

INSTALLATION, SERVICE AND MAINTENANCE INSTRUCTIONS

## SINGLE SEAT VALVE

# INNOVA M / L



10.241.32.0033



10.241.32.0034



# EC Declaration of Conformity



## INOXPA S.A.U.

Telers, 60  
17820 - Banyoles (Spain)

hereby declare under our sole responsibility that the

Machine:	<b>SINGLE SEAT VALVE</b>
Model:	<b>INNOVA</b>
Type:	<b>M / L</b>
Size:	<b>DN 25 - DN 100 / OD 1" - OD 4"</b>
Serial number:	<b>IXXXXXXXXXX to IXXXXXXXXXX XXXXXXXXXXIINXXX to XXXXXXXXXXXIINXXX</b>

fulfills all the relevant provisions of the following directive:

**Machinery Directive 2006/42/EC<sup>1</sup>**  
**Pressure Equipment Directive 2014/68/EU<sup>2,3</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**

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

David Reyero Brunet  
Technical Office Manager  
15th December 2021



Document: 10.241.30.04EN

Revision: (0) 2021/12

<sup>1</sup>INNOVA M / L with pneumatic actuator

<sup>2</sup>INNOVA M / L with manual or pneumatic actuator

<sup>3</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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fulfills all the relevant provisions of these regulations:

**Supply of Machinery (Safety) Regulations 2008<sup>1</sup>**  
**Pressure Equipment (Safety) Regulations 2016<sup>2,3</sup>**

and with the following designated standards:

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## 2. Generalities

### 2.1. INSTRUCTIONS MANUAL

This manual contains information about the reception, installation, operation, assembly, disassembly and maintenance of the INNOVA M and INNOVA L valve.

Carefully read the instruction prior to starting the agitator, familiarize yourself with the installation, operation and correct use of the agitator 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

Any warranty will be void immediately and lawfully and, additionally, INOXPA will be compensated for any civil liability claims submitted by third parties, in the following cases:

- the service and maintenance work have not been carried out in accordance with the service instructions, the repairs have not been carried out by our personnel or have been carried out without our written authorisation,
- modifications have been carried out on our material or equipment without written authorisation,
- the parts or lubricants used are not original INOXPA parts and products,
- the material or equipment has been improperly used, has been used negligently, or has not been used according to the instructions and their intended.

The General Conditions of Delivery already in your possession are also applicable.



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.

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 for equipment



Electric hazard

### ATTENTION

Important instruction to prevent damage to the equipment and 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

The [Technical specifications](#) of [chapter 9](#) should always be observed.



The installation and use of the valve should always be in accordance with applicable regulations in regard to 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

The [Technical specifications](#) of [chapter 9](#) should always be observed.



The specified limit values shall never be exceeded under any circumstance.

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

The [Technical specifications](#) of [chapter 9](#) should always be observed.



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, and the steps specified in this manual must be followed when performing maintenance operations to avoid injury. Do not leave loose parts on the floor.



All electrical work must be carried out by authorised personnel.

## 4. General Information

### 4.1. DESCRIPTION

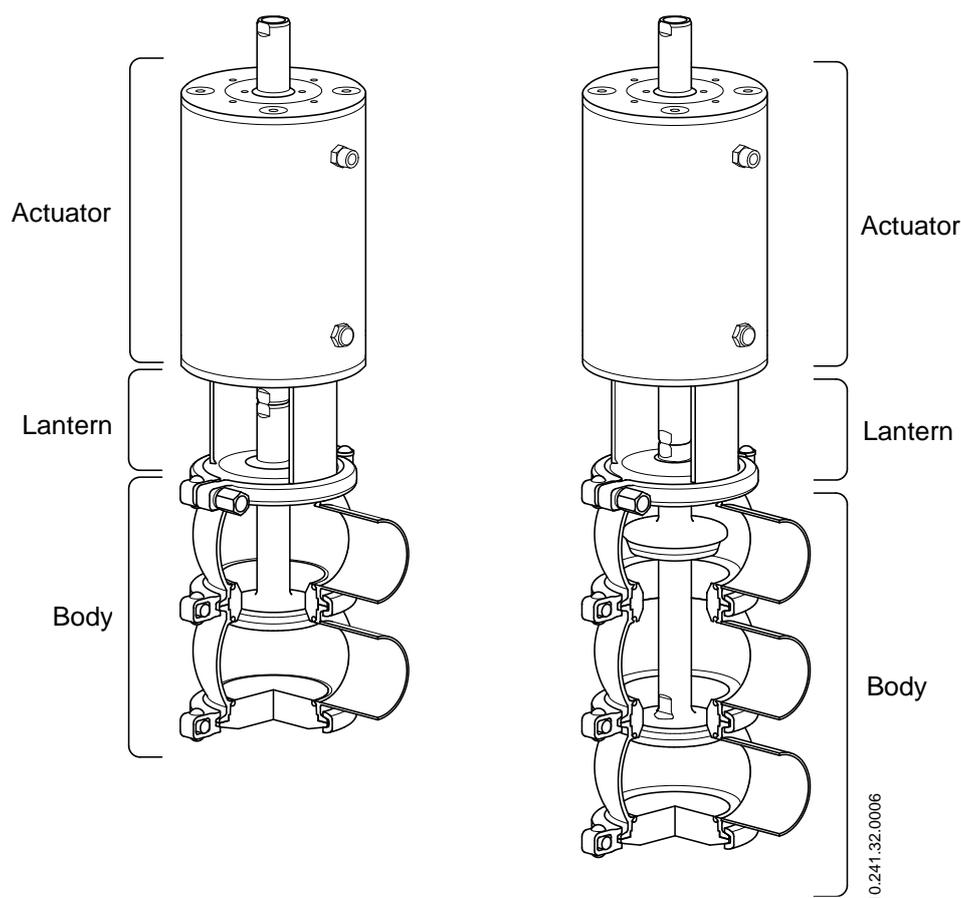
The INNOVA M single seat valve is a shut-off valve that is used to open or close sections of a pipe. The INNOVA L single seat valve is a divert valve to divert the product with a diverging flow.

### 4.2. APPLICATION

The INNOVA M and INNOVA L single seat valve are a sanitary and flexible design for a wide range of applications in the food, pharmaceutical, chemical and beverage industries.

The INNOVA M valve is usually used for emptying, drainage or as a shut-off valve on a bypass line.

The INNOVA L valve is often used to supply CIP and on return lines.



# 5. Installation

## 5.1. RECEPTION OF THE VALVE



INOXPA is not liable for any deterioration of the material caused by its transport or unpacking. Visually check that the packaging has not been damaged.

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,
- delivery slip,
- instruction manual.

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

When receipt 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 de fabrication number on all documents to refer to the valve.

**INOXPA S.A.U.**  
 C. TELERS 60 . 17820 BANYOLES  
 GIRONA (SPAIN) . www.inoxpa.com



ITEM: WAML0-00652050120                      SIZE: DN 50

TYPE: INNOVA ML DIN EPDM FDA ACT.T2 S/E NC

WORKING PRESSURE: 10 bar / 145 psi

AIR PRESSURE: Min. 6 bar / 87 psi    Max. 8 bar / 116 psi

PRODUCTION NR: I254782                      YEAR: 2018

Fabrication number →

10.241.32.0032

<b>WA</b>	<b>M</b>	<b>D</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>06</b>	<b>52</b>	<b>050</b>	<b>12</b>	<b>0</b>
										<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
									14	T4 S/E NC
									21	T1 S/E NO
									22	T2 S/E NO
									23	T3 S/E NO
									24	T4 S/E NO
									31	T1 D/E
									32	T2 D/E
									33	T3 D/E
									34	T4 D/E
										<b>Size</b>
									025	DN 25, OD 1"
									040	DN 40, OD 1 1/2"
									050	DN 50, OD 2"
									063	OD 2 1/2"
									065	DN 65
									076	OD 3"
									080	DN 80
									100	DN 100, OD 4"
										<b>Seals</b>
									43	HNBR
									52	EPDM
									78	FPM
										<b>Material</b>
									06	AISI 316L
										<b>Connection</b>
									0	Welded
										<b>Standard pipe</b>
									0	DIN
									1	OD
										<b>Bodies configuration</b>
									A, B, C, D	2 body
									J, P, R, S, V, W, X, Z	3 bodies
										<b>Types</b>
									M	Shut-off valve (reverse acting)
									L	Routing (diverging flow)
										<b>Product family</b>
									WA	INNOVA Valve

### 5.4. LOCATION

The valve should be installed in a manner that permits to be cleaned, inspected and self-draining. Allow sufficient spacer around the valve for adequate review, dismantling and maintenance. See table in section 5.8. [Welding](#).

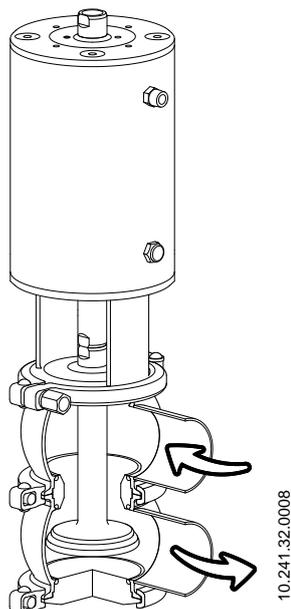
Installation shall allow that removable parts shall be readily disassembled.

### 5.5. DIRECTION OF FLOW

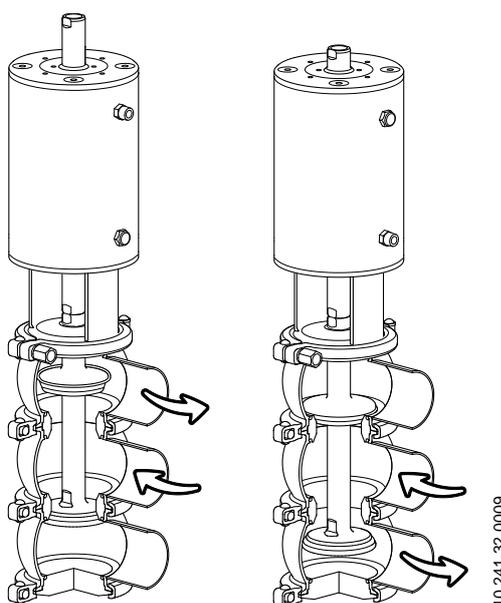
The following image indicates the recommended direction for product flow, as well as the direction of closing, depending on the type of valve. Following these indications will prevent water hammer and its consequences to the extent possible, which can occur when valves close.

The recommended direction will always be contrary to the movement of valve closing, that is, when the valve is closing, the valve will always work against the pressure of the fluid.

INNOVA M valve



INNOVA L valve



### 5.6. GENERAL INSTALLATION

After the location of the valve is defined, the pipe can be joined by welding the valve body or using fittings. In this case, do not forget the seals, and tighten the unions properly.

**ATTENTION**

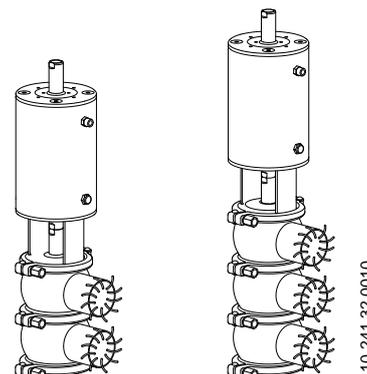


For INNOVA M and INNOVA L valve is recommended that the union for one of the bodies be made using a fitting to facilitate valve disassembly.

Before starting to weld the valve bodies to the pipe, disassemble the valve to prevent damage to the joints, following the instructions in section 8.4. [Assembly and disassembly of the valve](#).

Avoid using excessive force when assembling the valves, and pay special attention to:

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



## 5.7. CHECKING AND REVIEW

Perform the following checks before using:

- check that the clamps and nuts are tightened,
- open and close the valve, applying compressed air to the actuator, several times to make sure it operates correctly and to make sure that the shaft joint is coupled smoothly to the valve body.

## 5.8. WELDING

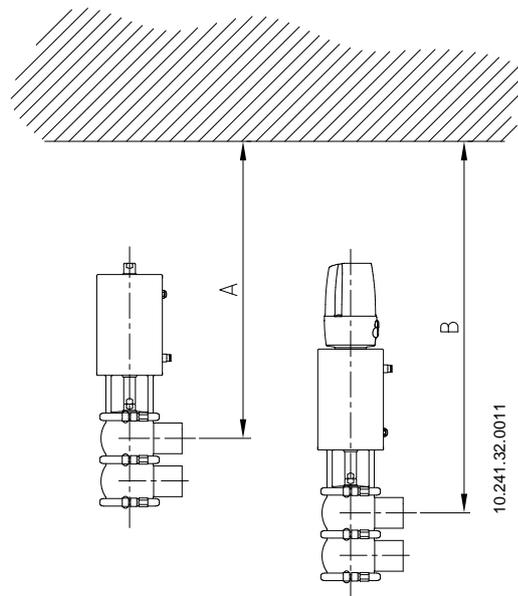


Welding work should only be done by qualified persons who are trained and equipped with the necessary equipment to perform this kind of work.

To perform welding work:

- Disassemble the valve as indicated in section [8.4. Assembly and disassembly of the valve](#),
- Weld the valve body to the pipes,
- When welding the valve body, it is very important to keep the minimum distance (height A) to allow the valve to be disassembled for subsequent reviews and to change valve parts (seals, bushings, etc.). It is important to differentiate when the valve has a control head (height B).
- For INNOVA L valve is recommended that the union for one of the bodies be made using a fitting to facilitate valve disassembly.

Valve size	A [mm]	B [mm]
DN 25 / OD 1"	330	450
DN 40 / OD 1 ½"	350	470
DN 50 / OD 2"	430	530
DN 65 / OD 2 ½"	500	600
DN 80 / OD 3"	520	620
DN 100 / OD 4"	580	680



## 5.9. VALVE CONFIGURATION WITH ACTUATOR

The standard configuration of the valves is NC (normally closed).

It is possible to convert them into NO (Normally Open) simply by turning the valve actuator (see section [8.8.3 Actuator configuration](#)).

Valves can also be configured as DE valves (double effect).

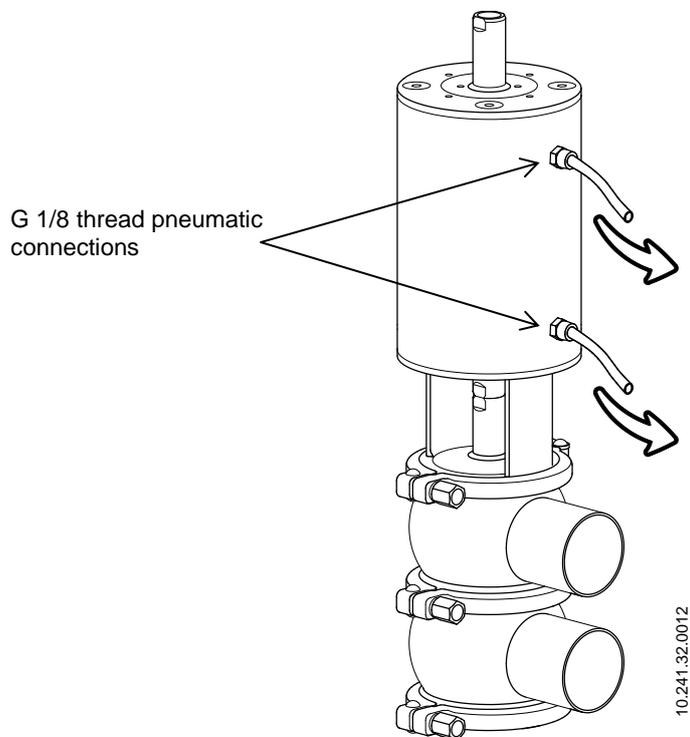


Never disassemble the valve clamps directly without Reading the instructions carefully, since the actuator contain a spring inside it with and applied load.

Valve and/or actuator assembly and disassembly should only be done by qualified persons.

### 5.10. ACTUATOR AIR CONNECTION

- Connect and check the compressed air connections.
- INOXPA valves are supplied with connections for Ø6 pipe, and with a silencer on S/E actuators.
- Consider 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



The start-up of the valve can be carried out provided the instructions indicated in the chapter [5. Installation](#) have been followed.



Prior to 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.

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 is 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 to the actuator matches what is indicated in the [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

Water hammer																									
↓	Valve does not open/close																								
↓	Internal leak of product (valve closed)																								
↓	The valve plug is sticking																								
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<ul style="list-style-type: none"> <li>Loss of seal (vibrations)</li> </ul>	<ul style="list-style-type: none"> <li>Tighten loose parts</li> </ul>																								
<ul style="list-style-type: none"> <li>Product pressure exceeds the actuator specifications</li> </ul>	<ul style="list-style-type: none"> <li>Replace the actuator with a larger one</li> <li>Reduce the product pressure</li> <li>Use auxiliary air on the spring side</li> </ul>																								
<ul style="list-style-type: none"> <li>Warping of seals</li> </ul>	<ul style="list-style-type: none"> <li>Replace the seals with ones of a different quality, if they have deteriorated prematurely</li> </ul>																								
<ul style="list-style-type: none"> <li>Actuator spring in poor condition and/or stuck (dirty)</li> </ul>	<ul style="list-style-type: none"> <li>Replace spring (clean)</li> </ul>																								
<ul style="list-style-type: none"> <li>The direction of flow is the same as the direction of closing</li> </ul>	<ul style="list-style-type: none"> <li>The direction of flow should go against the direction of closing</li> <li>Choke the air discharge to reduce the pressure</li> </ul>																								

# 8. Maintenance

## 8.1. GENERAL CONSIDERATIONS

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



Carefully read chapter 9. [Technical specifications](#).

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

Valve and/or actuator assembly and disassembly should only be done by qualified persons.

Before starting maintenance work, make sure that the pipes are not under pressure.

## 8.2. MAINTENANCE

To perform maintenance properly, the following are recommended:

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

During maintenance, pay special attention to the hazard warnings indicated in this manual.



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

During maintenance, the valve must never be hot. ¡Burn hazard!

### 8.2.1. Seal maintenance

CHANGING SEALS	
Preventive maintenance	Replace every 12 months
Maintenance after a leak	Replace at the end of the process
Planned maintenance	Regularly check for the absence of leaks and smooth operation of the valve Keep a valve log Use statistics to plan inspections
Lubrication	During assembly, apply lubricants that are compatible with the seal material. See the table below

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

The period between each preventive maintenance service will vary depending on the working conditions to which the valve is subject: temperature, pressure, number of operations per day, type of cleaning solutions used, etc.

### 8.2.2. Storage

Valves should be stored in an enclosed location under the following conditions:

- temperature from 15°C to 30°C,
- ambient humidity < 60%.

Equipment MAY NOT be stored outside.

### 8.2.3. Spare parts

To order spare parts, you must indicate the valve type, the fabrication number, the position and description of the part, as 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 other two options (HNBR, FPM) are not recommended.

Cleaning solutions for CIP processes:

Only use clear water (chlorine-free) to mix with the cleaning agents:

**a) Alkaline solution:** 1% by weight of caustic soda (NaOH) at 70°C (150°F)

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

or

2,2 l NaOH al 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)

0,7 l HNO<sub>3</sub> al 53% + 100 l H<sub>2</sub>O = cleaning solution

#### ATTENTION



Check the concentration of the cleaning solutions; 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.



Before starting disassembly and assembly tasks, clean the entire interior and exterior of the valve.

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

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

#### ATTENTION



Do NOT start the equipment during the sterilization with steam.

The parts/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) Max. temperature: 140°C / 284°F
- b) Max. time: 30 min
- c) Cooling: Sterile air or inter gas
- d) Materials: EPDM (HNBR and FPM are not recommended)

### 8.4. ASSEMBLY AND DISASSEMBLY OF THE VALVE



Proceed with caution. Personal injury can occur.

Always disconnect the compressed air before starting to disassemble the valve.

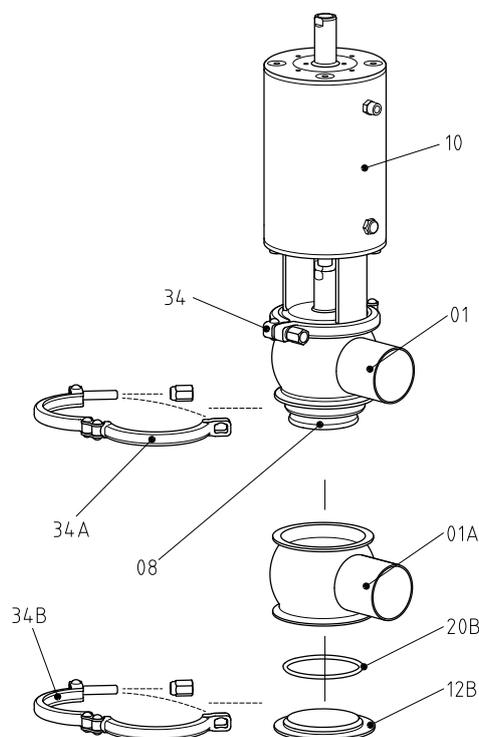
Never disassemble the valve clamps directly without Reading the instructions carefully, since the actuator contains a spring inside it with an applied load.

Valve and/or actuator assembly and disassembly should only be done by qualified persons.

### 8.5. DISASSEMBLY AND ASSEMBLY OF THE INNOVA M SINGLE SEAT VALVE

#### 8.5.1. Disassembly

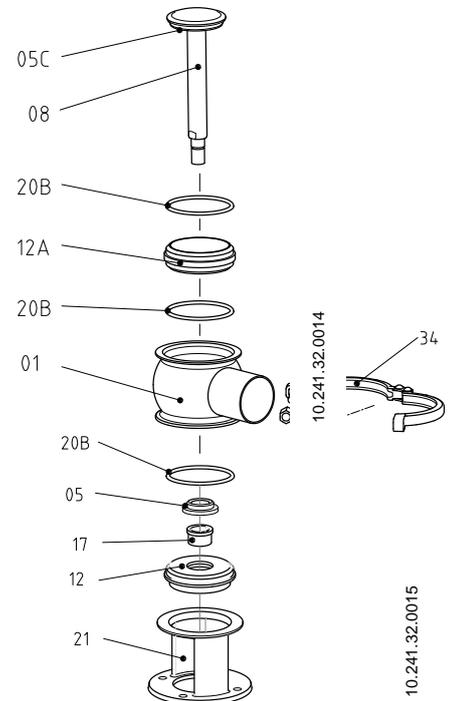
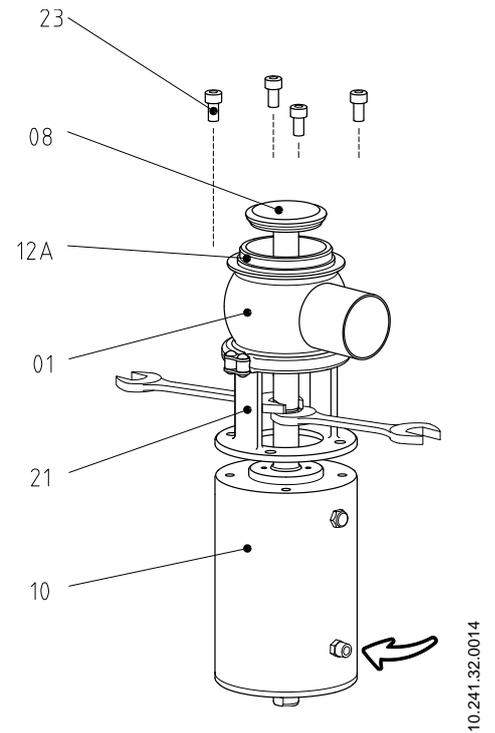
1. Loosen and separate the lower clamp (34B) and separate the lower bushing (12B) from the valve lower body (01A) and remove the seal (20B).
2. Dismount the fitting from the valve upper body (01).
3. Loosen and separate the intermediate clamp (34A).
4. Separate the actuator (10), lantern (21), valve upper body (01) and valve shaft (08) assembly from the valve lower body.
5. At the NC valves, apply compressed air to the actuator (10) so that the valve shaft (08) does not make contact with the lower part of the valve upper body.
6. Disassemble the clamp (34) that joins the valve upper body (01) to the lantern (21).
7. Unscrew the four hexagonal bolts (23) that fix the lantern (21) to the actuator, which will allow the lantern to turn freely.
8. Using two crescent spanners, unscrew the valve shaft (08) from the actuator shaft and remove the intermediate bushing (12A) along with the seals (20B).
9. Finish unscrewing the valve shaft (08) manually.
10. Separate the valve upper body (01) and the housing cap (12), the seal (20B), the shaft seal (05) and the guide bushing (17).
11. At the NC valves, release the compressed air in the actuator.
12. Separate the lantern (21).
13. Remove the seat seals (05C) as explained in section 8.7. [Replacing the seat seal.](#)



10.241.32.0013

### 8.5.2. Assembly

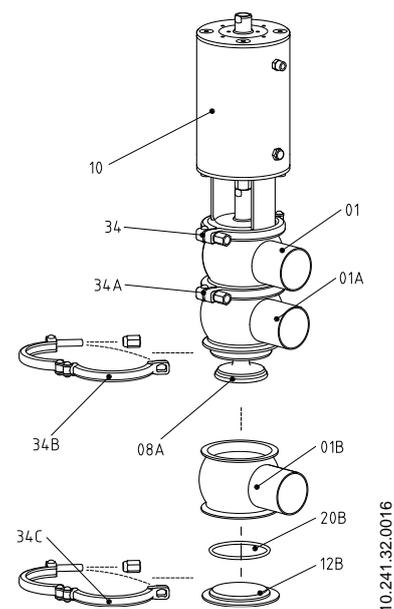
1. Insert the lantern (21) underneath the actuator.
2. Mount the guide bushing (17) on the housing cap (12).
3. Lubricate the seals with soapy water if necessary.
4. Install the seals (20B,05) in the housing cap (12) and put this assembly in the lantern.
5. Place the valve upper body (01) on the actuator (10), lantern (21) and body cap (12) assembly.
6. Install the two seals (20B) in the separator bushing (12A) and put them in the lower part of the valve upper body (01).
7. Install the seat seal (05C) on valve shaft (08) as explained in section 8.7. [Replacing the seat seal](#).
8. At the NC valves, apply compressed air to the actuator.
9. Thread the valve shaft (08) with the shaft actuator (10).
10. Tighten the four hexagonal bolts (23) that fix the lantern (21) to the actuator.
11. Place the top clamp (34A) that joins the lantern (21) to the top valve top body. The body is steerable 360°, place it as the needs of the user.
12. Mount the actuator (10), valve upper body (01), valve shaft (08) and body cap (12) assembly on the valve lower body (01A).
13. Mount the fitting on the upper valve body (01).
14. Fix the intermediate clamp (34) that joins the two halves of the valve body.
15. At the NC valves, release the compressed air in the actuator.
16. Mount the lower bushing (12) with the seal (20B) mounted on it and clamp it on the lower valve body (01A).
17. Fix the lower clamp (34B).
18. Operate the valve 3 or 4 times to verify its correct assembly.



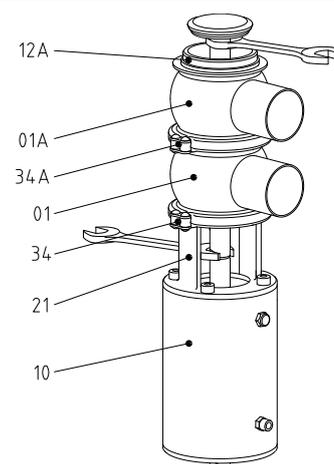
## 8.6. DISASSEMBLY AND ASSEMBLY OF THE INNOVA L SINGLE SEAT VALVE

### 8.6.1. Disassembly

1. Loosen and separate the lower clamp (34C) and separate the lower bushing (12B) from the valve lower body (01B) and remove the seal (20B).
2. At the NC valves, apply compressed air to the actuator (10) so that the valve shaft (08) does not make contact with the upper part of the valve lower body.
3. Dismount the fitting from the valve lower body (01A).
4. Loosen and separate the intermediate clamp (34B).
5. Separate the valve lower body (01B).
6. Using two crescent spanners, unscrew the valve top shaft (08) from valve lower shaft (08) and remove the intermediate bushing (12C) along with the seals (20B).
7. At the NC valves, release the compressed air in the actuator.
8. At the NO valves, apply compressed air to the actuator.
9. Disassemble the clamp (34A) that joins the valve intermediate body (01A) to the valve top body (01).
10. Remove the actuator (10) and valve top body (01) assembly from the valve intermediate body (01A).
11. Remove the intermediate bushing (12A) and the O-rings (20B).
12. Disassemble the clamp (34) that joins the valve top body (01) to the lantern.
13. Unscrew the four hexagonal bolts (23) that secure the lantern to the actuator, which will allow the lantern to turn freely.
14. Using two crescent spanners, unscrew the valve top shaft (08) from the actuator shaft.
15. Dismount the fitting from the valve top body.
16. Separate the upper valve body (01) and the housing cap (12), the seal (20B), the shaft seal (05) and the guide bushing (17).
17. At the NO valves, release the compressed air from the actuator.
18. Separate the lantern (21).
19. Remove the seat seals (05C) as explained in section [8.7. Replacing the seat seal](#).



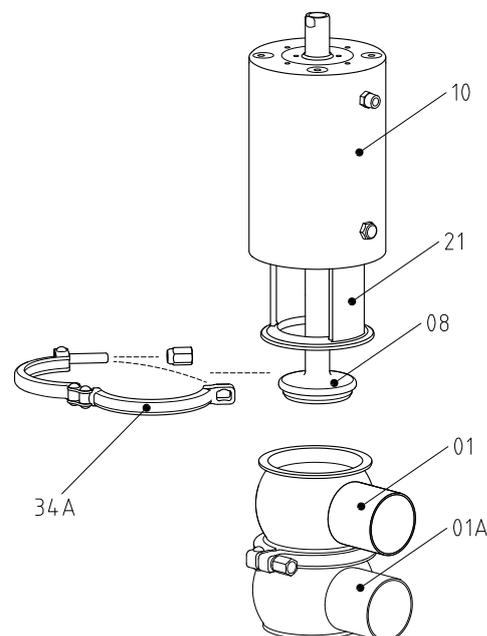
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10.241.32.0017

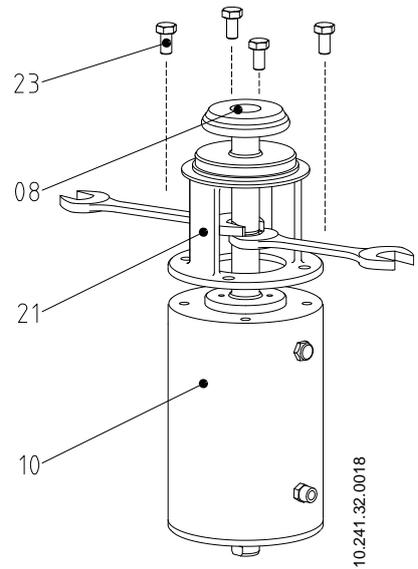
### 8.6.2. Assembly

1. Insert the lantern (21) underneath the actuator.
2. Mount the guide bushing (17) on the housing cap (12).
3. Lubricate the seals with soapy water if necessary.
4. Install the seals (20B,05) on the housing cap (12) and put this assembly in the lantern (21).
5. Install the seat seal (05C) on shaft as explained in section [8.7. Replacing the seat seal](#).
6. At the NC valves, apply compressed air to the actuator.
7. Screw the valve top shaft (08) with the actuator shaft (10).
8. Place the valve upper body (01).
9. Install the two seals (20B) in the separator bushing (12A) and put them in the bottom part of the valve top body (01).
10. Tighten the four hexagonal bolts (23) that fix the lantern (21) to the actuator.
11. Place the top clamp (34) that joins the lantern to the valve top body. The body is steerable 360°, place it as the needs of the user.
12. Mount the actuator (10), valve top body (01) and valve top shaft (08) on the valve intermediate body (01A).

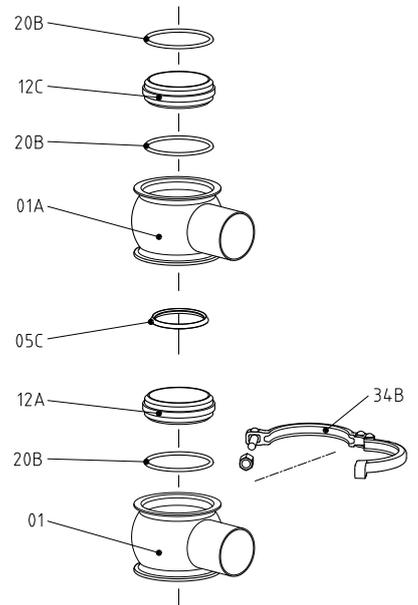


10.241.32.0022

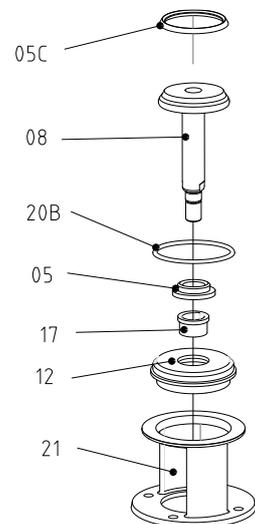
13. Fix the intermediate clamp (34A) that join the valve top body (01) and valve intermediate body (01A).
14. Install the seals (20B) on the separator bushing (12C) and put them on the top part of the valve intermediate body (01B).
15. Thread the valve lower shaft (08A) with the valve top shaft (08).
16. Mount the valve lower body (01B) on the valve intermediate body (01A).
17. Fix the clamp (34B) that joins the valve intermediate body (01A) with the valve lower body (01B).
18. At the NC valves, release the compressed air in the actuator.
19. Mount the lower bushing (12B) with the joint (20B) mounted on it and clamp it on the valve lower body (01B).
20. Mount the lower clamp (34C).
21. Operate the valve 3 or 4 times to verify its correct assembly.



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10.241.32.0023

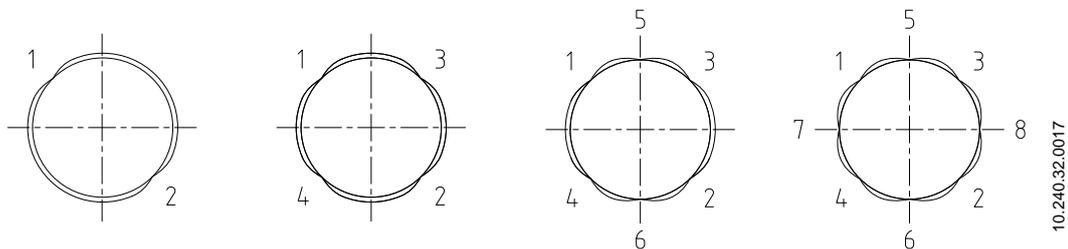
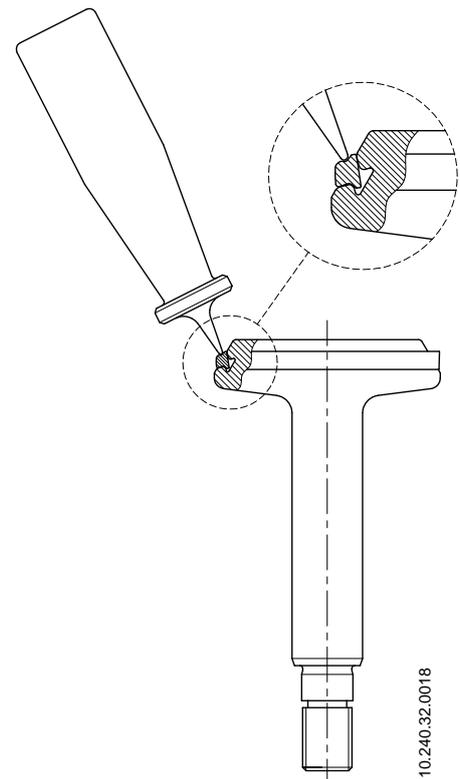


10.241.32.0019

See section 9.9. Exploded drawing and parts list of the INNOVA M single seat valve and 9.10. Exploded drawing and parts list of the INNOVA L single seat valve for a reference to the parts described.

### 8.7. 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 conical seal. Do not press the shaft too much if using a bench clamp.
2. Remove the used seal using a screw driver or a sharp hook-shaped tool. Make sure not to damage the mating surface of the seal.
3. Lubricate the new seat seal 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.
7. Press the seal with your fingers to make sure it is well seated. Make sure there are no parts projecting due to poor positioning of the seal.



The following tools are needed to assembly/disassembly the valve:

- a crescent spanner 15 mm and a crescent spanner 17 mm to remove the plug shaft DN 25,
- two crescent spanners 17 mm to remove the plug shaft DN 40 to DN 100,
- a crescent spanner 13 mm for remove the clamps,
- appropriate tool (not piercing) to mount the seat seals,
- allen key per the table:

Zone	DN 25/40	DN 50/65/80	DN 100
Cap	4 mm	5 mm	8 mm

- crescent spanner as per the table:

Zone	DN 25/40	DN 50/65/80	DN 100
Lantern	10 mm	13 mm	19 mm



Proceed with caution. Personal injury can occur.  
Never directly disassembly the clamps from the valve reading the instructions carefully.



### ATTENTION

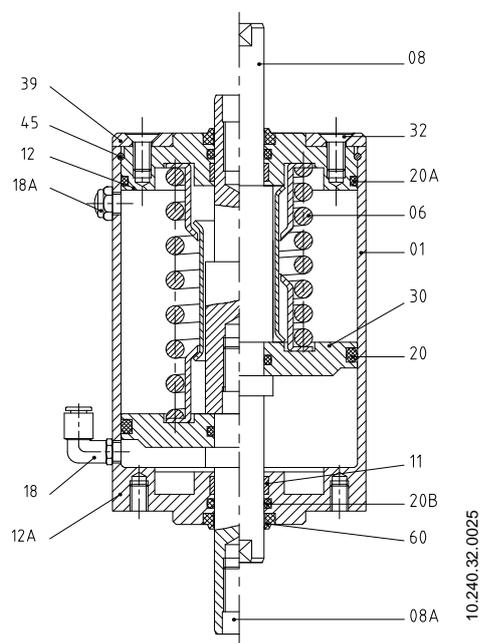
Valve/actuator assembly and disassembly should only be done by qualified persons.

## 8.8. DISASSEMBLY AND ASSEMBLY OF THE ACTUATOR

Do not apply compressed air until the disassembly/assembly process is completed. The figure is a schematic representation of some of the steps in the actuator disassembly process.

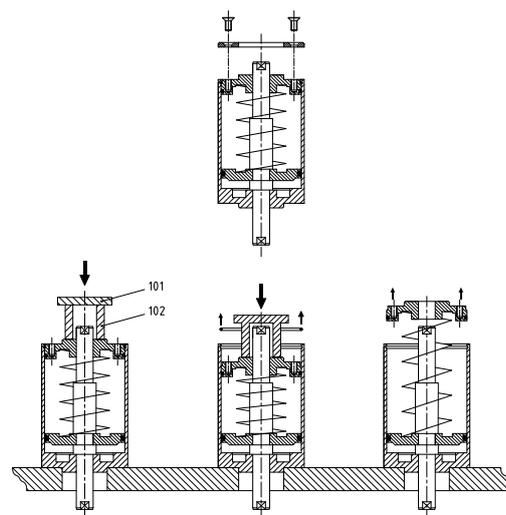
### 8.8.1. Disassembly

1. Loosen the four bolts (32) and remove the cap (39).
2. Remove air fitting (18A).
3. Situate the actuator in the base of the clamp or in the lathe collet. A thick tube (102) and a shim (101) must be used on the free end of the actuator.
4. Apply force to the shim. One the cover (12) has dropped 15 – 20 mm, remove the snap ring (45). This should have sufficient free space to be able to remove it.
5. Reduce the force on the shim slowly until the top cover is free (you will note that the spring no longer exerts pressure).
6. Remove the cover (12) and the internal components, spring assembly (06) and piston (30).
7. Take out the seals (20A and 20B), the scraper (60) and the guide (11) from the cover (12).
8. Take out the seals (20 and 20C) from the piston (30).
9. Dismount the scraper (60), seal (20B) and guide (11) from the base of the actuator.



### 8.8.2. Assembly

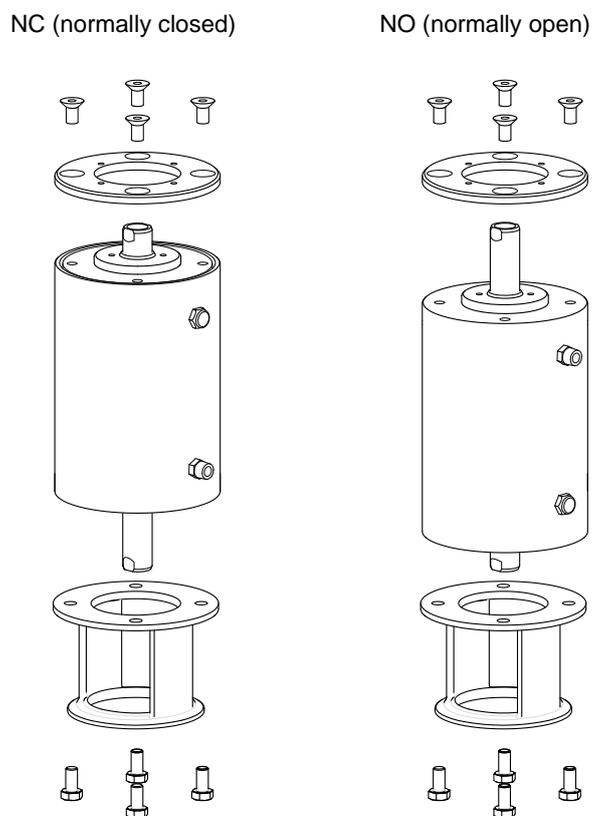
1. Mount the scraper (60), seal (20B) and guide (11) on the base of the actuator.
2. Mount the seals (20A and 20B), the scraper (60) and the guide (11) for the cover (12).
3. Put the seals (20 and 20C) on the piston (30).
4. Put the piston (30) and the spring assembly (06) inside the cylinder (01).
5. Mount the top cover (12) on the cylinder.
6. Apply force to the shim so it lowers 15-20mm. Insert the snap ring (45).
7. Reduce the force applied slowly until the tool no longer touches the cover.
8. Install the counter cover (39) and screw in the 4 bolts (32).
9. Install air fitting (18A).
10. Apply compressed air to check the proper functioning of the actuator.



### 8.8.3. Actuator configuration

The standard configuration of the valves is NC (normally closed).

If a NO (Normally Open) valve is needed, turn the actuator 180°. The following figure shows the orientation of the actuator depending on the desired actuator configuration.



The following tools are needed to disassemble the actuator:

- an allen spanner 5 mm for size DN 25 to DN 40, an allen spanner 6 mm for size DN 50 to DN 80 and an allen spanner 10 mm for size DN 100,
- fine point screw driver to remove the snap ring,
- vice or lathe to compress the spring and enable the actuator to be opened.

# 9. Technical Specifications

## 9.1. VALVE

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

## 9.2. ACTUATOR

Compressed air pressure	6 - 8 bar
Compressed air quality	per DIN/ISO 8573.1: <ul style="list-style-type: none"> <li>- <u>Solid particulate content</u>: quality class 3 / max. particle dimension 5 microns / 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 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 1m<sup>3</sup> air.</li> </ul>

Compressed air fitting G 1/8  
 Compressed air consumption (litres N/cycle)

DN	SE (Single Effect)	DE (Double Effect)
25	1,1	3,2
40	1,1	3,2
50	2,6	8,5
65	4,9	17,7
80	4,9	17,7
100	10,6	42,3

## 9.3. MATERIALS

Parts in contact with the product	AISI 316L
Other steel parts	AISI 304
Seals in contact with the product	EPDM (standard) – FPM – HNBR
Internal surface finish	Polished Ra ≤ 0,8 µm
Outer surface finish	Matt

## 9.4. SIZES AVAILABLE

DIN EN 10357 series A (formerly DIN 11850 series 2)	DN 25 – DN 100
ASTM A269/270 (correspond to OD tube)	OD 1” – OD 4”
Connections	Welded

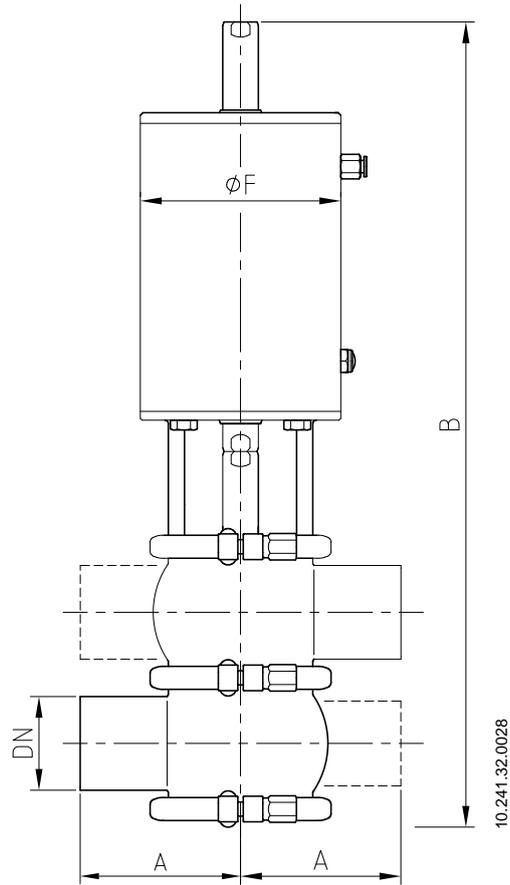
### 9.5. WEIGHTS OF THE INNOVA M SINGLE SEAT VALVE

	DN	Weight (kg)
DN	25	5,7
	40	7,0
	50	11
	65	20
	80	22
	100	39
OD	1"	5,7
	1 1/2"	7,0
	2"	11
	2 1/2"	20
	3"	22
	4"	39

### 9.6. WEIGHTS OF THE INNOVA L SINGLE SEAT VALVE

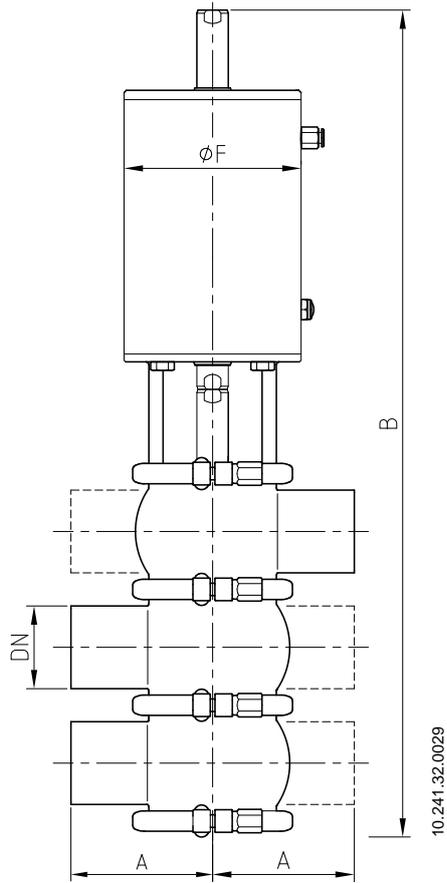
	DN	Weight (kg)
DN	25	6,1
	40	8,1
	50	12
	65	22
	80	25
	100	42
OD	1"	6,0
	1 1/2"	8,0
	2"	12
	2 1/2"	21
	3"	24
	4"	42

9.7. DIMENSIONS OF THE INNOVA M SINGLE SEAT VALVE



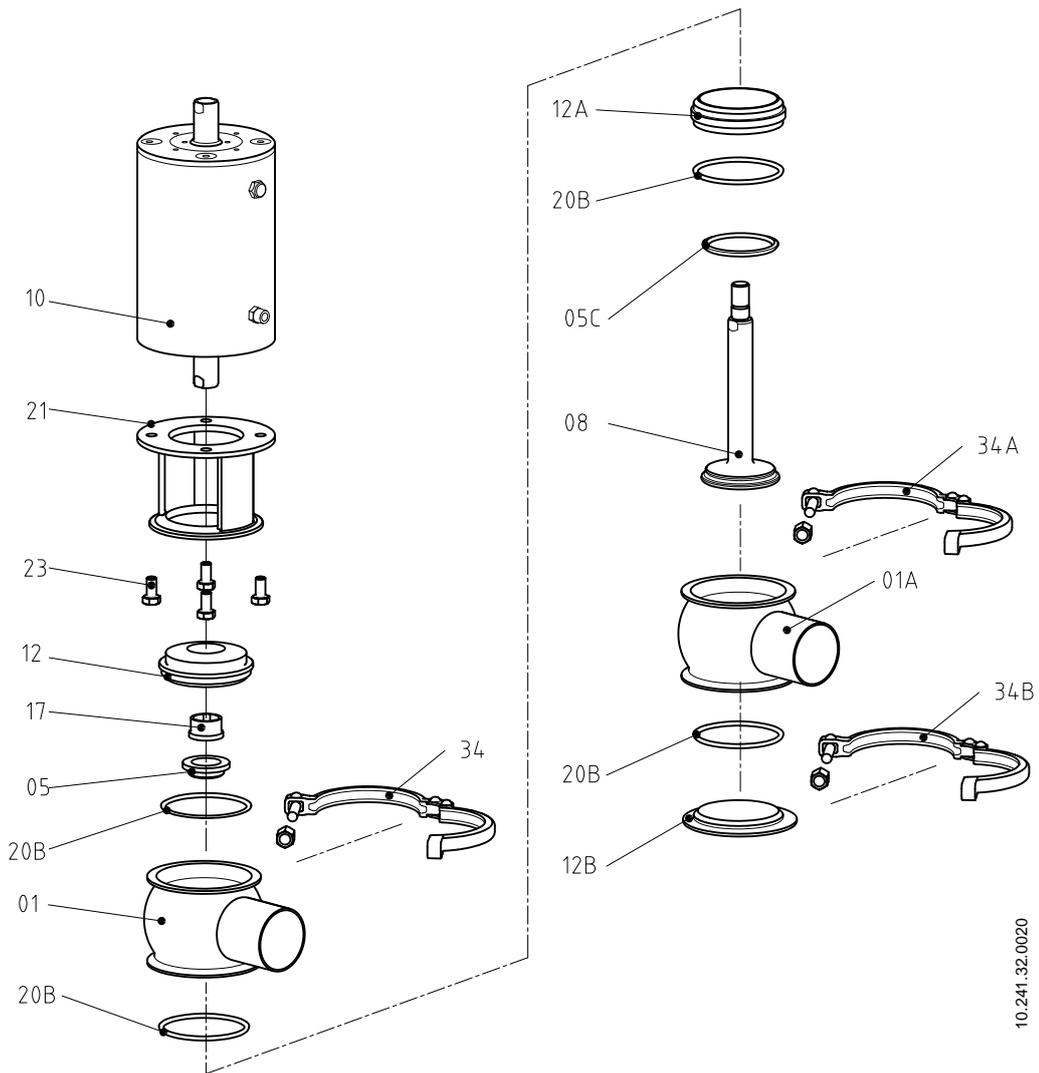
Dimensions (mm)				
DN	A	B	$\phi F$	
25	50	320	87	
40	85	359	87	
DIN	50	90	446	112
	65	110	521	143
	80	125	549	143
	100	150	608	216
OD	1"	50	316	87
	1 1/2"	85	355	87
	2"	90	444	112
	2 1/2"	110	515	143
	3"	125	541	143
	4"	150	605	216

9.8. DIMENSIONS OF THE INNOVA L SINGLE SEAT VALVE



	DN	Dimensions (mm)		
		A	B	ØF
DIN	25	50	383	87
	40	85	418	87
	50	90	517	112
	65	110	609	143
	80	125	648	143
	100	150	732	216
OD	1"	50	371	87
	1 1/2"	85	415	87
	2"	90	516	112
	2 1/2"	110	602	143
	3"	125	640	143
	4"	150	729	216

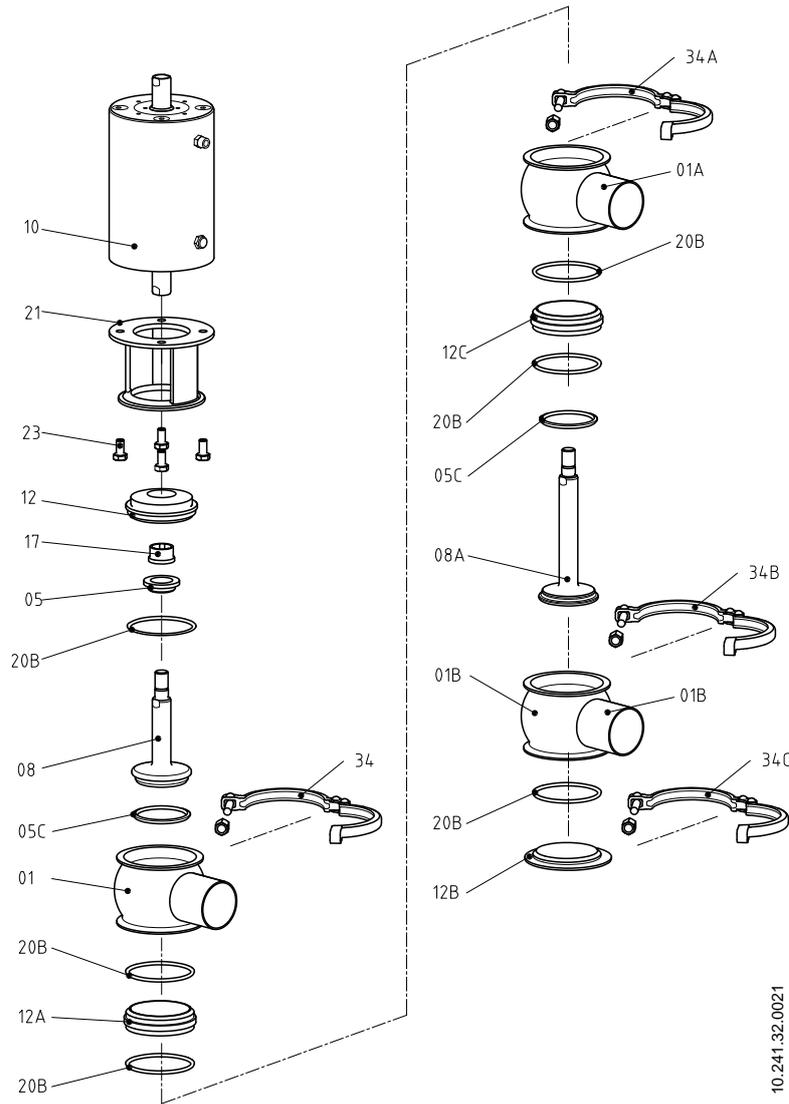
9.9. EXPLODED DRAWING AND PARTS LIST OF THE INNOVA M SINGLE SEAT VALVE



Position	Description	Quantity	Material
01, 01A	Body	2	AISI 316L
05	Shaft seal*	1	EPDM/FPM/HNBR
05C	Seat seal*	1	EPDM/FPM/HNBR
08	Valve shaft	1	AISI 316L
10	Actuator	1	AISI 304
12	Housing cap (top bushing)	1	AISI 316L
12A	Intermediate bushing	1	AISI 316L
12B	Lower bushing	1	AISI 316L
17	Guide bushing*	1	PTFE
20B	O-ring*	4	EPDM/FPM/HNBR
21	Lantern	1	AISI 304
23	Hexagonal screw	4	A2
34, 34A, 34B	Clamp	3	AISI 304

\* Recommended spare parts

9.10. EXPLODED DRAWING AND PARTS LIST OF THE INNOVA L SINGLE SEAT VALVE



10.241.32.0021

Position	Description	Quantity	Material
01, 01A, 01B	Body	3	AISI 316L
05	Shaft seal*	1	EPDM/FPM/HNBR
05C	Seat seal	2	EPDM/FPM/HNBR
08	Valve top shaft	1	AISI 316L
08A	Valve lower shaft	1	AISI 316L
10	Actuator	1	AISI 304
12	Housing cap (upper bushing)	1	AISI 316L
12B	Lower bushing	1	AISI 316L
12A, 12C	Intermediate bushing (separator bushing)	2	AISI 316L
17	Guide bushing	1	PTFE
20B	O-ring	6	EPDM/FPM/HNBR
21	Lantern	1	AISI 304
23	Hexagonal screw	4	A2
34, 34A, 34B, 34C	Clamp	4	AISI 304

\* Recommended spare parts



**How to contact INOXPA S.A.U.:**

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