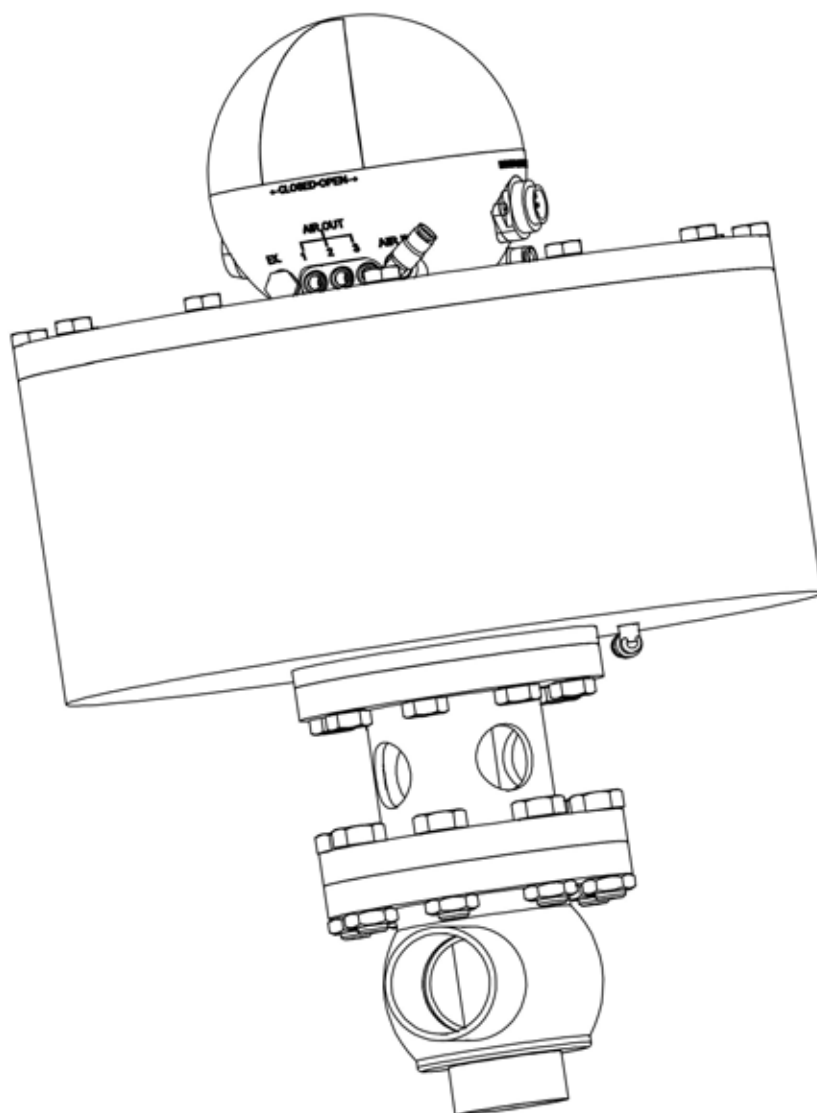


INSTRUCTION MANUAL

# High Pressure Valve

## ZQ - YQ - ZU



**B**ARDIANI  
VALVOLE

---

1. Safety signs .....	3
2. General safety precautions .....	3
3. Receiving /Unpacking/Storage .....	4
4. Installation .....	5
5. Operation .....	6
6. Troubleshooting .....	8
7. Cleaning .....	9
8. General Maintenance .....	10
9. Planned Maintenance .....	11
10. Spare parts ordering .....	12
11. Disassembly of valve type .....	13
Drawings .....	16
12. Assembly of valve type ZQ-YQ .....	18
13. Disassembly of divert valve type ZQ-YQ .....	21
Drawings divert .....	25
14. Assembly of divert valve type ZQ-YQ .....	27
15. Disassembly of valve type ZU.....	30
Drawings .....	31
16. Assembly of valve type ZU .....	32
17. Part list .....	34
18. Technical data .....	35
Warranty .....	36
Disclaimer .....	36

---

## Foreword

**This instruction manual is an integral part of the valve delivery.**

- **To use the Atex valve model is obligatory to consult the appropriate manual.**
- **Always read it carefully before using the valve.**
- **Always keep it for future reference.**

All rights are reserved. It is forbidden to reproduce or transit any part of the instruction manual by any means, either electronic or mechanical, including photo copies, recording or any other memorisation or retrieval system for purposes other than the exclusively personal use by the purchaser – without prior written permission by the manufacturer.

This instruction manual is expressly intended for use by technicians. Therefore, some information which can easily be inferred by reading the text and examining the illustrations and drawings has not been further specified. The publisher is not responsible for any consequences of incorrect operations by the user.

The data and information in this instruction manual are subject to modifications or updates without any further notice or obligations on the part of the manufacturer.

## 1. Safety/Caution Signs

---



General WARNING sign, which indicates that special instructions **MUST** be followed to avoid serious personal injuries.



General CAUTION sign, which indicates that special instructions **MUST** be followed to avoid damage of equipment and environment

### **NOTE!**

Indicates **IMPORTANT** information, which improves the understanding of the instructions.

---

## 2. General Safety Precautions



ALWAYS read the technical data before installation, operation and maintenance.

ALWAYS use authorised personal to install, operate and service the valve. The personal should know the valve and the instruction manual thoroughly.

ONLY use the valve for the designed purpose.

ALWAYS handle heavy valves carefully and use lifting tools where necessary.

ALWAYS pay attention to possible loose valve parts when unpacking the delivery.

ALWAYS connect air supply carefully and disconnect after use.

ALWAYS connect electrical supply carefully and disconnect after use.

NEVER touch moving valve parts.

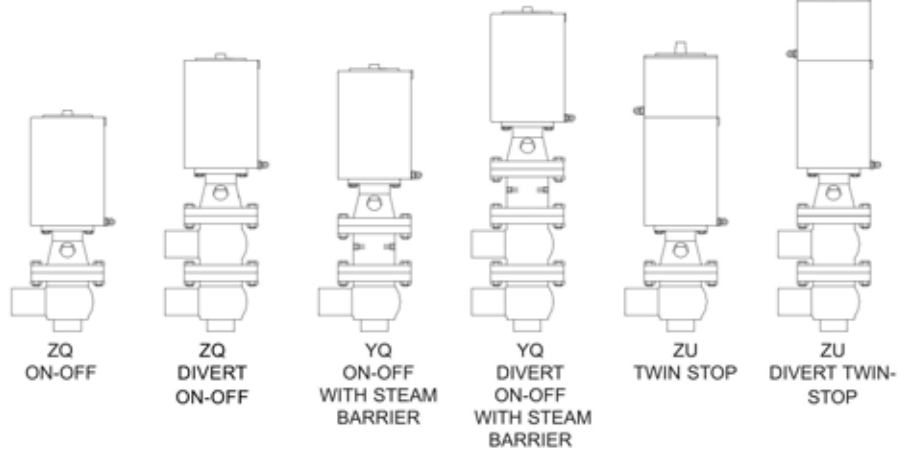
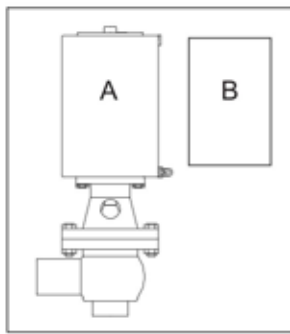
NEVER touch a hot valve.

ALWAYS handle cleaning agents carefully.

NEVER remove a valve from piping or disassemble it when the valve or piping are pressurised.

**We cannot be held responsible for incorrect  
installation, operation and maintenance!**

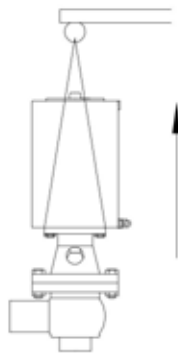
### 3. Receiving/Unpacking/Storage



**ATTENTION !**

- 1. UNPACK AND CHECK VALVE DELIVERY:**
- A. Complete valve
  - B. Instruction manual

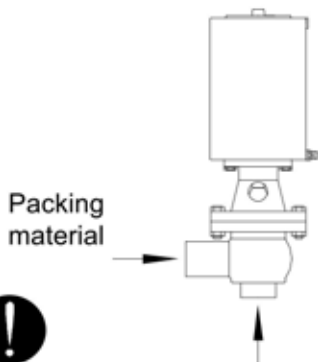
- 2. IDENTIFY VALVE TYPE SUPPLIED:**
- ZQ: Pneumatic High Pressure ON-OFF
  - YQ: High Pressure ON-OFF with Steam Barrier
  - ZU: High Pressure ON-OFF, Twin Stop.



- 3. LIFTING OF HEAVY VALVE:**
- Use lifting tool, if necessary.
  - Fix valve to lifting tool.

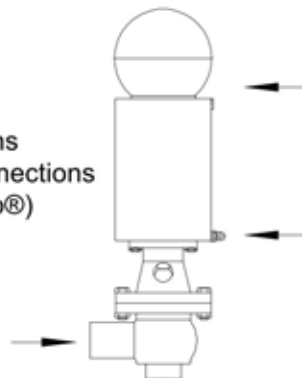


- 4. HANDLING OF LOOSE VALVE PARTS:**
- Avoid falling loose valve parts.
  - Assemble and tighten loose parts.
  - See assembly instructions.



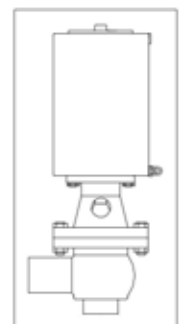
- 5. PACKING MATERIAL:**
- Inspect internal of valve.
  - Remove material and dispose of according to current directives.

- Opening
- Air connections
- Electrical connections (for Giotto-Top®)



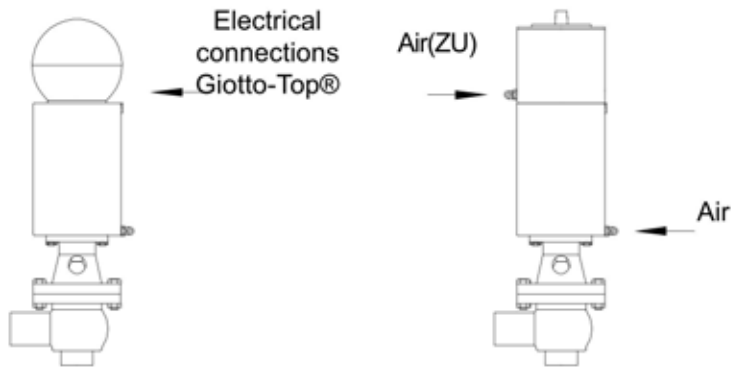
- 6. INSPECTION/CLAIM:**
- Inspect valve connections.
  - Document /verify damage, missing or wrong parts.
  - Use current claim procedure if necessary.

Safe valve protection!



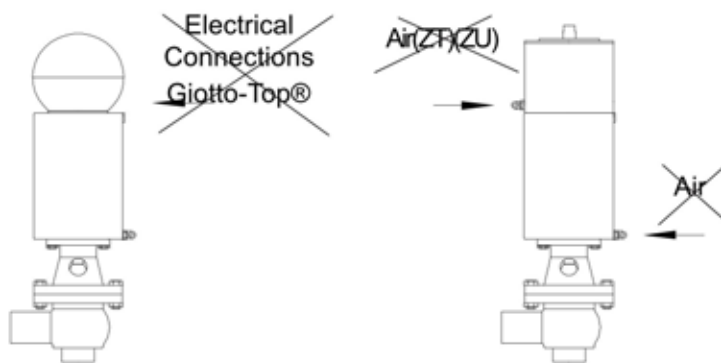
- 7. STORAGE/PROTECTION:**
- Avoid dust, humidity, wet areas, heat and similar.
  - Avoid vibration.
  - Min.: - 10 °C
  - Max.: + 50 °C

## 4. Installation



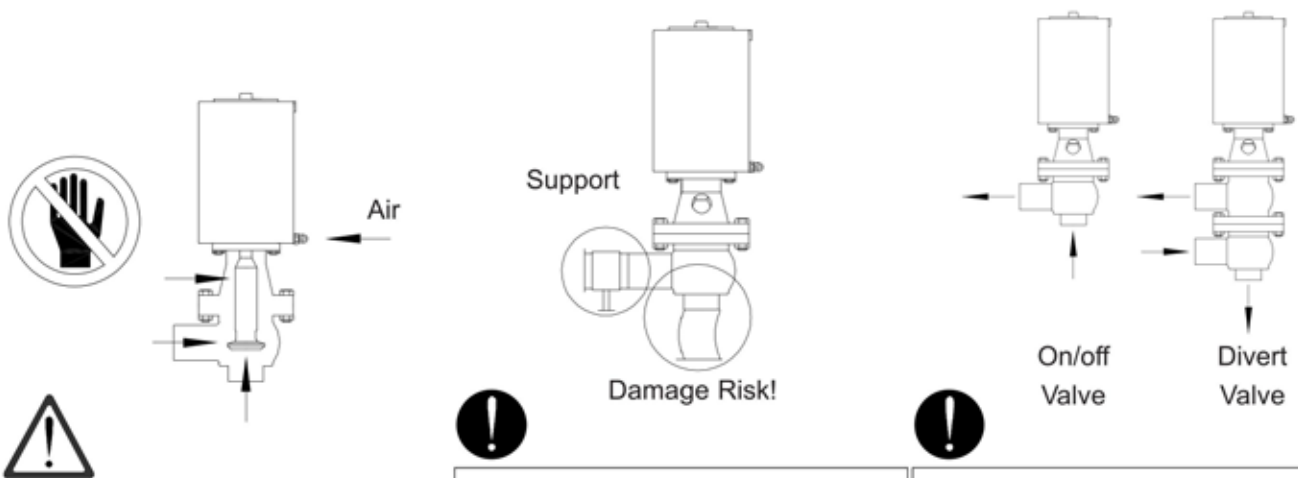
### 1. CONNECTION OF AIR AND EL SUPPLY:

- Use authorised personnel to install/connect the valve.
- Ensure correct air pressure and quality (see page 35).
- Ensure correct electrical supply for Giotto-Top® (see Giotto-Top® instruction manual).



### 2. DISCONNECT SUPPLIES AFTER USE:

- Disconnect air supply.
- Disconnect electrical supply (for Giotto-Top®).



### 3. MOVING VALVE PARTS:

- Never stick fingers into valve ports.



### 4. AVOID VALVE OVERLOADING AND COMPENSATE FOR:

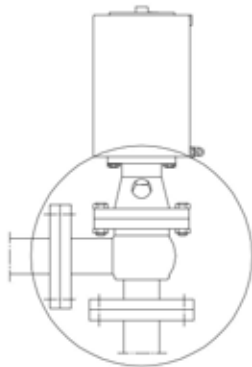
- Vibration
- Thermal expansion



### 5. CORRECT FLOW DIRECTION:

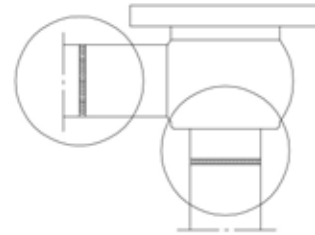
If possible, have flow against valve closing direction to avoid or minimise water hammer.

## 4. Installation



### 6. VALVE CONNECTIONS/UNIONS:

- Ensure tight connections between valve and piping.
- Remember gaskets and fit correctly.
- Tighten unions firmly and carefully.

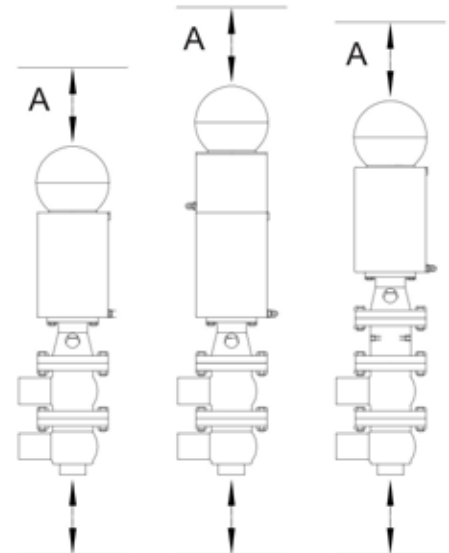


### 7. WELDING VALVE BODY INTO PIPING:

- Remove inner valve parts.
- Weld body carefully into piping.
- Assemble valve.
- See assembly instructions.

### ZQ-ZU-YQ (with Giotto-Top®)

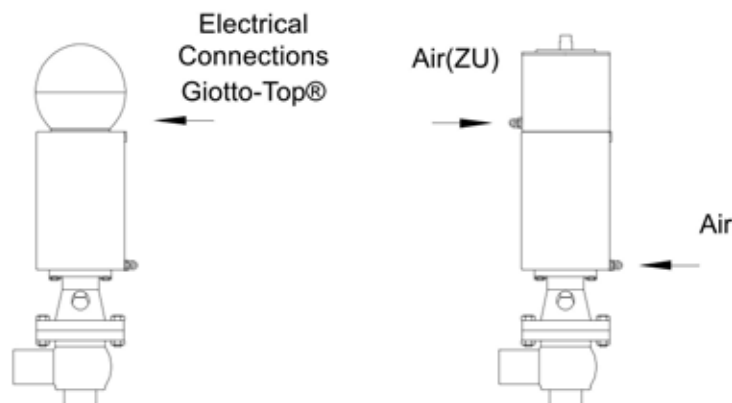
Valve dimension	A (mm)
DN10--20	280
DN25--40	300
DN50	320
DN65	340
DN80	360
DN100	380
DN125	420



### 8. INSTALLING VALVE INTO PIPING:

Ensure sufficient clearance for valve disassembly.

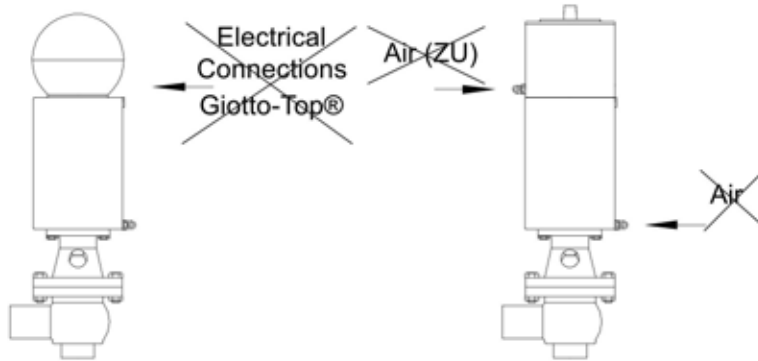
## 5. Operation



### 1. SUPPLYING AIR AND EL TO VALVE:

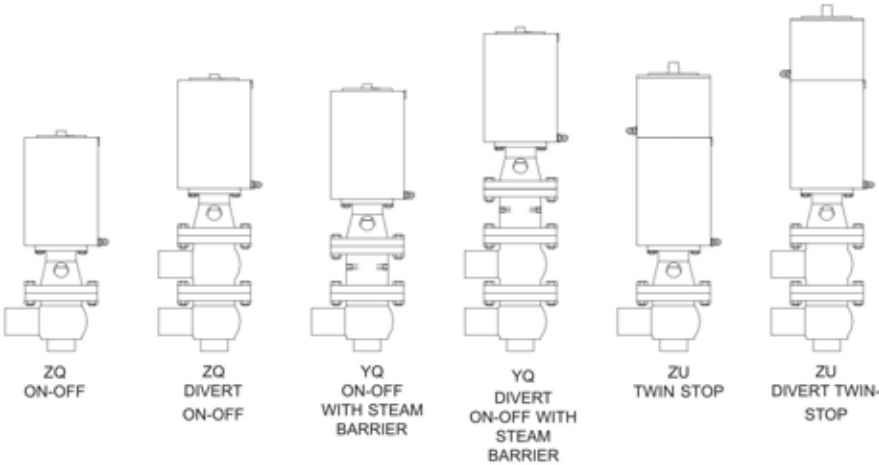
- Use authorised personnel to operate the valve.
- Ensure correct air pressure and quality (see page 35).
- Ensure correct electrical supply for Giotto-Top® (see Giotto-Top® instruction manual).

## 5. Operation



### 2. DISCONNECT SUPPLIES AFTER USE:

- Disconnect air supply.
- Disconnect electrical supply for Giotto-Top®



### 3. ONLY USE VALVE FOR DESIGNED PURPOSE:

ZQ: Pneumatic High Pressure ON-OFF

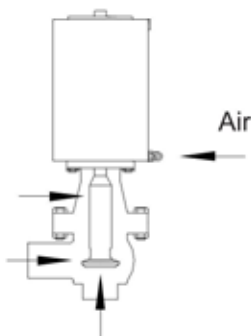
ZQ: Divert High Pressure Pneumatic ON-OFF

YQ: Pneumatic High Pressure ON-OFF with Steam Barrier

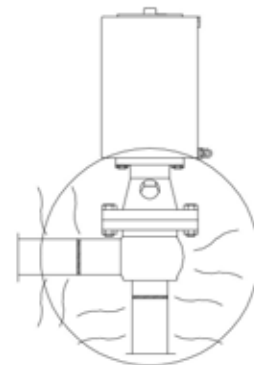
YQ: Divert High Pressure Pneumatic ON-OFF, with Steam Barrier

ZU: Pneumatic High Pressure ON-OFF, Twin Stop

ZU: Divert High Pressure Pneumatic ON-OFF, Twin Stop



**BURNING RISK**



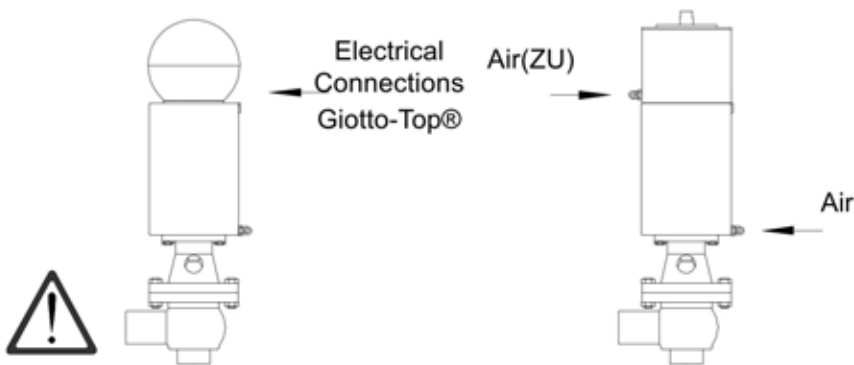
### 4. MOVING VALVE PARTS:

- Never stick fingers into valve parts.
- Never touch moving valve shutter/stem.

### 5. HOT VALVE/PIPING:

- Never touch hot valve or piping, if possible.
- Alternatively use protective gloves.

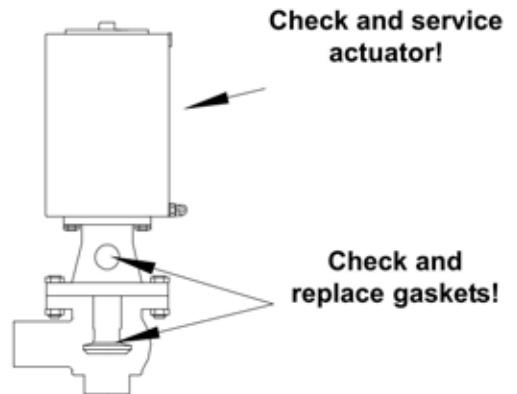
## 5. Operation



- 6. PRE-USE CHECK VALVE BEFORE OPERATION:**
- Supply air to the valve.
  - Supply el to the valve (with Giotto top®).
  - Open and close the valve several times.
  - Check that the valve functions operate correctly and smoothly.

## 6. Troubleshooting

- 1. TROUBLESHOOTING VALVE:**  
Always study operation and maintenance instructions carefully before troubleshooting.



- 2. REPLACING WORN VALVE PARTS:**
- See page 13 for spare parts ordering.

Problem	Possible cause	Possible remedy
External leakage	Worn out gasket	Replace gasket
Internal leakage with closed valve, caused by normal wear		
External leakage	Too high pressure	Replace with gasket of different elastomer type
	Too high temperature	
Internal leakage with closed valve occurring earlier than normal wear	Aggressive fluids	Modify operation conditions
	Too many active control	
Difficult opening and closing	Incorrect elastomer type of gaskets	Replace with gasket of different elastomer type
	Incorrect positioning of actuator	Assemble actuator correctly
	Incorrect operation of actuator	Change from normally open (NO) to normally closed (NC) or vice versa
	Dirt in actuator	Check and service actuator
	Incorrect positioning of valve body	Disassemble and reposition valve body



## 7. Cleaning

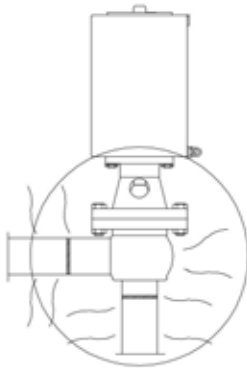


### 1. CLEANING VALVE WITH CLEANING AGENTS:

- Use authorised personnel to clean the valve.
- Observe concentrations of cleaning agents.
- Follow instructions of cleaning agent suppliers.
- Always use protective goggles and gloves.



**BURNING RISK!!**



### 2. HOT VALVE/PIPING:

- Never touch hot valve or piping, if possible.
- Alternatively use protective gloves.



**Corrosion risk of stainless steel!**



### 3. HANDLING OF CLEANING AGENTS:

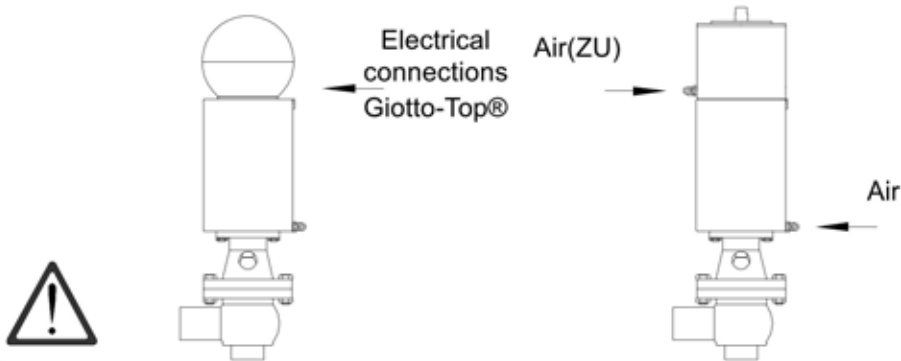
- Dose cleaning agents regularly to avoid excessive concentration.
- Always rinse carefully with clean water after cleaning.
- Check compatibility of valve mater

Example of suggested CIP

Step	Temperature °C	Cip product
First rinsing	Atmosphere	Water without chlorine or chlorids
Washing	70°	Soda (NaOH) at 1%
Intermediate washing	Atmosphere	Water without chlorine or chlorids
Washing	70°	Nitric acid (HNO3) at 0,5%
Final rinsing	Atmosphere	Water without chlorine or chlorids

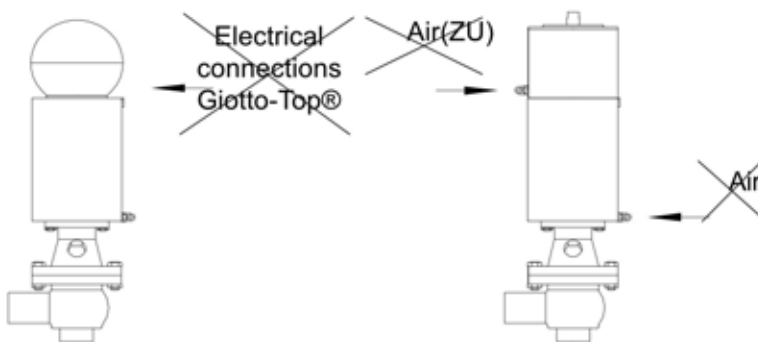
Recommended claning speed = 2 m/s

## 8. General Maintenance



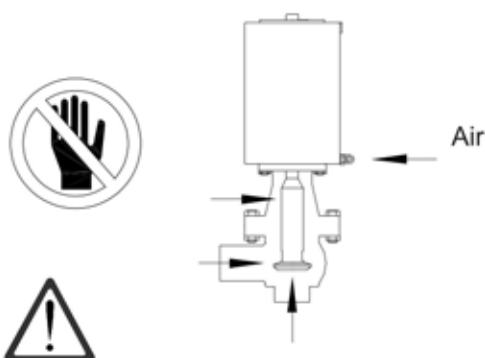
### 1. SUPPLYING AIR AND EL TO VALVE:

- Use authorised personnel to service the valve.
- Ensure correct air electrical supply for Giotto-Top® (see Giotto-Top® instruction manual).
- Ensure correct air pressure and quality (see page 35).



### 2. DISCONNECT SUPPLIES AFTER USE:

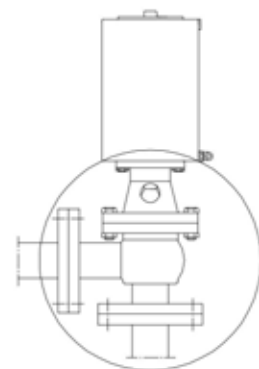
- Disconnect air supply.
- Disconnect electrical supply for Giotto-Top®



### 3. MOVING VALVE PARTS:

- Never stick fingers into valve parts.
- Never touch moving valve shutter/stem.

Atmospheric pressure required



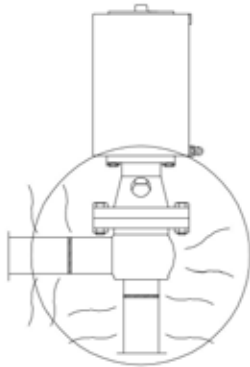
### 4. PRESSURISED VALVE/PIPING:

- Always release fluid pressure from valve and piping before disassembling the valve.

## 8. General Maintenance



**BURNING RISK!**



### 5. HOT VALVE/PIPING:

- Never touch hot valve or piping, if possible.
- Alternatively use protective gloves.

**Wash and clean thoroughly**



### 6. CLEANING OF DEPOSITS:

- Wash and clean all valve parts thoroughly before disassembly and assembly!
- Pay attention to possible deposits of cleaning agents and other aggressive fluids!
- Always use protective goggles and gloves, if necessary.



### 7. REPLACING WORN VALVE PARTS:

- Always use original spare parts.
- See page 13 for spare parts ordering.

## 9. Planned Maintenance

Planned maintenance	Valve gaskets	Actuator gaskets
Preventive	Replace after 12 months	Replace after 24 months
In case of leakage	Replace at the end of the day	Replace in case of leakage
Periodical	Check for correct operation and absence of leakage	Check for correct operation and absence of leakage
	Record all actions taken	Record all actions taken

# 10. Spare Parts Ordering



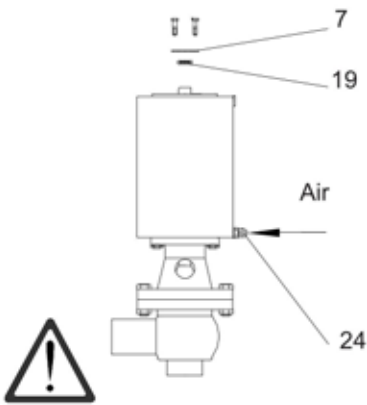
**NOTE!**

Please copy this page, fill it out and fax it to below address.

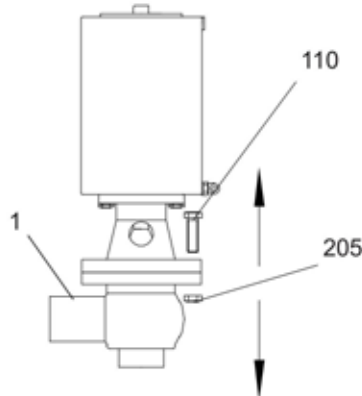
À :  
BARDIANI VALVOLE S.P.A. – Ufficio Ricambi  
Fax: +3905253408

From:			
Valve type:			
Serial number:			
Month/Year of purchase:			
Shipping instructions:			
Quantity:		Position no.:	
Description:			
Quantity:		Position no.:	
Description:			
Quantity:		Position no.:	
Description:			
Quantity:		Position no.:	
Description:			
Quantity:		Position no.:	
Description:			
Quantity:		Position no.:	
Description:			

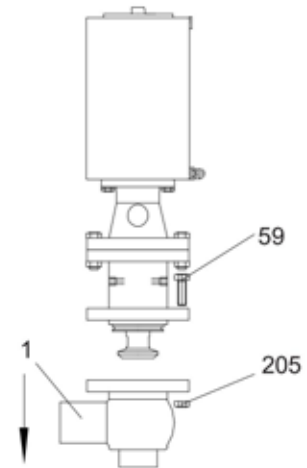
# 11. Disassembly of ZQ-YQ (cyl.108--130)



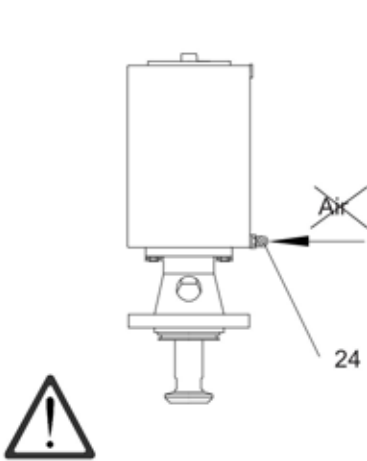
**1. YQ.** Tighten the two M6x10mm bolts to secure the washer (7) and the sealing ring (19). Connect compressed air to the fitting (24).



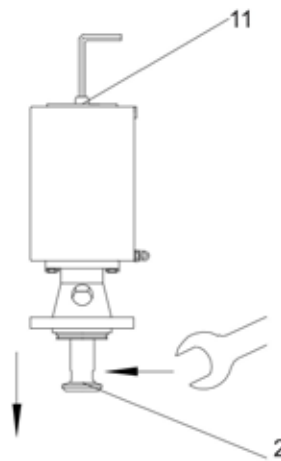
**2. YQ.** Unscrew retaining nuts (205) and bolt (110), and remove lower body (1).



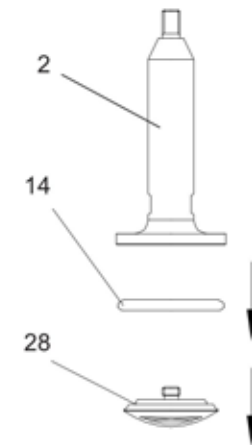
**3. YQ.** Unscrew nut (205) and bolt (59) and remove the lower body (1).



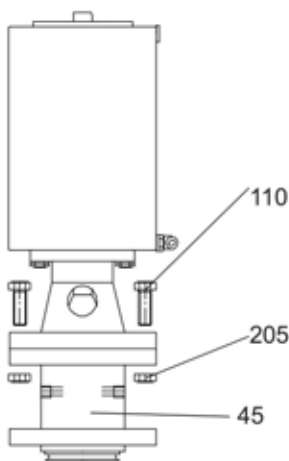
**4. YQ.** Release the air pressure disconnecting the compressed air form the fitting (24).



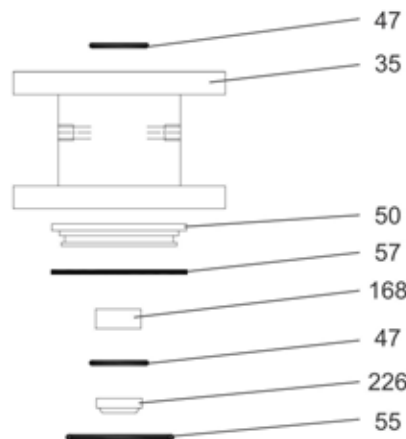
**5. YQ.** Unscrew shutter (2) retain the end of the shaft (11) inserting an Allan key.



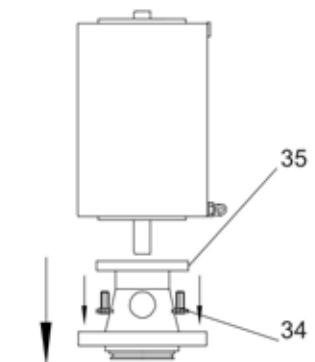
**6. PTFE SHUTTER:** Unscrew shutter nut (28) from the shaft (2) and remove the shutter ring (14).



**7. YQ.** Unscrew nuts (205) and bolts (110) and remove the steam barrier. (45).

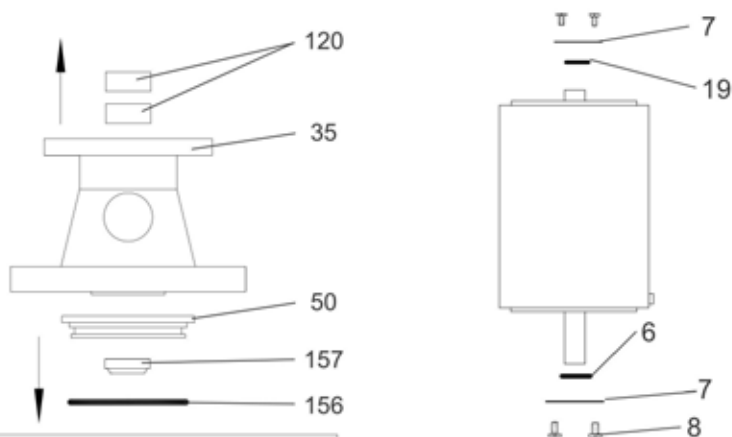


**8. YQ.** Dismount from the steam barrier (35) the plug (50), seal rings (55,226,47,57) and guide bushing (168).



**9. YQ.** Remove bolts (34) and assembly (35).

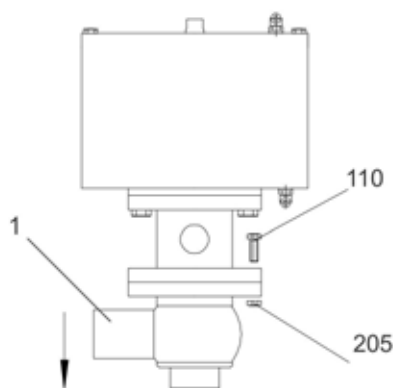
## 11. Disassembly of ZQ-YQ (cyl.108--130)



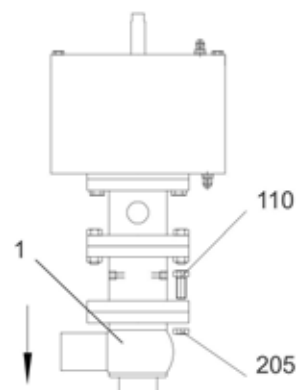
**10.** Remove from the assembly part (35) the plug (50), seal rings (156,157) and guide bushing (120).

**11.** Remove bolts (8) washer (7) and sealing rings (6,19).

## 11. Disassembly ZQ-YQ (cyl.207--360)

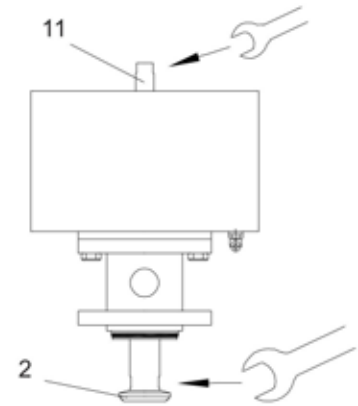
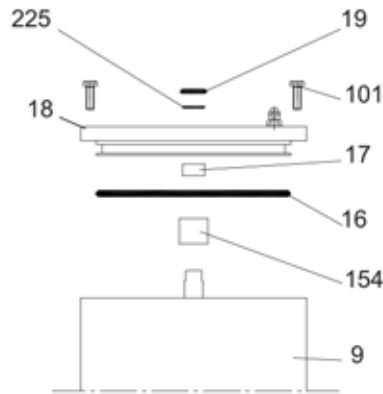


**2.** Remove nuts (205) and bolts (110). Remove lower body (1).



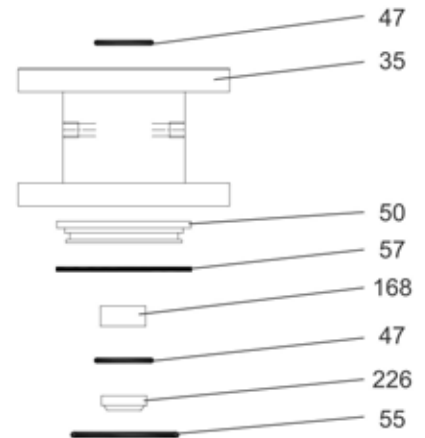
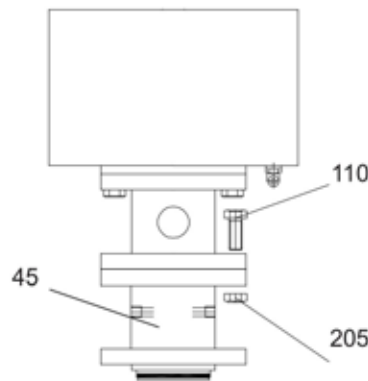
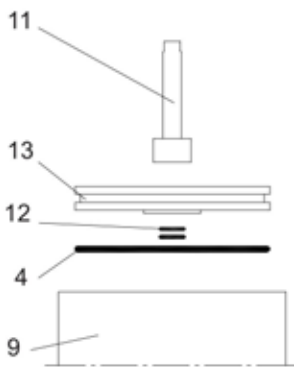
**2. YQ.** Remove nuts (205) and bolts (110). Remove lower body (1).

# 11. Disassembly of ZQ-YQ (cyl.207--360)



**3.** Unscrew bolts (101) of the cylinder (9), remove plug (18), slide out spacer (154) and remove sealing rings (16,19,225) and bush (17).

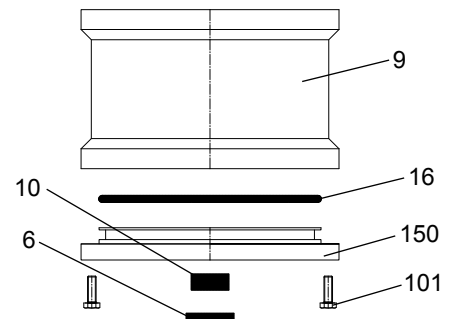
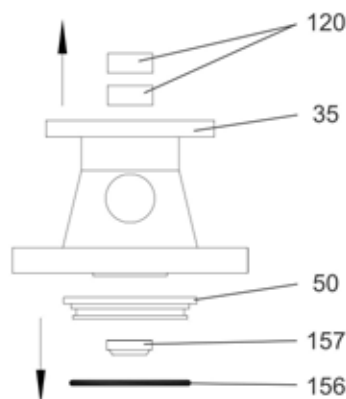
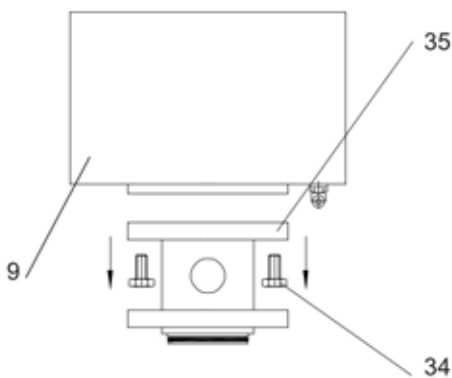
**4.** Unscrew the shutter (2) retain the shaft (11) with a spanner.



**5.** Slide out the piston shaft (11,13) of the cylinder (9), remove the sealing rings (12,4).

**6. YQ.** Unscrew nuts (205) and bolts (110) and disassemble the steam barrier (45).

**7. YQ.** Dismount from the steam barrier (35) the plug (50), seal rings (55,226,47,57) and guide bushing (168).



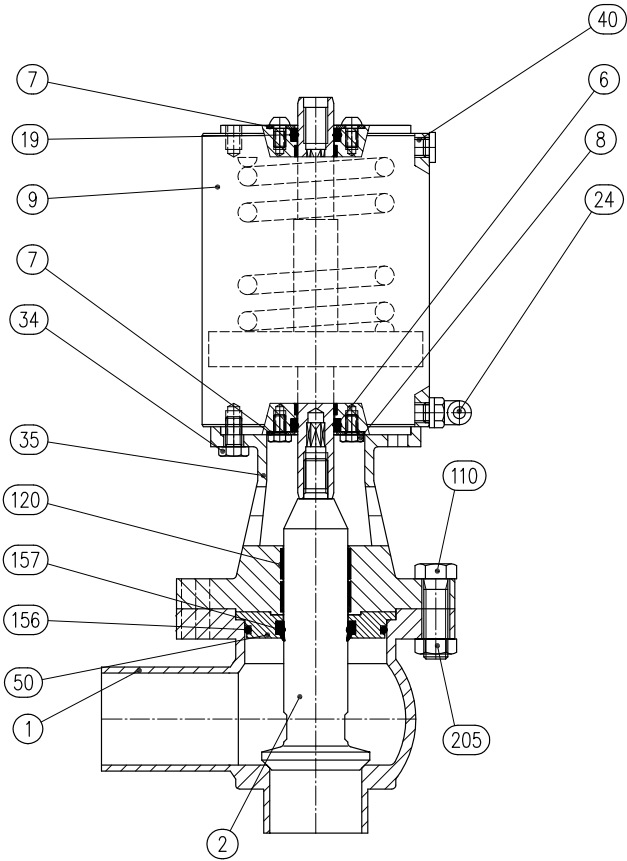
**8.** Remove bolts (34) and assembly (35) from the cylinder (9).

**9.** Remove from the assembly part (35) the plug (50), seal rings (156,157) and guide bushing (120).

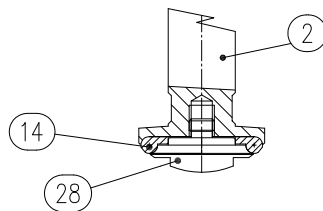
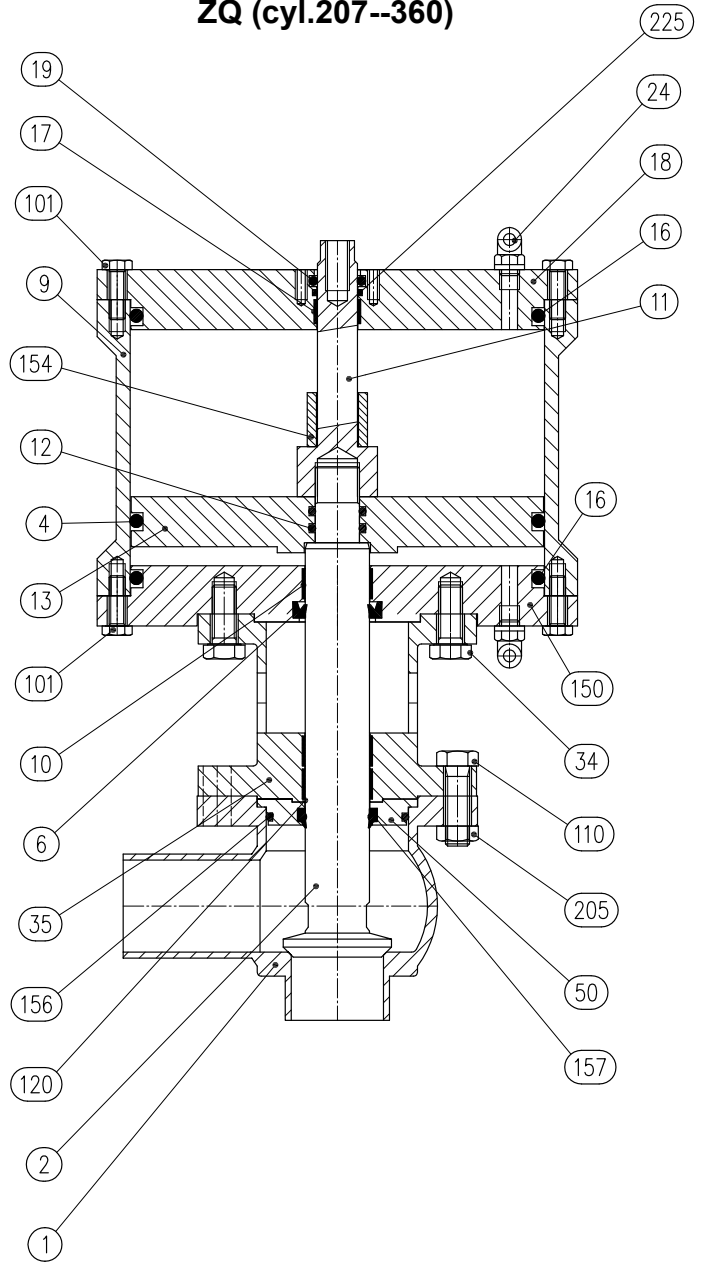
**10.** Remove the screw (101) and the lower cylinder cap (150) to the cylinder (9). Remove to the lower cylinder cap (150) the seal rings (16 and 6) and the guide bushing (10).

# 11. Disassembly of ZQ-YQ (cyl.108--360)

**ZQ (cyl.108--130)**



**ZQ (cyl.207--360)**

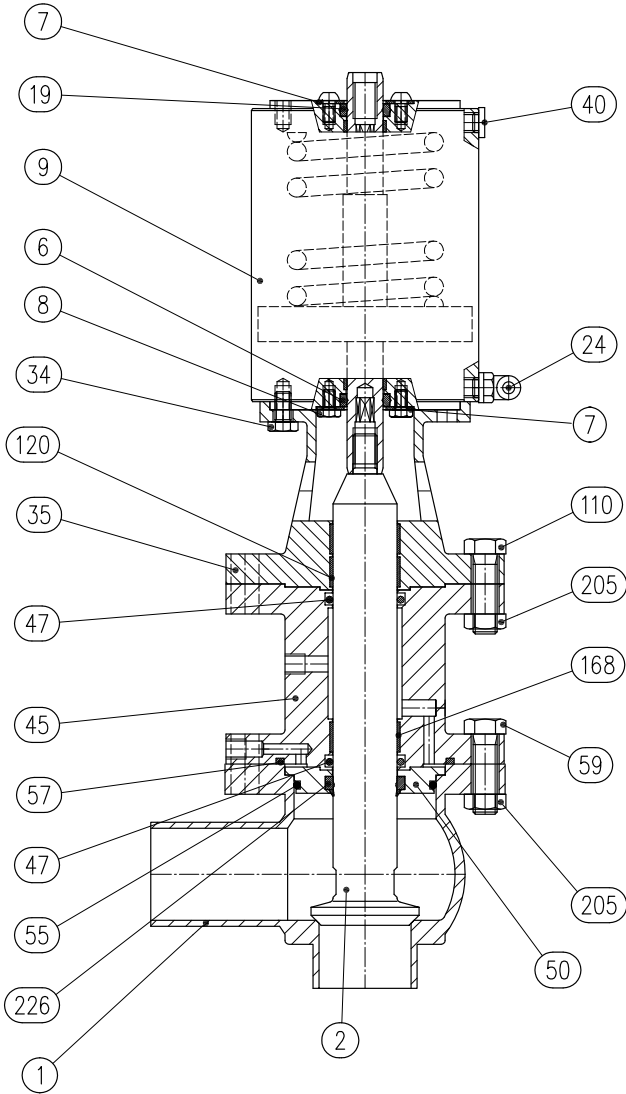


**P.T.F.E. SHUTTER**

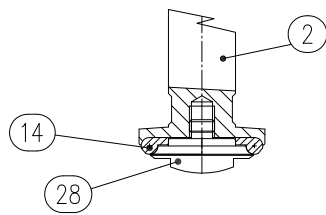
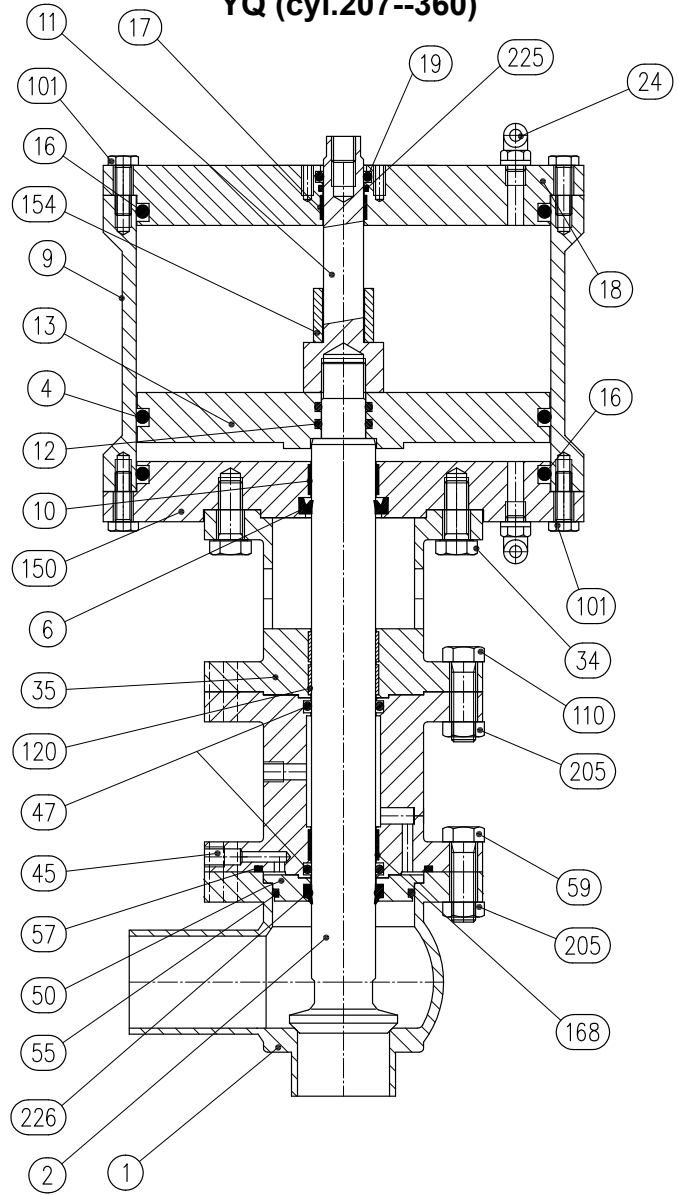


# 11. Disassembly of ZQ-YQ (cyl.108--360)

**YQ (cyl.108--130)**

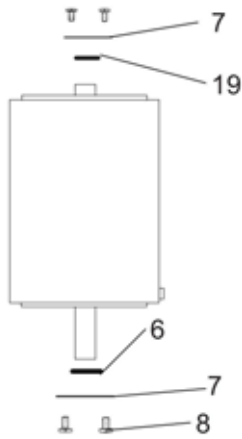


**YQ (cyl.207--360)**

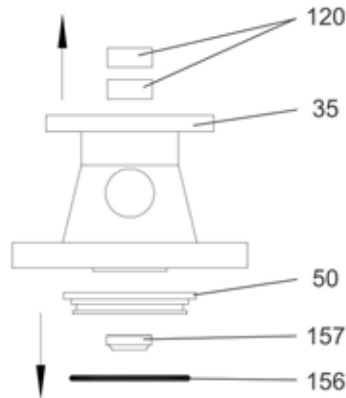


**P.T.F.E. SHUTTER**

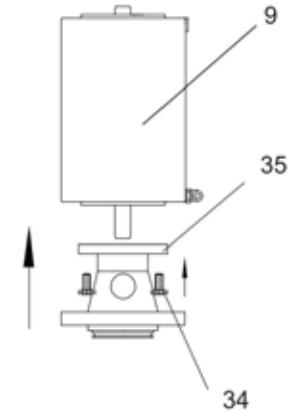
## 12. Assembly of ZQ-YQ (cyl.108--130)



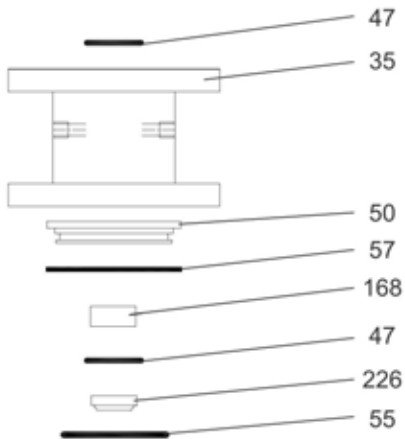
**1.** Insert the sealing rings (6,19) in the cylinder (9) and fit the washer (7) and the bolts (8).



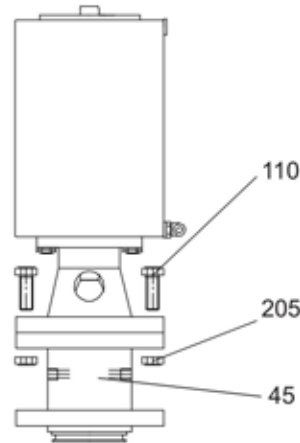
**2.** Assembly on the assembly part (35) the plug (50), seal rings (156,157) and guide bushing (120).



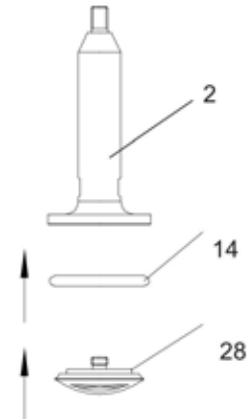
**3.** Fit the assembly (35) on the cylinder (9) with the bolts (34).



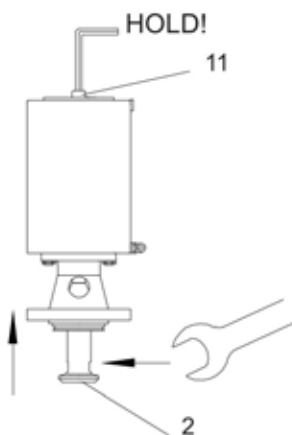
**4. YQ.** Mount on the steam barrier (35) the plug (50), seal rings (55, 226, 47,57) and guide bushing (168).



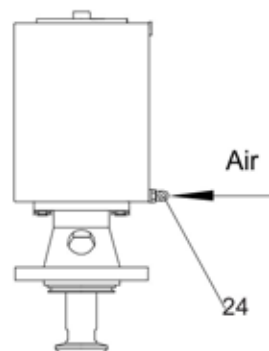
**5. YQ.** Fit steam barrier (45), tighten nuts (205) and bolts (110).



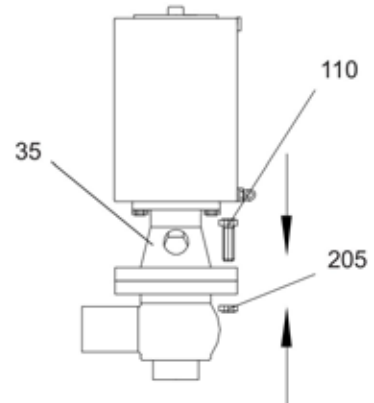
**6. SHUTTER PTFE.** Fit the shutter ring (14) on the shutter (2) and tighten the shutter nut (28).



**7.** Tighten the shutter (2) onto the piston shaft (11). Retain the shaft with an Allen key.

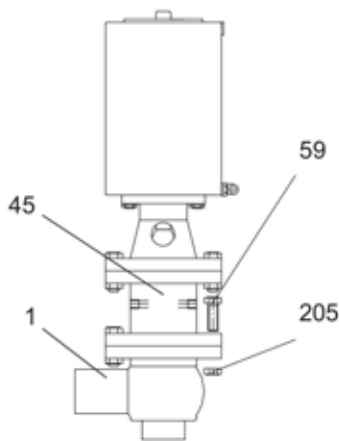


**8.** Attach compressed air to the fitting (24).

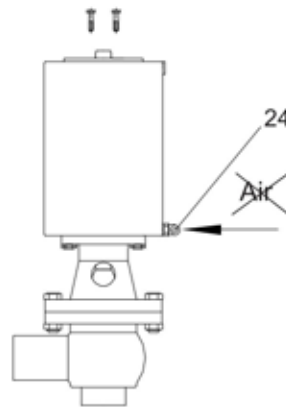


**9.** Fit the lower body (1) to the assembly (35) with the nuts (205) and bolts (110).

## 12. Assembly of ZQ-YQ (cyl.108--130)

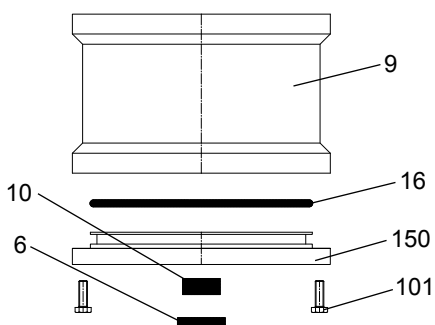


**10. YQ:** Fit the lower body (1) to the steam barrier (45) with bolts (59) and nuts (205).

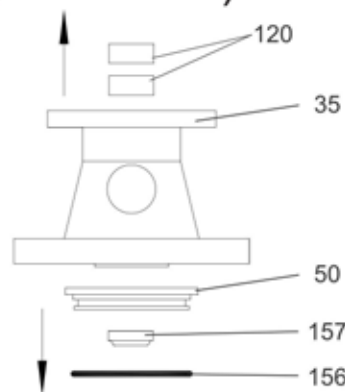


**11.** Release the air pressure disconnecting the compressed air from the fitting (24). Remove the bolts and fit the Giotto-Top®.

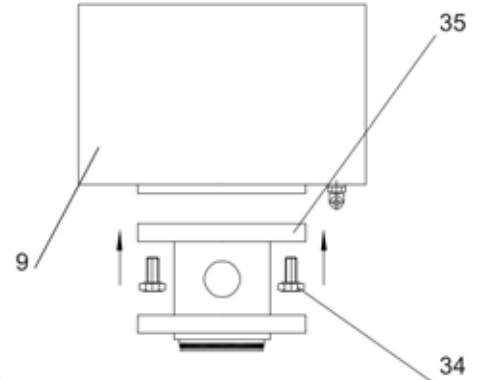
## 12. Assembly ZQ-YQ (cyl.207--360)



**1.** Assembly on the lower cylinder cap (150) seal ring (16 and 6) and guide bushing (10). Insert the lower cylinder cap (150) in to the cylinder (9) with the screw (101).

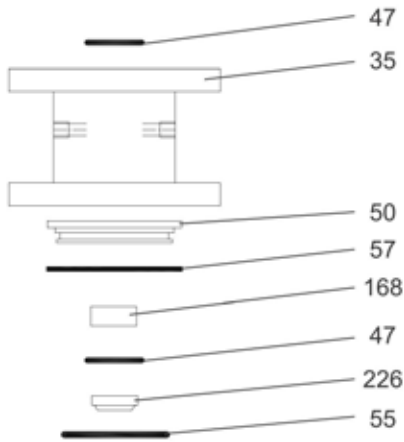


**2.** Assembly on the assembly part (35) the plug (50), seal rings (156, 157) and guide bushing (120).

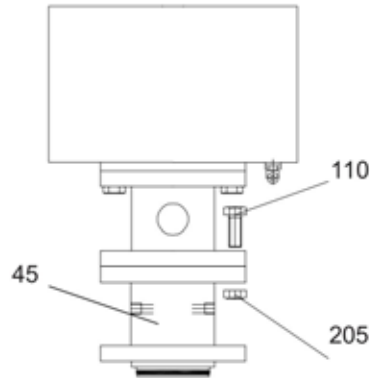


**3.** Fit the assembly (35) on the cylinder (9) with bolts (34).

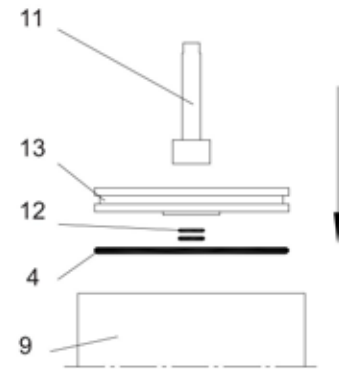
## 12. Assembly ZQ-YQ (cyl.207--360)



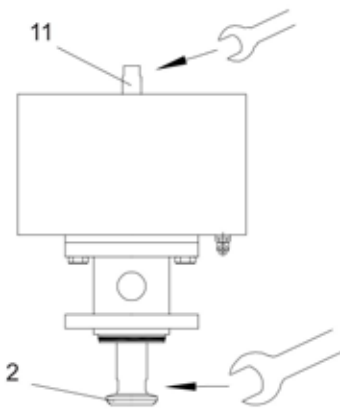
**4. YQ.** Mount on the steam barrier (35) the plug (50), seal rings (55, 226, 47,57) and guide bushing (168).



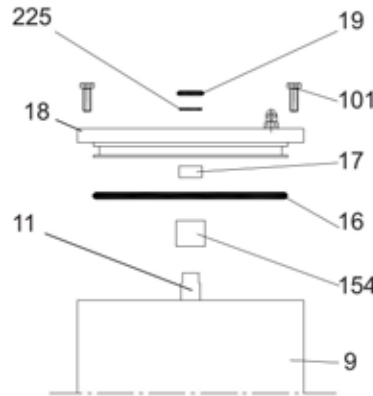
**5. YQ:** Fit steam barrier (45), and tighten the nut (205) and bolt (110).



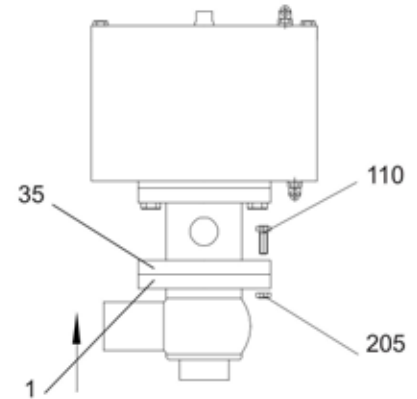
**6.** Insert the sealing rings (12,4) in the piston (13) and fit into the cylinder (9). Fit the shaft (11) into the cylinder.



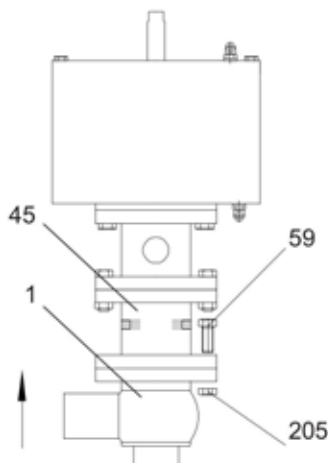
**7.** Tighten the shutter (2) retaining the shaft (11) with a spanner.



**8.** Insert the spacer (154) on the shaft (11). Fit sealing rings (16,19, 225) and bush (17) in the plug (18). Fit the plug on the cylinder (9) and tighten the bolts (101).

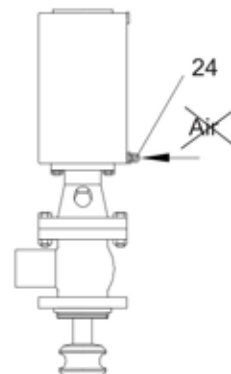
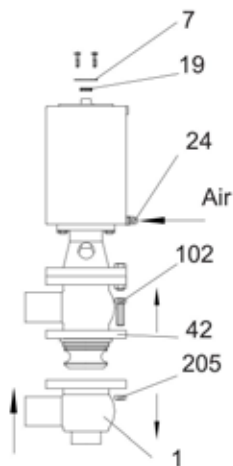


**9.** Fit the lower body (1) and assembly (35) with nut (205) and bolt (110).



**10. YQ:** Fit the body (1) to the steam barrier (45) with nut (59) and bolt (205).

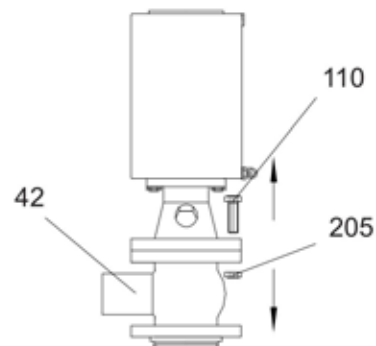
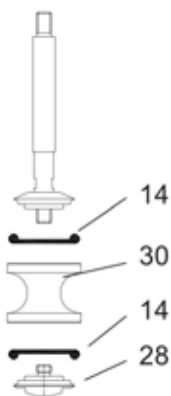
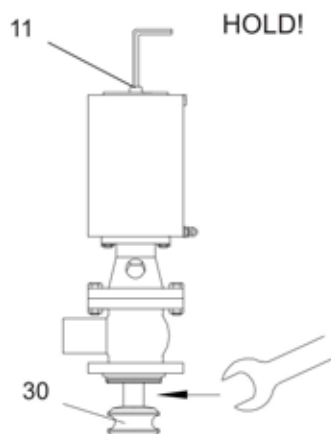
# 13. Disassembly of ZQ-YQ divert (cyl.108--130)



**1.** Tighten the two M6x10 to fit the washer (7) and sealing ring (19). Connect compressed air to the fitting (24), and unscrew bolts (102) and nuts (205) retaining the lower body. Remove lower body.



**2.** Disconnect compressed air (24).

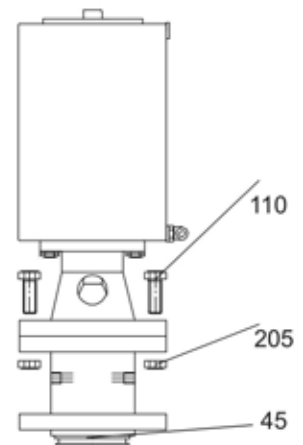
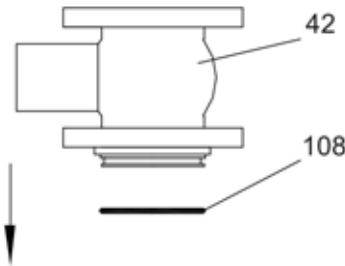
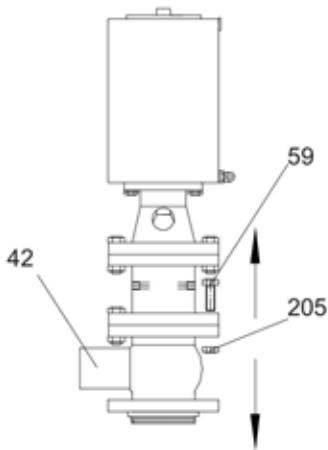


**3.** Unscrew shutter (30) retain the end of the shaft (11) insert an Allen key.

**4. SHUTTER PTFE:**  
Unscrew shutter nut (28) and remove lower shutter ring (14). Unscrew shutter (30) and remove upper shutter ring (14).

**5.** Unscrew the bolts (110) and nuts (205). Remove upper body (42).

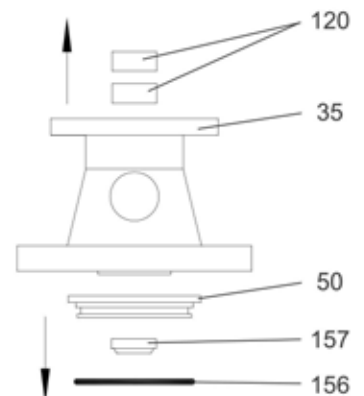
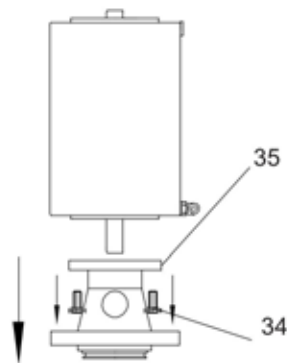
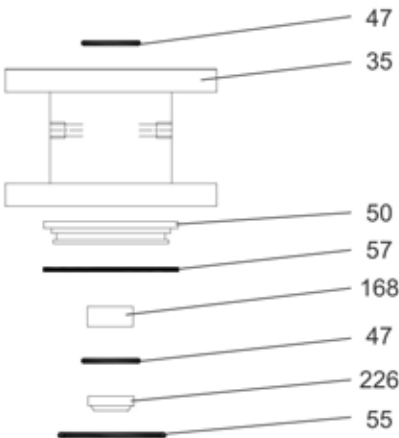
# 13. Disassembly of ZQ-YQ divert (cyl.108--130)



**6. YQ:** Unscrew the bolts (59) and nuts(205).Remove upper body (42).

**7.** Remove sealing ring (108) from the upper body (42).

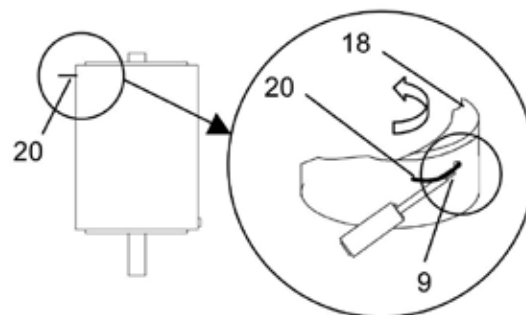
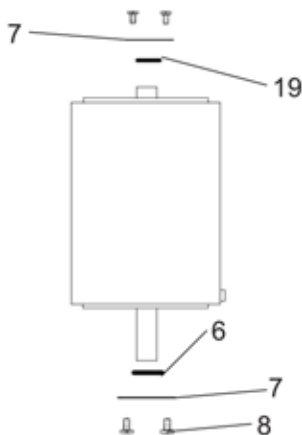
**8. YQ:** Unscrew nuts (205) and bolts (110) and disassemble the steam barrier (45).



**9. YQ.** Dismount from the steam barrier (35) the plug (50), seal rings (55,226,47,57) and guide bushing (168).

**10.** Remove bolts (34) and assembly (35) .

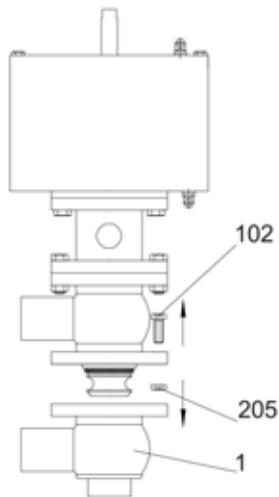
**11.** Remove from the assembly part (35) the plug (50), seal rings (156,157) and guide bushing (120).



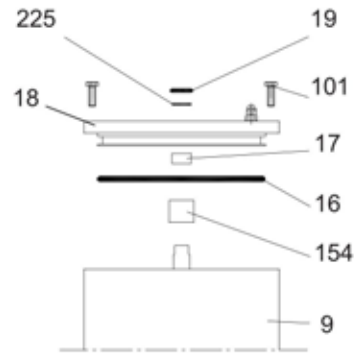
**12.** Remove bolts (8) washer (7) and sealing rings (6,19).

**13. CYLINDER 156.** Remove the lock wire (20) by rotating the plug (18) until the end of the wire is no longer visible through the cylinder slot.(9). Remove completely the end part using a pointed tool.

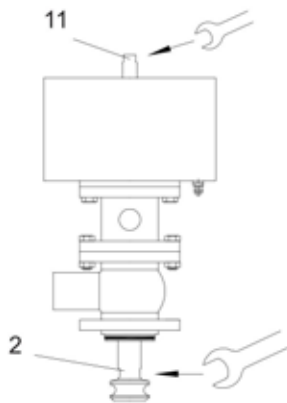
# 13. Disassembly of ZQ-YQ divert (cyl.207--360)



**1. Unscrew bolts (102) and nuts (205) fixing the lower body (1) and remove it.**

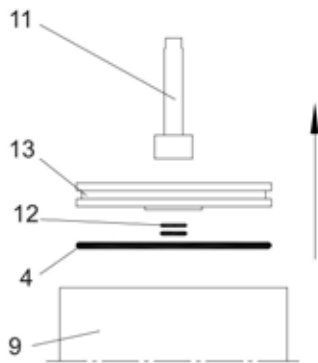


**2. Unscrews bolts (101) of the cylinder (9), remove plug (18), slide out spacer (154) and remove sealing rings (16,19,225) and bush (17).**

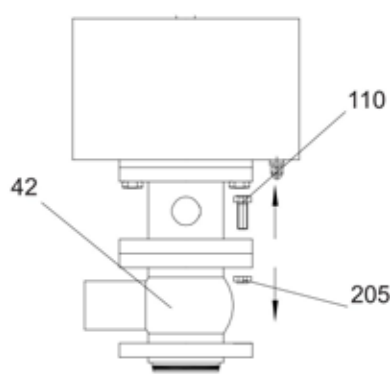


**3. Unscrew the shutter (2) retain the shaft (11) with a spanner.**

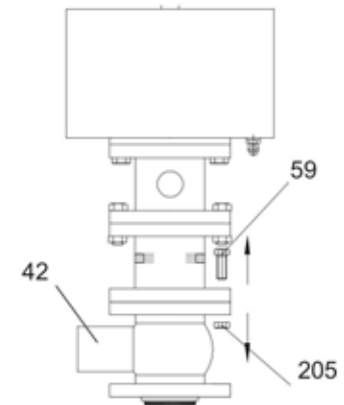
# 13. Disassembly of ZQ-YQ divert (cyl.207--360)



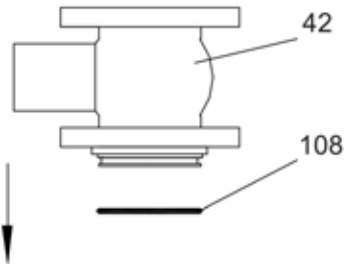
**4.** Slide out the piston shaft (11,13) of the cylinder (9), remove the sealing rings (12,4).



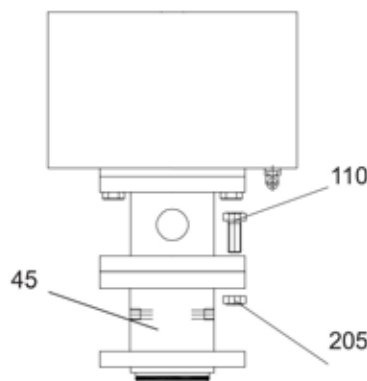
**5.** Unscrew the bolts (110) and nuts (205). Remove upper body (42).



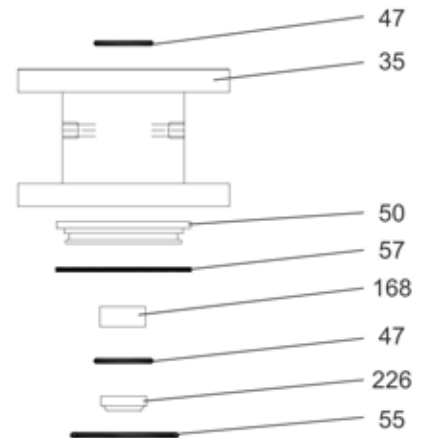
**6. YQ.** Unscrew the bolts (59) and nuts (205). Remove upper body (42).



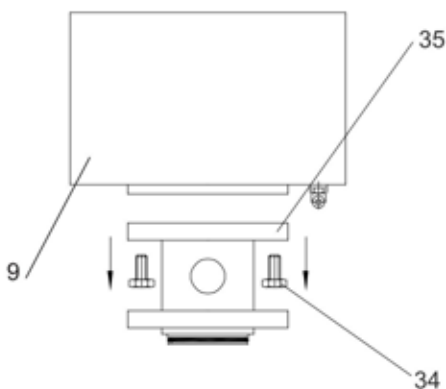
**7.** Remove sealing ring (108) from the upper body (42).



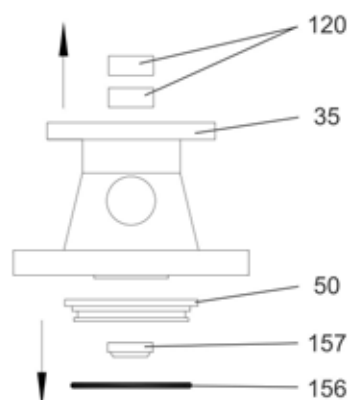
**8. YQ.** Unscrew nuts (205) and bolts (110) and remove steam barrier (45).



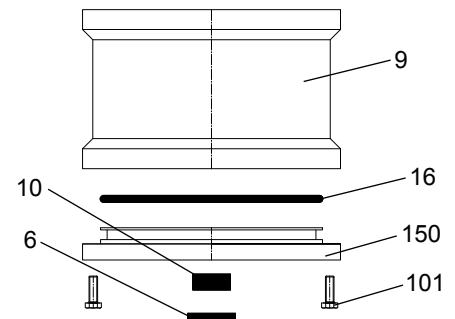
**9. YQ** Remove the cap (50), remove seal rings (55, 226, 47, 57) and bushing (168) from steam barrier (35).



**10.** Remove bolts (34) and assembly (35) from the cylinder (9).



**11.** Remove to the assembly (35) the cap (50), remove seal rings (50, 157) and bushing (120).



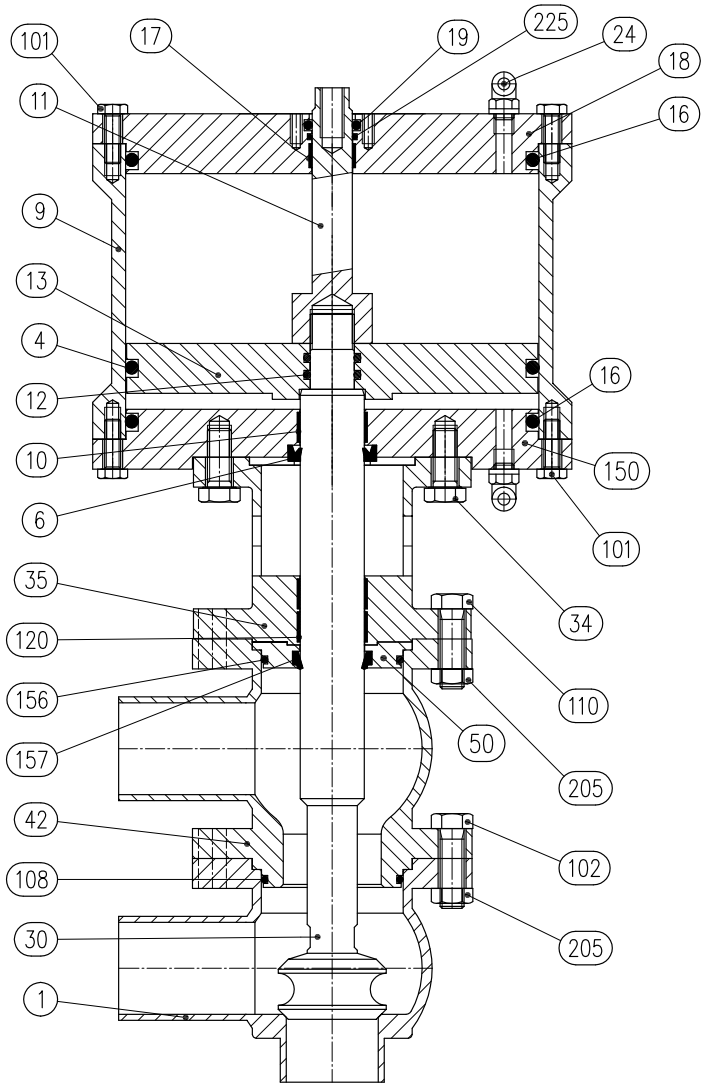
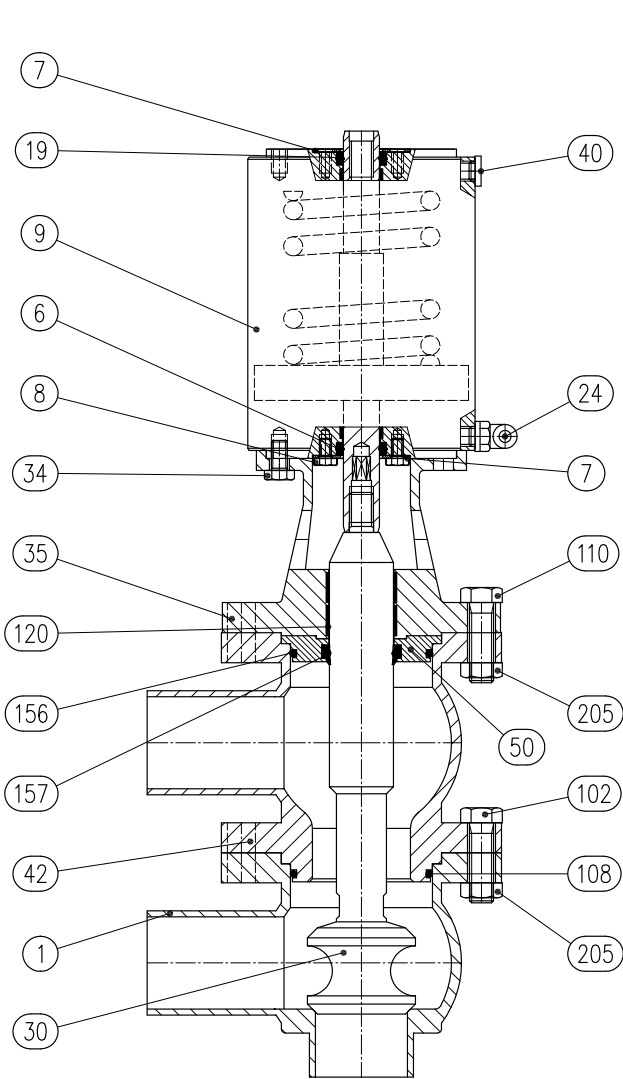
**10.** Remove the screw (101) and the lower cylinder cap (150) to the cylinder (9). Remove to the lower cylinder cap (150) the seal rings (16 and 6) and the guide bushing (10).



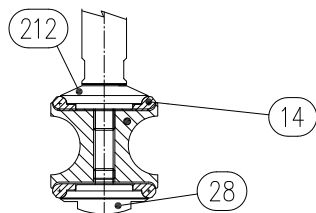
# 13. Disassembly of ZQ-YQ divert (cyl.108--360)

**ZQ divert (cyl.108-130)**

**ZQ divert (cyl.207-360)**

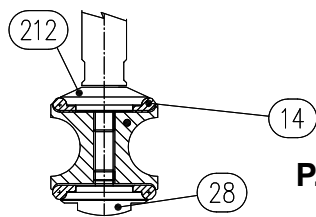
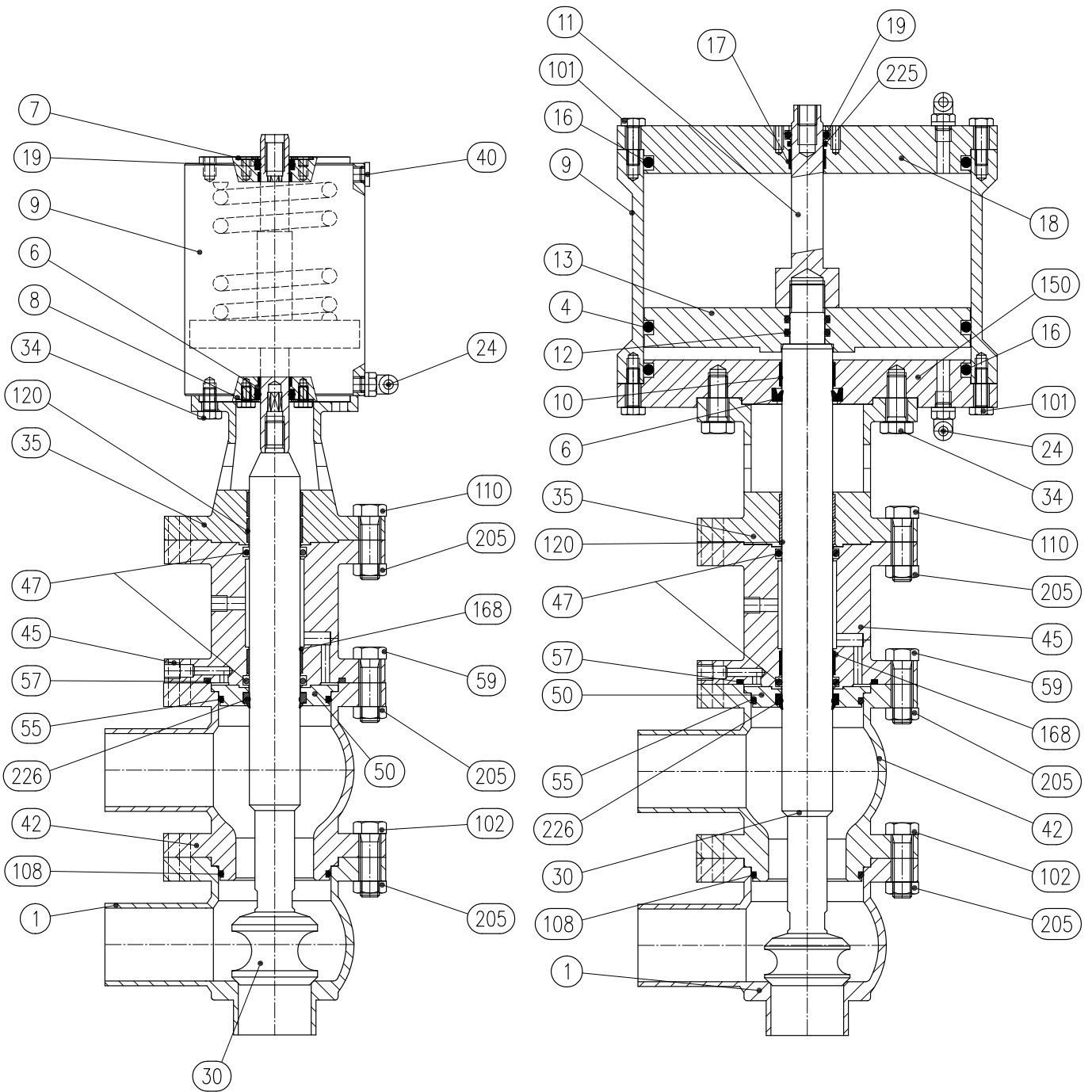


11. Remove



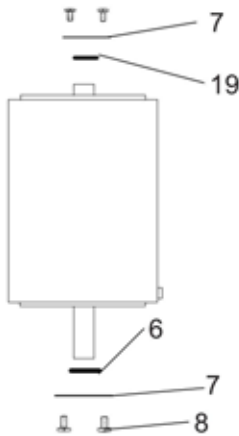
**P.T.F.E. DOUBLE SHUTTER**

# 13. Disassembly of ZQ-YQ divert (cyl.108--360)

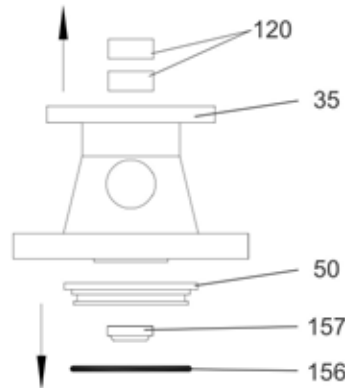


**P.T.F.E. DOUBLE SHUTTER**

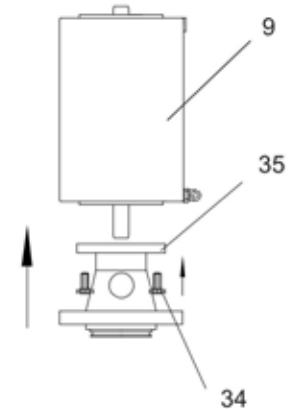
# 14. Assembly of ZQ-YQ divert (cyl.108--130)



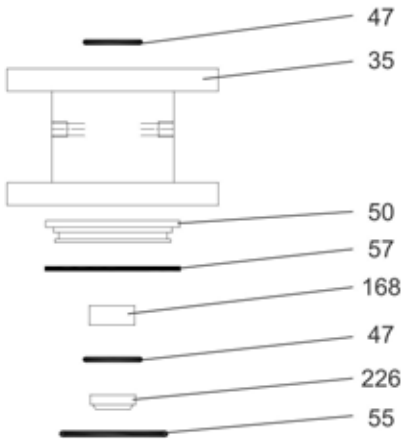
**1.** Insert the sealing rings (6,19) in the cylinder (9) and fit the washer (7) and the bolts (8).



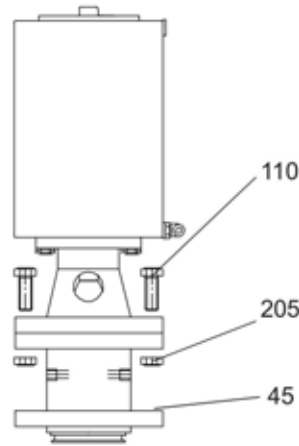
**2.** Assembly on the assembly part (35) the plug (50), seal rings (156,157) and guide bushing (120).



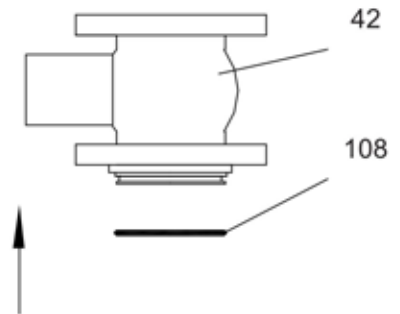
**3.** Fit the assembly (35) on the cylinder (9) with the bolts (34).



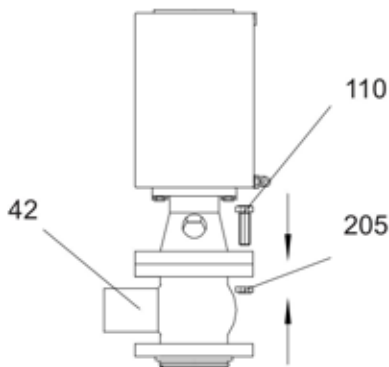
**4. YQ.** Mount on the steam barrier (35) the plug (50), seal rings (55, 226, 47,57) and guide bushing (168).



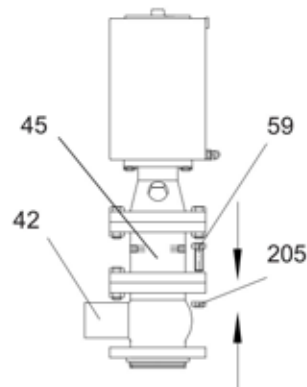
**5. YQ.** Fit steam barrier (45), tighten nuts (205) and bolts (110).



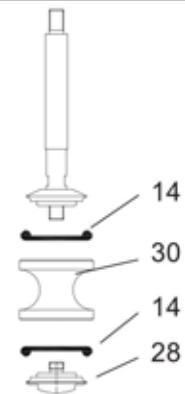
**6.** Insert the sealing ring (108) in the upper body (42).



**7.** Join the upper body (42) to the lower and tighten bolts (110) and nuts (205).

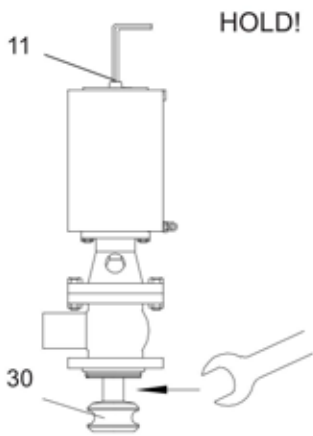


**8. YQ.** Join the upper body (42) to the stem barrier (45) and tighten bolts (110) and nuts (205).

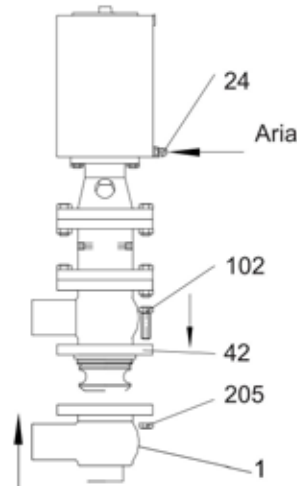


**9. PTFE SHUTTER:**  
Fit lower shutter ring (14), tighten shutter (30). Fit upper shutter ring (14) tighten shutter nut (28).

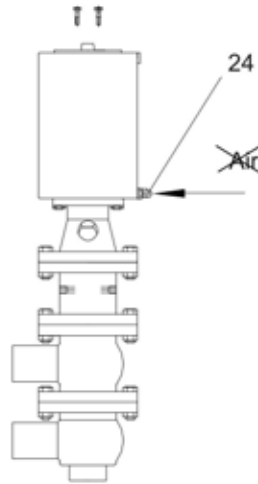
# 14. Assembly of ZQ-YQ divert (cyl.108--130)



**13.** Tighten the double shutter (30) onto the piston shaft (11). Retain the shaft with an Allen key.

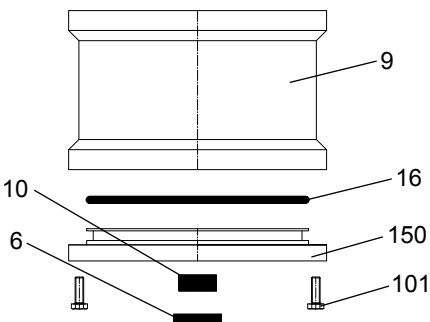


**14.** Attach compressed air to the fitting (24). Fit lower body (1), tighten bolt (102) and nut (205) to the upper body (42).

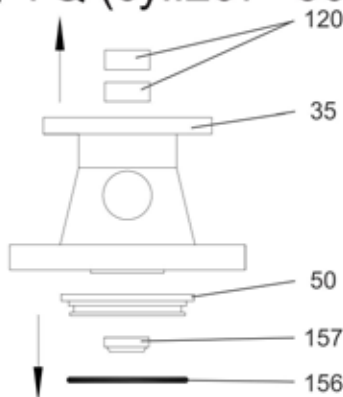


**15.** Release the air pressure disconnecting the compressed air from the fitting (24). Remove the bolts M6X10 and fit the Giotto-Top®.

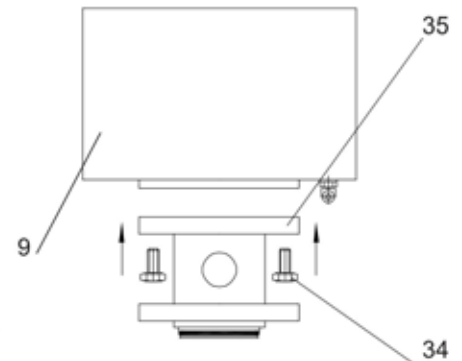
# 14. Assembly Divert ZQ-YQ (cyl.207--360)



**1.** Assembly on the lower cylinder cap (150) seal ring (16 and 6) and guide bushing (10). Insert the lower cylinder cap (150) in to the cylinder (9) with the screw (101).

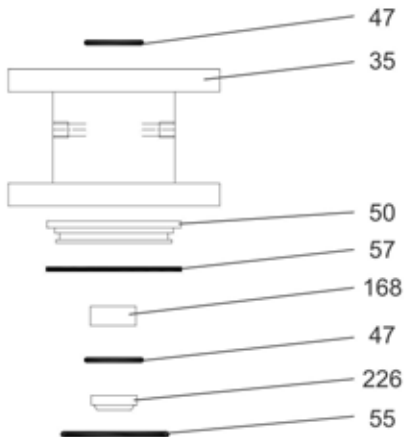


**2.** Assembly on the assembly part (35) the plug (50), seal rings (156,157) and guide bushing (120).

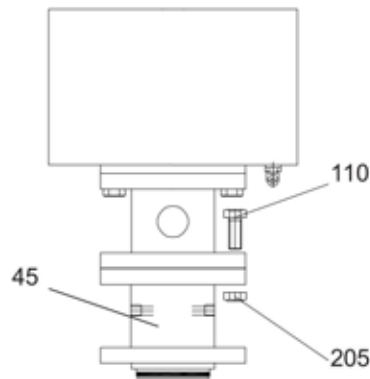


**3.** Fit the assembly (35) on the cylinder (9) with bolts (34).

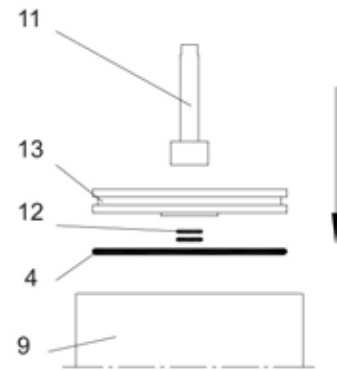
# 14. Assembly of ZQ-YQ divert (cyl.207--360)



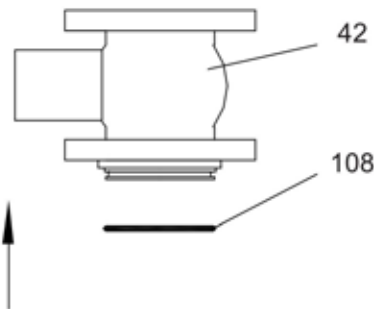
**4. YQ.** Mount on the steam barrier (35) the plug (50), seal rings (55, 226, 47,57) and guide bushing (168).



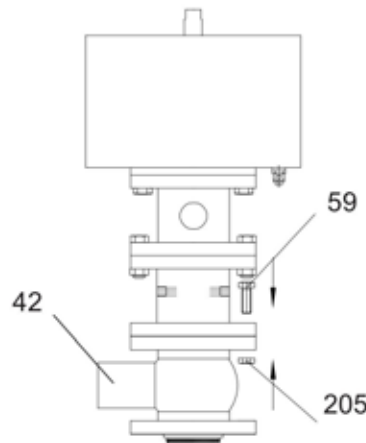
**5. YQ.** Fit steam barrier (45), and tighten the nuts (205) and bolts (110).



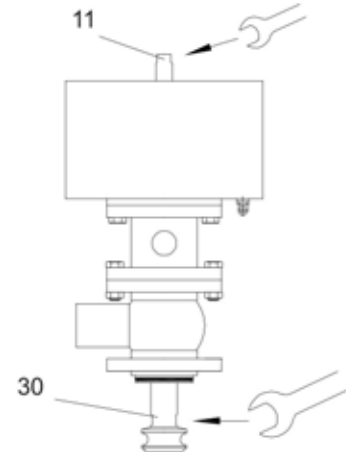
**6.** Insert the sealing rings (12,4) in the piston (13) and fit into the cylinder (9). Fit the shaft (11) into the cylinder.



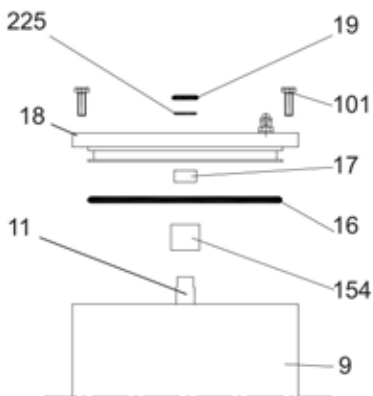
**7.** Insert sealing ring (108) in the upper body (42).



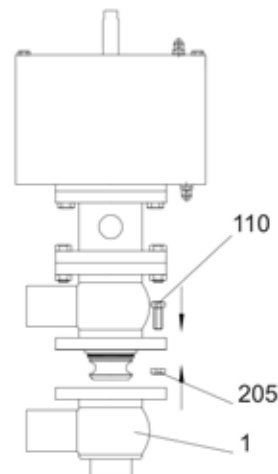
**8. YQ.** Tighten the bolts (59) and nuts (205). Fit upper body (42).



**9.** Tighten the double shutter (30) to the cylinder shaft (11). Retain the shaft with a spanner.

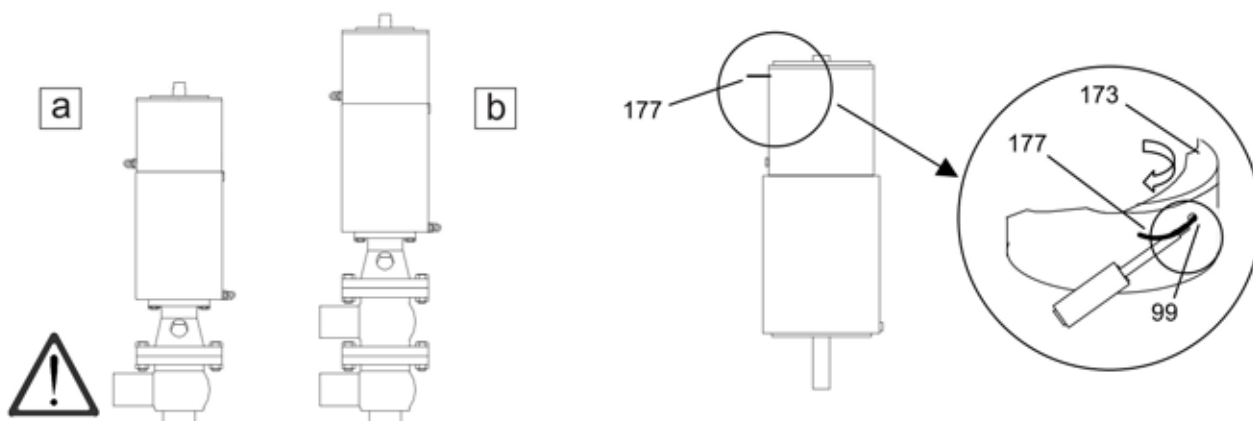


**10.** Insert the spacer (154) on the shaft (11). Fit sealing ring (16,19, 225) and bush (17) in the plug(18). Fit the plug on the cylinder (9) tighten the bolts (101).



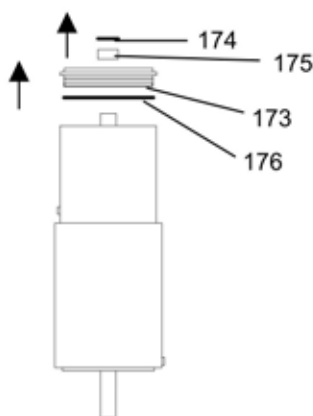
**11.** Fit the lower body (1) and upper body (42) with nuts (102) and bolts (205).

# 15. Disassembly of ZU (cyl.108--130)

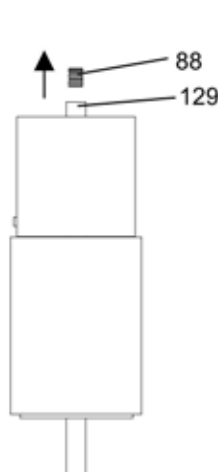


**1a.** Disassemble ZQ following the instructions on page 14 to 19.  
**1b.** Disassemble Divert ZQ following the instructions on page 23 to 29.

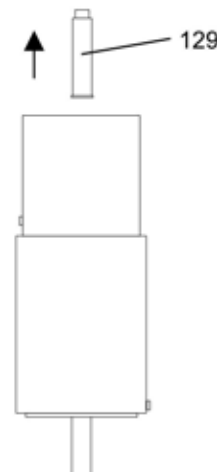
**2.** Remove the lock wire (177) by rotating the plug until the end of the wire is no longer visible through the cylinder slot.(9). Remove completely the end part using a pointed tool whilst rotating the plug (173).



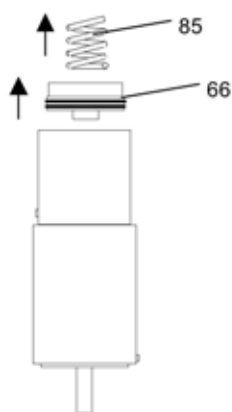
**3.** Remove the plug (173). Remove the sealing rings (174, 176) and the bush (175) of the plug (173).



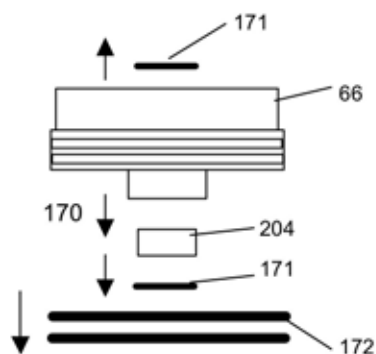
**4.** Remove the grub screw (88) from the adjustment shaft (129).



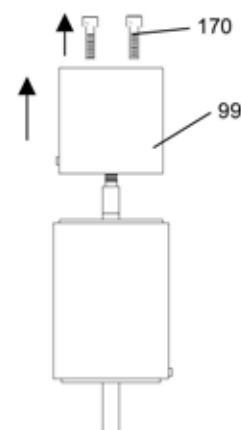
**5.** Remove adjustment shaft (129).



**6.** Remove spring (85) and piston (66).

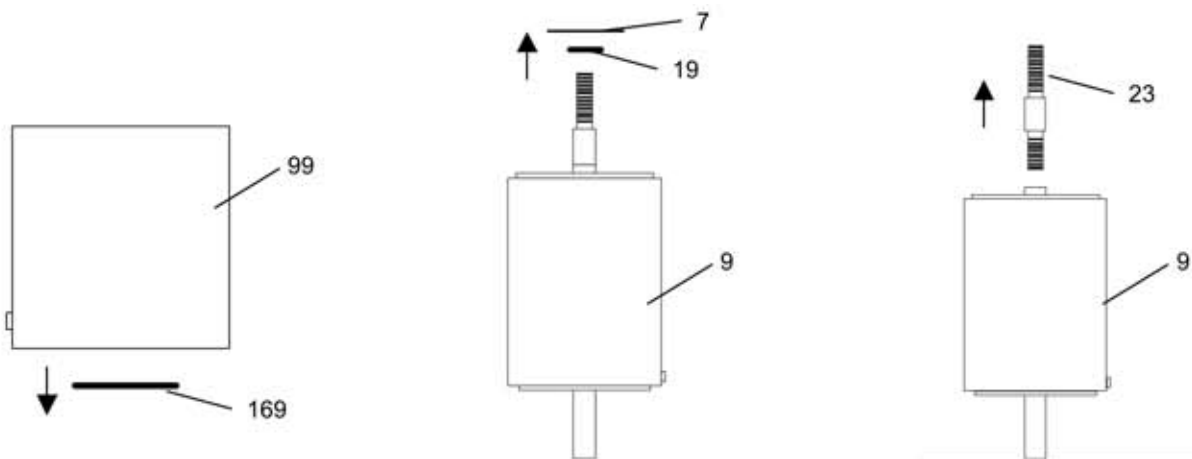


**7.** Remove sealing rings (171, 172) and bush (204) of the piston (66).



**8.** Remove bolts (170) and remove cylinder (99).

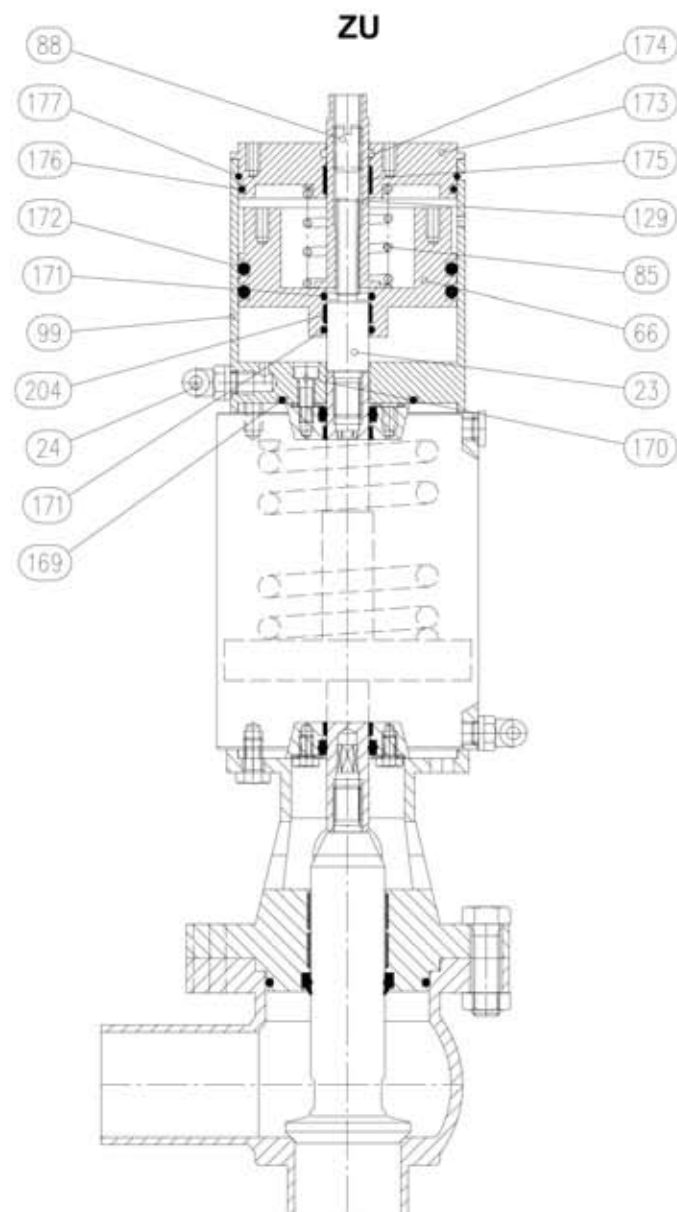
# 15. Disassembly of ZU (cyl.108--130)



**9.** Remove sealing ring (169) from cylinder (99).

**10.** Remove washer (7) and sealing ring (19) from cylinder (9).

**11.** Remove upper shaft (23) from cylinder shaft (9).



# 15. Assembly of ZU (cyl.108--130)

**a**

**b**

**1a.** Assemble ZQ following the instructions on page 20 to 22.  
**1b.** Assemble Divert ZQ following the instructions on page 29 to 32.

**2.** Fit shaft (23) on piston shaft (9). Fit washer (7) and sealing ring (19) on the cylinder.

**3.** Insert sealing ring (169) in the cylinder (99).

**4.** Insert sealing rings (171,172) and the bush (204) on the piston.

**5.** Insert sealing rings (174,175,176) and the bush on the plug (173).

**6.** Fit the cylinder (99) on to the cylinder (9) with bolts (170).

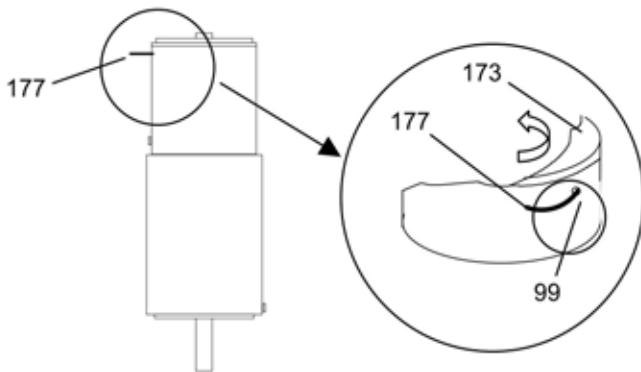
**7.** Insert piston (66) and spring (85).

**8.** Fit the adjustable shaft (129) on the shaft (23).

**9.** Insert plug(173) on the cylinder (99).



## 15. Assembly of ZU (cyl.108--130)



**10.** Fit lock wire (177) in the plug through the cylinder slot.(99).Rotate the plug until the wire is completely inserted.

**11.** Adjust the stroke of the double stop rotating the adjustable shaft (129).Fit and tighten the grub screw (88) to lock the shaft in position.

## 17. Part list

Item	Description	Item	Description
1	Lower body	85	Spring
2	Shutter	88	Grub screw
4	Seal ring	99	Cylinder
6	Seal ring	101	Screw
7	Washer	102	Screw
8	Screw	108	Seal ring
9	Cylinder	110	Screw
10	Guide bushing	120	Guide bushing
11	Pivot	129	Pivot
12	Seal ring	154	Thickness
13	Piston	156	Seal ring
14	Seal ring	157	Seal ring
16	Seal ring	168	Guide bushing
17	Guide bushing	169	Seal ring
18	Stopper cylinder	170	Screw
19	Seal ring	171	Seal ring
20	Snap ring	172	Seal ring
23	Upper pivot	173	Stopper cylinder
24	Air fitting	174	Seal ring
28	Shutter nut	175	Guide bushing
30	Double shutter	176	Seal ring
35	Assembly	177	Snap ring
40	Plug	204	Guide bushing
42	Upper body	205	Guide bushing
45	Steam barrier	225	Seal ring
47	Seal ring	226	Seal ring
50	Cap		
55	Seal ring		
57	Seal ring		
59	Screw		
66	Piston		

## 18. Technical data

---

### Valve technical specifications:

---

Max. working pressure:	150bar (2173psi) DN25--80 55bar (798psi) DN100 Valid for weld and connections
Min. working pressure:	Full vacuum
Max. product temperature:	140° C (284° F)
Min. product temperature:	-10° C (14°F)
Material in contact with the product:	AISI 316L (1.4404)
Seals in contact with the product (FDA homologation):	EPDM, FKM, HNBR, P.T.F.E. (other seals available upon request).
Finish on surfaces in contact with the product:	Ra 0.8 µm (other types of surface finish on request).

---

### Steam barrier specifications:

---

Connectors:	1/8" (BSP)
Max. steam temperature	130°C (266°F)
Seal / gasket material:	FKM

---

### Pneumatic actuator specifications:

---

Connectors:	1/8" (BSP) for tube 6x4mm
Air pressure:	from 6bar (87psi) to 8bar (116psi) for cyl.108 to 156 from 6bar (87psi) to 7bar (101psi) for cyl.207 to 360
Material:	AISI 304L (1.4307)
Seal / gasket material:	NBR
Power supply (Giotto-Top®):	See Giotto-Top® Instruction manual

---

**PED Directive 97/23/EEC, with special reference to Annex III, Module A regarding internal production control as Conformity Assessment Procedure in force valve sizes DN25--32 are not included in accordance with Article 3 paragraph 1.3:**

Valves intended for gases, liquified gases, gases dissolved under pressure, vapours and those liquids whose vapour pressure at the maximum allowable temperature is greater than 0,5 bar above normal atmospheric pressure (1013 mbar) within the following limits

- For fluids in Group 2 with a DN greater than 32

## WARRANTY

### 1. CONTRACTUAL WARRANTIES AND LIABILITY

1.1 Bardiani Valvole S.p.A. warrant that their products are free from defects in design, material and workmanship. Bardiani Valvole S.p.A. shall be liable should any such defects be found within 12 (twelve) months from the date of delivery of the products.

1.2 Any claim regarding defects and/or faults found in the products shall be notified in full and in writing to Bardiani Valvole S.p.A. within 8 (eight) days from the date they were found. Adequate documentation shall be provided as evidence of said defects at the time the claim is filed.

### 2. LIMITATION IN LIABILITY

2.1 Without prejudice to any statutory right of the Buyer, Bardiani Valvole S.p.A. shall be under no liability in respect of electric components or elastomers that are part of their products.

2.2 The Seller shall be under no liability in respect of defects/faults specified in the following points:

- defects and/or faults arising from failure to follow the instructions contained in the "Manual of Instruction for the Use and Maintenance of the Product" as to the use and storage of the products by the Buyer;
- defects and/or faults arising from fair wear and tear of the products or their parts or their components;
- defects and/or faults arising from repairs or interventions of the goods carried out by unauthorized or unqualified staff;
- defects and/or faults arising from misuse, accidents, negligence and abnormal working conditions caused by the Buyer.

### 3. WARRANTY

3.1 Bardiani Valvole S.p.A. shall, at their discretion, repair or replace the products that are acknowledged to be defective.

3.2 Should repair or replacement of the product or of its components occur, the parts returned shall become the property of Bardiani Valvole S.p.A. The relevant freight costs involved in the return of the goods or their components shall be entirely met by Bardiani Valvole S.p.A..

3.3 Under no circumstance shall Bardiani Valvole S.p.A. be liable to indemnify immaterial or indirect damages such as damages or consequential loss, whether loss of profit, loss of business, loss of business opportunities, loss of time, loss of goodwill and damage to corporate image, etc.

3.4 The performance of repair or replacement under the above warranty shall not entail any extension of the warranty period of 12 (twelve months), such term being unconditional.

3.5 No distributor, agent or staff to Bardiani Valvole S.p.A. is entitled to make any amendment, extension or addition to the above warranty.

## DISCLAIMER

1. All the statements, indications and technical data listed in this document are based on technical tests carried out by Bardiani Valvole S.p.A.. However accurate and reliable, such tests do not reflect all possible circumstances under which the products may be used.

It is therefore advisable that the Buyer should always ascertain the suitability of the product in its application. The Buyer will be entirely liable for all risks and damages incurred by said products.

Bardiani Valvole S.p.A. are not liable for any accident, loss or damage incurred, whether they be directly or indirectly caused by the use or misuse of the products.

No further guarantees other than those stated in this document shall be granted.

2. All our customers are advised to consult our technicians as well as our offices who will supply all information pertaining the technical characteristics of our products.

3. The pictures contained in this document are intended to be general representations. They are not to be intended either legally binding or detailed representations of our products.

4. The data and statements listed in this document only refer to our standard products. They do not apply in any case to any tailor-made products that might have been purchased by the customers.

5. Bardiani Valvole S.p.A. are not liable for any defects or faults resulting from the incorrect installation of their products. Such installation is to be carried out in full compliance with the instructions contained in the "Manual of Instructions for the Use and Maintenance of the Product". Bardiani Valvole S.p.A. are not liable for any defects or faults resulting from the incorrect use of their products.

6. Bardiani Valvole S.p.A. are not liable for any defects or faults resulting from the incorrect transportation and/or incorrect storage and/or incorrect maintenance of their products.

7. Bardiani Valvole S.p.A. cannot accept any liability for any faults or damages deriving from mishandling of the products and/or interventions carried out by unqualified personnel. No liability is accepted for damages caused by hits, dents, carelessness, negligence or any other any acts that cannot be considered as construction faults or faults related to the materials used in production.

