



TMG Holland b.v.
Solcamastraat 41
9262 ND SUAMEER
+31 (0)511 521290
e-mail info@tmghollandbv.nl
www.tmghollandbv.nl



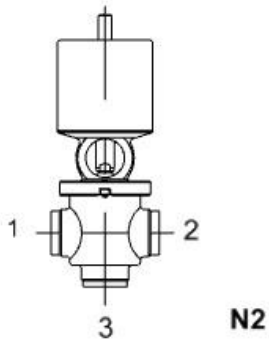
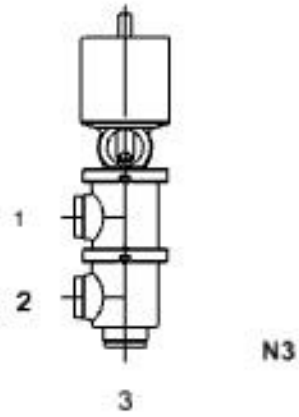
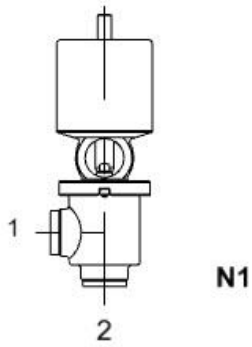
Table of contents

1	General	4
1.1.	Type of Valves.....	4
1.2.	Coding of Valves	5
2	Safety	6
2.1.	Important information	6
2.3.	Safety precautions.....	7
3	Installation	8
3.1.	Unpacking / intermediate storage	8
3.2.	Disassembly	8
4	Install and operation	9
4.1	Required tools	9
4.2	Welding instructions.....	9
4.3	Mounting the CBS.....	10
5	Maintenance	11
5.1.	General maintenance	11
5.2.	Disassembly Cone with Bellows.....	11
5.3.	Actuator maintenance	12
5.5	Mounting the Actuator on the Valve.	14
6	Technical data	15
6.1.	Technical data.....	15
6.2.	Noise.....	15

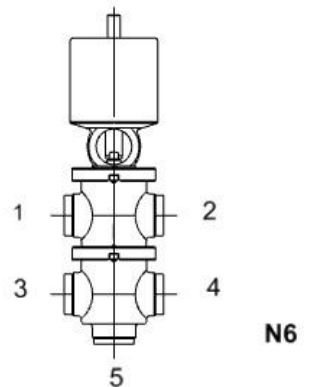
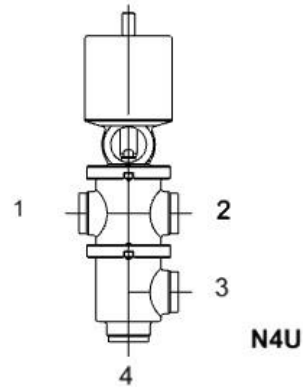
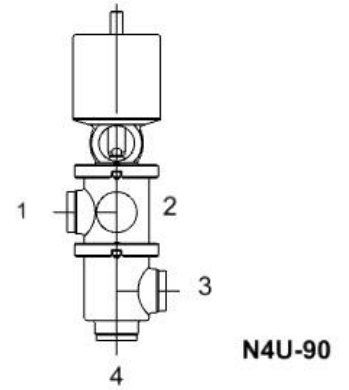
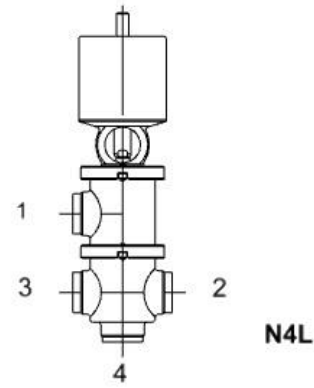
1 General

1.1. Type of Valves

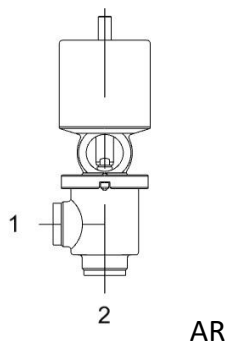
Shut-off Valve



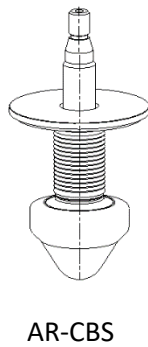
Divert Valve



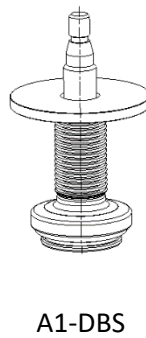
Reducing Valve



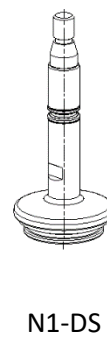
Reducing Cone



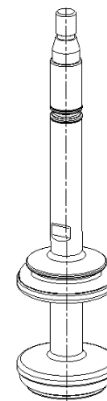
Aseptic Shut-off Valve



Sanitary Shut-off Valve

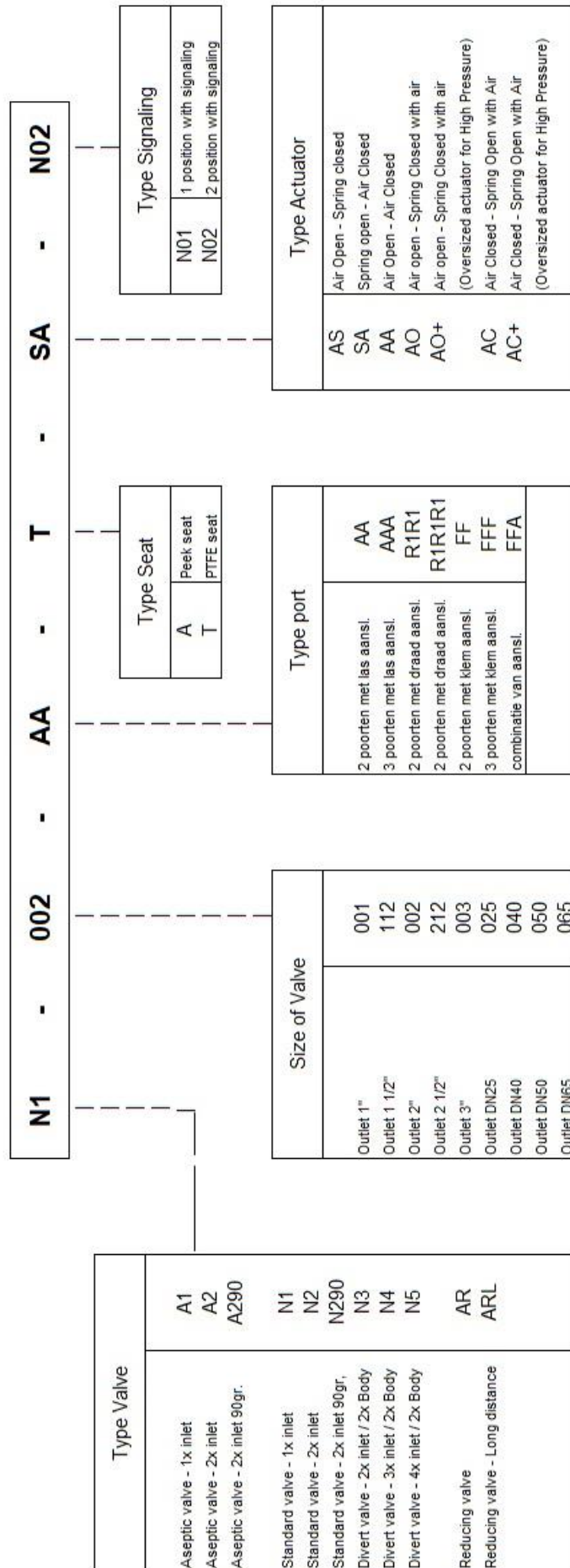


Sanitary Divert Valve



1.2. Coding of Valves

If no signal detecting is present, indication is skipped, as an example; N1-002-AA-T-SA
 When no seat is present as with reducing valve, indication is skipped, for example; AR-002-AA-SA



2 Safety

*Unsafe practices and other important information are emphasized in this manual.
Warnings are emphasized by means of special signs.*

2.1. Important information

Always read the manual before using the valve!

Expressions used in this manual;

PAY ATTENTION!

Displays important information

WARNING!

Indicates that special procedures must be followed to avoid serious personal injury.

CAUTION!

Indicates that special procedures must be followed to avoid damage to the valve.

NOTE!

Indicates important information to simplify or clarify procedures.

Symbols used in this manual;



General warning



Caustic agents



Cutting danger

2.3. Safety precautions

Installation:

Before installing always read the technical data thoroughly (see chapter 6 Technical data)



Never install the valve with connected compressed air
With a connected airline there is a chance that the actuator will be activated during installation and risk of injury.

During operation:



Never touch the valve or the pipes while processing hot liquids.
Never put your hands under or near the outlet during operation, there is a risk of injury if the product consists of aggressive or hot liquid.
Never remove the air line during operation, if a loose airline is activated, there is a risk of injury from a swishing line.

Performing maintenance:



Before starting maintenance, check that the valve with pipe lines are still hot.
Do not perform any maintenance on the hot valve.
Before starting , maintenance, disconnect compressed air line.
If present, disconnect wiring from status report.
Never pressurize the valve when servicing the valve.
Always apply the seals correctly and with care.
The warranty for TMG Holland products depends on the use of original TMG Holland spare parts.

During transport:



Always ensure that all connections are removed before you remove the valve from the installation.
Check the weight of the valve before removing it from the installation.
Always ensure that the valve is properly secured during transport if specially designed packaging material is available, it must be used.



Residual fluid that flows out of valve and pipe lines can contain acid or lye.
Dispose of spilled liquid according to the rules.

3 Installation

*The instruction manual is part of the delivery.
Study the instructions carefully.*

3.1. Unpacking / intermediate storage

Check the delivery for:

1. Complete valve
2. Instruction manual
3. Valve for damage
4. Delivery note

Step 1

Remove packaging material

Use the right tools to remove staples and / or straps.

Step 2

Please note weight of the valve

Carefully lift the valve out of the package, use lifting equipment if necessary.

Step 3

Remove possible packing materials from the valve ports.

Step 4

Inspect the valve for any transport damage.

3.2. Disassembly

The valve is assembled complete.

When the body of the valve is equipped with welding connections, the valve will have to be disassembled first.

Please observe the following steps.

Place the valve vertically and remove the Try-clamp

Never weld the Valve Body with an Actuator mounted

Carefully lift the actuator with the Cone and Bellows (CBS).

Be careful not to damage O-ring and Bellows.

Place the Actuator with CBS in a safe place.

The Body can now be mounted in pipework.



4 Install and operation

4.1 Required tools

- Wrench 14 mm
- Wrench 19 mm
- O-ring remover
- Spring Tensioner
- Grease for threaded ends ; Never Seize pasta - Weicon ASW 040 P or equal
- Grease for cylinder surface; Teflon cylinder grease - Magnalube G MGL 4 or equal
- Lubricant for O-rings, make sure it is allowed in the food industrie.



4.2 Welding instructions

The valve body can be equipped with a welding end.
Always disassemble the complete valve before welding.
The weld ends are not equipped with weld edge chamfer.
Body and ferrule must be welded into the pipe system according to ISO 3834 certification.

When the Body is installed, the Actuator can be mounted with the CBS. Make sure that the O-ring is properly mounted on the CBS. Place the actuator with CBS on the body.
Secure Actuator to CBS with Try-Clamp.

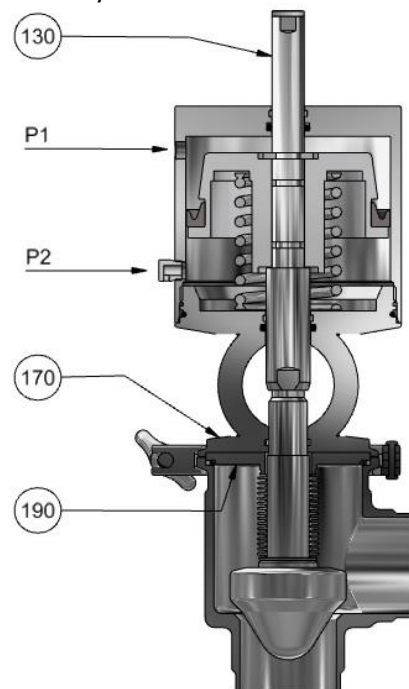
The Actuator for the Reducing valve is applied as SA type, which means that the Actuator will lift the Cone in rest position.

The closing force of the Cone can be adjusted by means of a variable air pressure.

Experimentally, it can be set at which pressure of the medium the cone will lift.

Air pressure can be connected to connection P1 (G1/8")

A air vent is mounted on P2.



4.3 Mounting the CBS

For mounting the CBS it is recommended to clamp the CBS in a vice. The vise must be fitted with soft blocks to prevent damage to the Cone



To mount the CBS, the actuator will have to be actuated with low air pressure to P1, which creates space between the adapter (170) and the CBS plate (190).

In this way the CBS can be mounted without tension, as shown in figure A

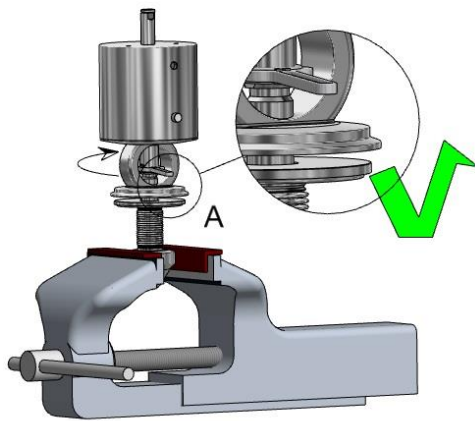


Figure A

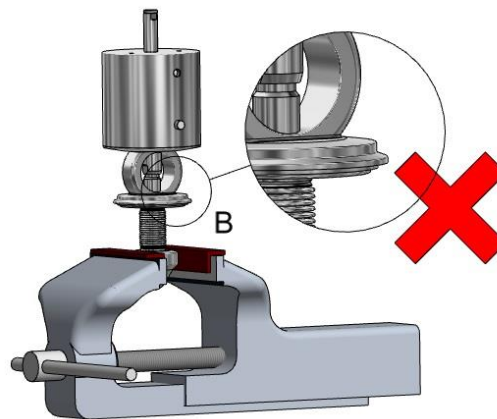


Figure B

- Clamp the CBS in the vise as shown
- Connect the air supply to the Actuator at P1
- Carefully place the Actuator with the adapter over the stem so that the guide ring in adapter is not damaged
- Make sure there is a low air pressure on P1
- The Stem (130) is pushed out a bit
- Use a 19 wrench to mount the Stem (130) on the CBS
- When mounting, make sure that the adapter plate does not touch the CBS plate (Figure A) to avoid tension on the CBS
- Disconnect the air supply and remove the Actuator with CBS from the vise

The Actuator with CBS is now ready to mount in the Body

5 Maintenance

5.1. General maintenance

Recommended spare parts: Maintenance kits (see 6 Technical data)
Order service kits from the service kits section (see 6 Technical data)
Ordering spare parts: Contact the Sales Department.



The Actuator is Spring Loaded,
for disassembly it is necessary
to use a Spring Tensioner.

5.2. Disassembly Cone with Bellows

The Actuator with the Cone and Bellows (CBS) can be disassembled
in the field without disassembling the valve body.

Make sure the air system is turned off.

Remove the air hose from the Actuator.

Remove the Try-clamp

Carefully lift the actuator with CBS.

Be careful not to damage O-ring and Bellows.

Place the Actuator with CBS in a dust-free place
on the workbench in a vice as shown.



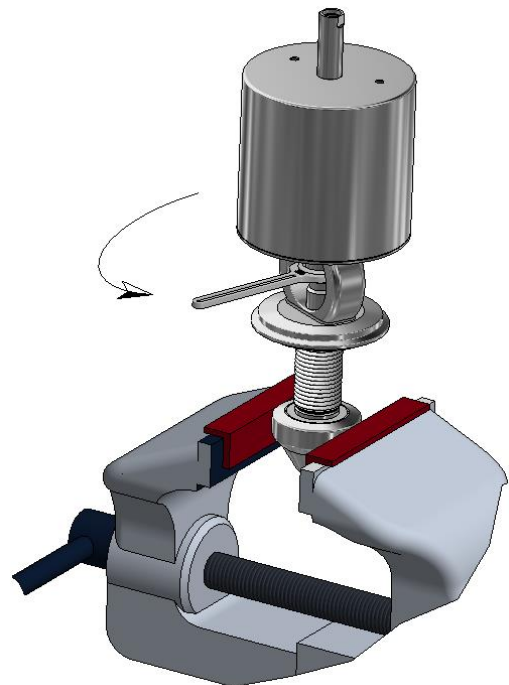
Use soft blocks in the vise
to avoid damaging the Cone

Use wrench 19 for disassembly the CBS

and use little compressed air on P1

Follow the CBS assembly guidelines in reverse order
for proper disassembly (chapter 4.3)

Work carefully, the CBS must be
without tension at all times.



5.3. Actuator maintenance

Disassembling the Actuator.

Place the Actuator in a vise as shown.
Do not clamp the actuator in the center of the cylinder.
Use soft blocks in the vise to avoid damaging the Actuator.

Install a Spring Tensioner to the bottom of the actuator as shown.

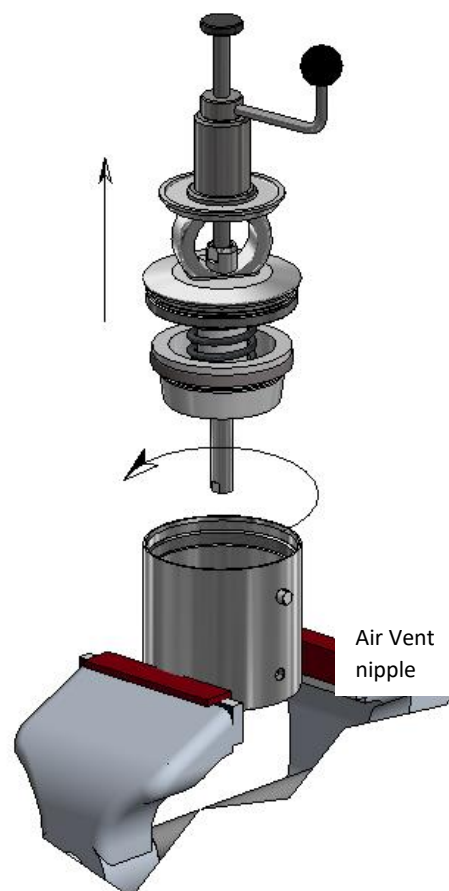
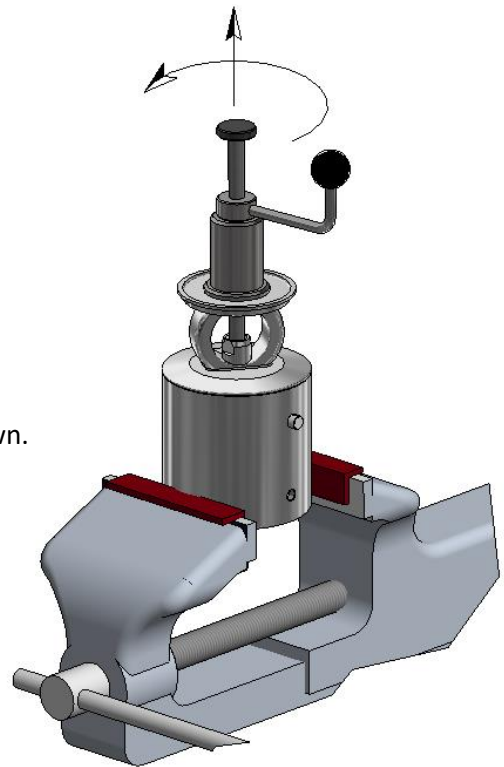
Pull the piston up by turning the spring tensioner counterclockwise.
Unscrew the Adapter from the Actuator Body by turning it counterclockwise.

Carefully pull the spring tensioner with piston and spring out of the Actuator Body.

The spring can then be released by turning the spring tensioner clockwise.

Remove the spring tensioner by turning the spindle out of the Stem.

Remove the Actuator Body from the vise and clean it thoroughly.
Check whether the Air vent nipple is damaged and can pass enough air.
If damaged, install a new Air Vent.



Maintenance for Piston and Stem

Disassemble the Upper Stem (132) from the Stem (130), and remove the Piston (160) from Stem (130).

Remove de Seal from Piston (160)
Remove O-rings (60) from Stem (130)

Remove O-ring (70) from Adapter (170)
Remove Guide ring (80) from Adapter
Remove O-ring (90) from Adapter
Remove Guide ring (110) from Adapter

The used O-rings and Guide rings cannot be reused.
They must be disposed of in accordance with the applicable regulations.

Thoroughly clean the Stem, Piston, and Adapter before installing the new O-rings and Seat.

Use Maintenance kit AR-MK-002

Mount the new seat (50) on the Piston (160)
Mount the new O-rings (60) on the Stem (130)
Mount the new O-ring (0) in the Adapter (170)
Mount the new Guide strips (80) and (110) In the Adapter.



To get the Guide Ring in the right shape in the right place, it is useful to use a Mandrel

Mount the new O-ring (70) to the Adapter.

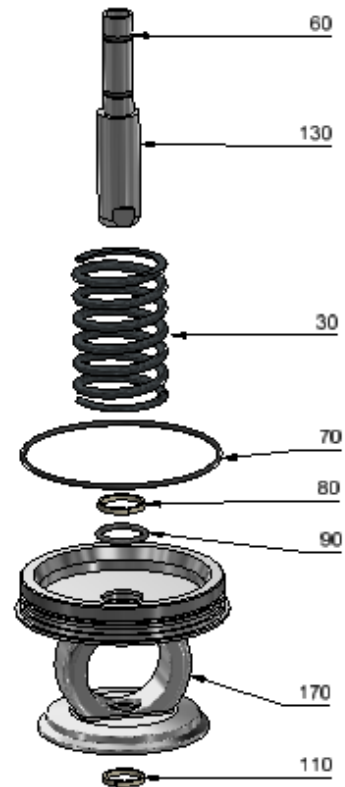
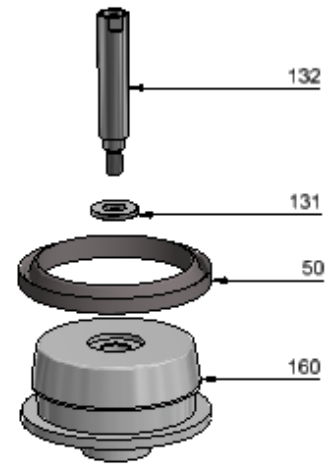
Place the Piston on the Stem (130) and assemble with washer (131) and Upper Stem (132)

Place Spring (30) on Adapter (170) and mount Stem with Piston In the Adapter.

Install the Spring Tensioner and pull the Piston to the Adapter by turning the Spring Tensioner clockwise.

Now assemble the Actuator Body.

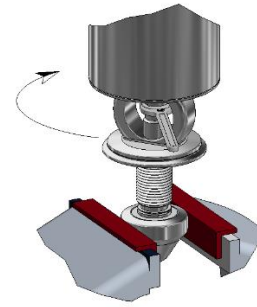
Afterwards, the spring can be released and the spring tensioner removed.



5.5 Mounting the Actuator on the Valve.

Mounting the CBS

Follow the guidelines of chapter 4.3 for proper mounting of the CBS



Mounting Actuator with CBS to Valve body

Mount the new O-ring (100) from maintenance kit to CBS

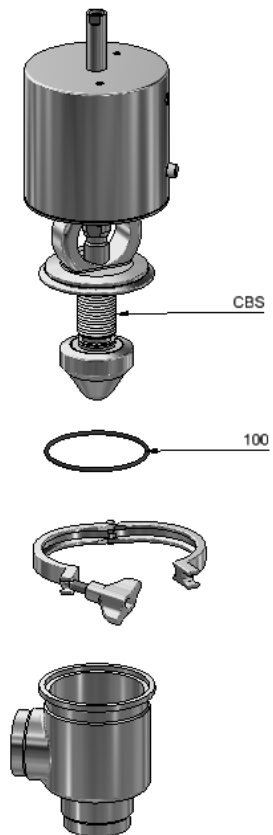
Carefully insert the Actuator with CBS into the Valve Body.

Check whether the CBS hangs loosely in the Body



Work carefully, the CBS must be without tension at all times.

Mount the Actuator with the Clamp on the Valve Body



6 Technical data

It is important to observe the technical data during installation, operation and maintenance.

6.1. Technical data

Technische gegevens		<i>min.</i>	<i>max.</i>		
Product pressure	atm.	6 bar			
Temperature range	-5 °C	140 °C			
Air pressure	atm.	8 bar			
Connection type	Weld				
Materialen					
Product wetted steel parts	AISI 316L				
Other steel parts	AISI 304	or equal			
Product wetted seals	EPDM PC				
Seals according	3A FDA USDA USP Class VI ADI (EC) No. EC1935-2004-FDA 21 CFR 177,2600				
Inside product side	Ra<0,8				
outside	Polish				

6.2. Noise

The noise level of a valve actuator will be approximately 77db(A) without noise damper and approximately 72 db(A) with damper.

- Measured at 6 bar air-pressure.
- Measured at 1 meter distance and 1.6 meter height