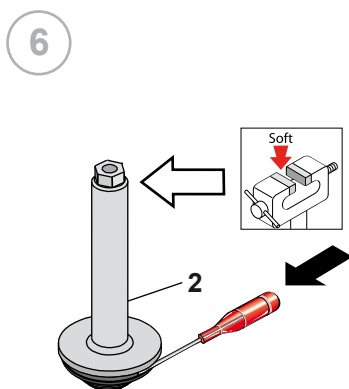
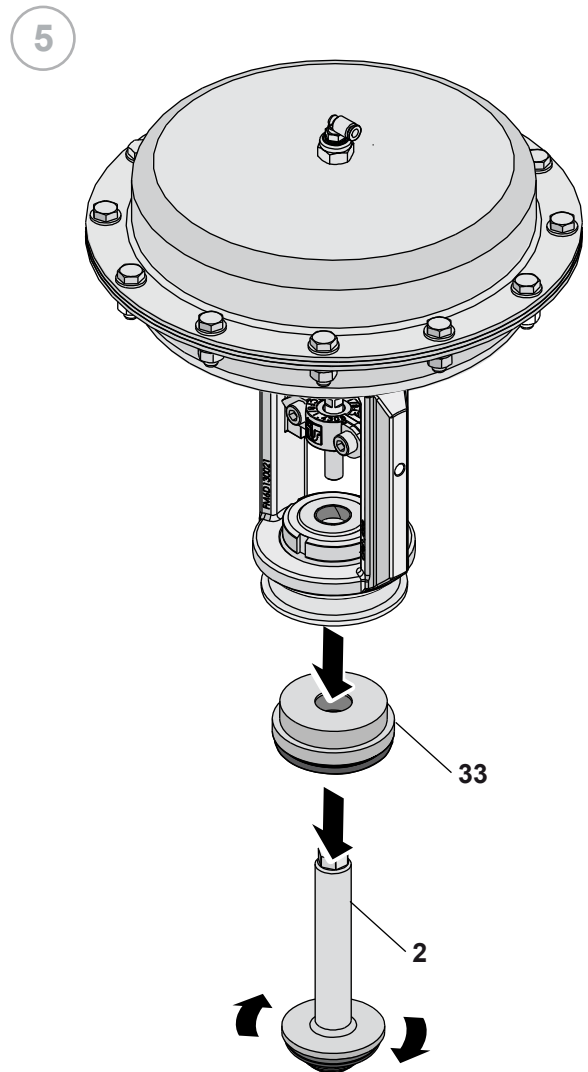
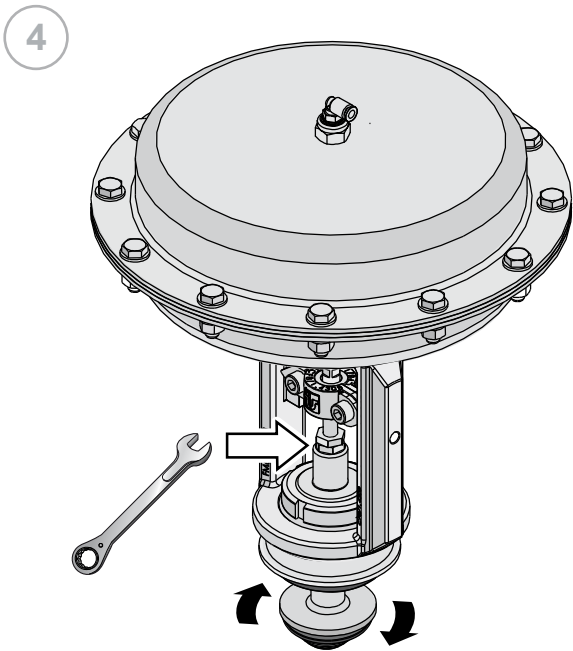
1 a2

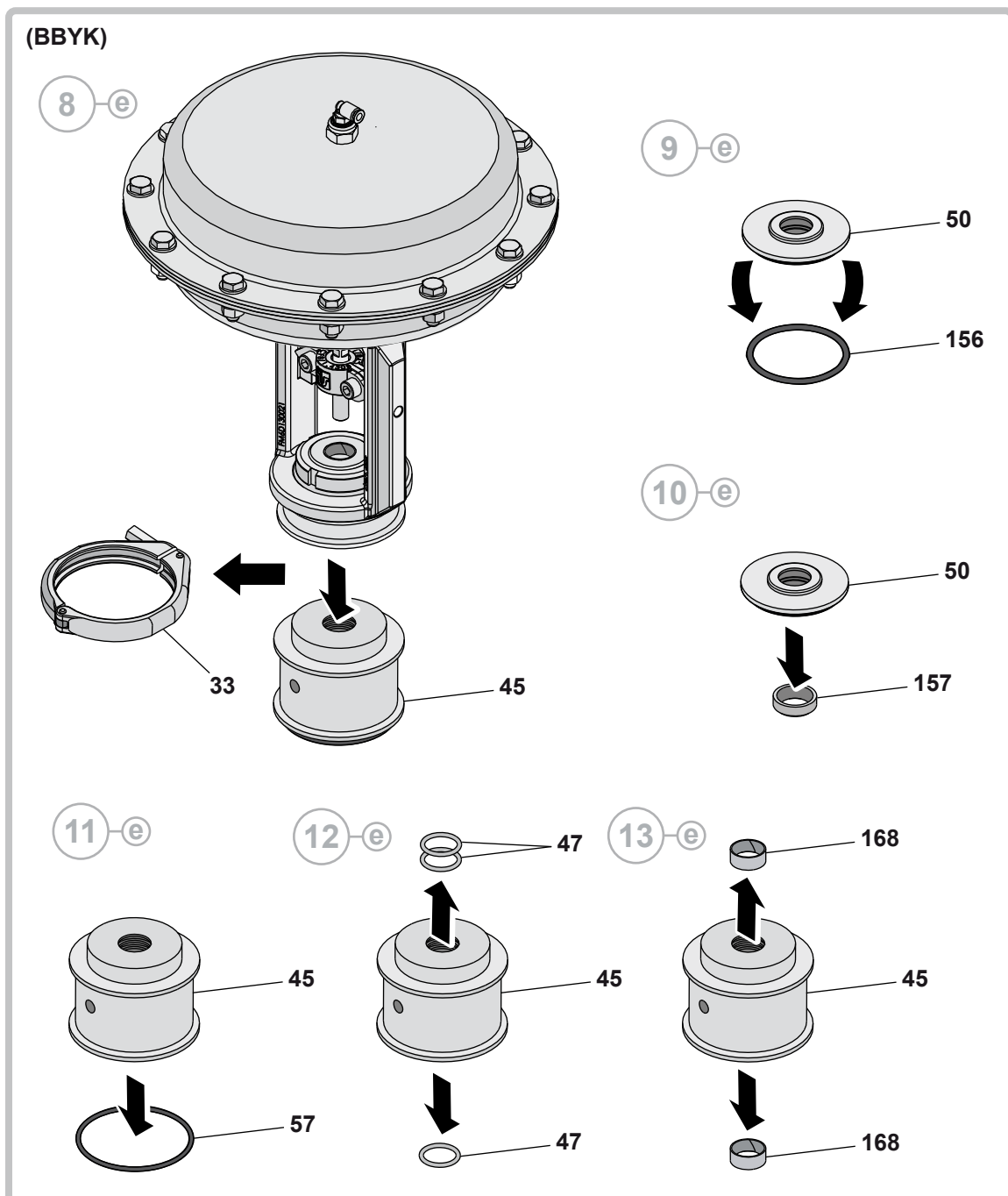
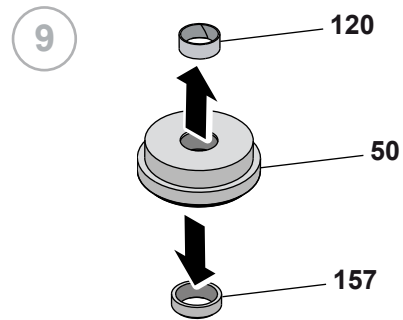
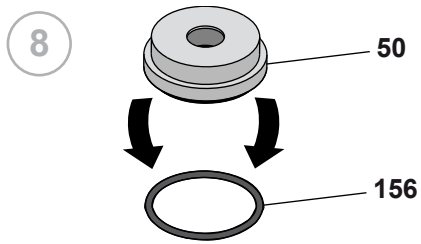


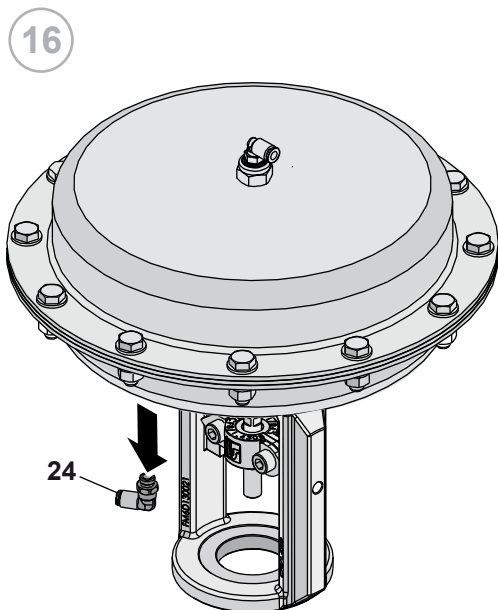
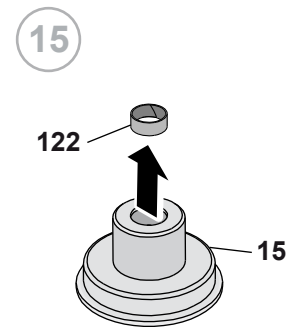
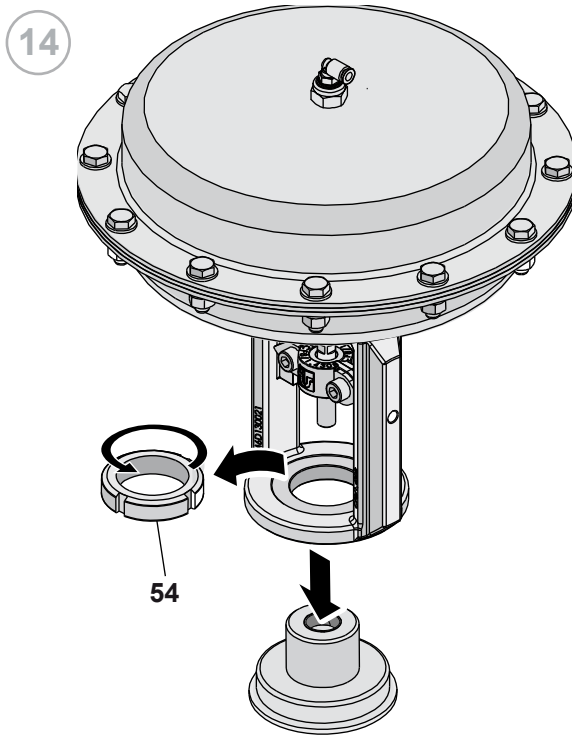
**Note the distance like show  
in the picture**

2 a2



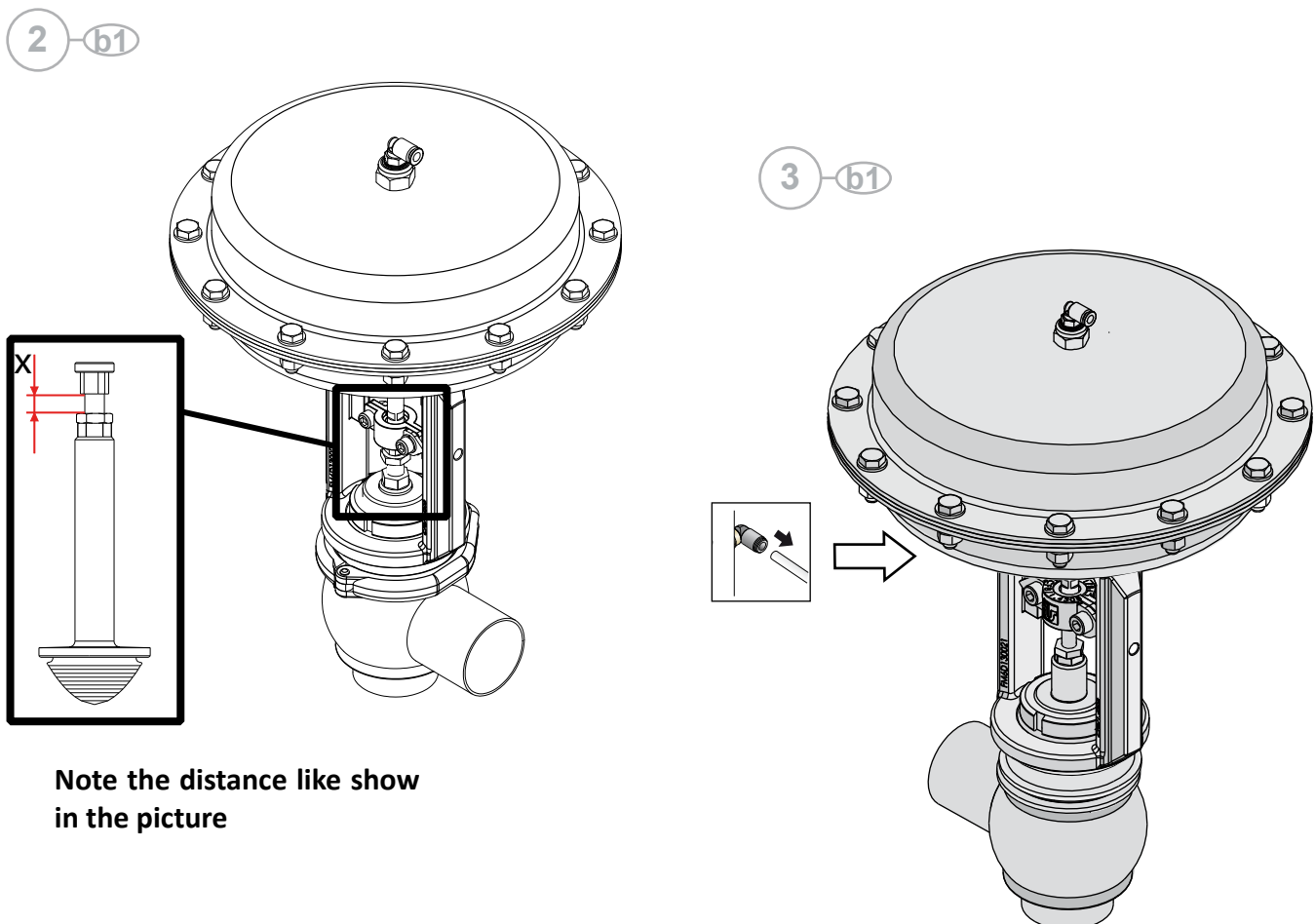
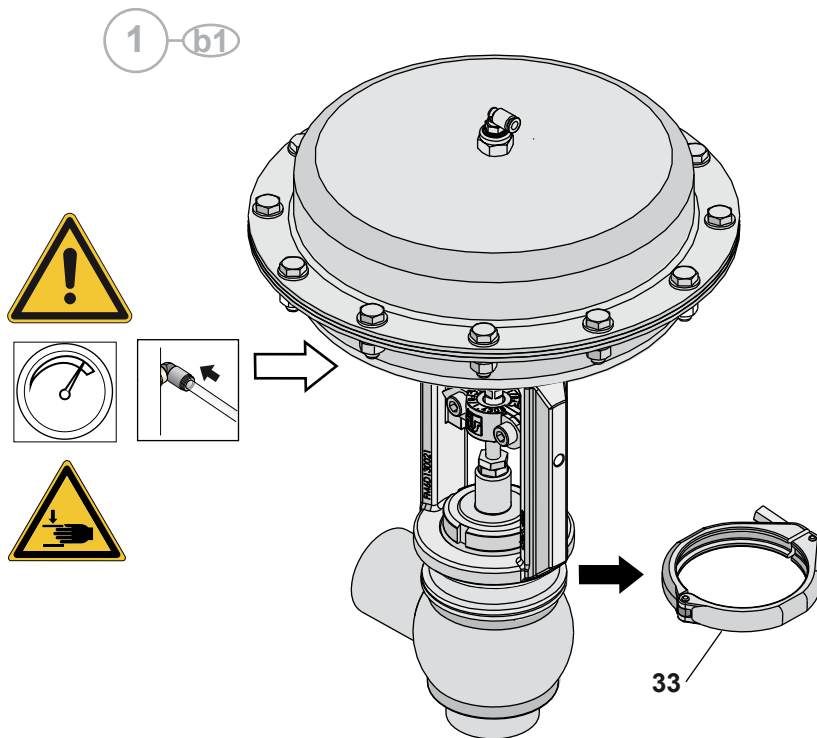




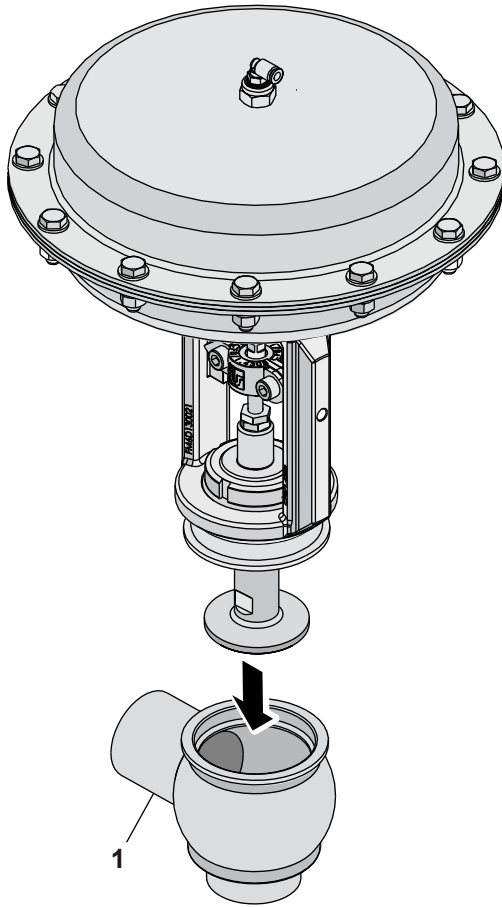


## B Disassembly of the BBWK1

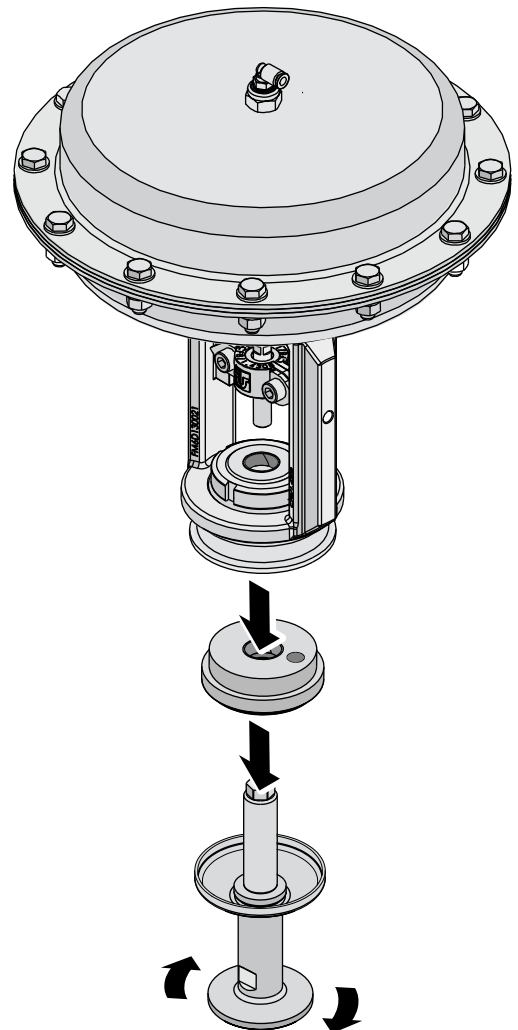
(Normally closed)



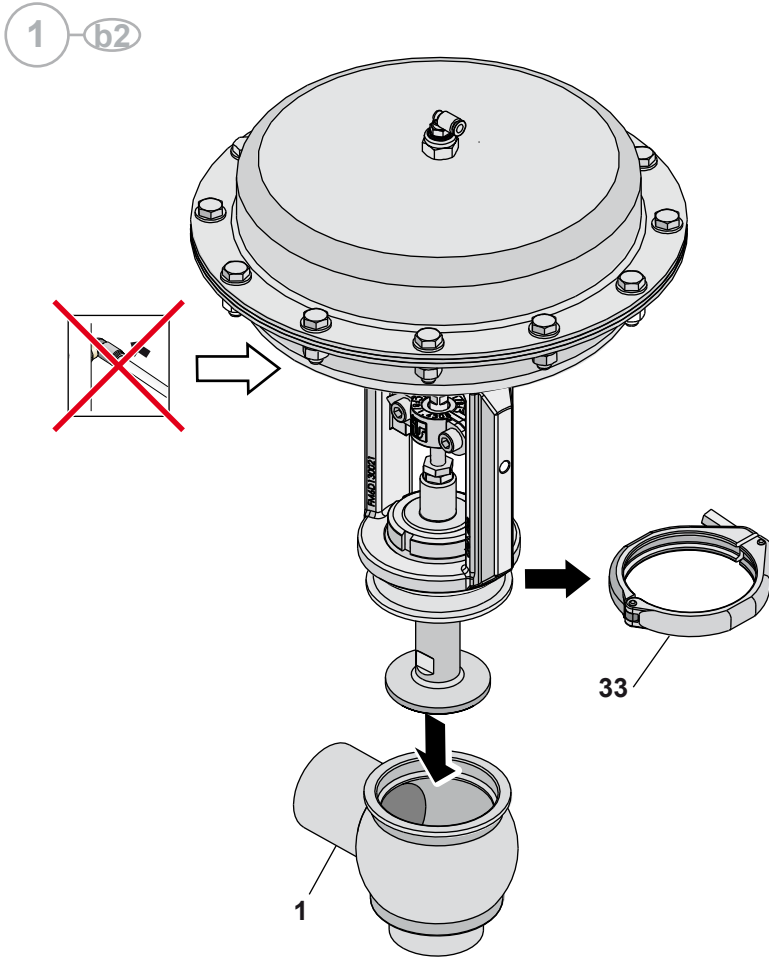
4 b1



5 b1

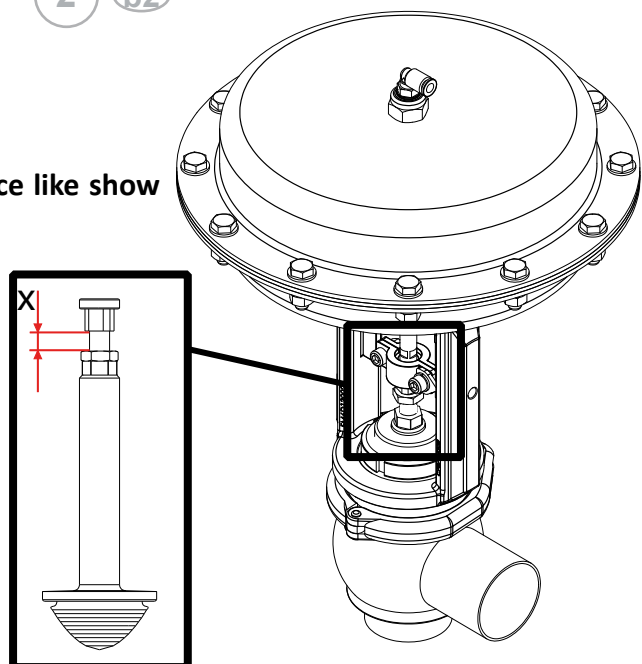


**(Normally open)**



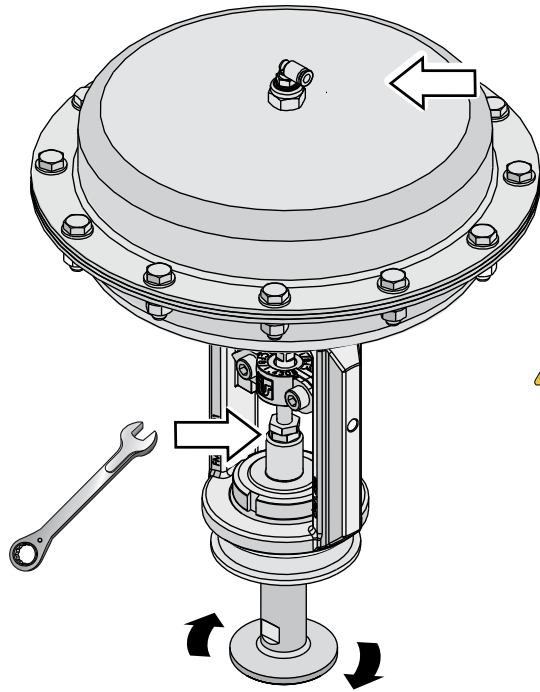
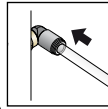
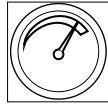
2 b2

**Note the distance like show in the picture**

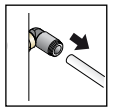




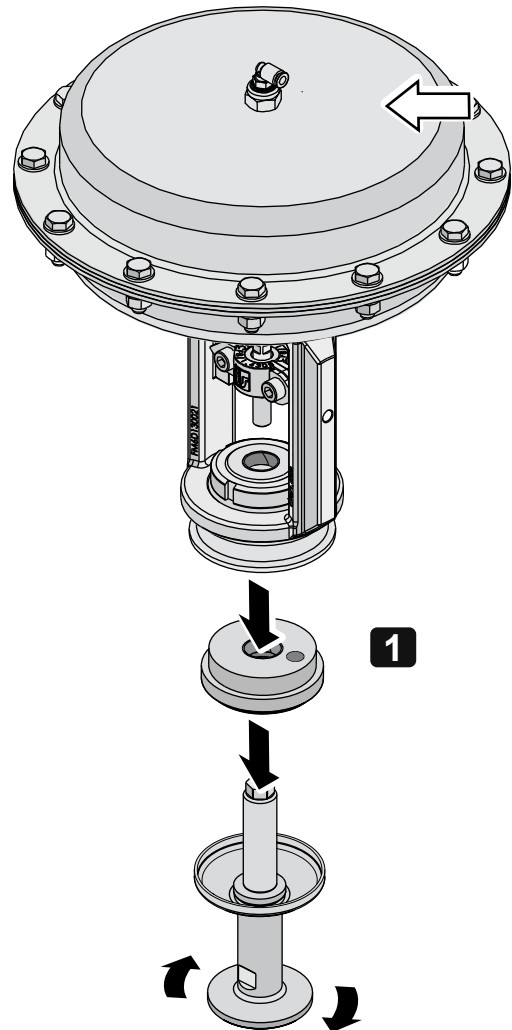
3 b2

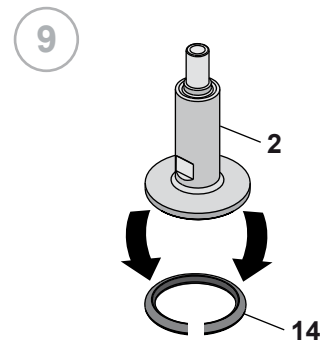
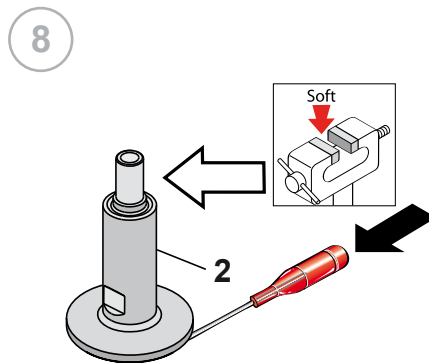
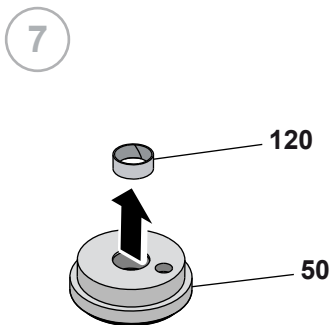
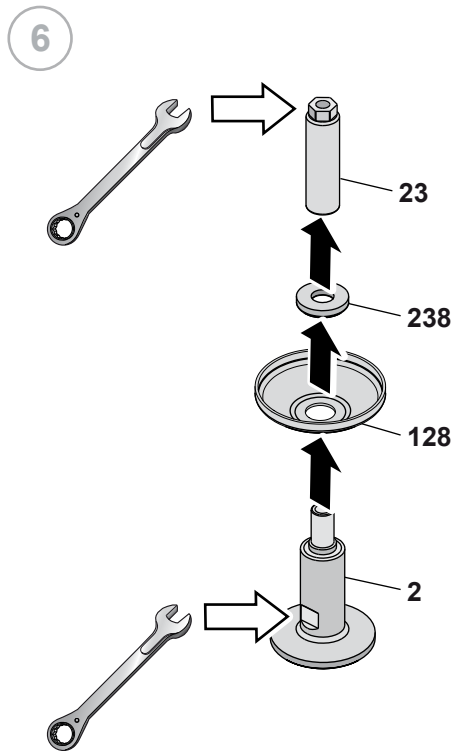


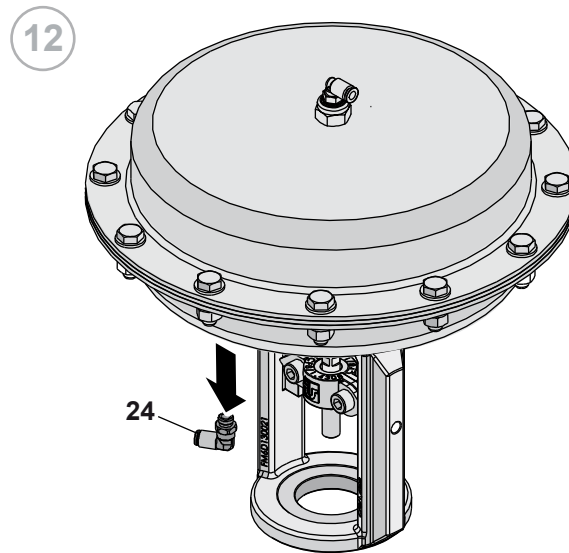
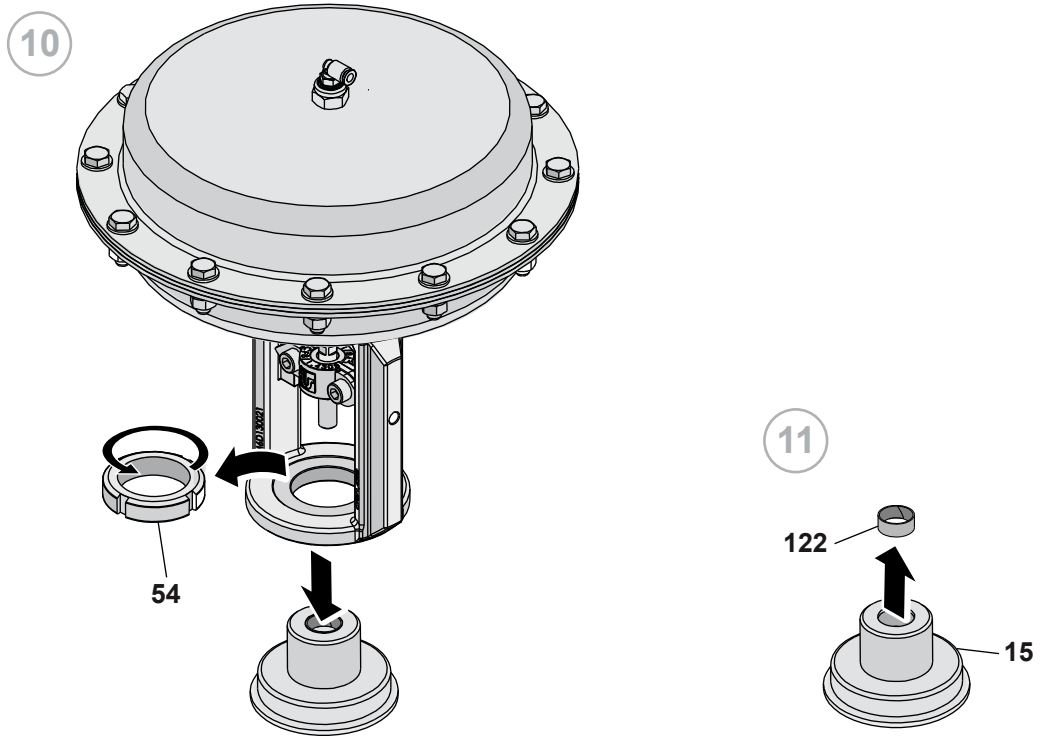
4 b2



2

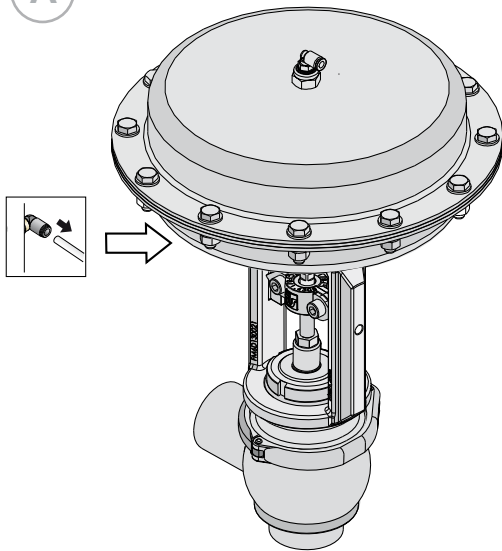






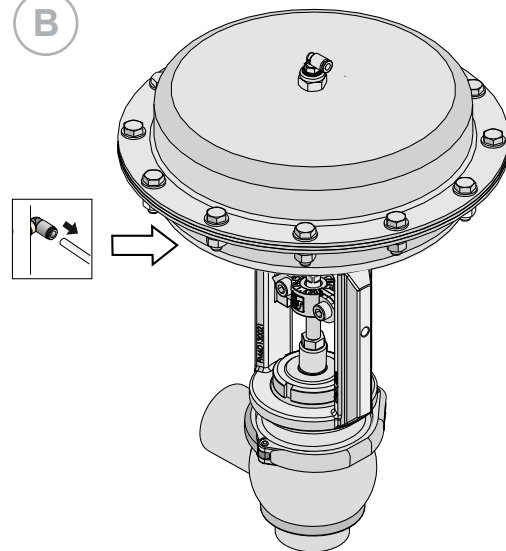
## 10.6 Assembly of the BBZK - BBYK - BBWK1

A



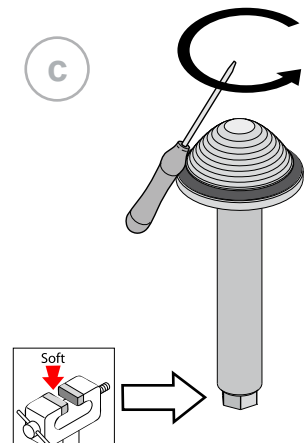
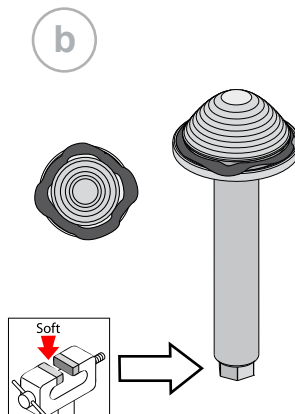
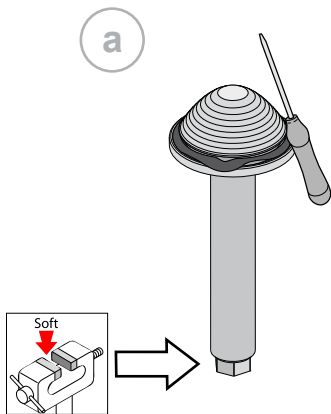
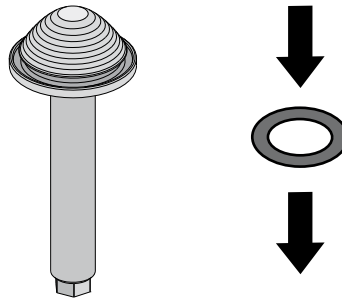
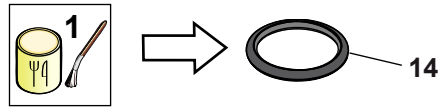
[A M BBZK]

B

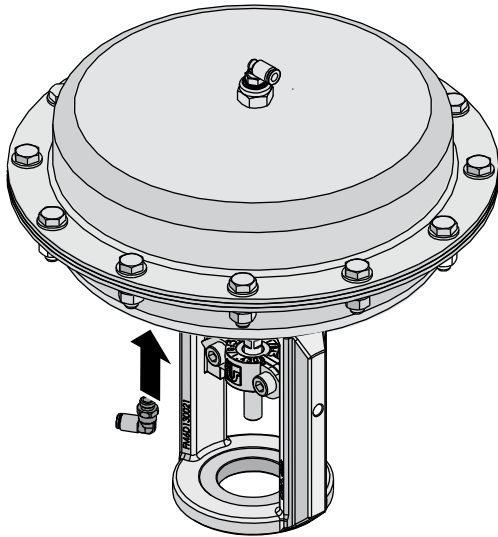


[B M BBWK1]

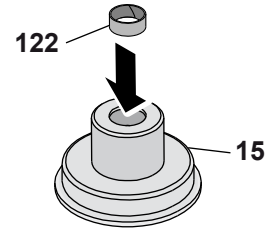
# A Assembly of the BBZK - BBYK



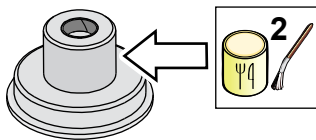
1



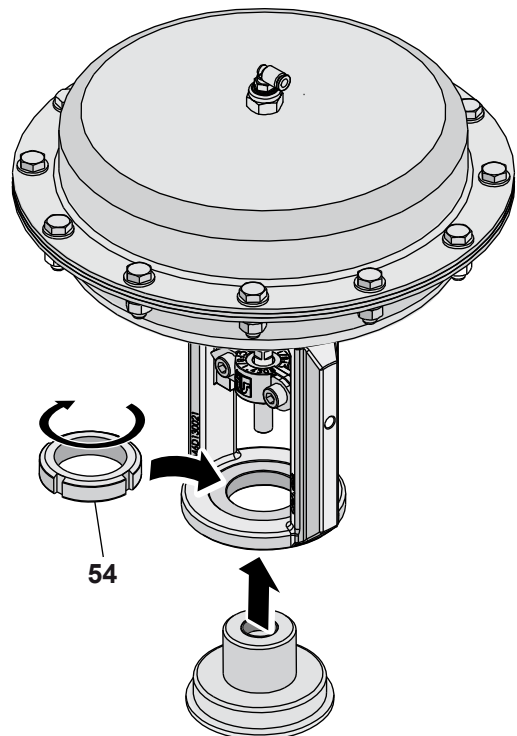
2

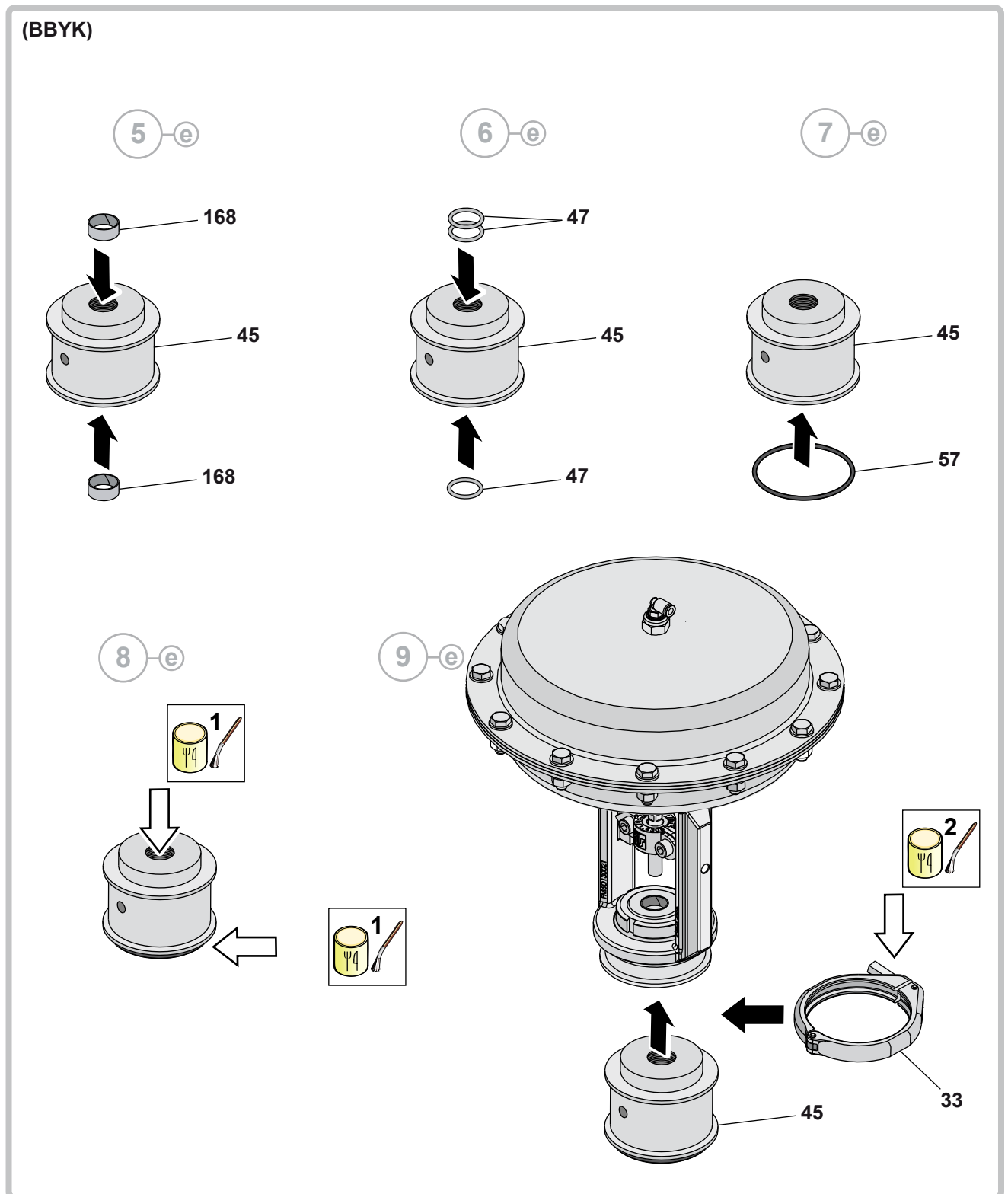


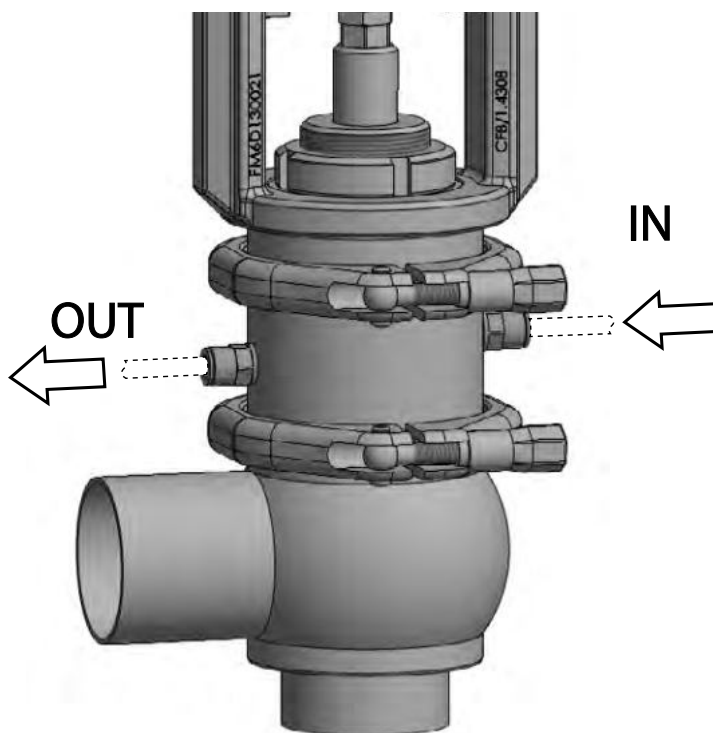
3



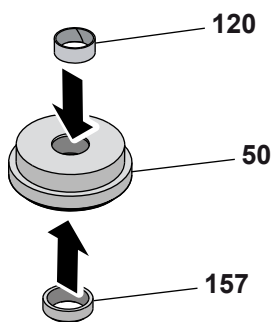
4



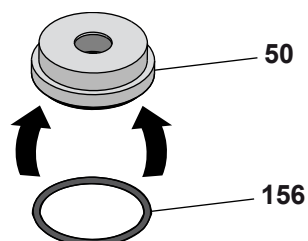




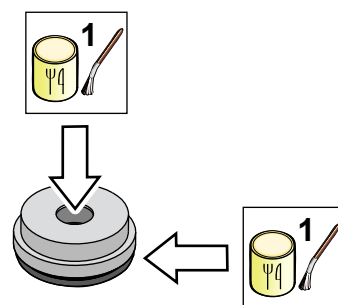
10



11

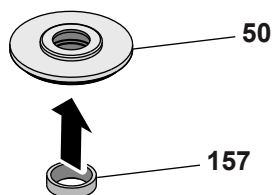


12

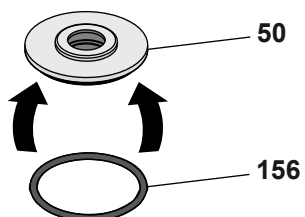


(BBYK)

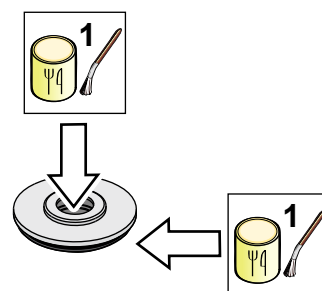
10-a



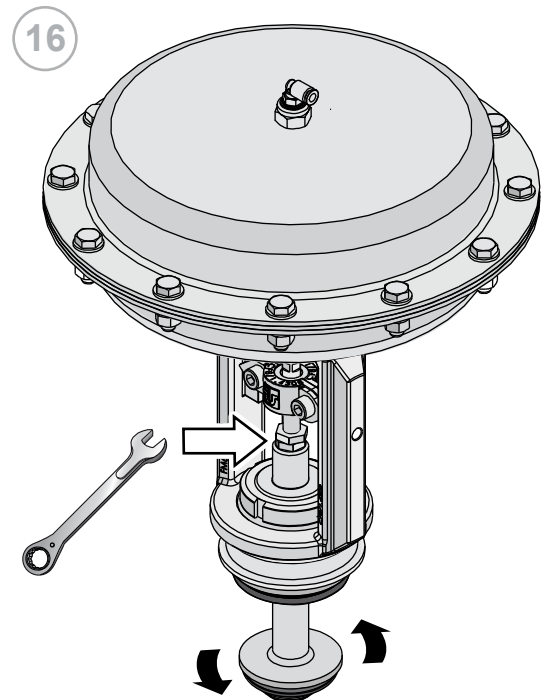
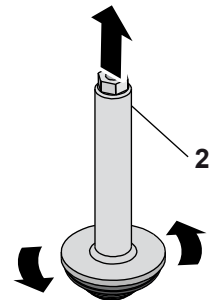
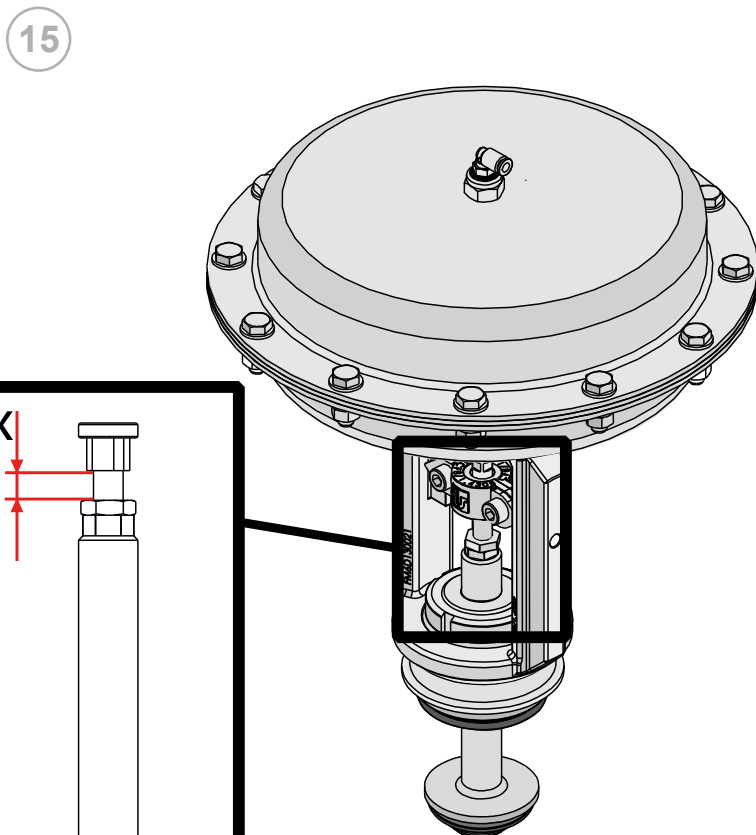
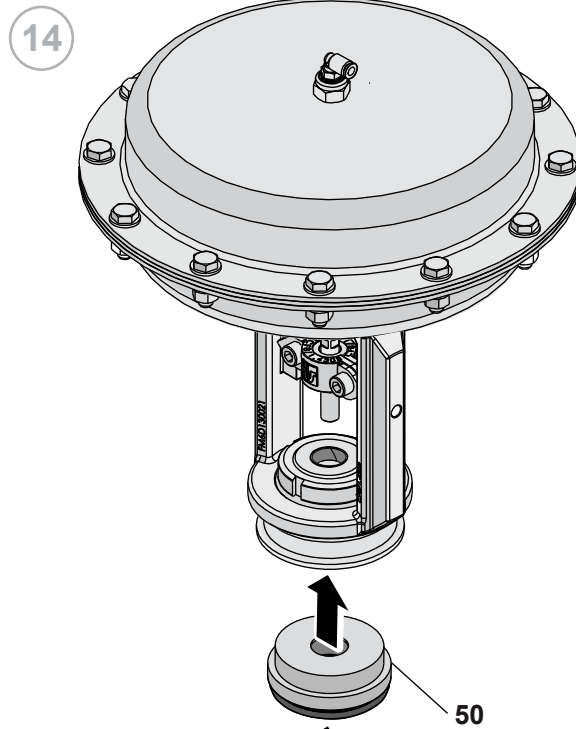
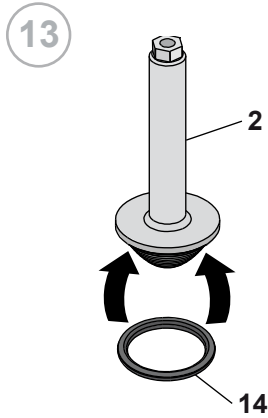
11-a



12-a



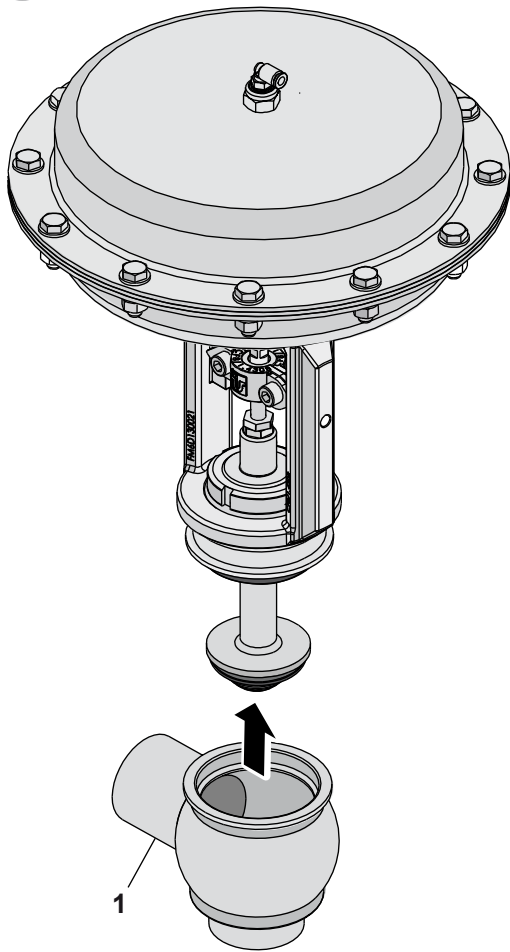




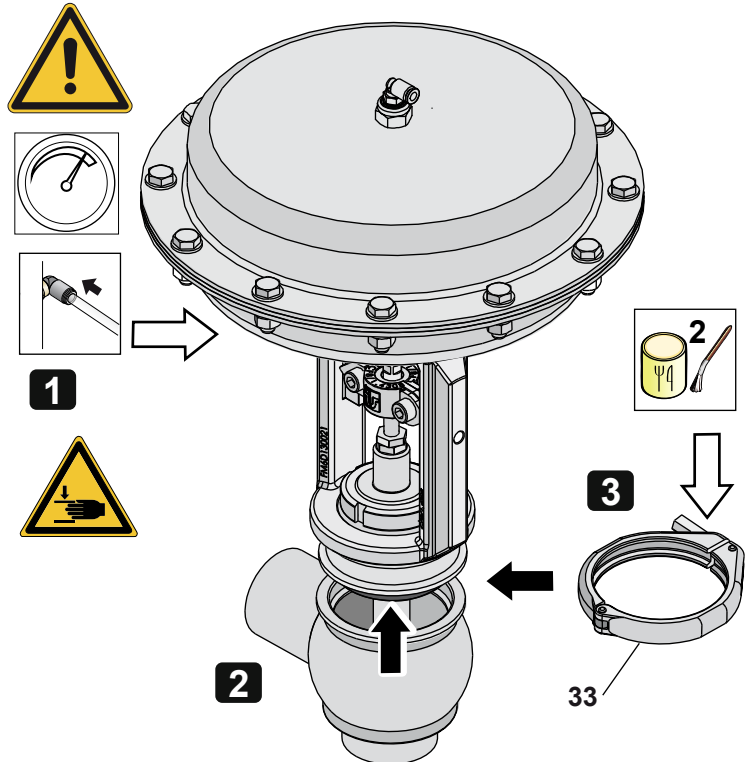
Adjust the shutter to the same distance noted above

(Normally closed)

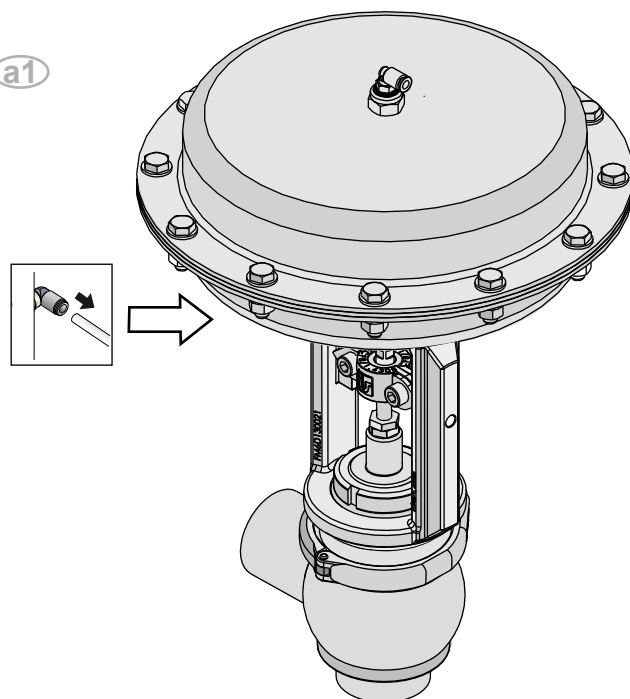
17 a1



18 a1

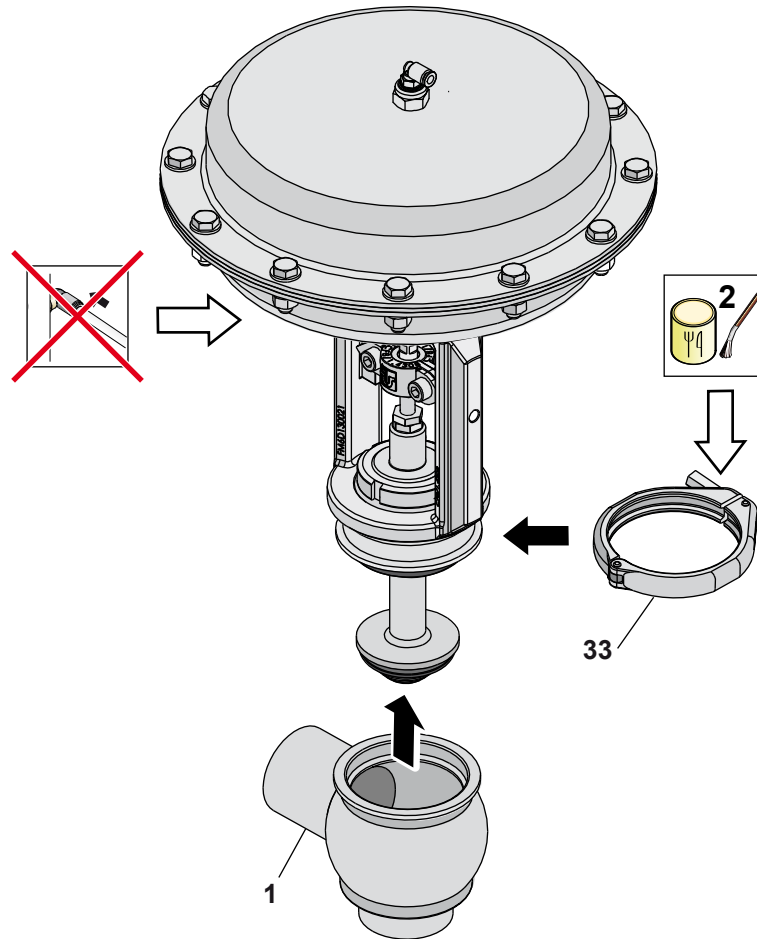


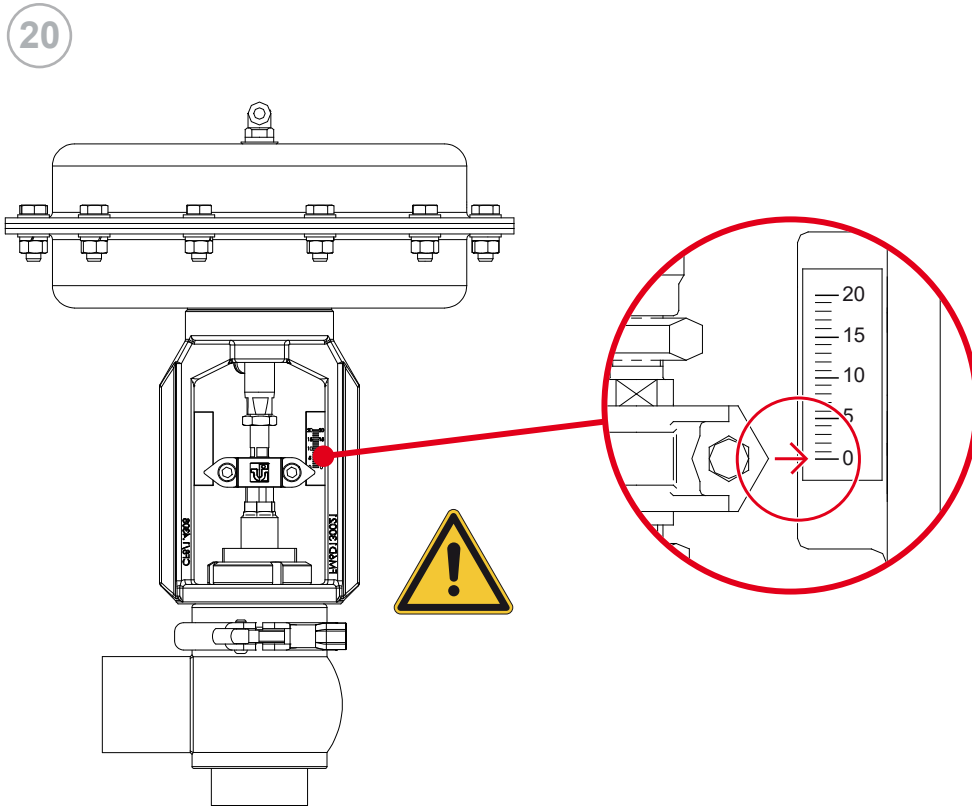
19 a1



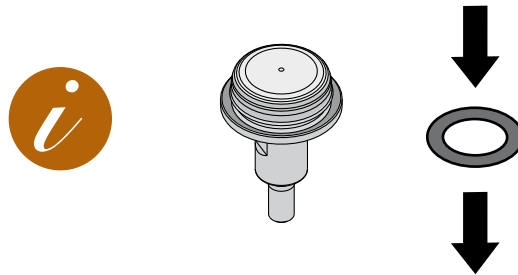
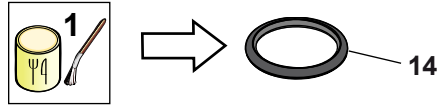
**(Normally open)**

17 a2





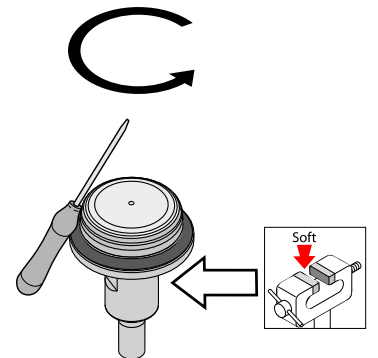
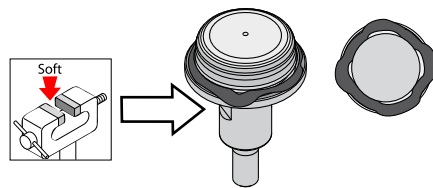
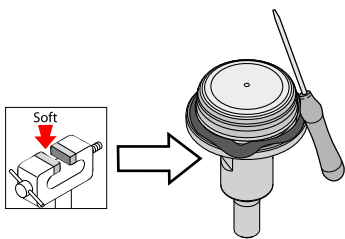
## B Assembly of the BBWK1



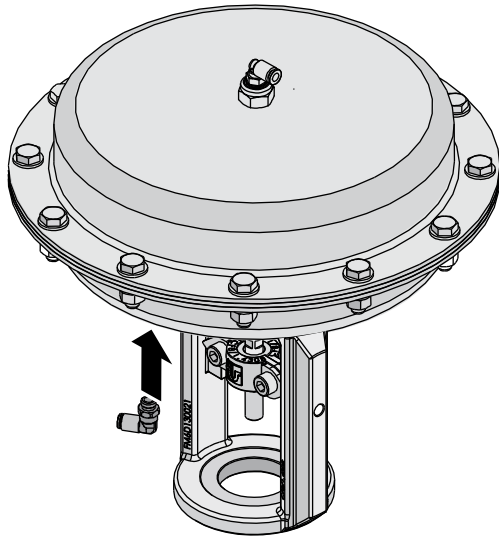
a

b

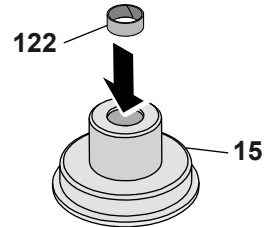
c



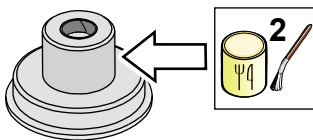
1-b



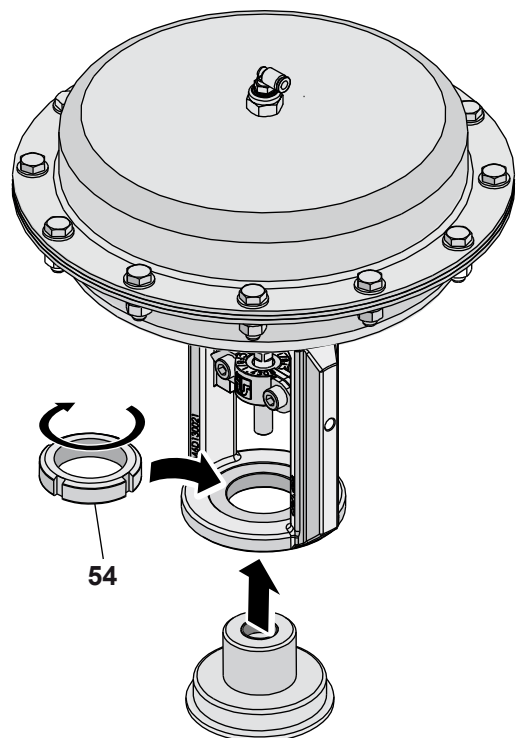
2-b

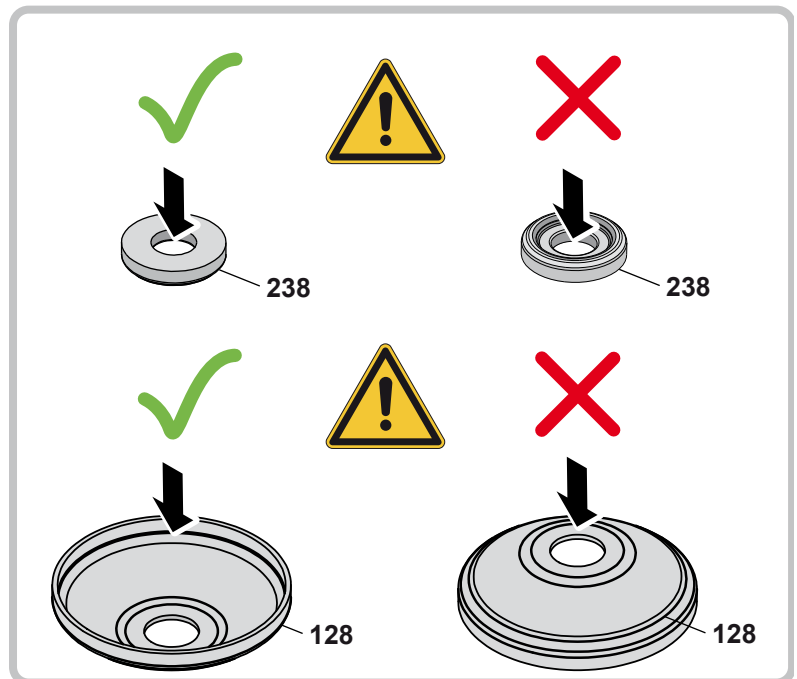
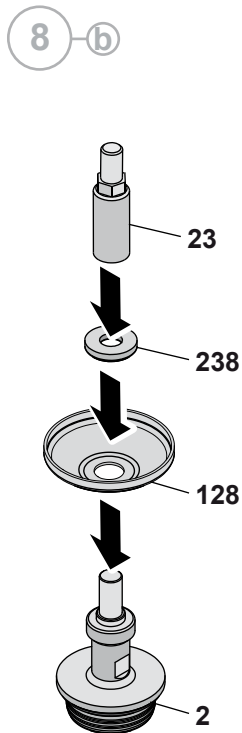
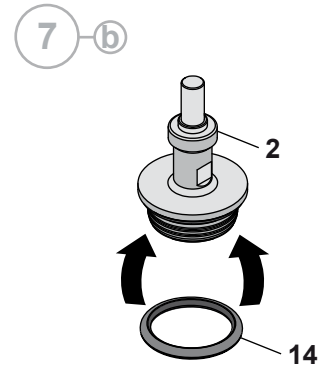
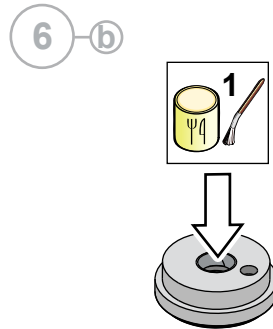
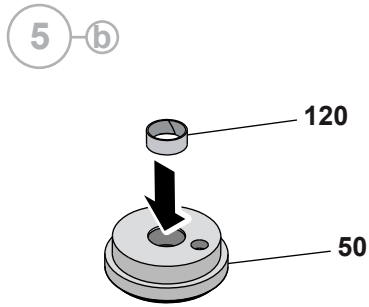


3-b

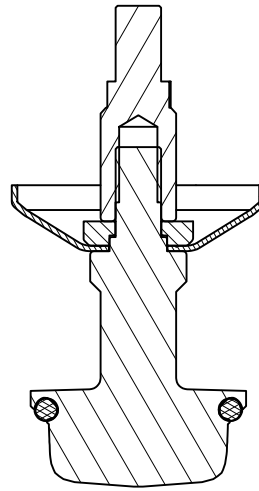
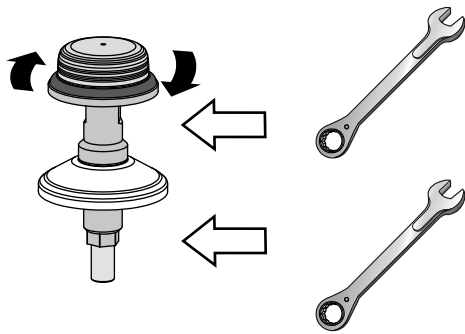


4-b

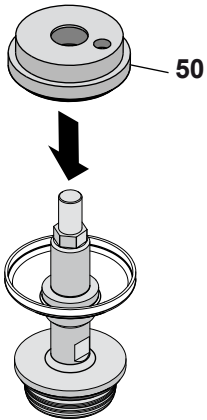




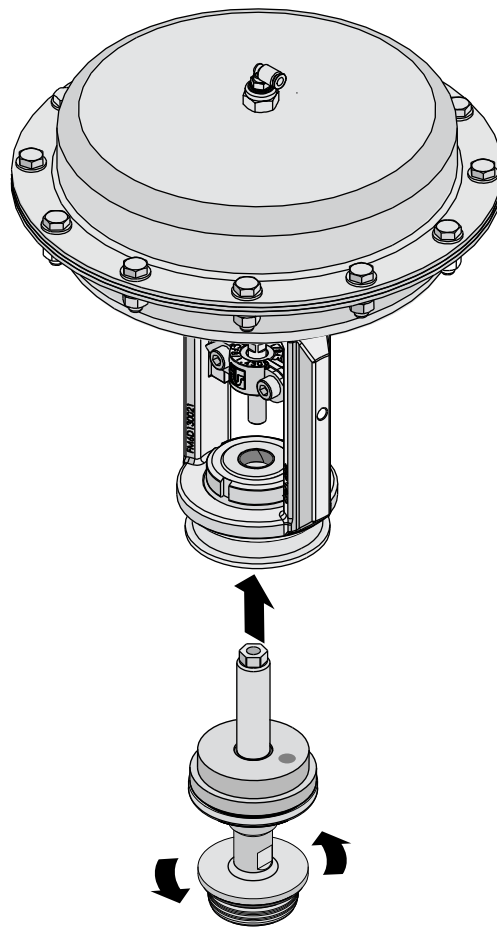
9-b



10-b

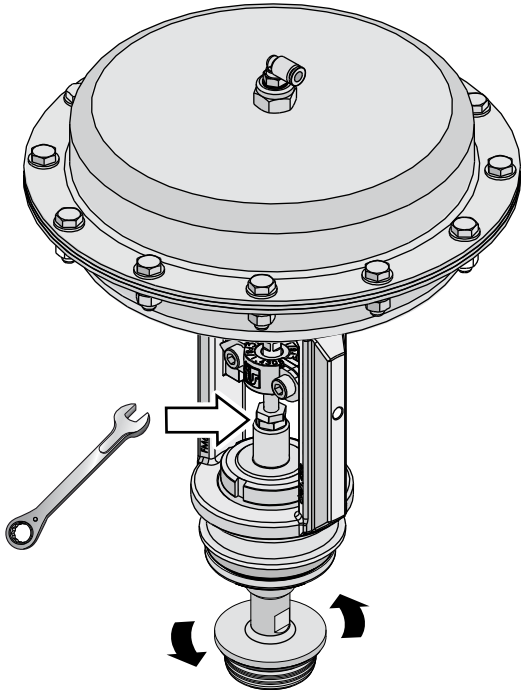


11-b

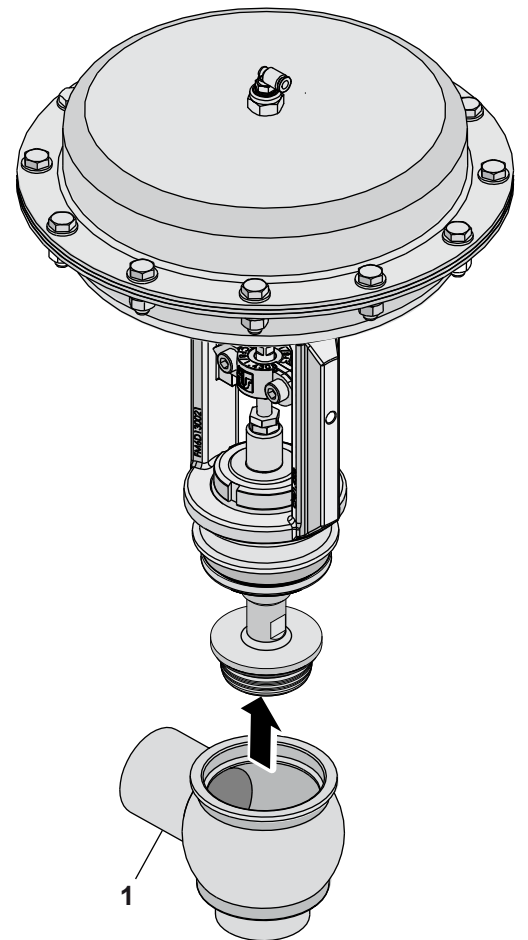




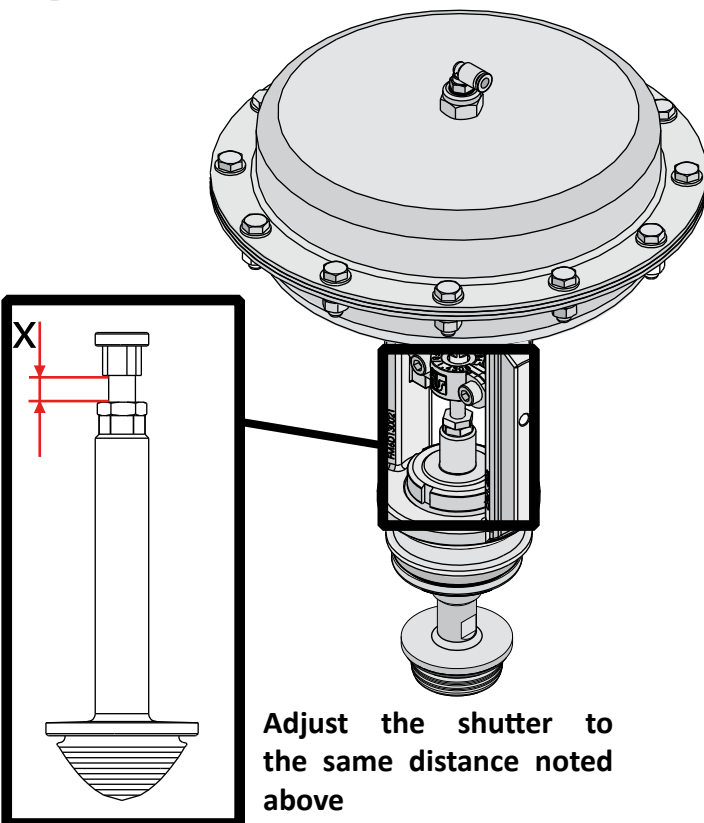
12-b



14-b

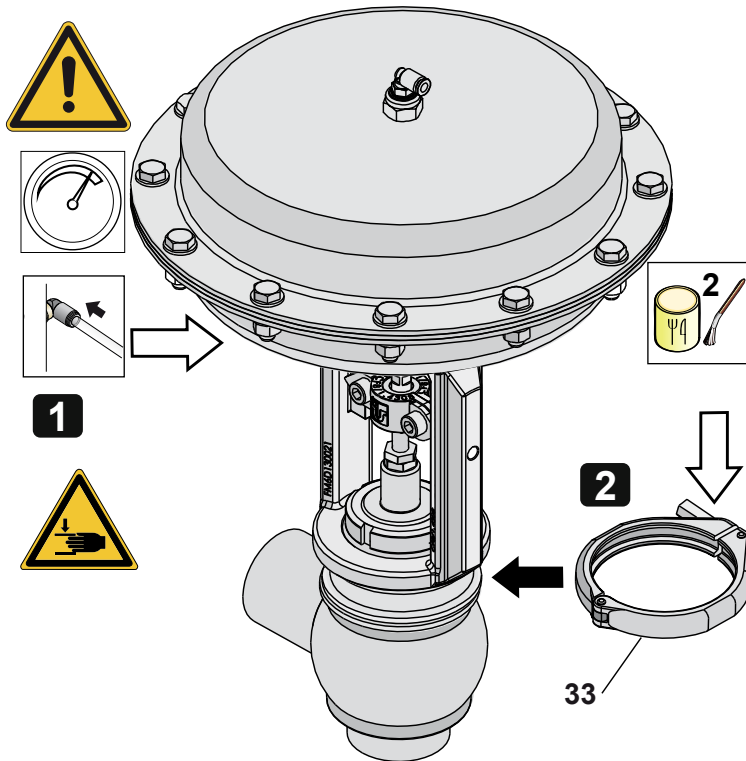


13-b

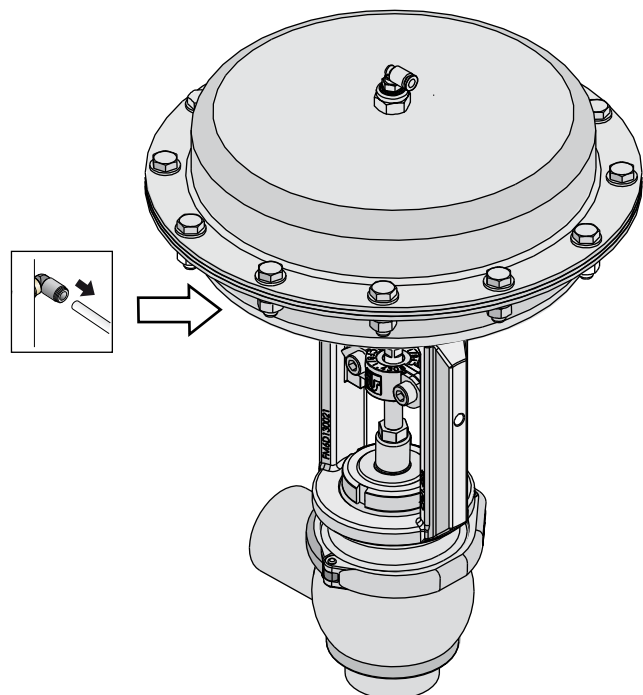


(Normally closed)

15-b1

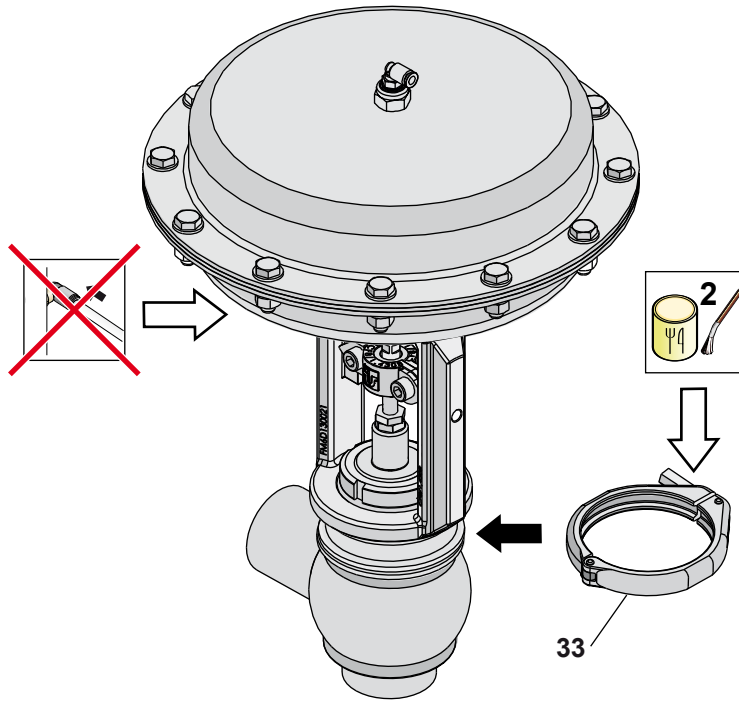


16-b1

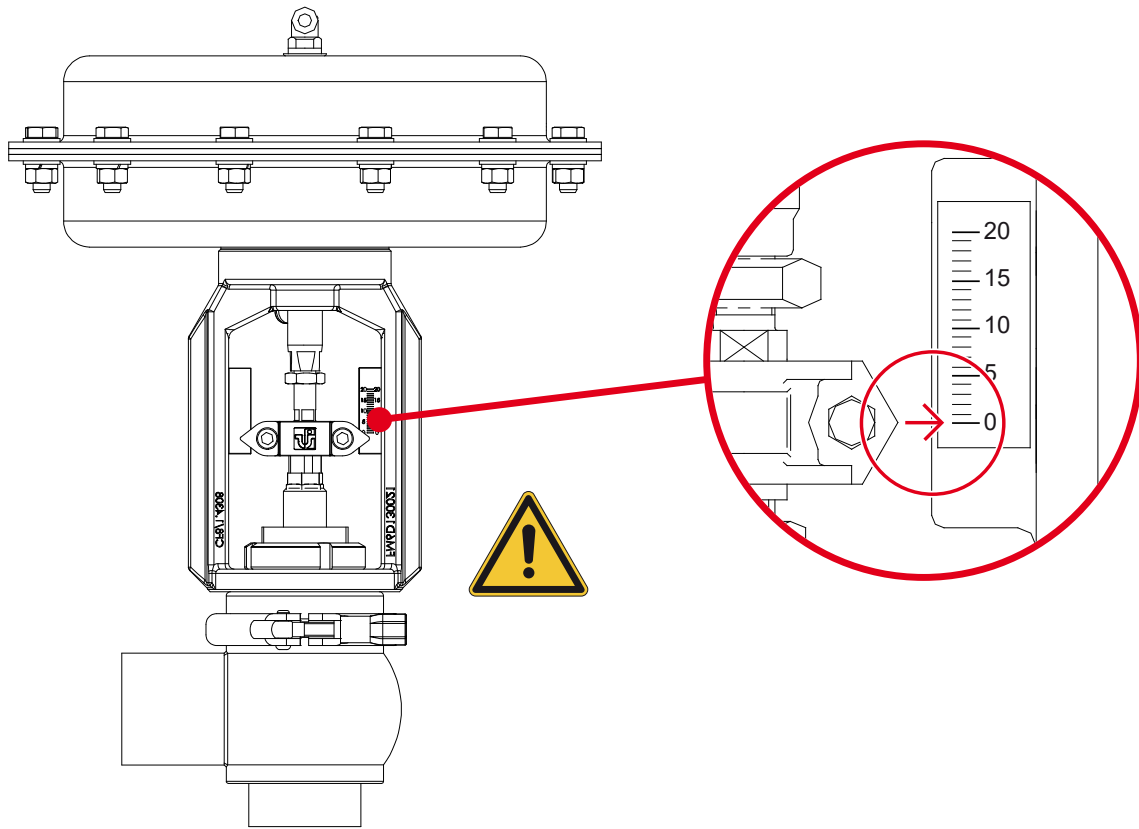


**(Normally open)**

15 b2

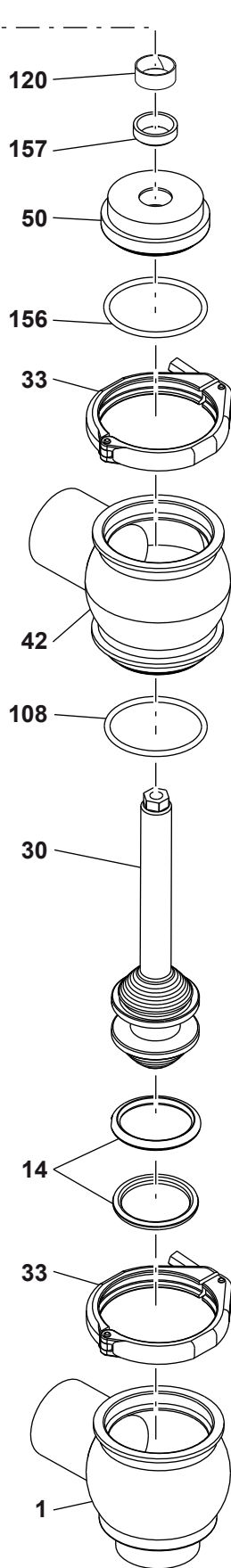
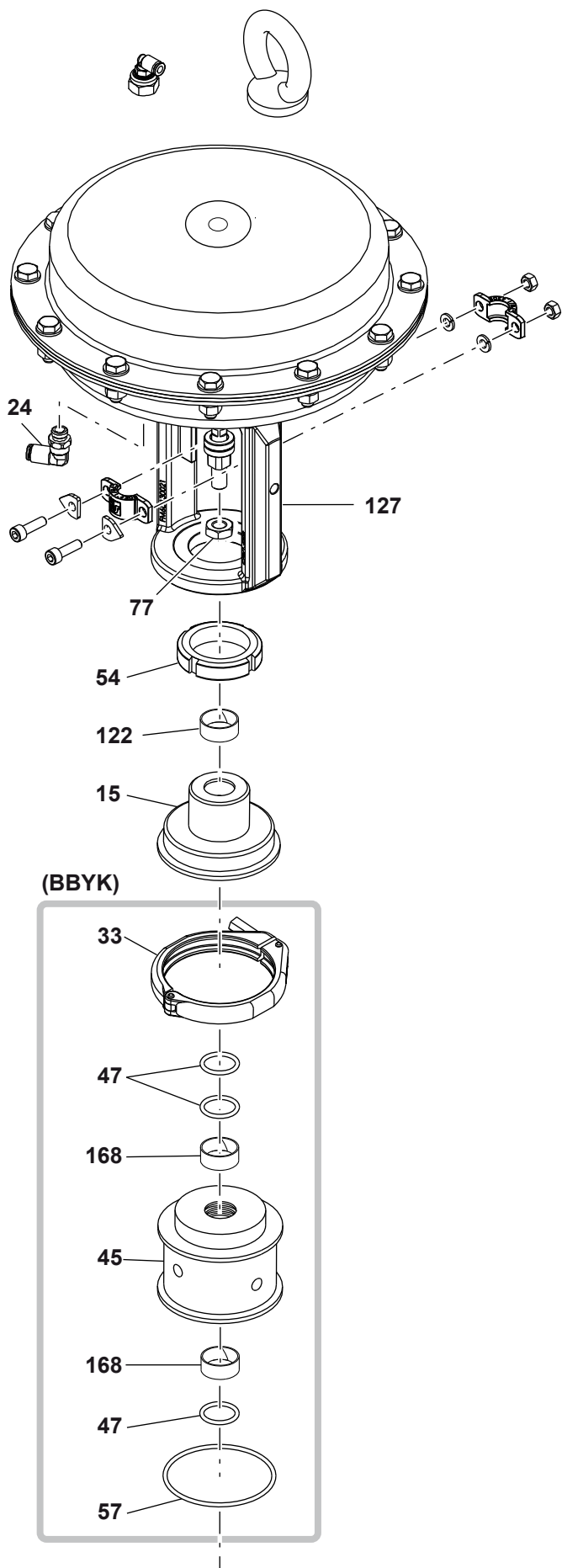


17

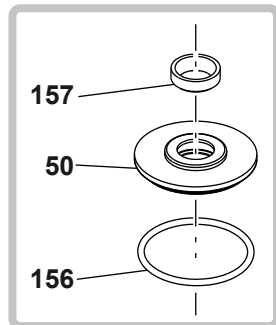


## 10.7 Modulating valve BBZK - BBYK Diverter

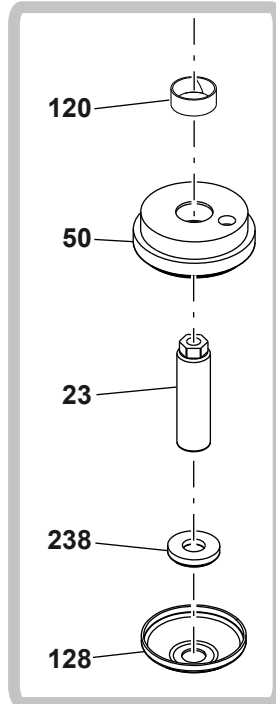
NO.	DESCRIPTION
1	Lower body
14	Sealing ring
15	Yoke
23	Pin
24	Air coupling
30	Double valve member
33	Clamp
42	Upper body
45	Steam barrier
47	Sealing ring
50	Gasket holder disc
54	Ring nut
57	Sealing ring
77	Nut
108	Sealing ring
120	Bush
122	Bush
127	Pneumatic actuator
128	Diaphragm
156	Sealing ring
157	Sealing ring
168	Bush



(BBYK)



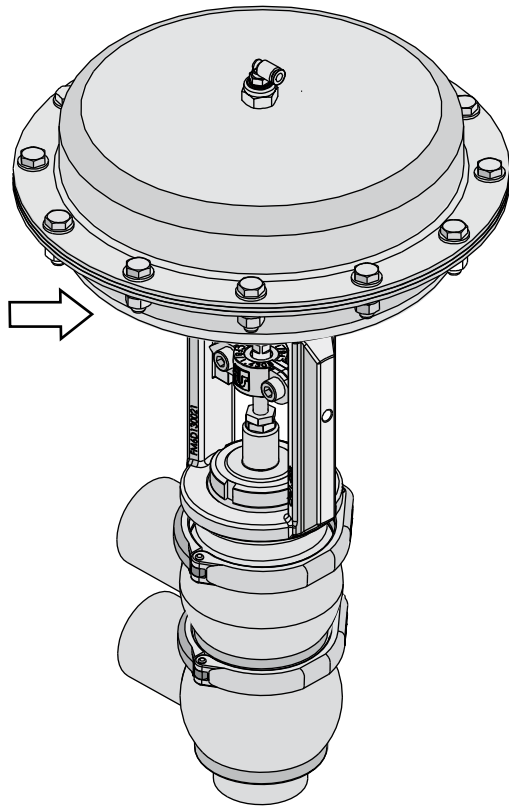
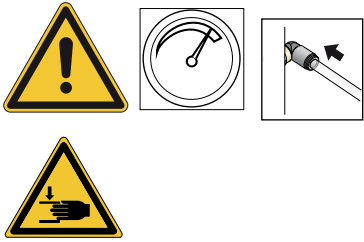
(BBWK1)



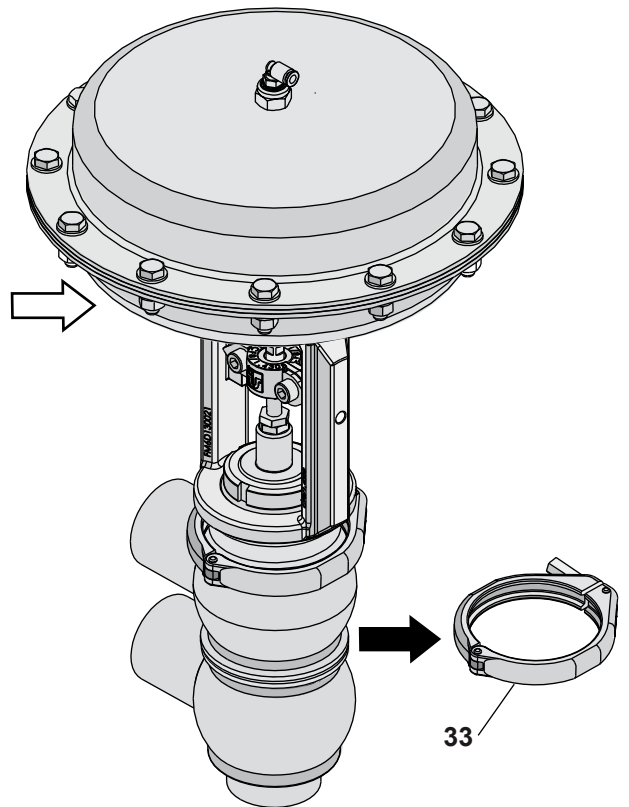
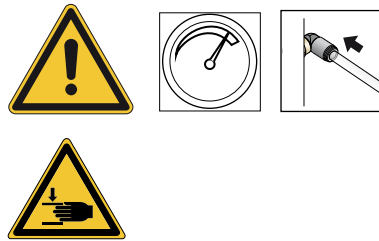
# 10.8 Disassembly of the BBZK - BBYK Diverter

(Normally closed)

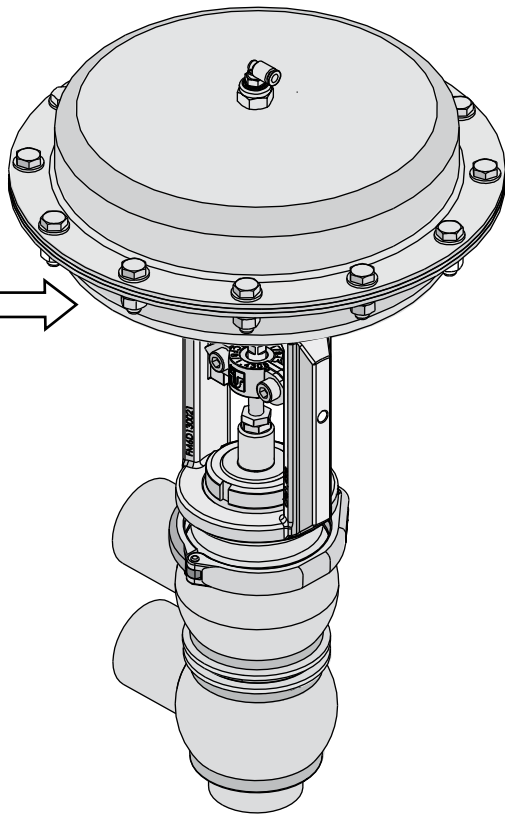
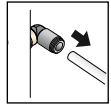
1-a



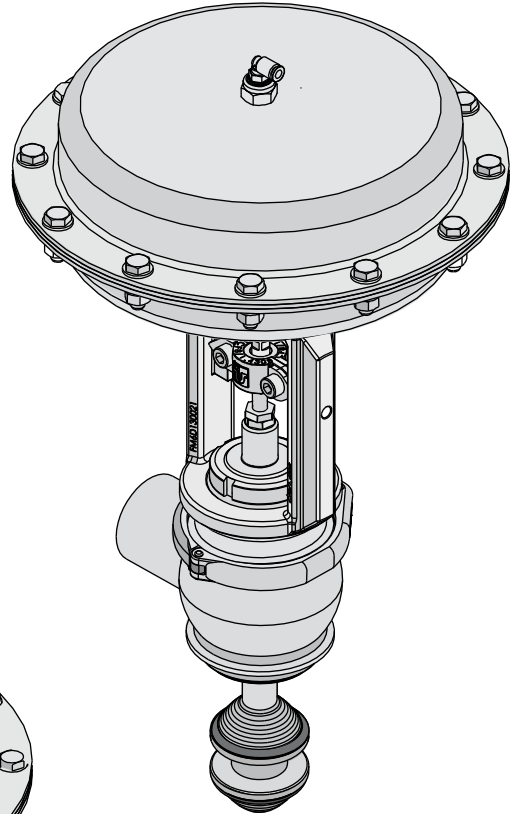
2-a



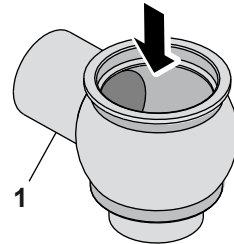
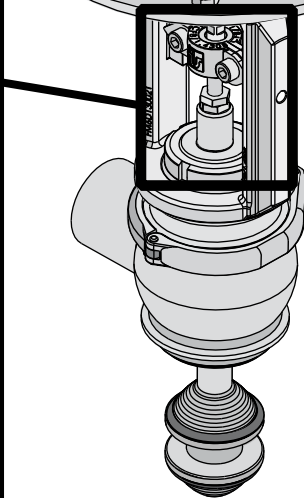
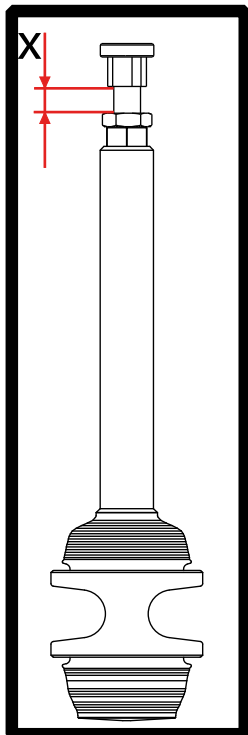
3 a



4 a



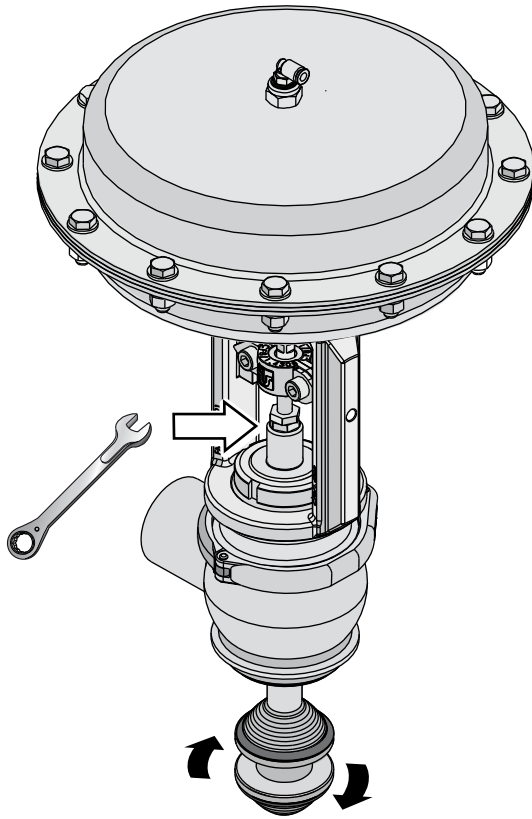
5 a



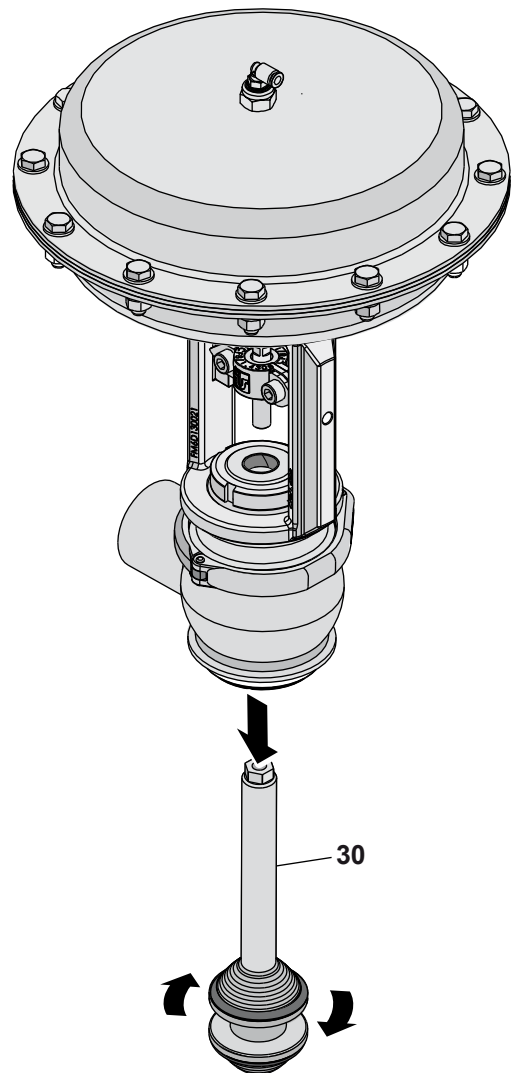
Note the distance like show in the picture



6 a

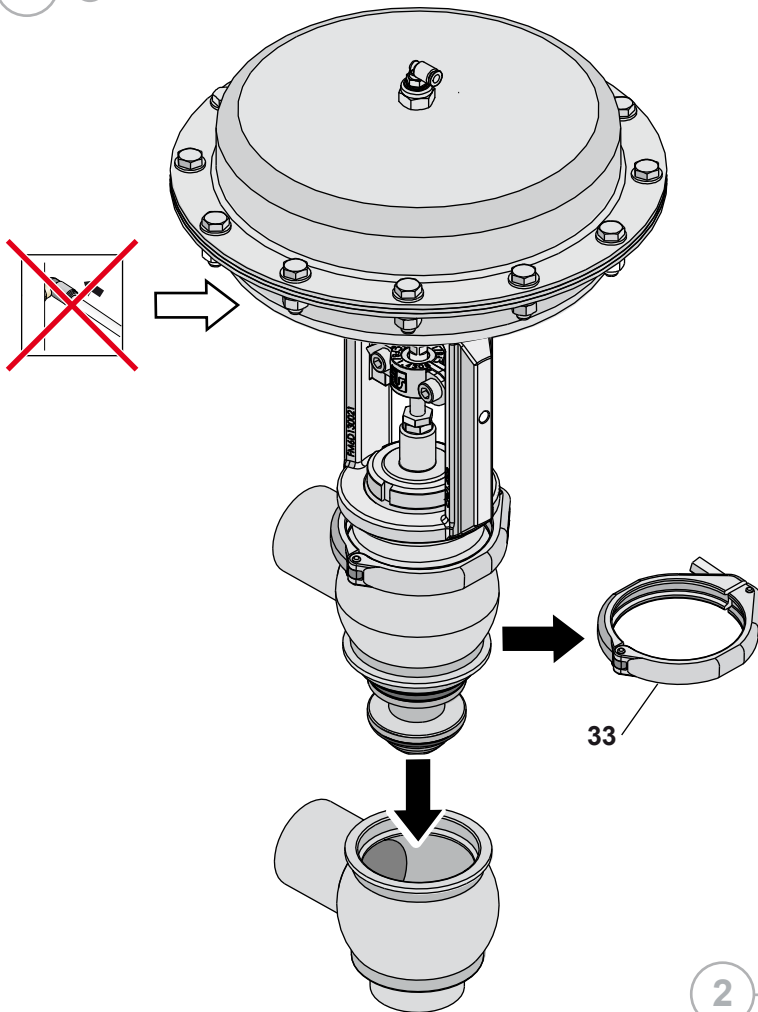


7 a

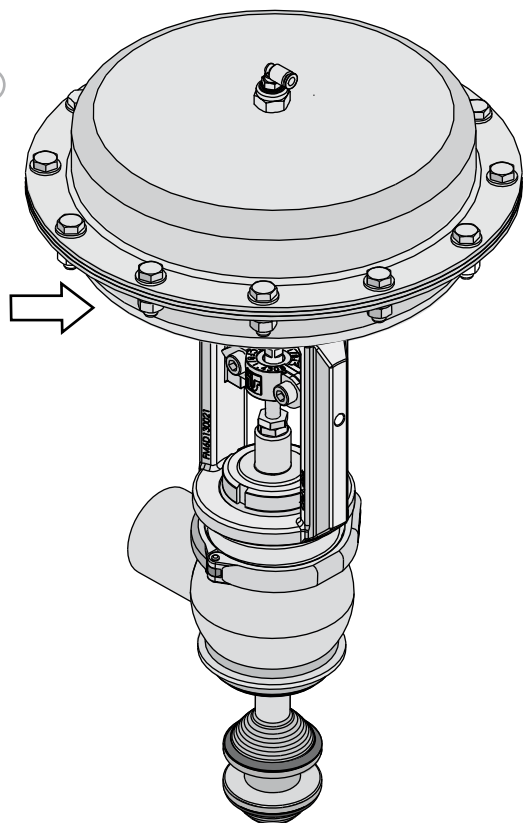
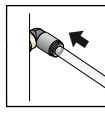



**(Normally open)**

1-b

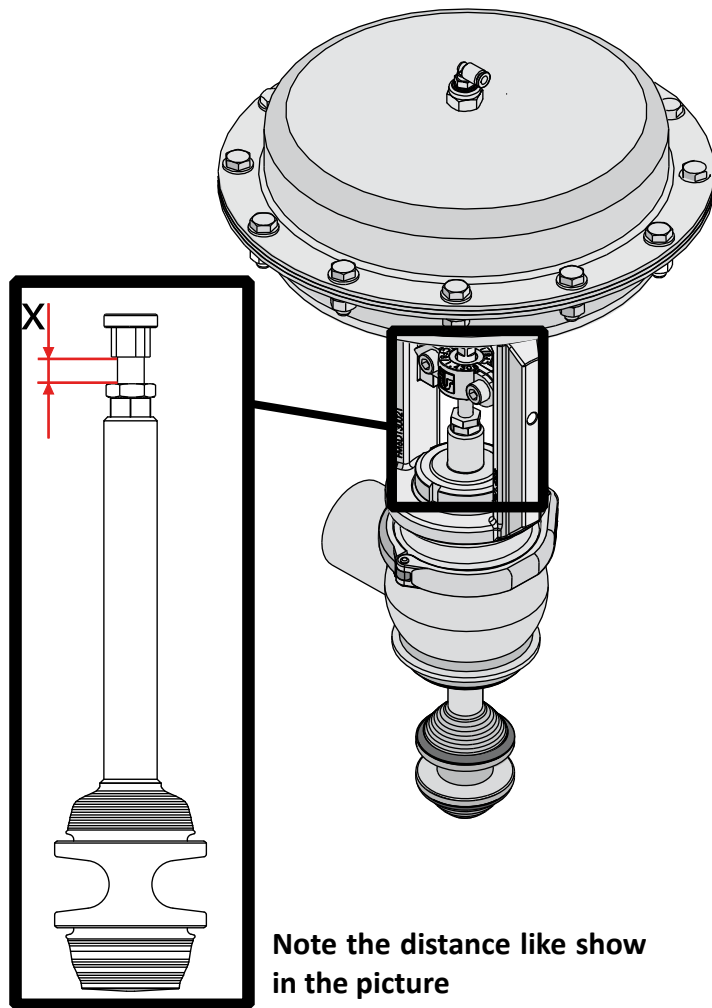


2-b

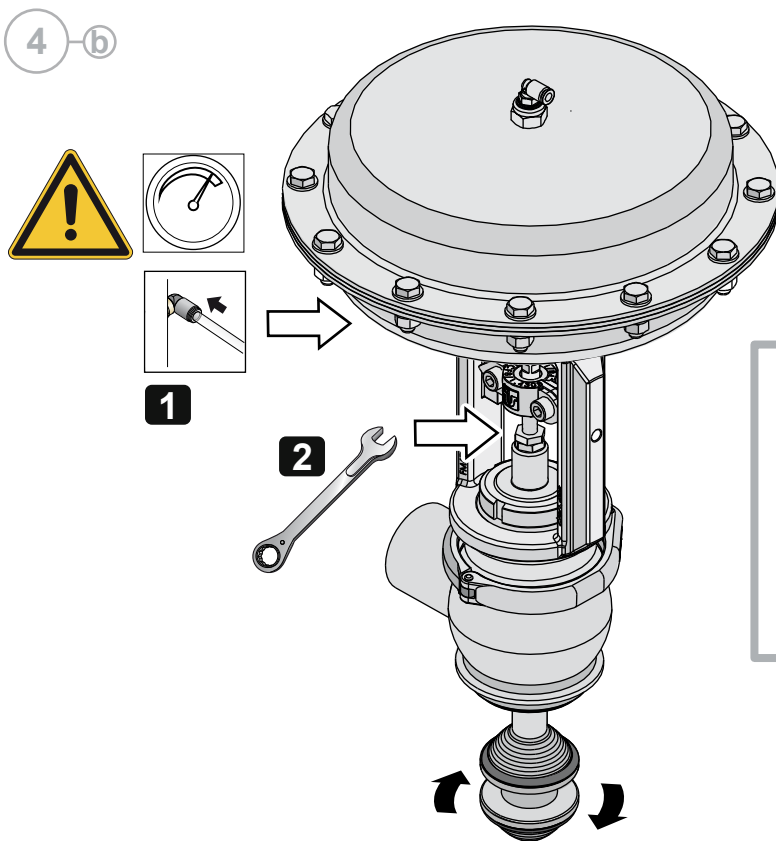


  
 Never touch moving parts if the actuator is supplied with compressed air.

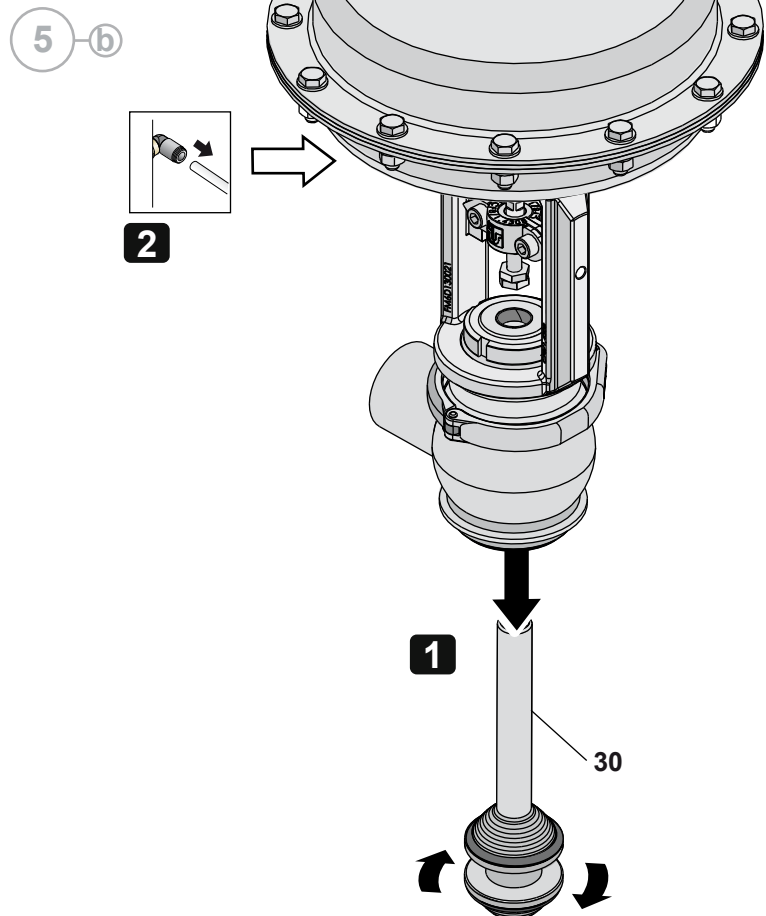
3 b

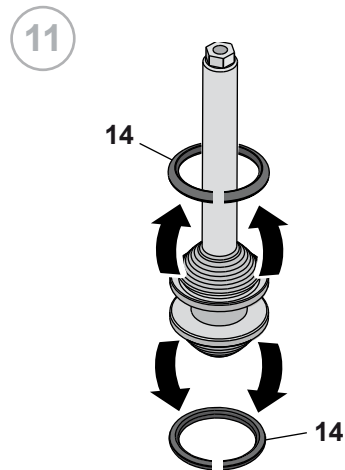
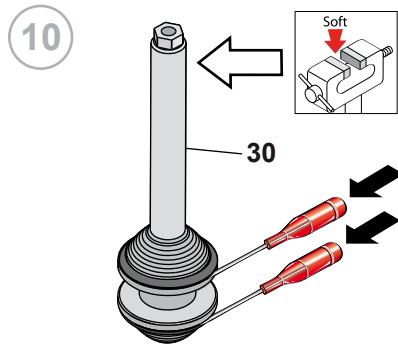
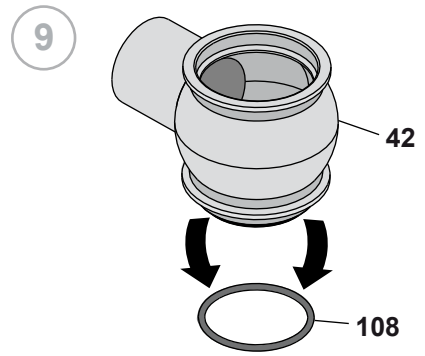
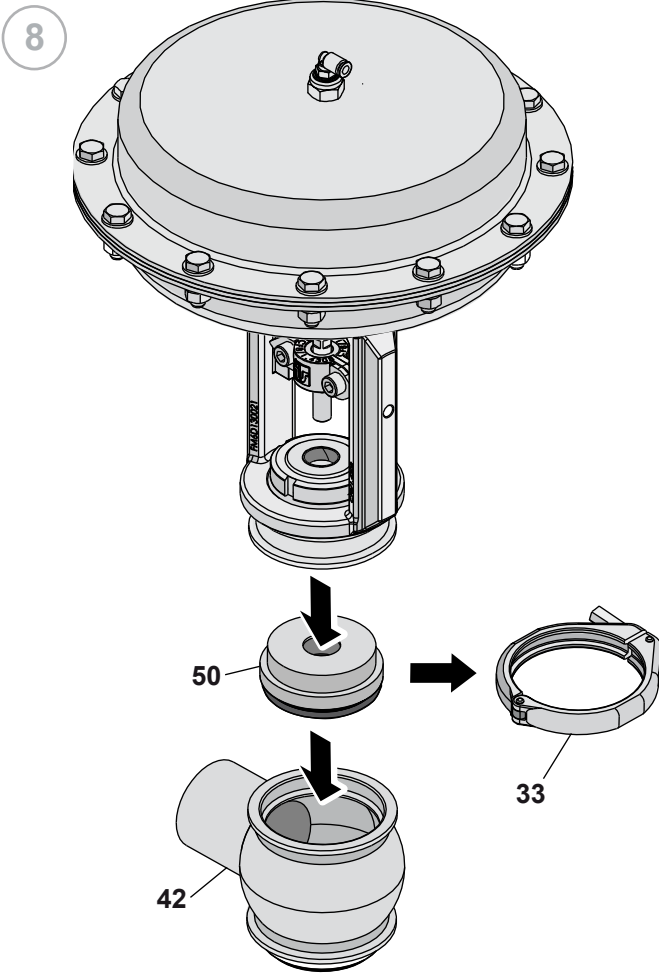


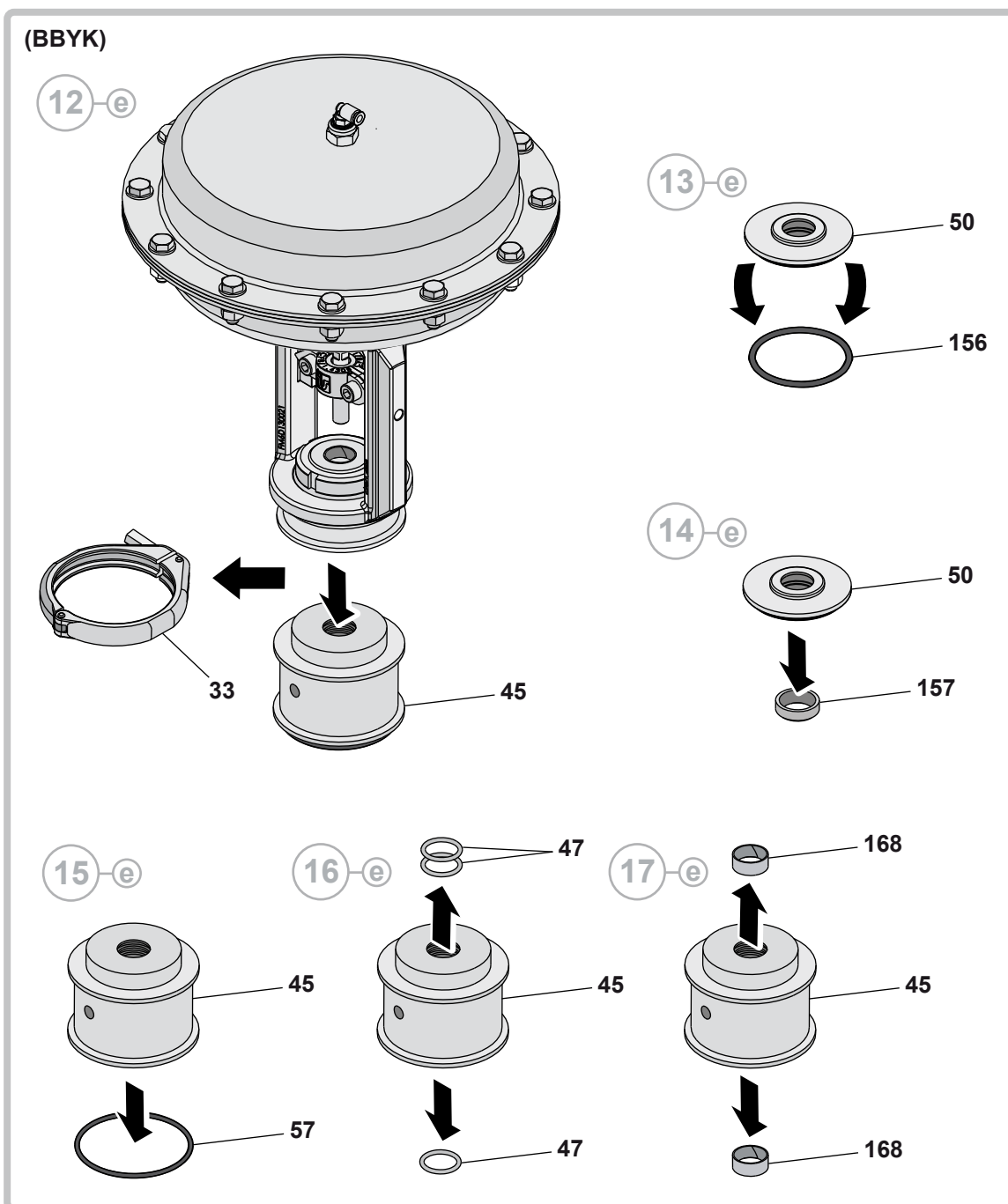
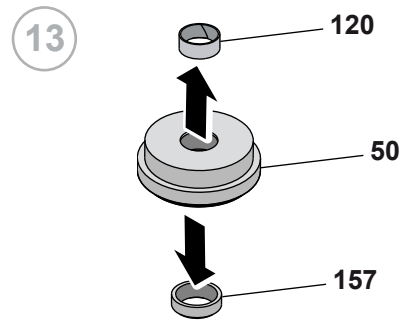
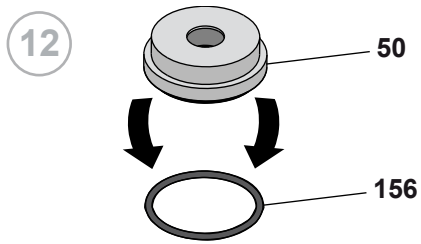
Note the distance like show in the picture

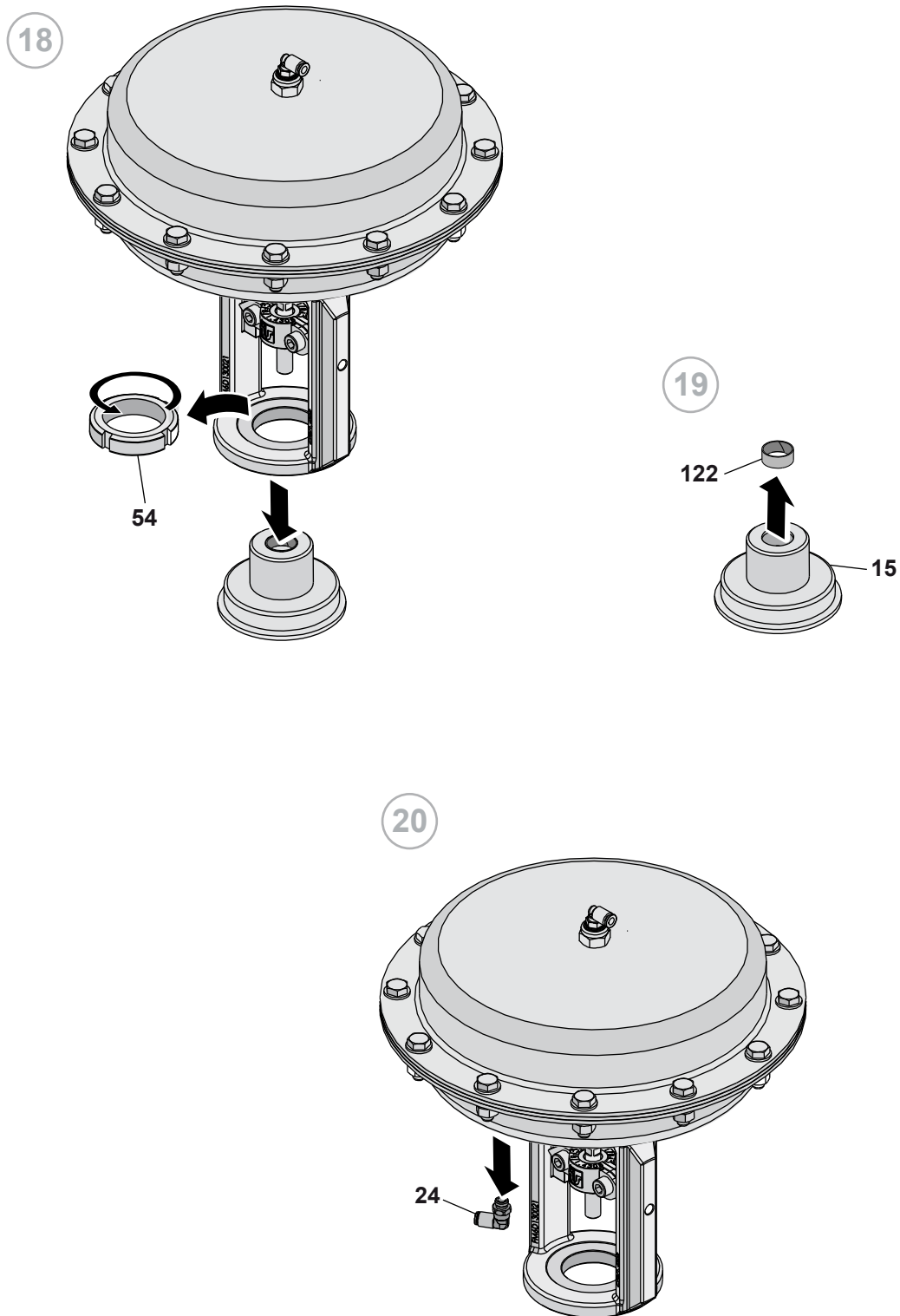


Never touch moving parts if the actuator is supplied with compressed air.

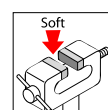
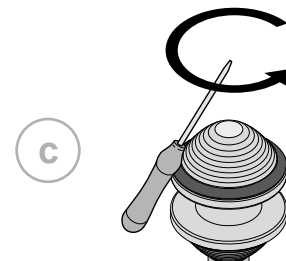
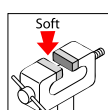
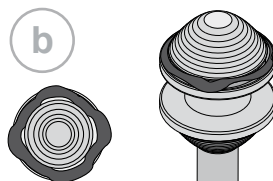
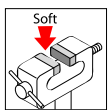
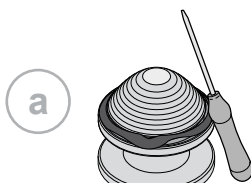
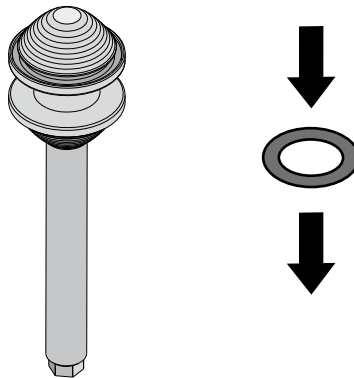
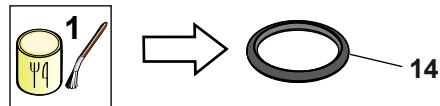






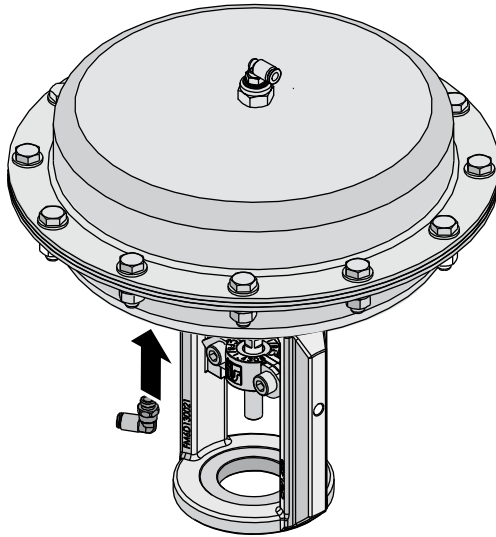


## 10.9 Assembly of the BBZK - BBYK Diverter

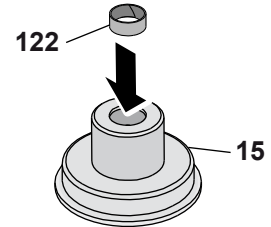




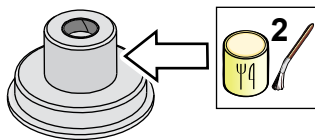
1



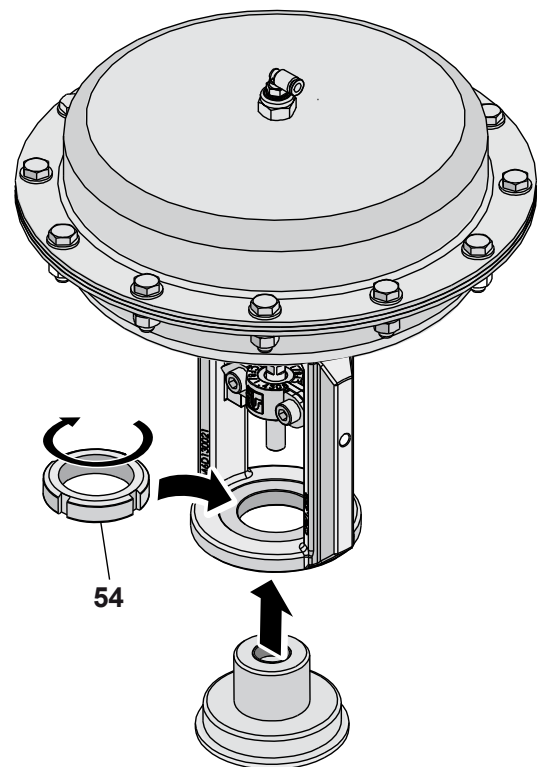
2



3

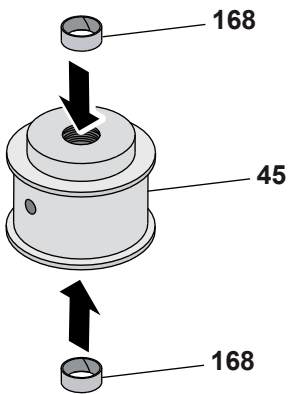


4

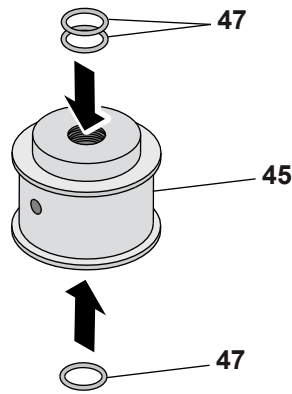


(BBYK)

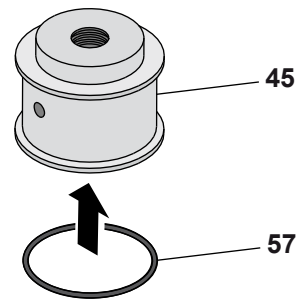
5-e



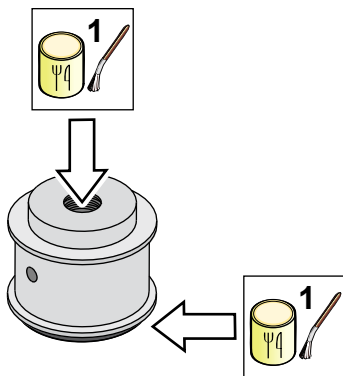
6-e



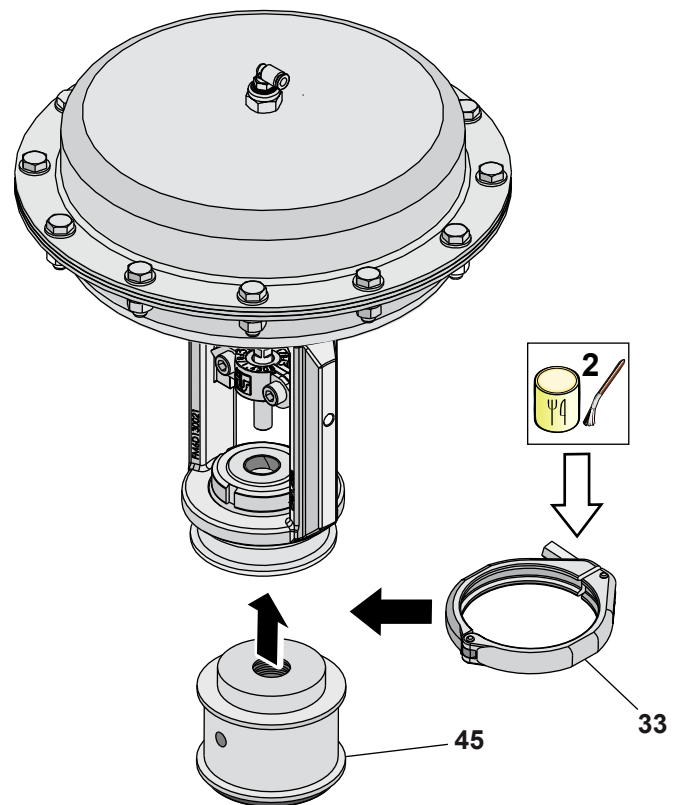
7-e

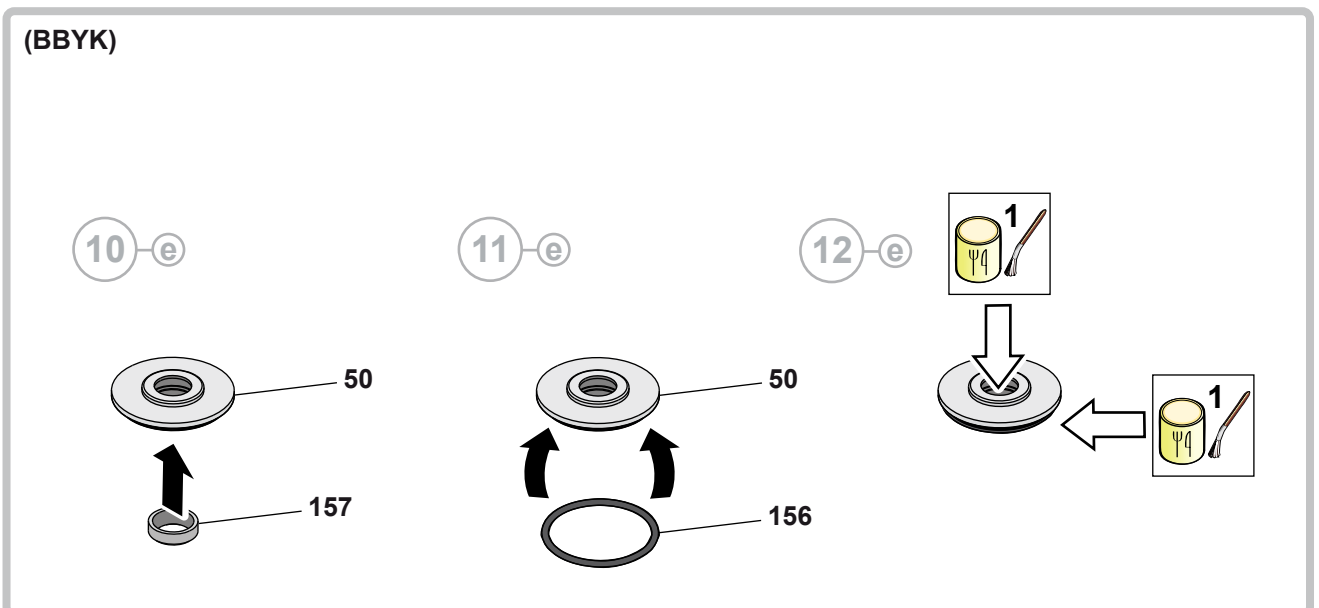
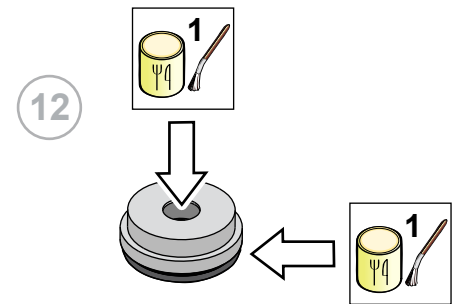
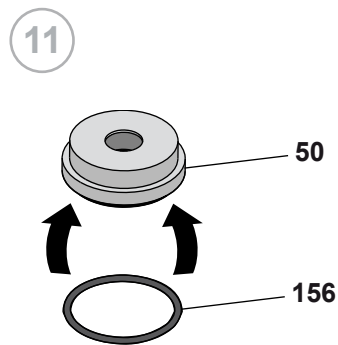
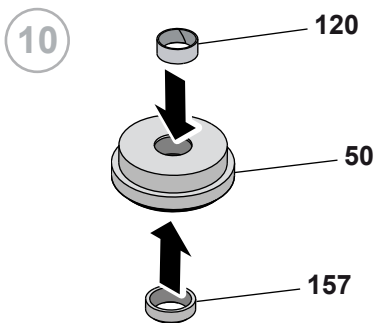
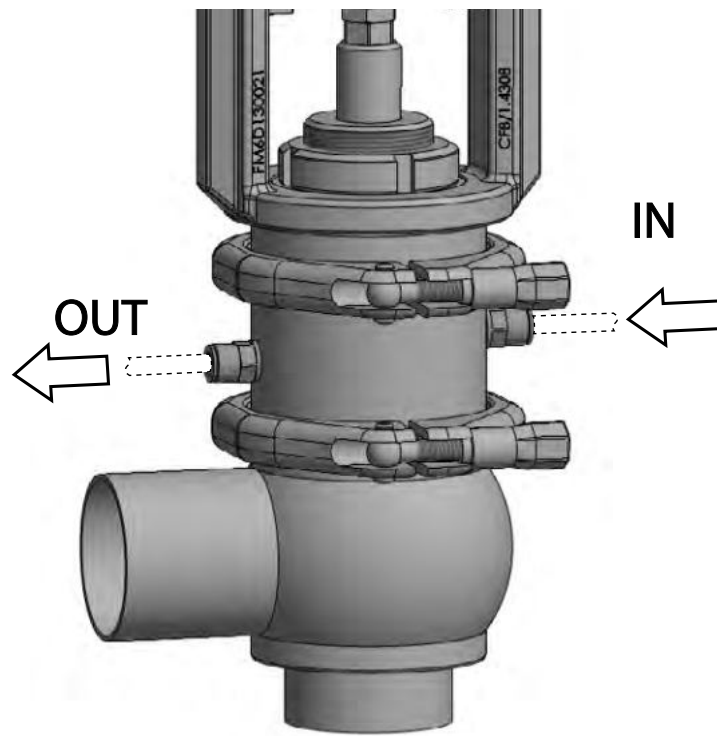


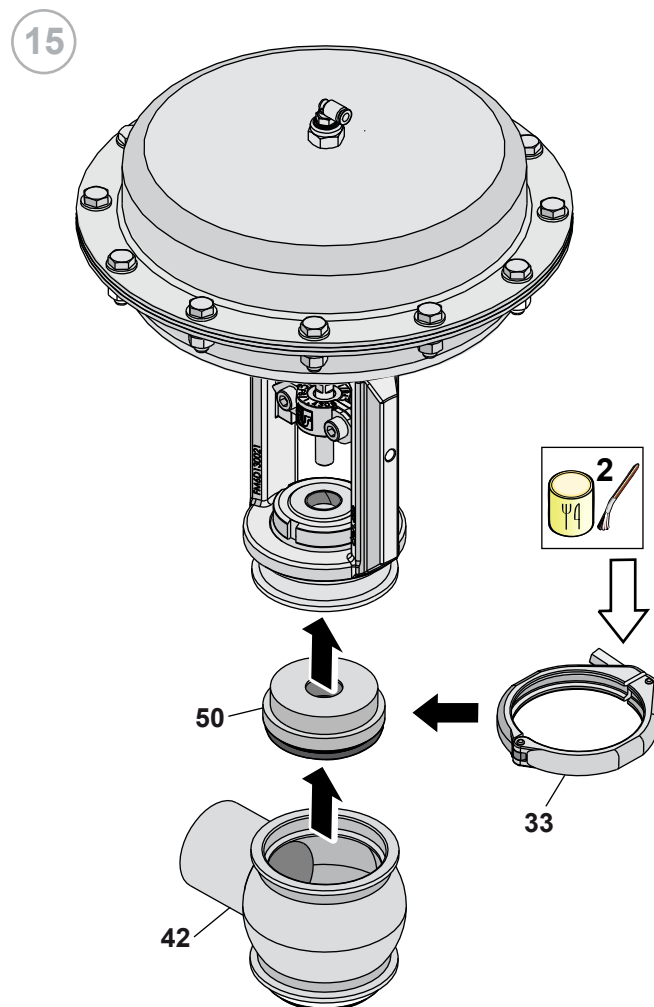
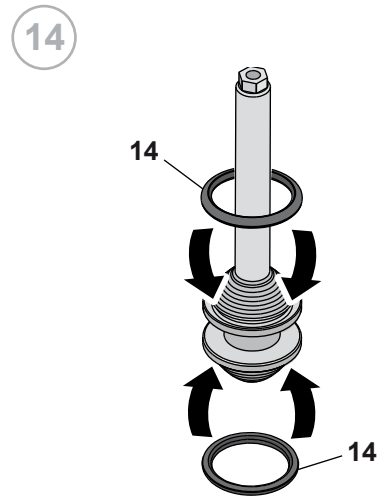
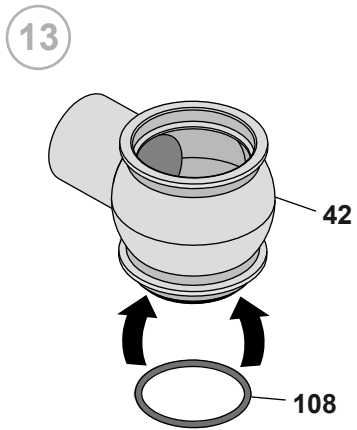
8-e



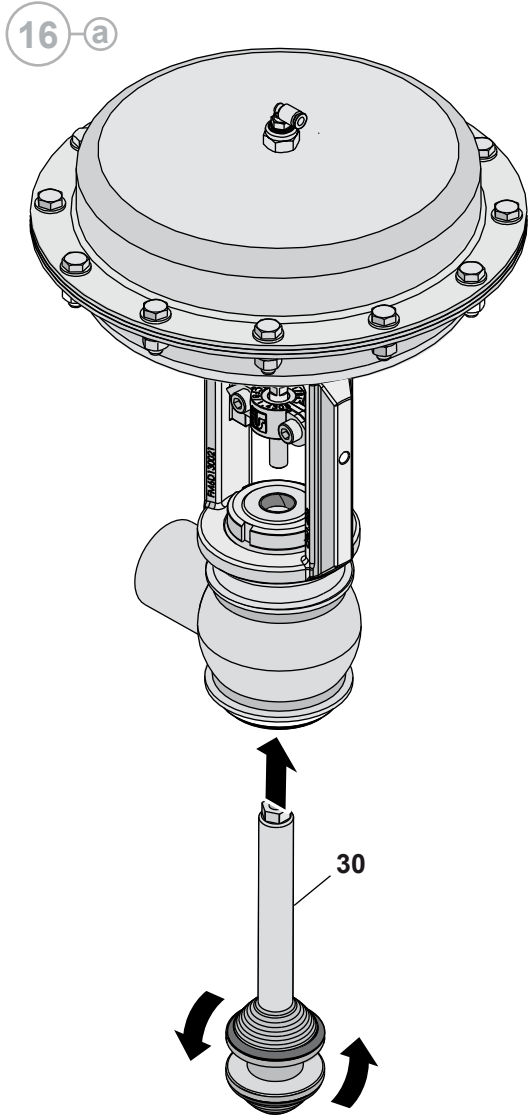
9-e



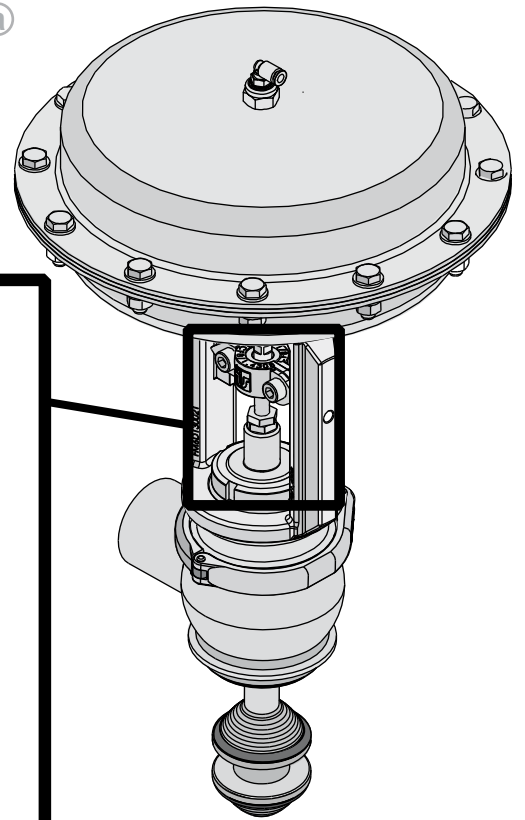
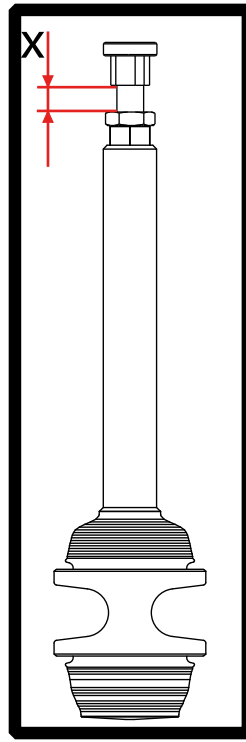




**(Normally closed)**

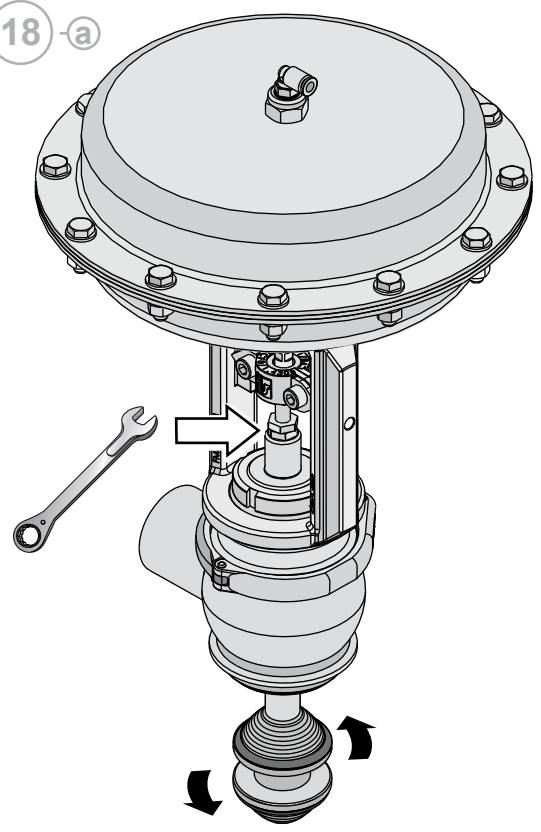


17-a

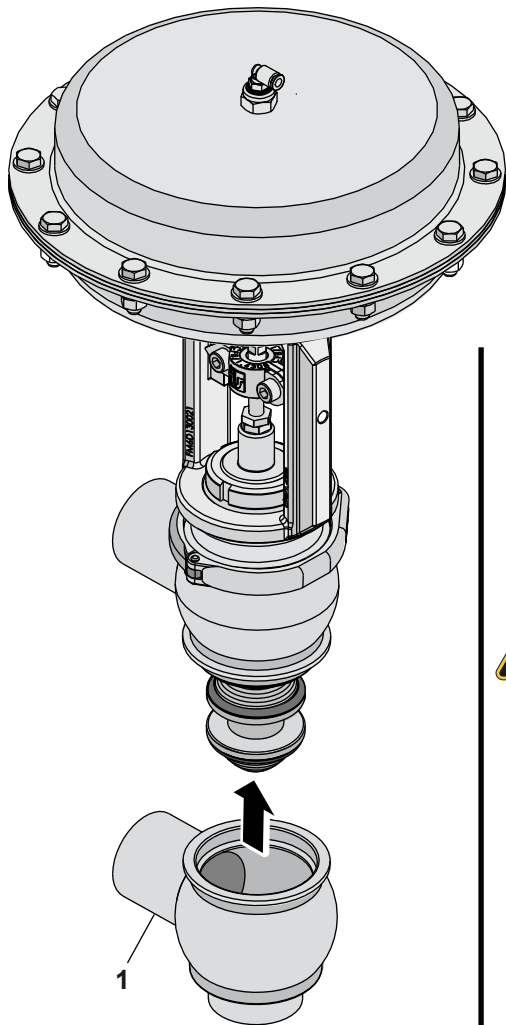


Adjust the shutter to the same distance noted above

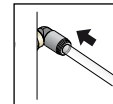
18-a



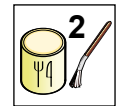
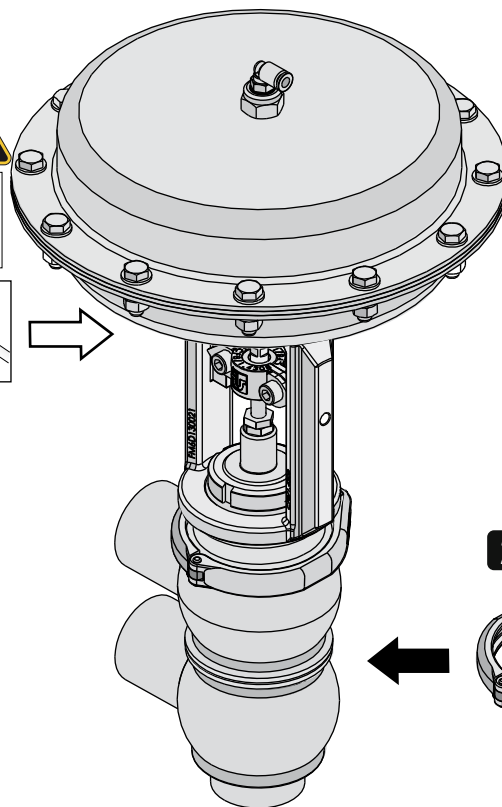
19-a



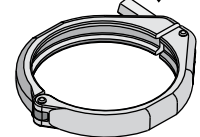
20-a



**1**

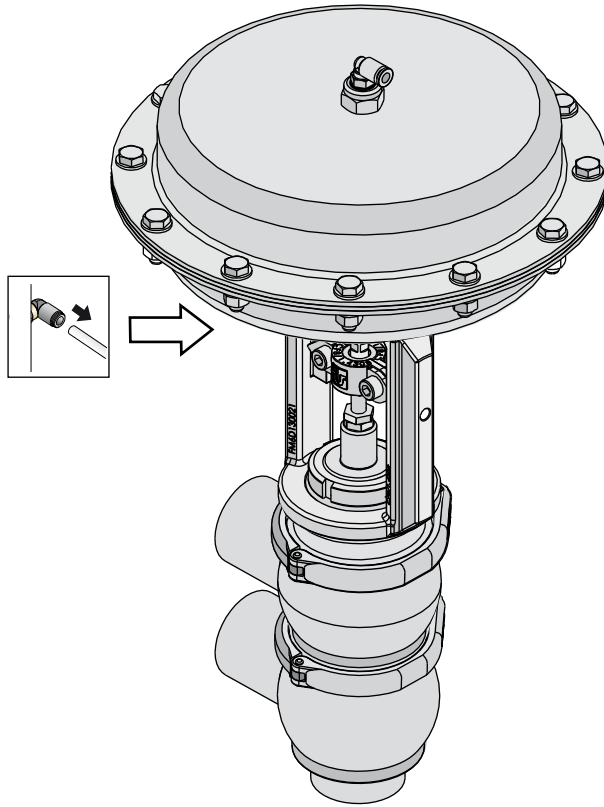


**2**



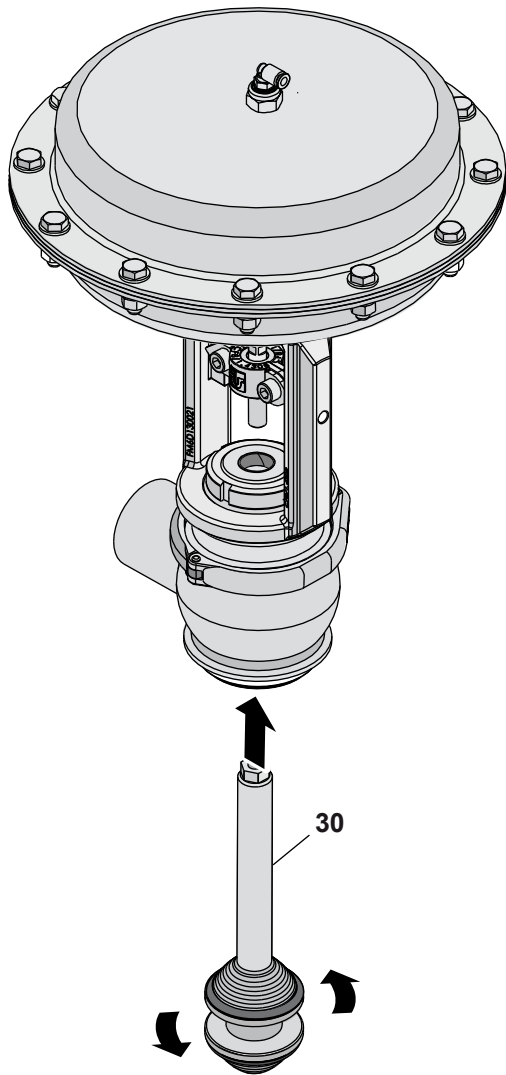
Never touch moving parts if the actuator is supplied with compressed air.

21-a

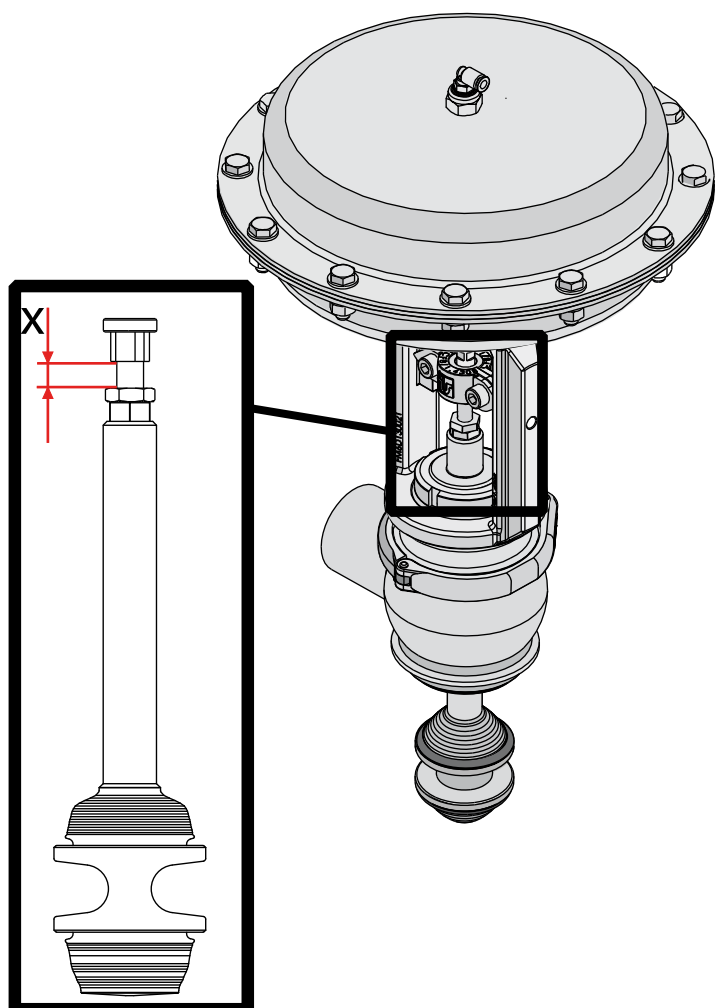


**(Normally open)**

16-b



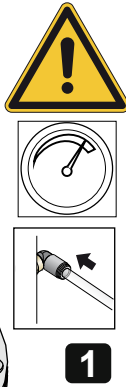
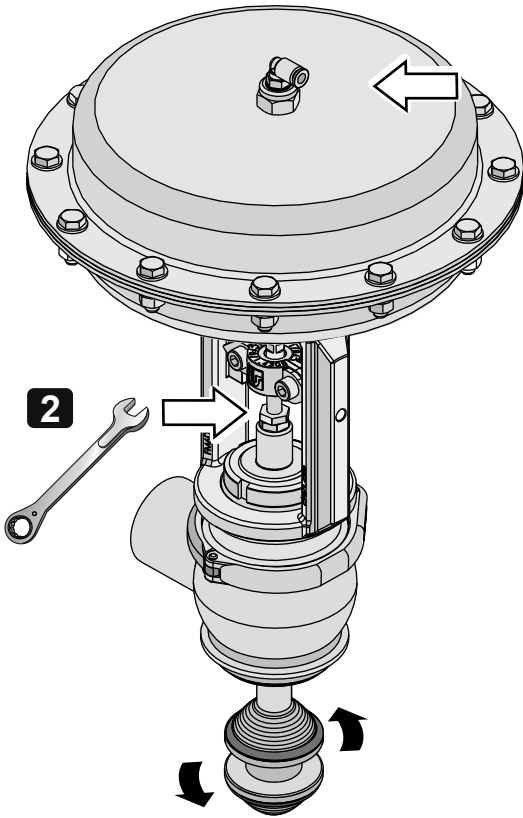
17-b



**Adjust the shutter to the same distance noted above**

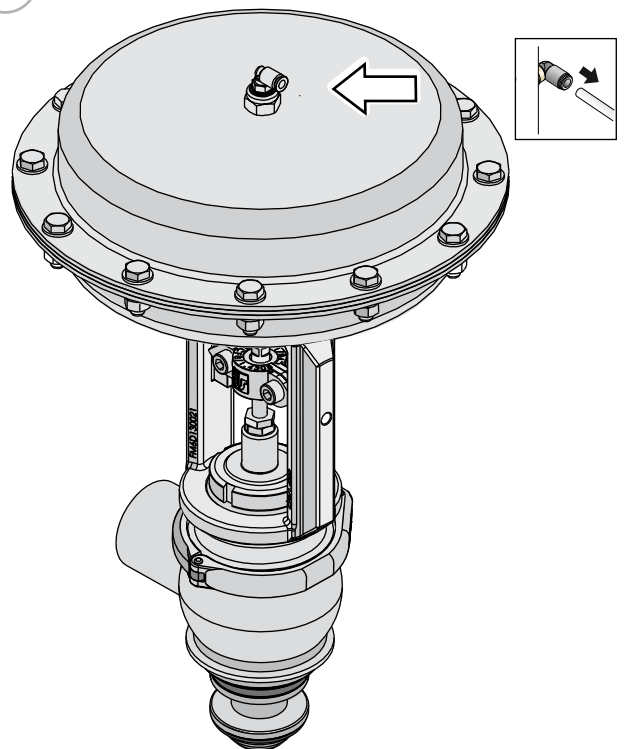


18-b

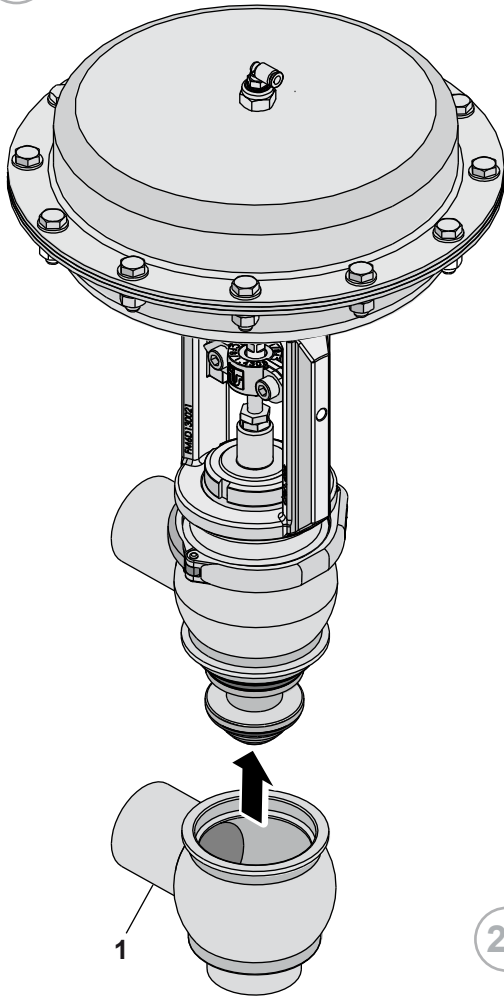


Never touch moving parts if the actuator is supplied with compressed air.

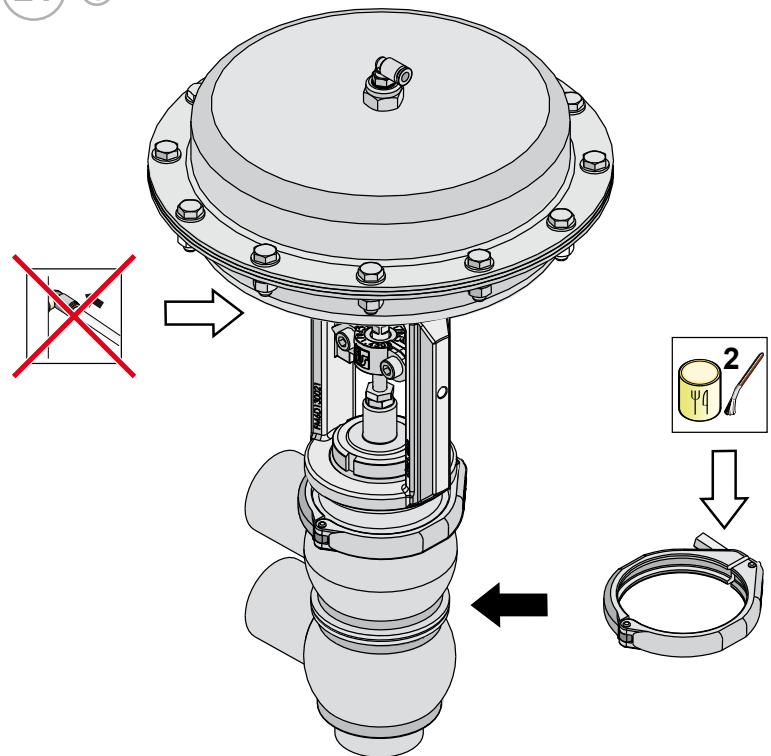
19-b

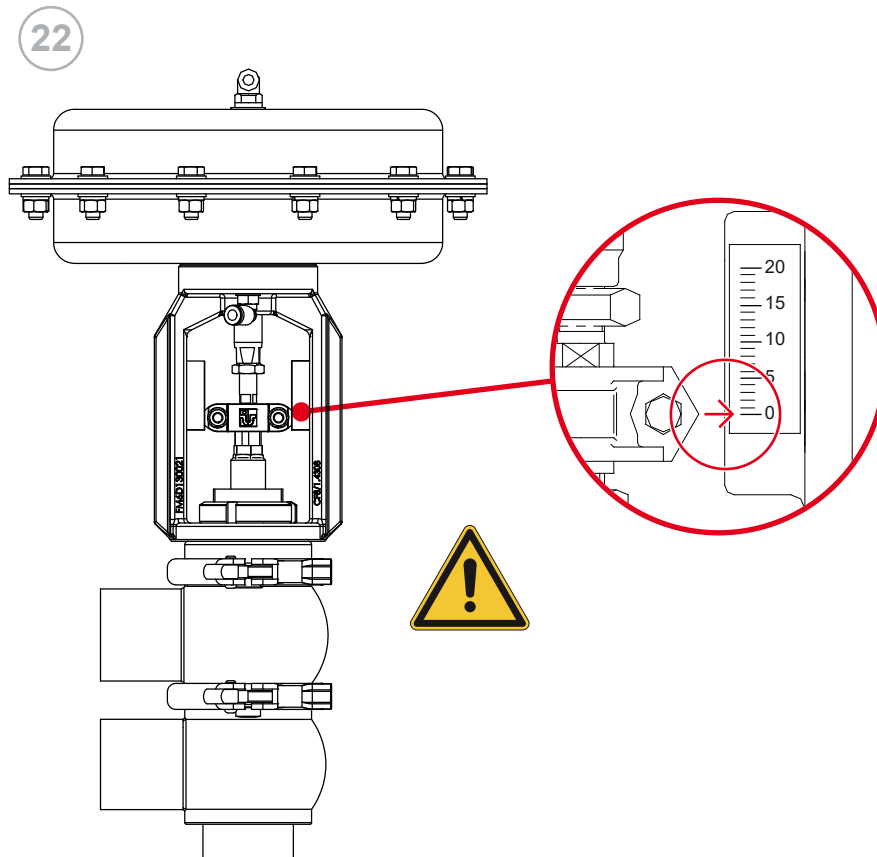


20 - (b)



21 - (b)





# 11 Annexes



GB - EC Declaration of conformity - A3-P-PRG-GB

## 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 Fornovo di Taro (Pr) – Italy

**Declares**

*under its own responsibility that the machine:*

Type:	<b>PNEUMATIC VALVES</b>
Model:	#####
Serial number:	#####
Function:	<b>Fluid handling</b>
Year of construction:	<b>2018</b>
Reference	#####

complies with all relevant provisions of the following EC directives:

**(EC) 2006/42 MACHINERY**

and also comply with the following EC Directives and Regulations:

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

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

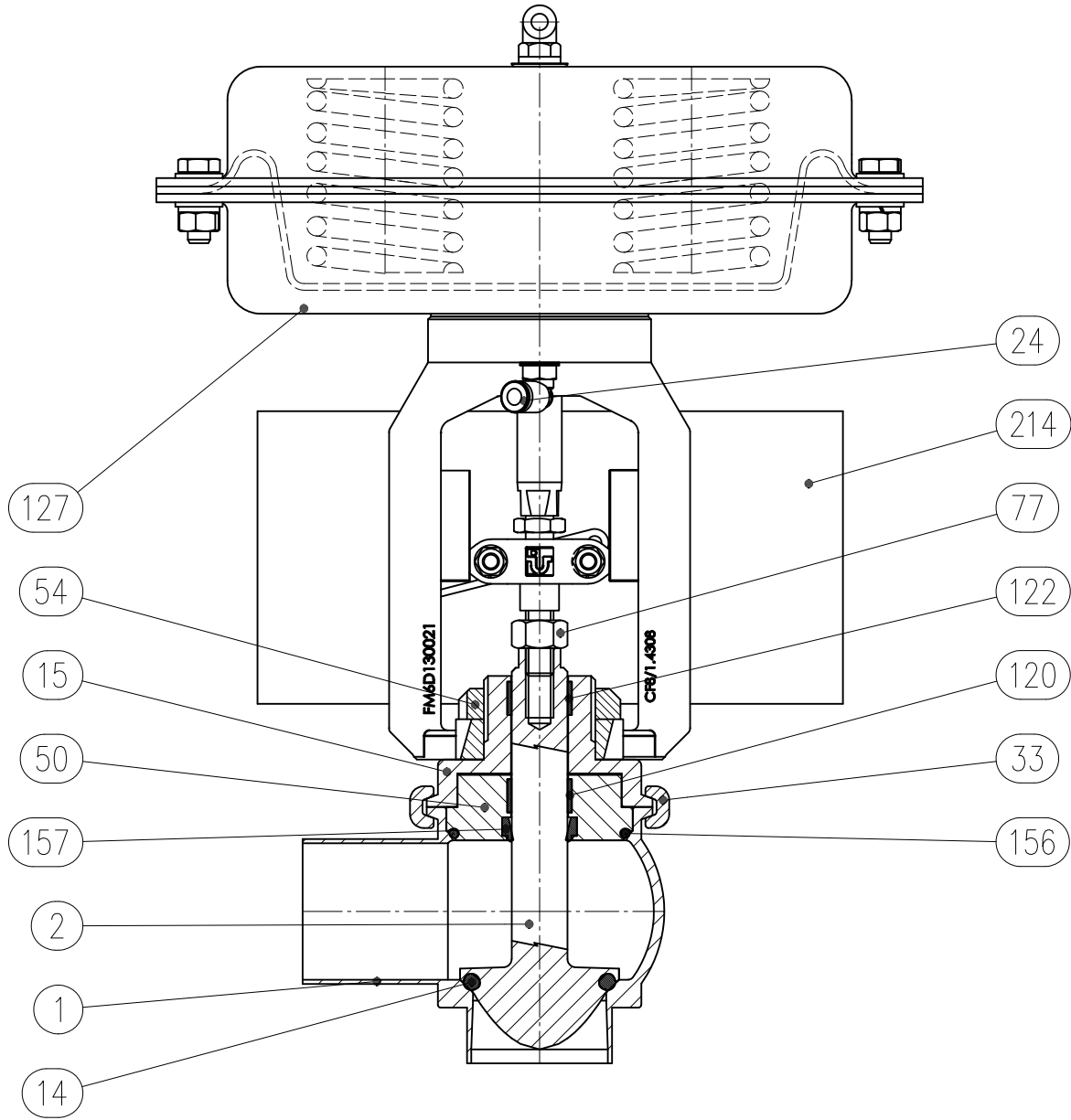
Fornovo di Taro  
20/09/2018

\_\_\_\_\_  
Legal representative

A3-P-PRG-GB Ed. 1. Rev. 0

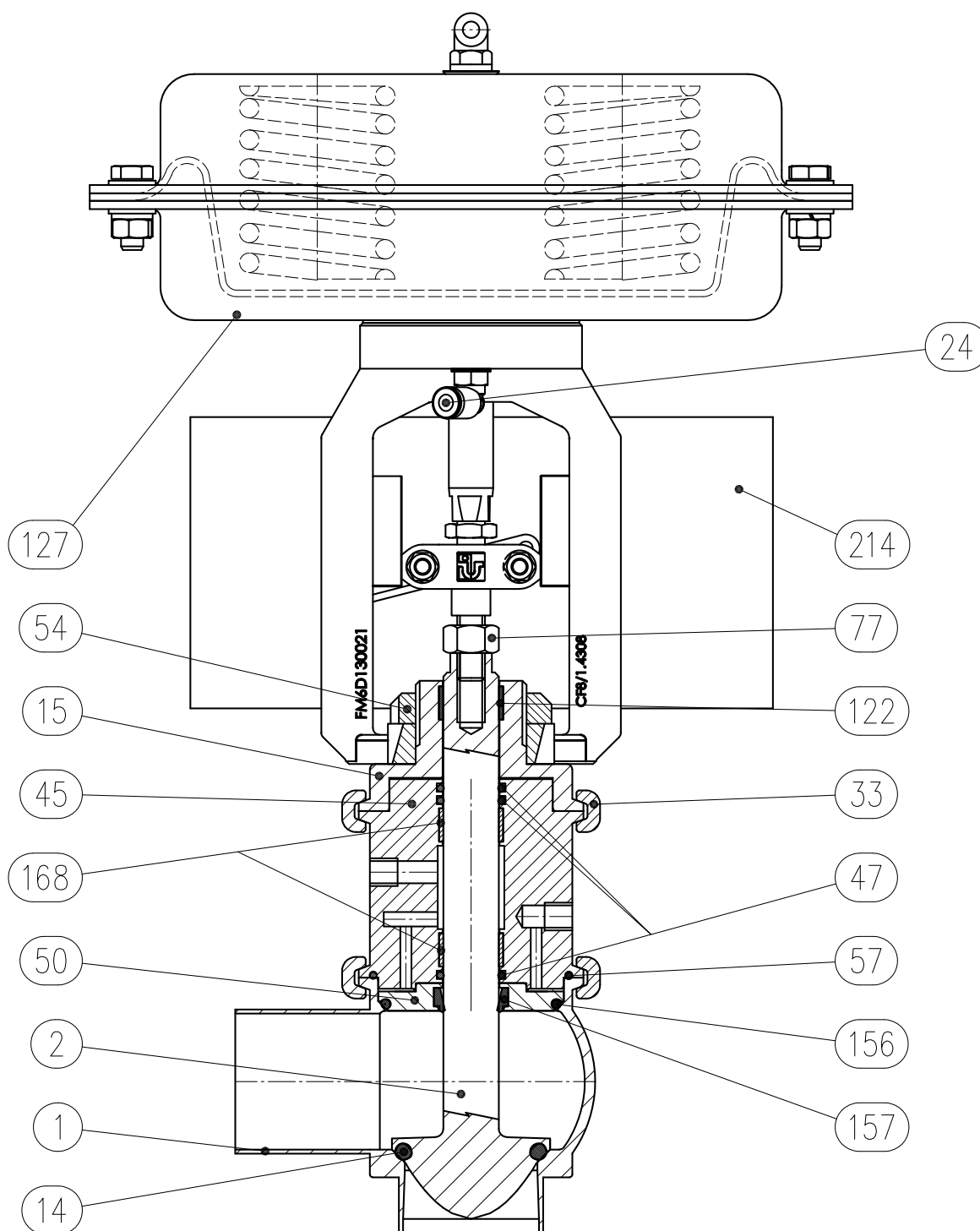
**BARDIANI VALVOLE S.p.A.**  
Via G. di Vittorio 50/52  
43045 Fornovo di Taro (Pr)

# 12 2D diagram BBZK



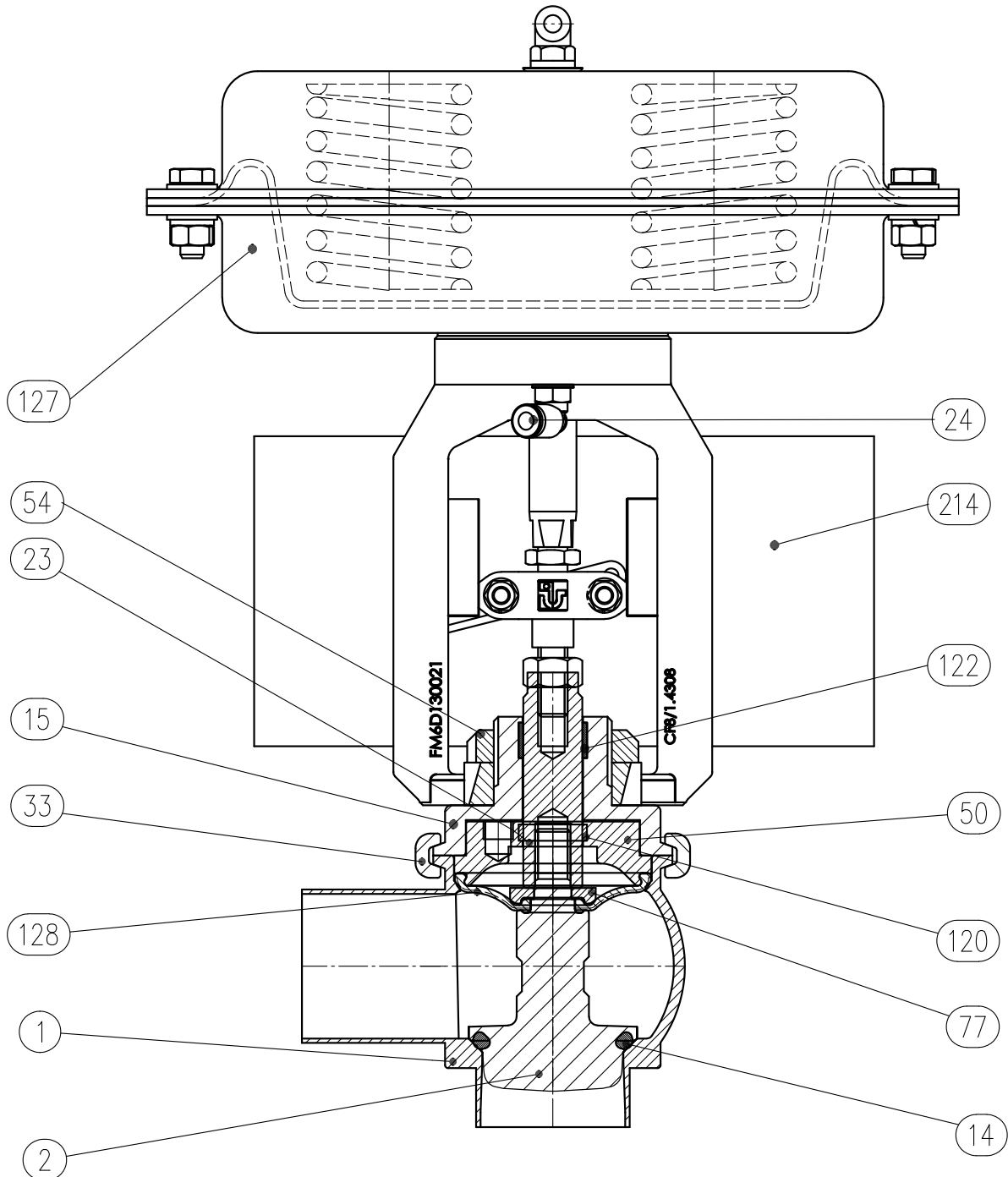
[A M BBZK]

# 13 2D diagram BBYK



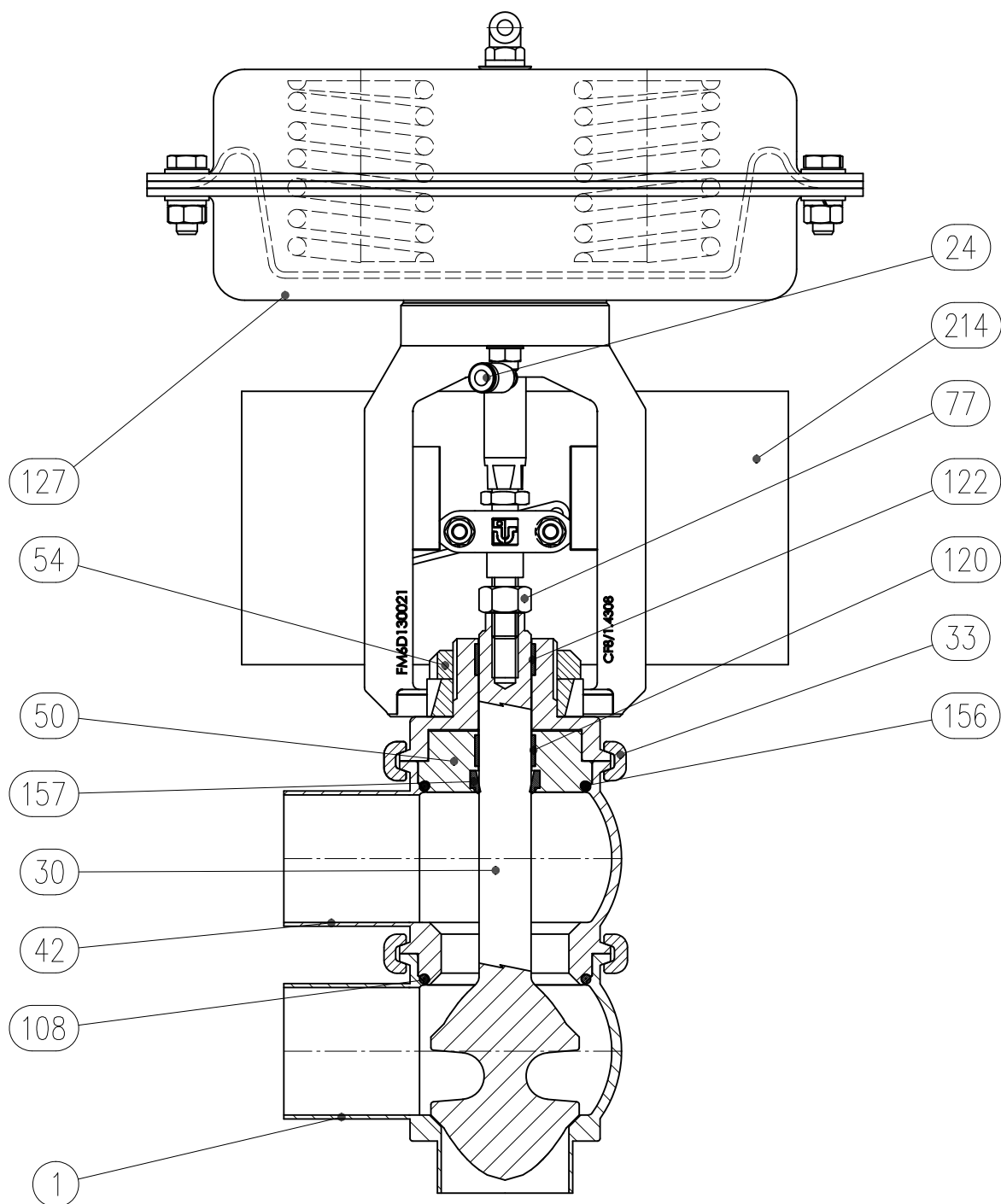
[A M BBZK]

# 14 2D diagram BBWK1



[B M BBWK1]

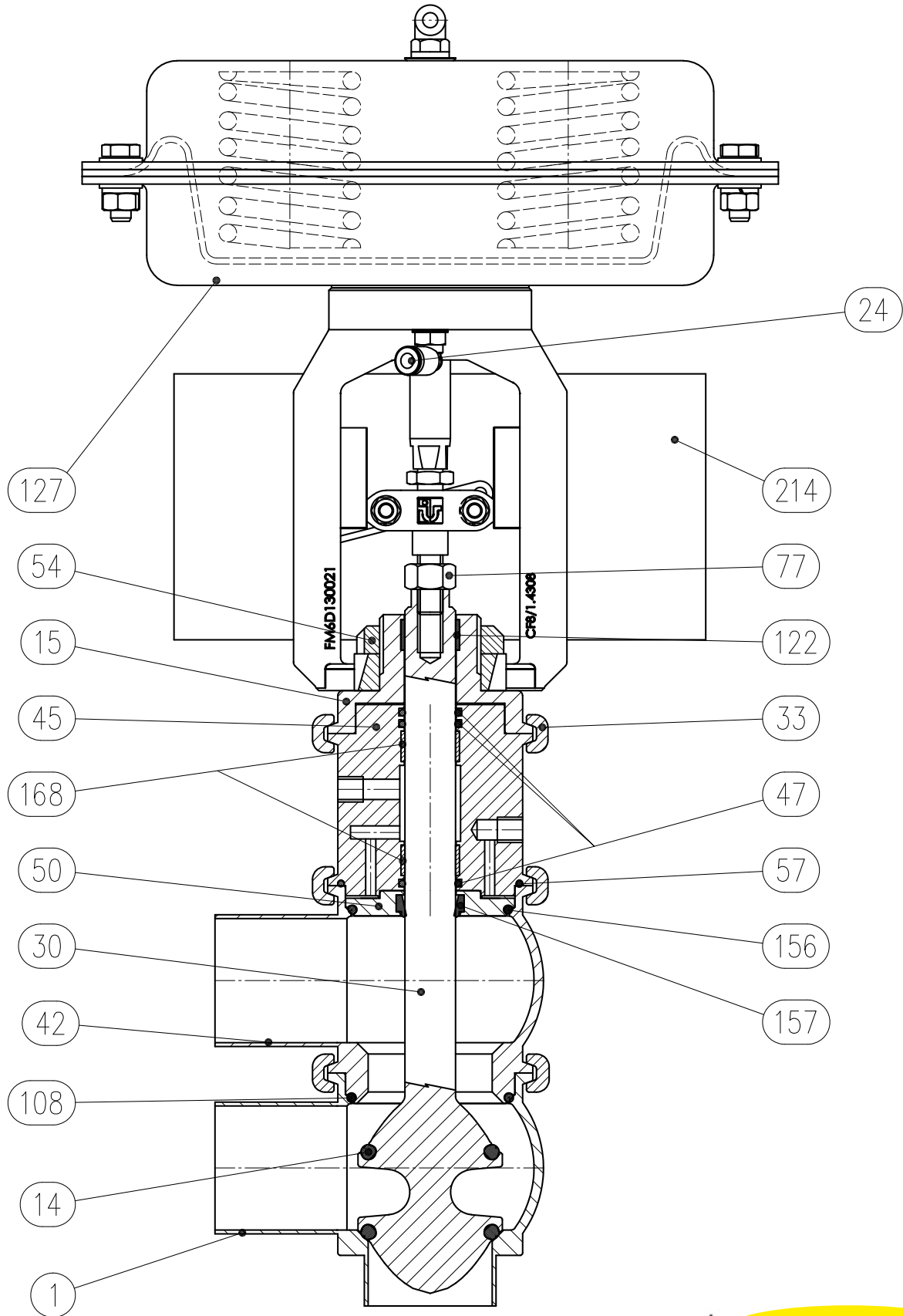
# 15 2D diagram BBZK Diverter



[A M BBZK-LL]



# 16 2D diagram BBYK Diverter



[A M BBZK-LL]

# 17 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 at the expense of 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. EXCLUSIONS FROM THE WARRANTY

Elastomers and electrical components 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.

Application of this warranty also excludes:

- faults and/or defects resulting from incorrect and/or unsuitable and/or improper transport for the Product,
- faults and/or defects resulting from installation of the Product which fails to observe the indications provided in the "Instruction, Use and Maintenance Manual" or in any case caused by incorrect and/or unsuitable and/or improper installation,
- faults and/or defects resulting from use and/or maintenance operations and/or storage of the Products which fail to observe the prescriptions provided in the "Instruction, Use and Maintenance Manual" or in any case which are incorrect and/or unsuitable and/or improper;
- faults and/or defects in 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 outside the control of Bardiani Valvole S.p.A. or determined by force majeure or mishap.

## 18 Recommendations

- 1.** Consultation of the "Instruction, Use and Maintenance Manual" is mandatory prior to the installation, use and maintenance 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.** All the illustrations and drawings provided are to be intended as indicative and therefore not binding, the illustrations being for presentation purposes only.
- 3.** Being as the conditions of Product use and applications cannot be controlled by Bardiani Valvole S.p.A., the Purchaser must ascertain suitability of the use he intends to make of the products beforehand and assume all risks and liabilities which may result from the same.
- 4.** Customer is strongly advised to consult Bardiani Valvole S.p.A.'s technical-commercial collaborator to request any specific information concerning the technical characteristics of the Products.
- 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.** 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.** The content and validity of the warranty covering Bardiani Valvole S.p.A products are dealt with in the relative section in the "Instruction, Use and Maintenance Manual" which constitutes an integral part of the products themselves.
- 8.** 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.

NOTES

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