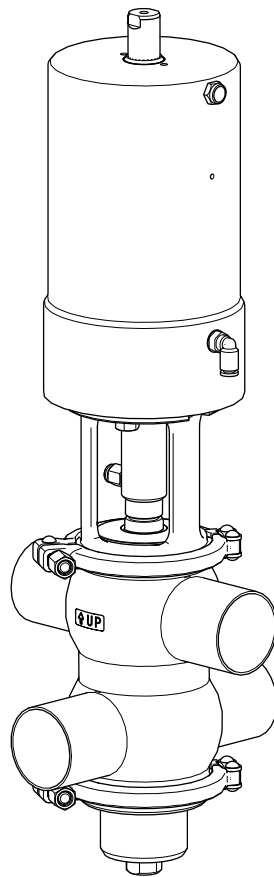


INSTALLATION, SERVICE AND MAINTENANCE INSTRUCTIONS

## DOUBLE SEAT VALVE

# INNOVA S



10.251.32.0048



# EC Declaration of Conformity



**INOXPA S.A.U.**

Telers, 60  
17820 - Banyoles (Spain)

hereby declare under our sole responsibility that the

Machine: **DOUBLE SEAT VALVE**

Model: **INNOVA**

Type: **S**

Size: **DN 40 - DN 100 / OD 1½" - OD 4"**

Serial number: **IXXXXXXXXXX to IXXXXXXXXXX**  
**XXXXXXXXXXIINXXX to XXXXXXXXXXXIINXXX**

fulfills all the relevant provisions of the following directive:

**Machinery Directive 2006/42/EC**  
**Pressure Equipment Directive 2014/68/EU<sup>1</sup>**  
**Regulation (EC) n° 1935/2004**  
**Regulation (EC) n° 2023/2006**

and with the following harmonized standards and/or regulations:

**EN ISO 12100:2010, EN ISO 13732-1:2008, EN 1672-2:2005+A1:2009,**  
**EN ISO 14159:2008, EN 12266-1:2012, EN 19:2016, EN ISO 13857:2019**

The technical file has been prepared by the signer of this document.

A handwritten signature in black ink, appearing to read "David Reyero Brunet".

David Reyero Brunet  
Technical Office Manager  
3rd July 2023



Document: 10.251.30.08EN  
Revision: (0) 2023/07

<sup>1</sup>DN≤25 Designed and manufactured in accordance with the sound engineering practice  
DN>25 Class I equipment. Conformity assessment procedure used: Module A

# Declaration of Conformity



**INOXPA S.A.U.**

Telers, 60  
17820 - Banyoles (Spain)

hereby declare under our sole responsibility that the

Machine:	<b>DOUBLE SEAT VALVE</b>
Model:	<b>INNOVA</b>
Type:	<b>S</b>
Size:	<b>DN 40 - DN 100 / OD 1½" - OD 4"</b>
Serial number:	<b>IXXXXXXXXXX to IXXXXXXXXXX XXXXXXXXXXIINXXX to XXXXXXXXXXXIINXXX</b>

fulfills all the relevant provisions of the these regulations:

**Supply of Machinery (Safety) Regulations 2008  
Pressure Equipment (Safety) Regulations 2016<sup>1</sup>**

and with the following designated standards:

**EN ISO 12100:2010, EN ISO 13732-1:2008, EN 1672-2:2005+A1:2009,  
EN ISO 14159:2008, EN 12266-1:2012, EN 19:2016, EN ISO 13857:2019**

The technical file has been prepared by the signer of this document.

A handwritten signature in black ink, appearing to read "David Reyer Brunet".

David Reyer Brunet  
Technical Office Manager  
3rd July 2023



Document: 10.251.30.09EN  
Revision: (0) 2023/07

<sup>1</sup>DN≤25 Designed and manufactured in accordance with the sound engineering practice  
DN>25 Class I equipment. Conformity assessment procedure used: Module A

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## 2. Generalities

### 2.1. INSTRUCTIONS MANUAL

This manual contains information about the reception, installation, operation, assembly and maintenance of the double seat valve INNOVA S.

Carefully read the instruction prior to starting the valve, familiarize yourself with the installation, operation and correct use of the valve and strictly follow the instructions. These instructions should be kept in a safe location near the installation area.

The information published in the instruction manual is based on updated data.

INOXPA reserves the right to modify this instruction manual without prior notice.

### 2.2. COMPLIANCE WITH THE INSTRUCTIONS

Not following the instructions may impose a risk for the operators, the environment and the machine, and may cause the loss of the right to claim damages.

This non-compliance may cause the following risks:

- failure of important machine/plant functions,
- failure of specific maintenance and repair procedures,
- possible electrical, mechanical and chemical hazards,
- risk to the environment due to the type of substances released.

### 2.3. WARRANTY

The conditions of the warranty are specified in the General Sales Condition that has been delivered at the time of placing your order.



The machine may not undergo any modification without prior approval from the manufacturer.

For your safety, only use original spare parts and accessories. The usage of other parts will relieve the manufacturer of any liability.

Changing the service conditions can only be carried out with prior written authorization from INOXPA.

The non-compliance of the prescribed indications in this manual means misuse of this gear on the technical side and the personal safety and this exempts INOXPA of all responsibility in case of accidents and personal injuries and/or property damage. Also, excluded from the warranty all breakdowns caused by improper use of the gear.

Please do not hesitate to contact us in case of doubts or if further explanations are required regarding specific data (adjustments, assembly, disassembly, etc.).

# 3. Safety

## 3.1. WARNING SYMBOLS



Safety hazard for people in general and/or equipment

### ATTENTION

Important instruction to prevent damage to the equipment and/or its function

## 3.2. GENERAL SAFETY INSTRUCTIONS



Read the instruction manual carefully before installing and starting the valve. Contact INOXPA in case of doubt.

### 3.2.1. During installation



Always take into account the [Technical Specifications of chapter 9](#).

The installation and use of the valve should always be in accordance with applicable regulations regarding health and safety.

Before starting up the valve, check that it is assembled correctly and its shaft is perfectly aligned. Incorrect alignment and/or excessive stress during coupling can cause serious mechanical problems in the valve.

### 3.2.2. During operation



Always take into account the [Technical Specifications of chapter 9](#).

NEVER exceed the specified limit values.

NEVER touch the valve and/or piping that is in contact with the fluid during operation. If the process involves hot products there is a risk of burns.

The valve contains parts that move in a linear fashion. Do not place hands or fingers in the valve closing area. This can cause serious injury.

### 3.2.3. During maintenance



Always take into account the [Technical Specifications of chapter 9](#).

NEVER disassemble or remove the valve until the pipes have been emptied. Bear in mind that the fluid in the pipe may be hazardous or extremely hot. Consult the regulations in effect in each country for these cases.

Inside the actuator there is a spring with an applied load. The steps specified in this manual must be followed when performing maintenance operations to avoid injury.

Do not leave loose parts on the floor.

## 4. General Information

### 4.1. DESCRIPTION

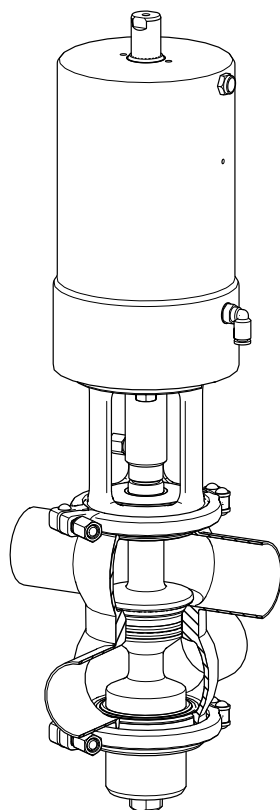
The INNOVA S valve is a shut-off double-seat valve for hygienic applications. Its main components are the actuator, which can incorporate a control head, the lantern, the two shafts of shut-off and the body.

At atmospheric pressure, between the seats of the two shafts of the INNOVA S valve, a leak detection chamber is formed, which allows a safe separation between the two products, one of them is a clean product (CIP).

The leakage chamber can be cleaned by the independent lifting of the seats during the CIP cleaning of the line.

### 4.2. APPLICATION

The INNOVA S valve is a hygienic valve suitable for the food, beverage, pharmaceutical and chemical industries.



10.251.32.0035

# 5. Installation

## 5.1. RECEPTION OF THE VALVE



INOXPA is not liable for any deterioration of the material caused by its transport or unpacking.

When receipt the valve, check to see whether all the parts listed on the delivery slip are present:

- complete valve,
- its components if any are supplied,
- instruction manual.

INOXPA inspects all its equipment before packaging. However, it cannot guarantee that the merchandise arrives at the user intact.

When unpacking the valve:

- remove any possible traces of packaging from the valve or its parts,
- inspect the valve or the parts that comprise it for possible damage incurred during shipping,
- take all possible precautions against damage to the valve and its components.

## 5.2. TRANSPORT AND STORAGE



The buyer or user shall be liable for assembly, installation, start-up and operation of the valve.

Take all possible precautions when transport and storage the valve to avoid damage it and its components.

## 5.3. IDENTIFICATION OF THE VALVE

Each valve is inscribed with its fabrication number. Indicate the fabrication number on all documents to refer to the valve.

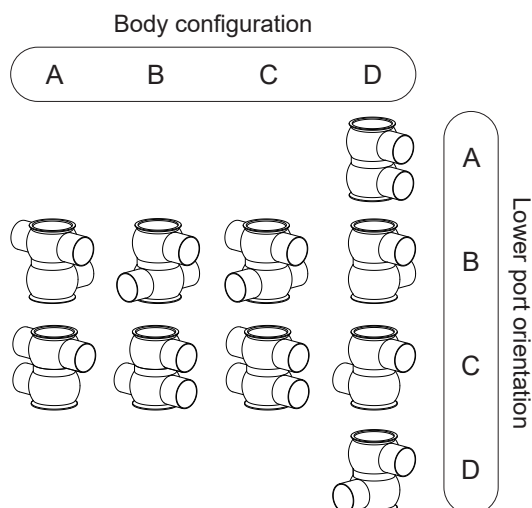
 	
INOXPA S.A.U. C. TELERS, 60 - 17820 BANYOLES GIRONA (SPAIN) . www.inoxpa.com	
<b>Type</b> <b>Serial</b> <b>Air</b>	<b>Size</b> <b>Year</b>

10.251.32.0043



WB	S	A	0	-	0	06	52	050	11	0	B			
											<b>Lower port orientation</b>			
											A	0°	C	180°
											B	90°	D	270°
											<b>Options</b>			
											0	ID Ra ≤ 0,8		
											1	ID Ra ≤ 0,5		
											<b>Actuator</b>			
											11	T1 S/E NC		
											12	T2 S/E NC		
											13	T3 S/E NC		
											<b>Size</b>			
											040	DN 40, OD 1½"	076	OD 3"
											050	DN 50, OD 2"	080	DN 80
											063	OD 2½"	100	DN 100, OD 4"
											065	DN 65		
											<b>Seals</b>			
											43	HNBR		
											52	EPDM		
											78	FPM		
											<b>Material</b>			
											06	1.4404 (AISI 316L)		
											<b>Connection</b>			
											0	Soldar		
											<b>Standard pipe</b>			
											0	DIN		
											1	OD		
											<b>Body configuration</b>			
											A,B,C,D	2 bodies		
											<b>Type</b>			
											S	mixproof valve		
<b>Product family</b>														
WB válvula INNOVA														

Housing combinations:



## 5.4. LOCATION

Place the valve leaving enough space around it to realize easily the dismantling, the inspection and the review the valve as well as in order to access to the actuator air connection's device for valves with automatic actuation even when the valve is operating. Consult in chapter 5.8. [Welding](#) the required minimum distances. The installation should allow that the removable parts are could remove easily.

## 5.5. GENERAL INSTALLATION

After the location of the valve is defined, the valve can be joined to the pipe by welding the valve housing or using fittings.

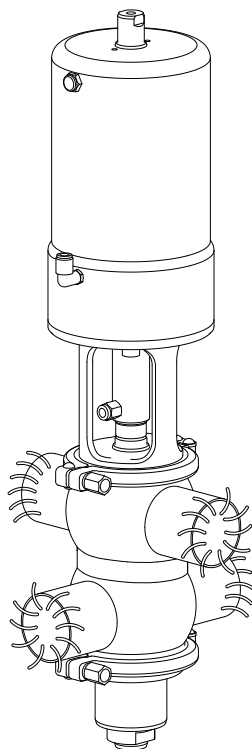
In case of joining the valve to the pipe by fittings do not forget the seals and tighten the unions properly.

If instead, the valve is joined by welding, before starting to weld the valve bodies to the pipe disassemble the valve to prevent damage to the joints, following the instructions in chapter 8.4. [Disassembly and assembly the valve](#).

During installation, the valve avoids using excessive force and pay special attention to:

- vibrations that may be produced on the facility,
- hermal dilation that the pipe may undergo when hot fluids are circulating,
- the weight that the pipe can support,
- excessive welding current.

Due to the design of the bodies, the valve is completely drainable in a vertical position. In case of placing the valve in other positions, horizontal or inclined, to assure the self-draining, install the valve with at least the port that occupies the lowest position facing downwards.



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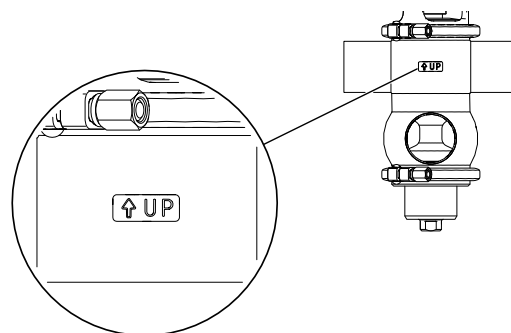
### 5.6. CHECKING AND REVIEW

Perform the following checks before using the valve:

- check that the clamps and nuts are tightened,
- if the valve is fitted with a pneumatic drive, apply the compressed air several times, checking that the valve carries out the opening and closing action without difficulty.

### 5.7. BODY ORIENTATION

The valve body must be oriented in a way that the actuator is in the direction that indicates the body arrow.



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### 5.8. WELDING



Welding work should only be done by qualified persons who are trained and equipped with the necessary equipment to perform this kind of work.

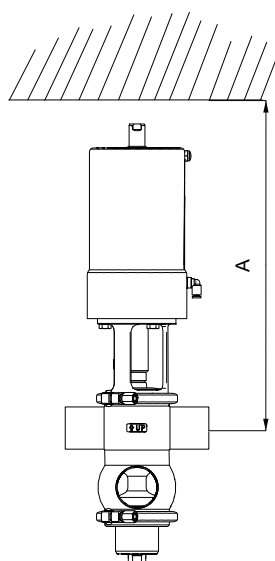
Before performance the weld, check the correct orientation of the body as indicated in chapter 5.8. [Body Orientation](#).

To perform the welding works:

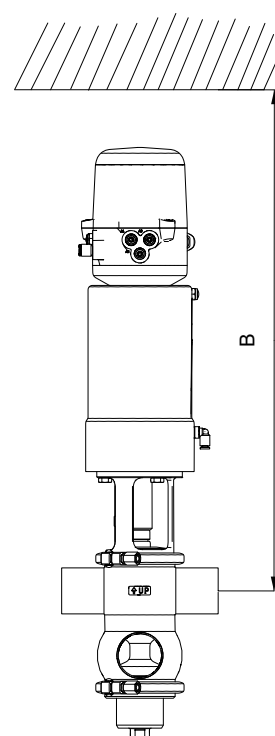
- disassemble the valve as indicated in chapter 8.4. [Disassembly and assembly the valve](#),
- weld the valve body to the pipes maintaining the distance indicated in the following table. This will allow for the disassembly of the valve, doing the subsequent reviews and changing the necessary valve pieces like seals, bushings, etc.

Valve Size	A [mm]	B [mm]
DN 40 / OD 1½"	610	765
DN 50 / OD 2"	640	795
DN 65 / OD 2½"	790	950
DN 80 / OD 3"	830	990
DN 100 / OD 4"	965	1120

10.251.14.0003



10.251.32.0036



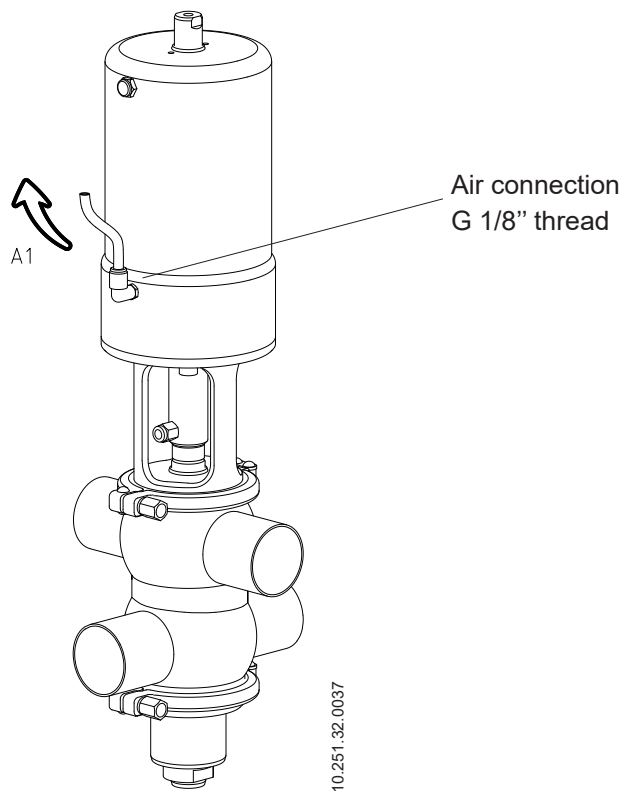
10.251.32.0044

## 5.9. CONNECTING THE AIR TO ACTUATOR

To perform the air connection to the actuator:

- connect and check the air connections (G 1/8" thread for tubing Ø6 mm) with thread in accordance with double-effect or simple effect needs.
- mind the quality of the compressed air according to the specifications described in chapter 9. [Technical Specifications](#).

Depending on the configuration, the actuator may have one or two air connections.



## 6. Start-up



Read carefully the instructions in chapter 5. [Installation](#) before start-up the valve.



Before start-up, the persons in charge must be duly informed about how the valve works and the safety instructions to follow. This instruction manual will be available to personnel at all times.



Check the correct orientation of the body as indicated in chapter 5.8. [Body Orientation](#).

Before putting the valve or the actuator into service the following must be taken into consideration:

- check that the piping and valve are completely free of possible traces of welding slag or other foreign particles. Clean the system if is necessary,
- check to make sure the valve moves smoothly. If necessary, lubricate it with special grease or soapy water,
- check for possible leaks, and make sure the pipes and their connections are sealed and do not have any leaks,
- if the valve has been supplied with an actuator, make sure that the alignment of the valve shaft and the actuator shaft enables smooth movement,
- check that the compressed air pressure at the inlet of the actuator matches what is indicated in chapter 9. [Technical Specifications](#),
- consider the quality of the compressed air, according to the specifications described in chapter 9. [Technical Specifications](#),
- activate the valve.

### ATTENTION



Do not modify the operating parameters for which the valve has been designed without prior written authorisation from INOXPA.

Do not touch the moving parts of the coupling between the actuator and the valve when the actuator is connected to the compressed air supply.



¡Burn hazard! Do not touch the valve or the pipes when hot fluids are circulating or when cleaning and/or sterilization are being carried out.

## 7. Operating problems

The upper shaft does not rise during impulses	
The individual seats do not clean	
Internal leak of product (valve closed)	
Jerky valve operation	
POSSIBLE CAUSES	SOLUTIONS
<ul style="list-style-type: none"> <li>• The seal or guide bushing is worn, deteriorated or has gotten stuck</li> </ul>	Replace the seals. Replace the seals with ones made of a different material or grade that is more appropriate for the product. Lubricate with soapy water or a lubricant that is compatible with the seal material and the product.
<ul style="list-style-type: none"> <li>• Normal seal wear</li> </ul>	Replace the seals.
<ul style="list-style-type: none"> <li>• Premature wear of the seal/affected by the product</li> </ul>	Replace the seals with ones made of a different material or grade that is more appropriate for the product. Reduce the pressure in the line. Lower the operating temperature.
<ul style="list-style-type: none"> <li>• Product residue has deposited on the valve seat and/or plug</li> </ul>	Clean frequently
<ul style="list-style-type: none"> <li>• Product pressure exceeds the actuator specifications</li> </ul>	Reduce the product pressure
<ul style="list-style-type: none"> <li>• Excessive product pressure in body</li> </ul>	Reduce the product pressure
<ul style="list-style-type: none"> <li>• Loss of seal (vibrations)</li> </ul>	Tighten loose parts
<ul style="list-style-type: none"> <li>• Insufficient time for impulses</li> </ul>	Adjust cleaning time in control system
<ul style="list-style-type: none"> <li>• Insufficient air pressure</li> </ul>	Increase the compressed air pressure

# 8. Maintenance

## 8.1. GENERAL CONSIDERATIONS

This valve, just like any other machine, requires maintenance. The instructions in this chapter cover the maintenance of the valve, the identification and replacement of the spare parts and the disassembly and assembly of the valve. The instructions are aimed at maintenance personnel and those responsible for the supply of spare parts.



Read carefully the chapter [9. Technical Specifications](#).

Maintenance work should only be done by qualified persons who are trained and equipped with the necessary equipment to perform this kind of work.

All replaced material should be duly disposed or recycled according to the directives in effect in each area.

Make sure that the pipes are not under pressure before starting maintenance work..

## 8.2. MAINTENANCE

To perform maintenance properly is recommended:

- periodic inspection of the valve and its components,
- keeping an operational record of each valve writing down any problems,
- always having spare replacement seals in stock.

Pay special attention to the hazard warnings indicated in this manual during the performance of the maintenance work.



The valve and the pipes must never be under pressure during maintenance.

⚠ Burn hazard! Do not touch the valve or the pipes when hot fluids are circulating or when cleaning and/or sterilization are being carried out.

The time interval between each preventive maintenance may vary in accordance with the work conditions to which the valve is subject: temperature, pressure, number of operations per day, type of cleaning solutions used, etc.

### 8.2.1. Maintenance of the seals

#### REPLACING SEAL

Preventive maintenance	Replace after 12 months
Maintenance after a leak	Replace at the end of the process
Planned maintenance	Regularly check the absence of leaks and the smooth operation of the valve. Keep a record of the valve's maintenance. Use statistics for planning inspections.
Lubrication	During assembly, apply lubricants that are suitable with the material of which the seat seal is made. See the following table.

SEAL COMPONENT	LUBRICANT	NLGI DIN 51818 Class
HNBR / FPM	klübersynth UH 1 64-2403	3
EPDM / HNBR / FPM	PARALIQ GTE 703	3

### 8.2.2. Storage

The valves should be stored in a closed area under the following conditions:

- temperature between 15°C y 30°C,
- air humidity < 60%

Storage of the equipment outdoors is NOT allowed.

### 8.2.3. Spare parts

To request spare parts is necessary to indicate the type of valve, the size, the fabrication number, the position and the description of the part which can be found in chapter 9. [Technical Specifications](#).

## 8.3. CLEANING



The use of aggressive cleaning products such as caustic soda and nitric acid may burn the skin.

Wear rubber gloves during all cleaning procedures.

Always wear protective goggles.

### 8.3.1. CIP (clean-in-place) cleaning

If the valve is installed in a system with a CIP process, its disassembly will not be required. EPDM is the standard seal material that will be used for CIP cleaning, both in alkaline mediums and in acid mediums. The materials of the seal HNBR and FPM are not recommended.

Two types of solutions can be used for CIP processes:

**a. alkaline solution:** 1% by weight of caustic soda (NaOH) at 70°C (150°F). To make this solution:

1 kg NaOH + 100 l H<sub>2</sub>O<sup>1</sup> = cleaning solution

2,2 l NaOH at 33% + 100 l H<sub>2</sub>O = cleaning solution

**b. acid solution:** 0,5% by weight of nitric acid (HNO<sub>3</sub>) at 70°C (150°F). To make this solution:

0,7 l HNO<sub>3</sub> at 53% + 100 l H<sub>2</sub>O = solución de limpieza

1) only use chlorine-free water to mix with the cleaning agents

#### ATTENTION



Check the concentration of the cleaning solutions. An incorrect concentrations may lead to the deterioration of the valve seals.

To remove any traces of cleaning products, ALWAYS perform a final rinse with clean water at the end of the cleaning process.



Clean the entire interior and exterior of the valve before starting disassembly and assembly tasks.

### 8.3.2. Automatic SIP (sterilization-in-place)

Sterilization with steam is applied to all equipment including the pipping.



**ATTENTION**

Do NOT start the equipment during the sterilization with steam.  
 The parts and the materials will not be damaged if the indications specified in this manual are observed.  
 No cold fluid can enter the equipment until the temperature of the equipment is lower than 60°C (140°F).

Maximum conditions during the SIP process with steam or superheated water:

- a. maximum temperature: 140°C / 284°F
- b. maximum time: 30 min
- c. cooling: sterile air or inter gas
- d. materials: EPDM (the materials HNBR and FPM are not recommended)

#### 8.4. DISASSEMBLY AND ASSEMBLY THE VALVE



Proceed with caution. Personal injury can occur.  
 Always disconnect the compressed air before starting to disassemble the valve.  
 Never disassemble the valve clamps directly without reading the instructions carefully, since the actuator contains a spring inside it with an applied load.  
 Valve and actuator assembly and disassembly should only be done by qualified persons.

The following tools are needed in order to disassembly and assembly the valve and the drives:

- a spanner crescent to unscrew the top shaft from the bottom shaft of the valve:

Valve size	DN 40 OD 1½	DN 50 OD 2"	DN 65/80 OD 2½" - 3"	DN 100 OD 4"
Actuator	17 mm			
Bottom shaft	19 mm	41 mm		

- 13 mm crescent spanner to separate the lantern from the actuator,
- appropriate tool (not piercing) to mount the seat seals.

### 8.4.1. Disassembly

1. Apply compressed air to the actuator (10) A2 connection to the valve passes to open position. This way, the shafts will not contact with the valve body (01).
2. Loosen and separate the clamp (34) that joins the body (01) to the lantern.
3. Separate the assembled formed by the actuator (10) and the shafts (08,08A) from the body (01).
4. Loose and separate the bottom clamp (34) from the valve body (01).
5. Remove the bottom cover (12B) of the body (01), the seal of the bottom shaft (05), the wide guide (11) and the O-ring (20B) from the bottom part of the body (01).
6. Release the compressed air from the actuator (10) so that the valve is in the rest position.
7. With the help of the crescent spanners, disassemble the bottom shaft (08A) from the valve unscrew it while actuator top shaft is fixed.
8. Disassemble the top shaft (08).
9. Remove the conical seat (05C) and the flat seat (05D) seals from the top shaft (08) following the instructions of chapter [8.5. Replacing the seat seal](#).
10. Disassemble the diffuser (44) and the O-ring (20A) from the top shaft (08).
11. Remove the radial seat (05C) seal from the bottom shaft (08A) following the instructions of chapter [8.5. Replacing the seat seal](#).
12. Remove the O-ring (20) from the bottom shaft (08A).
13. Remove the body top cover (12) from the lantern (21).
14. Remove the seal of the top shaft (05), the guide bushing (17) and the seal of the body top cover (12) from the body top cover (12).
15. Disassemble the lantern (21), loosening the screws (23) that join the actuator (10) with the 13 mm crescent spanner.

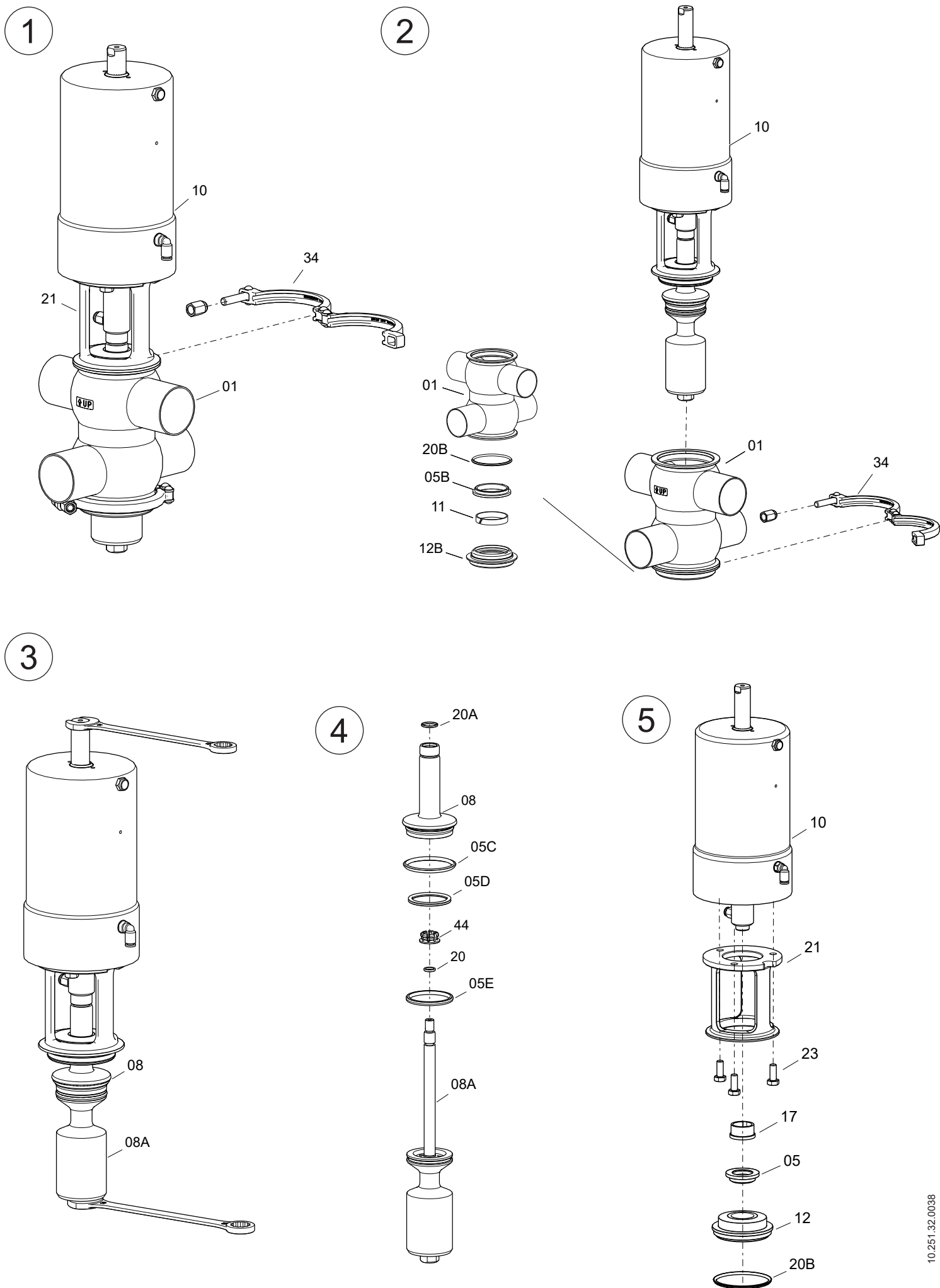
### 8.4.2. Assembly

1. Mount the lantern (21) to the actuator tightening the screws (23) with the 13 mm crescent spanner.
2. Mount the seal of the top shaft (05), the guide bushing (17) and the seal (20B) on the body top cover (12).
3. Place the body top cover (12) in the lantern (21).
4. Place the radial seat (05E) seal to bottom shafts (08A) following the instructions of chapter [8.5. Replacing the seat seal](#).
5. Mount the O-ring (20) of the bottom shaft (08A).
6. Place the conical seat (05C), flat seat (05D) seals to the top shaft (08) following the instructions of chapter [8.5. Replacing the seat seal](#).
7. Mount the O-ring (20A) and the diffuser (44) on the top shaft (08).
8. Mount the top shaft (08).
9. With the crescent spanner, screw the bottom shaft (08A) of the valve into the actuator top shaft (10) fixing this with the 17 mm crescent spanner to avoid it turns.
10. Mount the seal of the bottom shaft (05B), the guide wide (11) and the O-ring (20B) on the body bottom cover (12B).
11. Apply compressed air to the actuator (10) so that the valve passes an open position.
12. IOrient the valve according to chapter [5.7. Body Orientation](#), introduce the actuator-valve assembly into the body and fit it with the clamps (34) that join the body (01) to the lantern (21).
13. Mount the body bottom cover (12B) in the body (01) and fix it with the bottom clamp (34).
14. Release the compressed air from the actuator (10) so that the valve passes a rest position.

#### ATTENTION

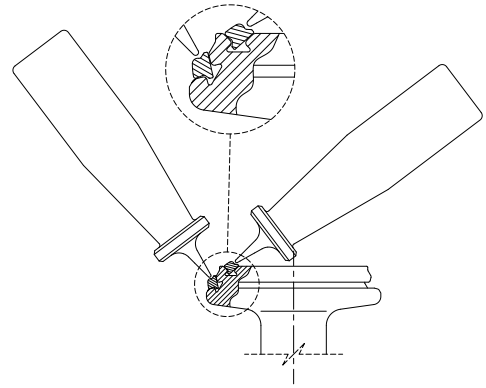


Check the correct orientation of the body as indicated in chapter [5.7. Body Orientation](#).

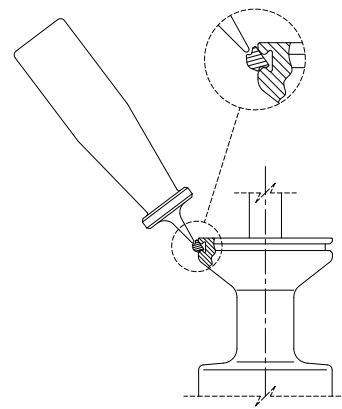


### 8.5. REPLACING THE SEAT SEAL

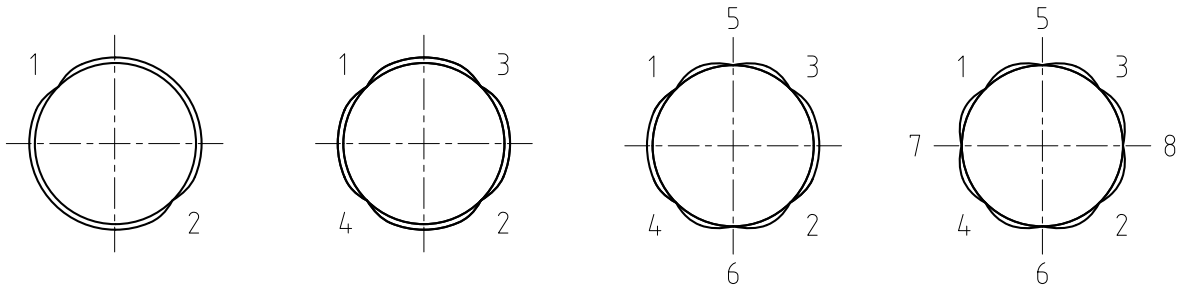
1. Put the plug shaft in a vertical position –for example, with a bench clamp- so that the shaft is kept stable and no damage is caused to the mating surface of the seat seals. Do not press the shaft too much if using a bench clamp.
2. Remove the used seals using a screwdriver or a sharp hook-shaped tool. Make sure not to damage the mating surfaces of the seal.
3. Lubricate the new seat seals with soapy water if necessary to facilitate installation.
4. Insert the seal in the plug shaft seat accommodation so that its edges are inside the accommodation. Preferably the seal should fit within the part of the section that has the greatest diameter, as shown in the figure.
5. Then, with the help of an appropriate tool (not piercing), press the edge of the seal that hasn't yet fit into the accommodation, as shown in the figure.
6. This operation should be done around the entire diameter, applying the tool in the sequence 1-2-3-4-5-6-7-8 as shown in the bottom figure. Always press on opposite sides. Once you get to the last step of this sequence, repeat the process until the seal is completely inside the accommodation.
7. Press the seal with your fingers to make sure it is well
8. seated. Make sure there are no parts projecting due to
9. poor positioning of the seal.



10.250.32.0019



10.250.32.0018

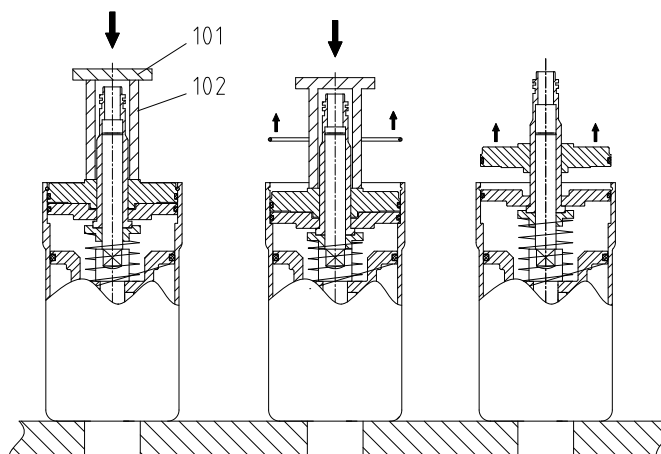


10.240.32.0017

## 8.6. DISASSEMBLY AND ASSEMBLY OF THE ACTUATOR

### 8.6.1. Disassembly

1. Remove the air fittings (18,18B) and the silencer.
2. Disassemble the actuator back cover (39) removing the screws (32A) and remove the plug (07).
3. Place the actuator on a base of a press or on the lathe collet and place a thick tube (102) and a shim (101) on the free end of the actuator.
4. Apply force on the shim. When the cover (12) has lowered 15-20 mm remove the retaining ring (45) It should have enough free space to be able to dismount it.
5. Reduce the force on the shim slowly until you note that the spring does not exert pressure. At this moment, the actuator base will have been free.
6. Remove the actuator base (12) and the shaft sleeve (35).
7. Remove the O-rings (20C,20F), the bushing (11D) and the scraper (60A) from the actuator base.
8. Remove the O-ring (20E) and the bushing (11C) from the shaft sleeve (35).
9. Remove the spring base (43B) and the bottom spring (06A).
10. Remove the spring assembly (06).
11. Extract the O-ring (20B) from the spring assembly (06).
12. Disassemble the stop of the top piston (43C) removing the screws (32B) that join it to the actuator body (01).
13. Remove the top piston (30B) from the actuator body (30).
14. Disassemble the scraper (60), the bushing (11B) and the O-ring (20E) from the actuator body (01).



10.250.32.0048

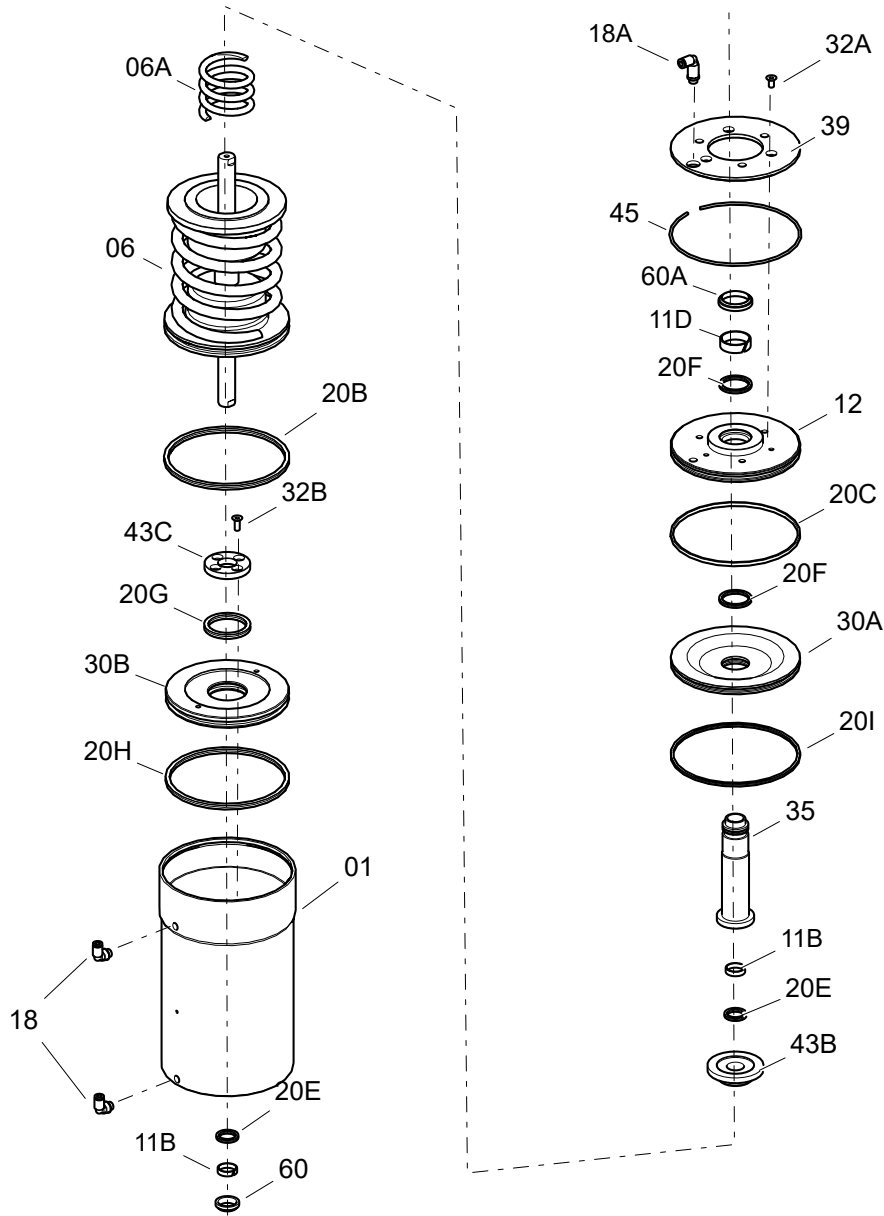


Do not take the spring assembly (06) apart, as it contains a spring with an applied charge.  
Valve and actuator assembly and disassembly should only be performed by qualified personnel.

### 8.6.2. Assembly

1. Mount the scraper (60), the bushing (11B) and the O-ring (20) from the actuator body (01).
2. Place the top piston (30B) inside the actuator body (01).
3. Mount the stop of the top piston (43C) screwing the screws (32B) that join it to the actuator body (01).
4. Mount the O-ring (20B) to the spring assembly (06).
5. Mount the O-ring (20E) and the bushing (11B) on the shaft sleeve (35).
6. Mount the O-rings (20C,20F), the bushing (11D) and the scraper (60A) from the actuator base (12).
7. Introduce the spring assembly (06) inside the actuator body (01).
8. Introduce the bottom spring (06A), the base of the bottom spring (43B), the shaft sleeve (35) and the bottom piston (30A) in the actuator body (01).
9. Mount the actuator base (12) on the body (10).
10. Apply force on the shim to low 15-20 mm the actuator base (12).
11. Place the retaining ring (45).
12. Reduce the applied force slowly until the tool does not touch the actuator base (12).
13. Place the back cover (39) from the actuator and fix it with the screws (32A).
14. Place the plug (07) on the actuator back cover (39).

- 15. Install the air fittings (18,18B) and the silencer.
- 16. Apply compressed air to check the correct operation of the actuator.



10.250.32.0047

# 9. Technical Specifications

## 9.1. VALVE

Maximum working pressure	1000 kPa (10 bar)
Minimum working pressure	vacuum
Maximum working temperature	121°C (250°F) EPDM seals (for higher temperatures other grades of seals will be used)

## 9.2. ACTUATOR

Compressed air pressure	600 - 800 kPa (6 - 8 bar)
Compressed air quality	per ISO 8573-1:2010: <ul style="list-style-type: none"> <li>- <u>Solid particulate content</u>: quality class 3, max. particle dimension = 5 µ, max particle density = 5 mg/m<sup>3</sup>.</li> <li>- <u>Water content</u>: quality class 4, max. dew point = 2°C. If the valve is used at a high altitude or under low ambient temperature conditions, the dew point must be adjusted accordingly.</li> <li>- <u>Oil content</u>: quality class 5, preferentially oil free, max. 25 mg oil per 1 m<sup>3</sup> air.</li> </ul>

Compressed air fitting	G 1/8
Compressed air consumption (litres N/cycle of P <sub>rel</sub> = 6 bar)	

Actuator	SE (air-spring)
T1	4,4
T2	9,9
T3	17,2

Actuator	T1	T2	T3
Valve	DN 40 - 50 OD 1½" - 2"	DN 65 - 80 OD 2½" - 3"	DN 100 OD 4"

## 9.3. MATERIALS

Parts in contact with the product	1.4404 (AISI 316L)
Other steel parts	1.4301 (AISI 304)
Seals in contact with the product	EPDM (standard) - FPM - HNBR
Internal surface finish	bright polish Ra ≤ 0,8 µm
External surface finish	matt

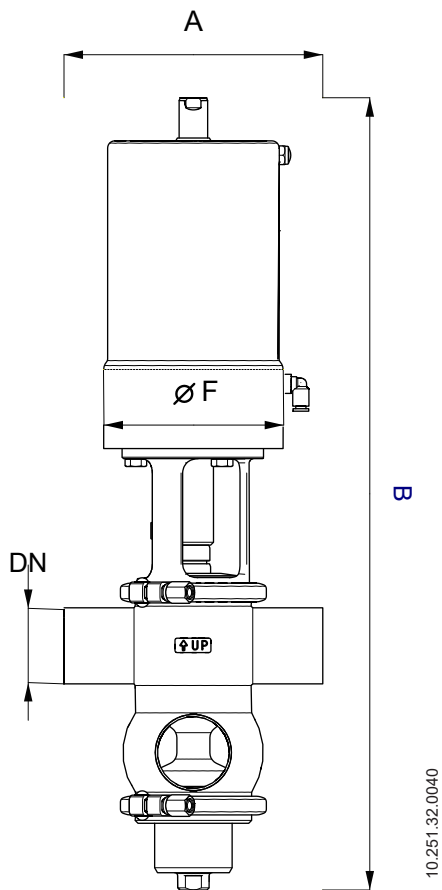
## 9.4. SIZES AVAILABLE

DIN EN 10357 serie A (formerly DIN 11850 series 2)	DN 40 - DN 100
ASTM A269/270 (corresponds to OD tube)	OD 1½" - OD 4"
Connections	weld

### 9.5. WEIGHTS

	DN	Weights (kg)
DIN	40	13
	50	15
	65	27
	80	30
	100	45
OD	1½"	14
	2"	15
	2½"	28
	3"	30
	4"	46

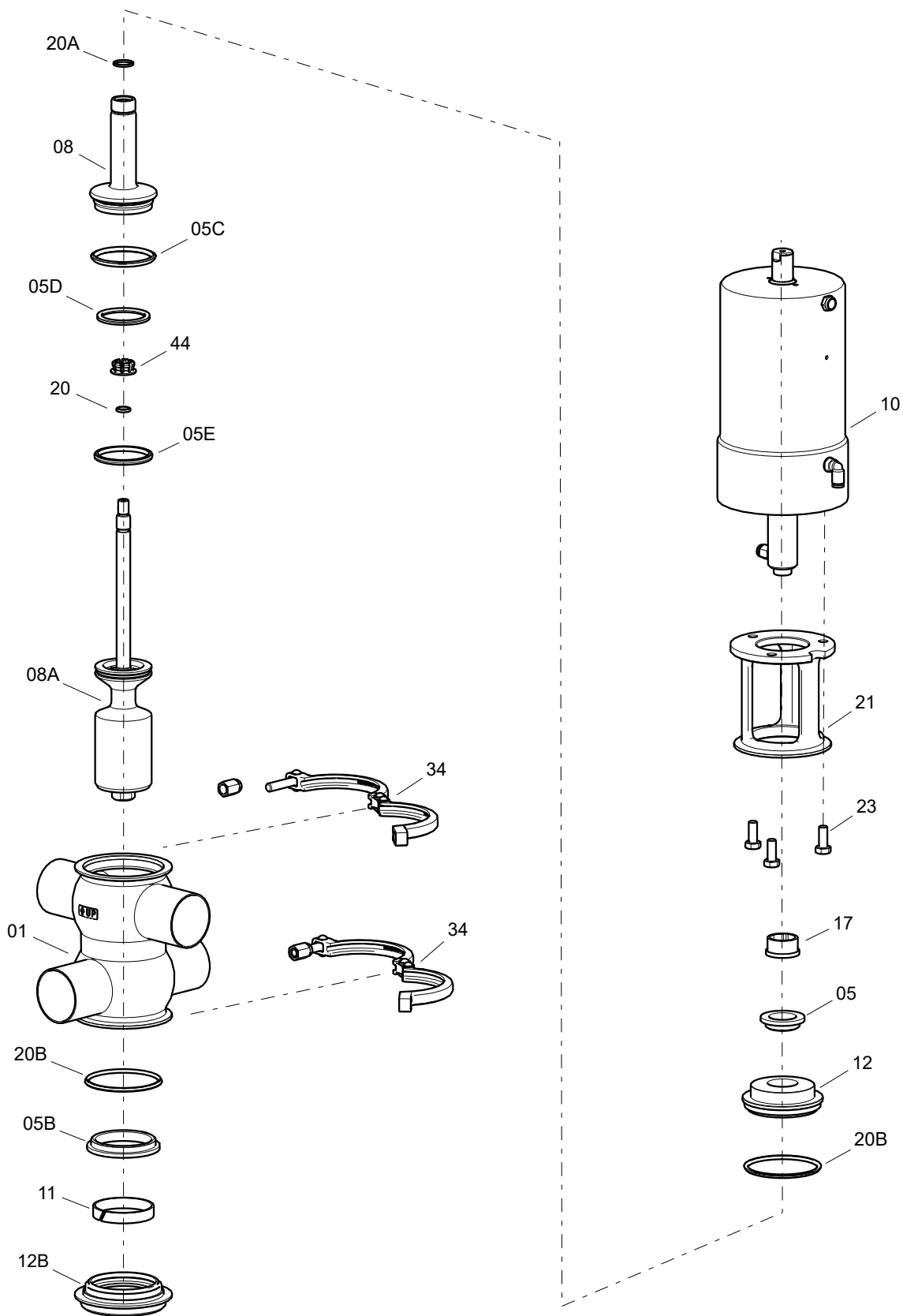
### 9.6. DIMENSIONS



	DN	Dimensions (mm)		
		A	B	ØF
DIN	40	170	527	125
	50	180	551	125
	65	220	683	161
	80	250	713	161
	100	300	807	193
OD	1½"	170	527	125
	2"	180	551	125
	2½"	220	683	161
	3"	250	713	161
	4"	300	807	193



9.7. EXPLODED DRAWING and PARTS LIST



10.251.32.0039

Position	Description	Quantity	Material
01	body	1	1.4404 (AISI 316L)
05	top shaft seal <sup>1</sup>	1	EPDM / FPM / HNBR
05B	bottom shaft seal <sup>1</sup>	1	EPDM / FPM / HNBR
05C	conical seat seal <sup>1</sup>	1	EPDM / FPM / HNBR
05D	flat seat seal <sup>1</sup>	1	EPDM / FPM / HNBR
05E	radial seat seal <sup>1</sup>	1	EPDM / FPM / HNBR
08	top shaft	1	1.4404 (AISI 316L)
08A	bottom shaft	1	1.4404 (AISI 316L)
10	actuator	1	1.4307 (AISI 304L)
11	guide wide	1	PTFE
12	top body cover	1	1.4404 (AISI 316L)
12B	bottom body cover	1	1.4404 (AISI 316L)
17	guide bushing	1	PTFE
20	O-ring <sup>1</sup>	1	EPDM / FPM / HNBR
20A	O-ring <sup>1</sup>	1	EPDM / FPM / HNBR
20B	O-ring <sup>1</sup>	2	EPDM / FPM / HNBR
21	lantern	1	1.4301 (AISI 304)
23	screw	3	A2
34	clamp	2	1.4301 (AISI 304)
44	diffuser	1	PTFE

1) recommended spare parts



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