Norit leading in purification Südmo

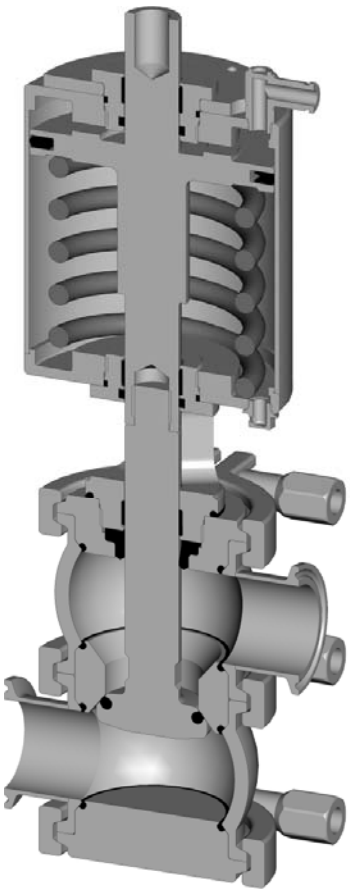
Operating instructions

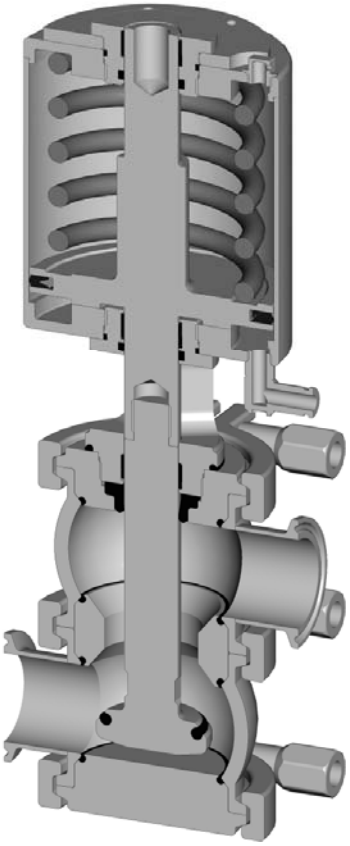
BAA S370 2G-U Select

SVP valve with split valve body

DN 25 – 100, DN 1” – 4”

Profile gasket – O-ring
Pneum. operated





Änderung	Datum	Name	Änderung	Datum	Name	Änderung	Datum	Name	Änderung	Datum	Name

erst. am/von 09.02.2010 Graf
gepr. am/von 09.02.2010 Neumeyer

1. Contents

2. Safety instructions

Danger

This symbol indicates a direct and immediate danger to the life and health of persons!

Failure to observe these warnings may result in serious damage to health, up to and including life-threatening injuries which may or may not be fatal.

Caution

This symbol indicates a potentially hazardous situation!

Failure to observe these warnings may result in less serious injuries or damage to material property.

This sign draws your attention to important information about the proper use of the SVP valve. It is essential for this information to be observed.

Failure to observe these instructions may cause malfunctions in the valve or in its vicinity.

2.1. General

⇒ SVP valves from Südmo Components GmbH are manufactured in accordance with state-of-the-art standards and the recognized safety rules. However, these SVP valve may constitute a hazard if used by operating personnel improperly or for a purpose other than the intended one. This may result in a risk to life and limb of the user or of third parties, or cause damage to the SVP valve and other material propertyn.

⇒ Each person concerned with installation, commissioning, operation and maintenance of this SVP valve must have read and understood the complete operating instructions, and in particular all safety instructions.

⇒ In addition to these operating instructions, the following are of course also valid:
- → pertinent accident prevention regulations
- → generally recognized safety rules
- → national regulations of the country of use
- → in-house work and safety regulations.

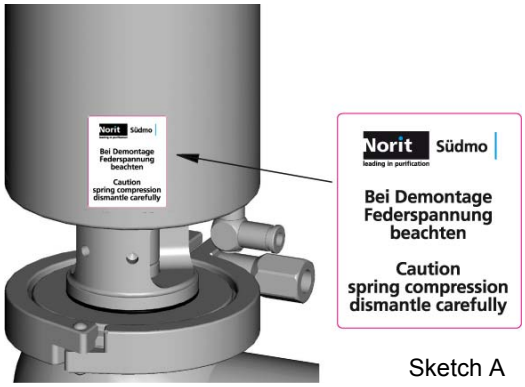
2.2. Maintenance

⇒ Our SVP valves should be maintained and commissioned only by qualified personnel.

Qualified personnel in the sense of the operating instruction are persons which are familiar with assembly, commissioning and operation of this product and have corresponding qualifications
- → Training or instruction according to the current standards of the security techniques concerning corresponding care and use of the security devices
- → First Aid training
- → Plants with explosion protection:
- → Training, instruction or authorization to effect works on explosive plants (pay attention to ATEX requirements).

⇒ Before starting maintenance please make sure that:
- → discharge of the pipeline
- → please effect only when there is no pressure and no product in the pipeline
- → to be informed about possible dangers which can occur due to the product and to take the corresponding measures (security glove, protecting glasses)
- → cool down the components if required.
- → exclude commissioning of the plant by a third party.
- → counteract against cushion pressure which can occur in isolated pipelines.
- → do assembly in accordance with assembly instructions.

→ if the closing springs are not preloaded when removing the actuator, there might be danger of injury when the clamping joint is loosened because the drive releases spring tension (see label – sketch A)
→ switch off the power supply.
→ take the SVP valve out of the pipeline section if possible.



Sketch A

⇒ Any method of working that impairs the safety and function of the SVP valve must be avoided.

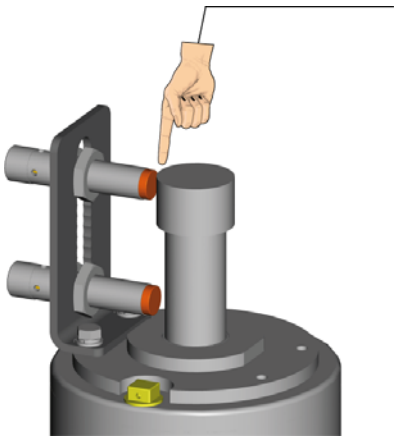
2.3. Modification of the SVP valve

⇒ The user is obligated to ensure that the SVP valve is always operated in accordance with its designated use and only by safety-conscious persons who are fully aware of the risks involved in ist operation. Changes to the SVP valve which impair its functioning or safety must be reported immediately. The user is obligated to ensure that the SVP valve is always operated in technically perfect condition.

Danger

Modification of the SVP valve is strictly prohibited

2.4. SVP valves with feedback



Danger

Don't put fingers into check-back signal.

⇒ Accident risk.

Fingers can be crushed or cut off.

2.5. Storage

⇒ Store the valve in a dry place and protect it against external conditions.
⇒ Prior to any handling (dismantling of housings / actuations) store valves at least for 24 h in a dry place at a temperature of ≥ 5° C.

2.6. Operation

⇒ ***Never touch the valve or piping system when hot products are in processing or during sterilization.***
⇒ ***Technische Daten immer genau einhalten.***
⇒ ***Wir haften nicht bei falschem Betrieb des Ventils.***

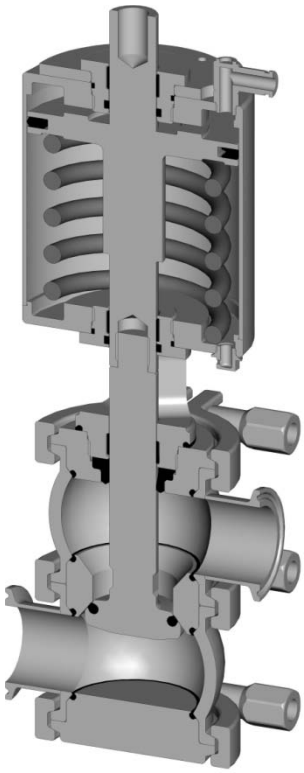
2.7. Spare parts

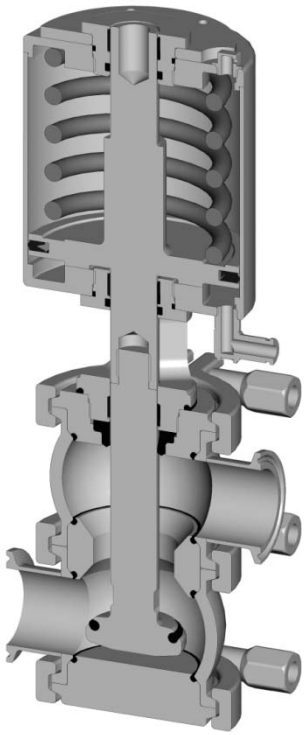
Please use only original Norit Südmo spare parts
⇒ ***Norit Südmo spare parts see list of spare parts***
⇒ ***exclusion of liability by using other spare parts***

2.8. Risk assessment

⇒ All safety instructions in these operating instructions result from the risk assessment for the SVP valve.

3. Technical datas





3.1. Valve use

Application:	shut-off valve
For use in:	low-germ processes
Shut-off tightness:	6 bar max.

3.2. Materials

3.2.1. Seal materials

⇒ EPDM

Temperature for continuous application in air		-40° C to +130° C
Resistant to	Hot water	to 100° C
	Steam	to 130° C for continuous application, to 150° C for short time
	Wort	to 100° C
	Sodium hydroxide	to 100° C and concentration to 5 %
	Nitric acid	to 60° C and concentration to 3 %
	Peracetic acid	to 80° C and concentration to 0,7 %
	Raspberry flavor	room temperature
	Cherry flavor	room temperature

⇒ HNBR

Temperature for continuous application in air		-25° C to +130° C
Resistant to	Hot water	to 100° C
	Steam	to 130° C for continuous application, to 150° C for short time
	Sodium hydroxide	to 100° C and concentration to 5 %
	Nitric acid	to 60° C and concentration to 1,5 %

⇒ FPM

Temperature for continuous application in air		-20° C to +200° C
Resistant to	Hot water	to 80° C
	Sodium hydroxide	to 60° C and concentration to 2,5 %
	Peracetic acid	room temperature and concentration to 0,7 %
	Orange flavor	room temperature
	Mandarin flavor	room temperature

The application parameters depend on
⇒ **application duration per day**
⇒ **switching intervals**
⇒ **kind of product, temperature etc...**
⇒ **type of cleaning (CIP / SIP)**

3.2.2. Stainless steel

In contact with product	1.4404
Not in contact with product	1.4301

3.3. CIP-Cleaning

⇒ **Valve inner chambers must be cleaned regularly**
⇒ **Observe the safety information sheets issued by the detergent manufacturers !**
⇒ **Only use detergents which are non-abrasive and non-aggressive towards seals and stainless steel.**

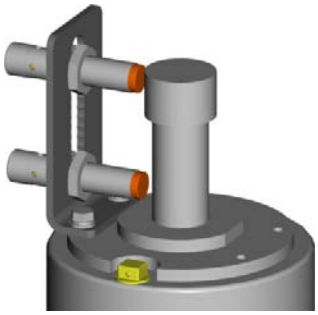
3.4. Surfaces

Surfaces in contact with product	$R_a \leq 0{,}8\ \mu m$
Optional	E-polished
Surfaces not in contact with product	bright-turned, $R_a \leq 1{,}6\ \mu m$

3.5. Control systems

3.5.1. Single feedback

⇒ signal: open or closed valve position
⇒ inductive feedback - thread M 12 according to customer order
⇒ feedback data - refer to the data sheet of the manufacturer of the feed-back
⇒ mounting set for check-back signal - order number 2125977



3.5.2. Double feedback

⇒ signal: open and closed valve position
⇒ inductive feedback - thread M 12 according to customer order
⇒ feedback data - refer to the data sheet of the manufacturer of the feed-back
⇒ mounting set for check-back signal - order number 2125977

3.5.3. Process control head IntelliTop® type 8680

Technical data	refer to BA 8680
Pneum. connections	refer to BA 8680
Electrical connections	refer to BA 8680
Maintenance	refer to BA 8680

3.6. Electrical and pneumatic connections

3.6.1. Electrical connections

Connect up the electrical and pneumatic systems after installing the valve.

Danger

Only qualified personnel may do electrical installation

⇒ Observe VDE, IEE, IEC power utility and other locally applicable regulations.
⇒ Before connecting it up, check to see whether operating voltage and current match specifications.

3.6.2. Pneumatic connections

⇒ Angular screw-in-union G 1/8, air hose PE ø 6/4
⇒ USA:
Angular screw-in-union G 1/8, air hose PE ¼“ (ø6,35)

3.6.3. Air hose

Use always the hose quality according to Norit Südmo order no. 0490227 (6/4 hose) and 0735563 (8/6 hose) or equivalent:

⇒ Air hose black
⇒ Material: Polyamid 12
Linear coefficient of expansion: $15x10^{-5}$
Version according to DIN73378 soft
⇒ Max. operating pressure: AD 6/ ID 4 = 27 bar
AD 8/ ID 6 = 19 bar
all pressure indications at 20°C, higher temperatures have a negativ effect on the max. operating pressure

⇒ **Use only calibrated hose lines with an outside diameter of 6mm or 1/4" or 8 mm or 5/16" (Tolerance +0,05/-0,1).**
⇒ **Cut the hose line only with a special hose cutter otherwise the hoses can be damaged.**
⇒ **During inappropriate cutting, the hose can leak at the cutting point which can cause a pressure loss.**
⇒ **The length of the hose must be calculated in a way that the hose cannot buckle. If the hose is once buckled it is permanently damaged. This can cause a pressure loss or an interruption of the air supply. Please see manufacturer’s instruction regarding the minimum bending radius of the hose.**
⇒ **Insert the air hose tangentially into the connector and fix it. Avoid inclined hoist on the connector as the air hose may buckle and leakages can arise. This can cause a pressure loss or an interruption or the air supply.**

3.7. Control air

3.7.1. Control air pressure

SVP actuator	DN 25 / 1” – DN 100 / 4”	min. 6 bar – max. 8 bar
Process control head IntelliTop® type 8680	refer to BA 8680	

Only use clean and dry compressed air !

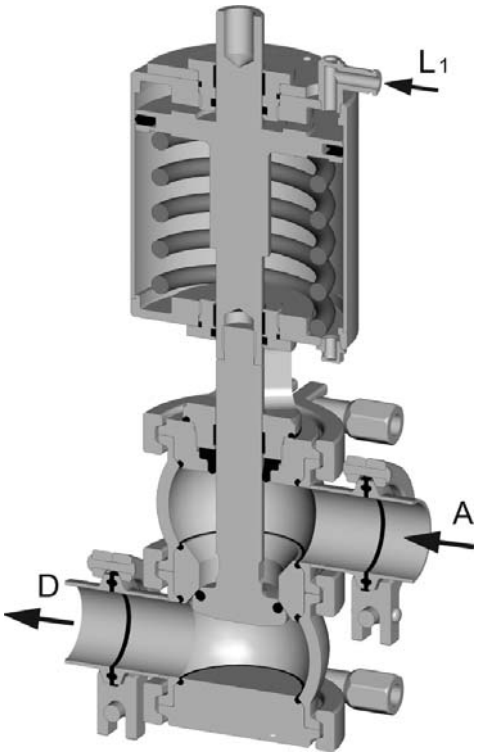
3.7.2. Control air quality

acc. to DIN/ISO 8573.1

Solid content	Particle size max. 5 µm Praticle density max. 5 mg/m³ (quality grade 3)
Water content	quality grade 3 Dew point -20° C or at least 10° C at lowest ambient temperatures
Oil content	quality grade 3, preferable oil free, max. 25 mg oil 1 m^3 air

4. Valve function

4.1.1. SVP valve air to open – spring to close



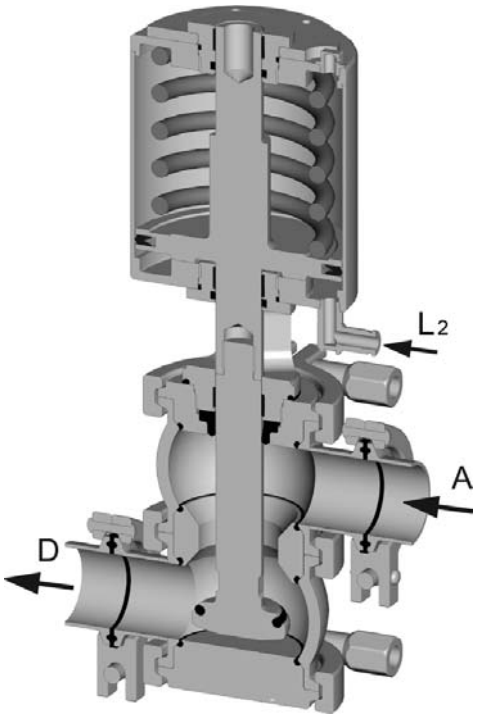
Valve position „Closed“

⇒ control air pressure 0 bar on air connection L_1
⇒ safety position
⇒ locking pressure against product pressure 6 bar.

Valve open

⇒ control air pressure 6 bar on air connection L_1
⇒ valve open

4.1.2. SVP valve spring to open – air to close



Valve position „Closed“

⇒ control air pressure 6 bar on air connection L_2
⇒ locking pressure against product pressure 6 bar.

Valve open

⇒ control air pressure 0 bar on air connection L_2
⇒ safety position
⇒ Valve open

5. Valve connection piping

5.1. Installation position

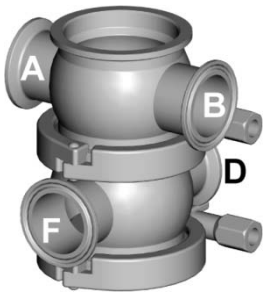
Vertical, horizontal
Ensuring that product can drain from valve and piping.

5.2. Valve connections

Anschluss A und/oder B:
⇒ welding end
→ lösbare Rohrverbindung erforderlich
⇒ union connection
⇒ clamp connection
⇒ small flange connection

Anschluss D und/oder F :
⇒ welding end
⇒ union connection
⇒ clamp connection
⇒ small flange connection

Welding instructions see page 12.



5.3. Installation instructions

Dismantle valve in accordance with page 14.

Caution

⇒ ***Remove seals before welding.***
⇒ ***Valve housing must be free from stress and distortions when welded.***
⇒ ***Welding works have to be effected only by approved qualified personnel (DIN 287-1 W11).***
⇒ ***Do not allow any foreign bodies to enter the piping.***

6. Installation instructions

6.1. General remarks

We strongly recommend that the fittings should be installed by specially trained, qualified personnel.

Caution

Welding works have to be effected only by approved qualified personnel (DIN 287-1 W11)

We cannot be held liable for any loss damage or injury resulting from incorrect installation.

6.2. Delivery condition

⇒ Factory-tested and adjusted.
⇒ Ready for installation or for welding into the piping

6.3. Installation instructions

6.3.1. Installation space

Determine and define the connection axes before starting installation work. Observe the installation dimensions specified in the dimensional drawings.
Ensure that there is sufficient space available for both operation and maintenance, which may include removal.

6.3.2. Installation

Make sure that the fittings and piping are not subjected to tensile or compressive stresses.

6.4. Welding instructions

6.4.1. Area of application

Welding of fittings into pipes according to DIN 11850 Reihe 1, 2; OD-Tube; DIN EN ISO 1127.

6.4.2. Welding technique

TIG (tungsten inert-gas welding)

6.4.3. Type of welding

⇒ Preparation of the welding seam according to DIN 2559 (groove shape I / for I-groove)
⇒ Welding seams corresponding to DIN EN ISO 5817 → evaluation group B (high)

6.5. Weld preparation

Saw off the pipe ends evenly and at right angles, and debur them (pipe saw M882). Align the welding ends of the valve body and piping radially and axially, ensuring they are fitted flush together (centering device).

There must be no gap at the flush-fitted welding ends as the corrosion resistance of the welded joint would be impaired by the escaping forming gas.

6.6. Welding

Connect the forming gas. Tack at 3 or 4 points. Type of welding: TIG-manual or orbital (automatic welding).

6.7. Weld filler materials

Material allocation

Material of parts to be welded	Suitable weld filler materials		
	1.4430	1.4440	1.4519
1.4404	X		
1.4435	X	X	X
1.4571	X	X	

6.8. Weld finishing

6.8.1. Interior

Weld finishing not required. Improvement of surface finish by grinding (at accessible points).

6.8.2. Exterior

Weld finishing methods
⇒ pickling - dispose pickling paste correctly
⇒ brushing
⇒ grinding
⇒ polishing

6.9. Cleaning

Clean throughly before assembly.

6.10. Assembly

Assemble the fittings in accordance with the assembly instructions.

7. Dismantling – Assembly

7.1. Before disassembly

Do assembly in accordance with assembly instructions.

Please always take the following steps before loosening the valve connections and clamp connection on the valve housing:

Danger

⇒ ***Ensure that there is no work being done in that area when doing service and maintenance work.***
⇒ ***evacuate all pipeline elements leading to the SVP valve and clean or rinse if necessary.***
⇒ ***Shut off the control air if not required for disassembly.***
⇒ ***Preload closing springs with auxiliary assembly air when removing the actuator of spring-closed valves.***
⇒ ***if the closing springs are not preloaded when removing the actuator, there might be danger of injury when the clamping joint is loosened because the drive releases spring tension***
⇒ ***switch off the power supply.***
⇒ ***take the SVP valve out of the pipeline section if possible..***

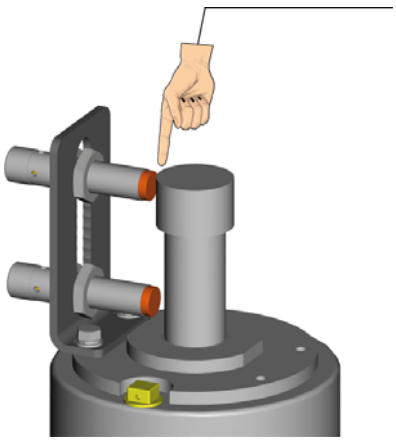
Before assembly, clean and grease the sliding surfaces and lubricate the sealing elements.

Seal materials	Grease type
EPDM	PARALIQ GTE 703
HNBR	PARALIQ GTE 703
FPM	PARALIQ GTE 703
NBR	RENOLIT SI 410 M

Caution

⇒ ***if a different grease is used***
→ it may attack seals.
⇒ ***please do not use mineral or animal greases.***
⇒ ***Don't use grease based on petroleum.***

7.2. SVP valves with feedback



Danger

Don’t put fingers into check-back signal.

⇒ Accident risk.

Fingers can be crushed or cut off.

7.3. Spare parts

Caution

Please use only original Norit Südmo spare parts

⇒ Norit Südmo spare parts see list of spare parts

⇒ exclusion of liability by using other spare parts

7.4. Mounting tools

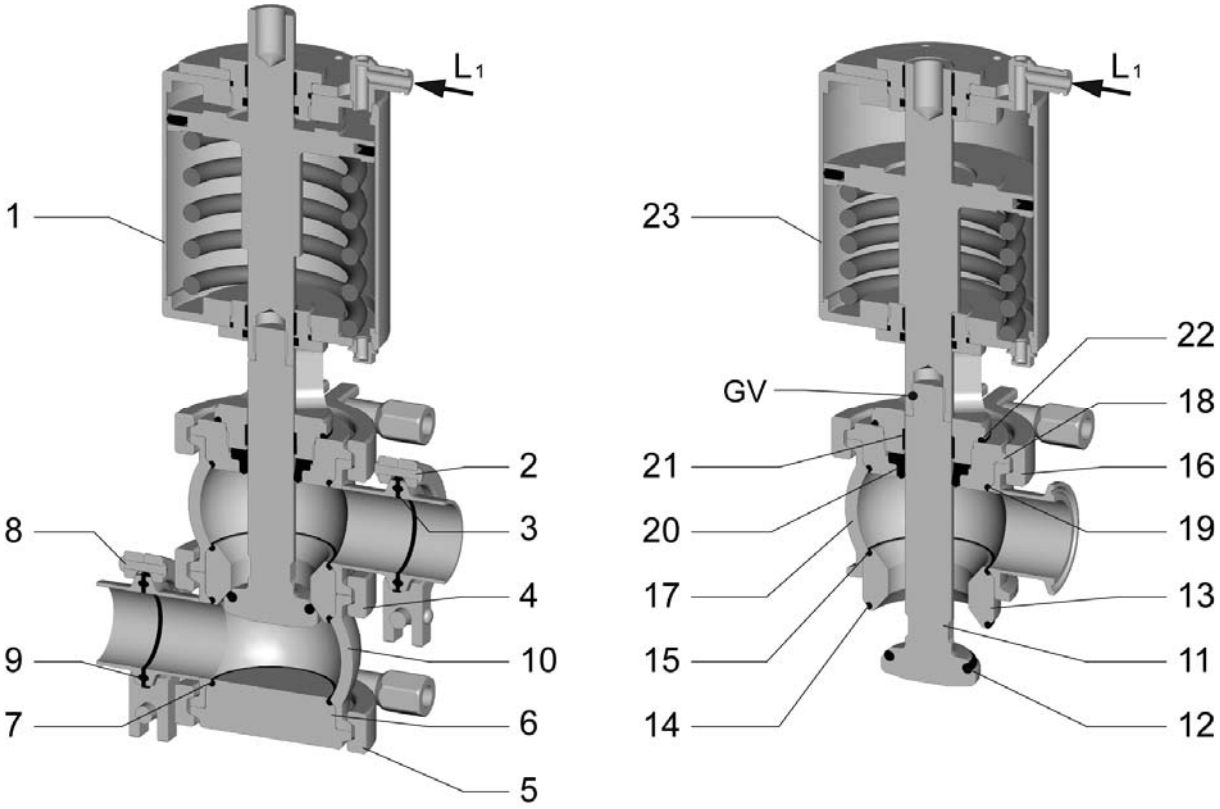
Tool	for	Order no.	Use
forked open jaw wrench SW 17 – 19 	DN 25 – DN 100 DN 1” – DN 4”	0098558	Pneum. SVP valve
open-jawed spanner SW 46 	DN 25 – DN 100 DN 1” – DN 4”	2123662	Pneum. SVP valve
hock wrench with finger 45/50 	DN 25 – DN 100 DN 1” – DN 4”	2153550	Pneum. SVP valve

7.5. Replacement of the seals in contact with the product

7.5.1. SVP valve, air to open – spring to close

Caution

Avoid any damage to the metallic surfaces of the valve disks and to the valve disk seals.



Dismantling the valve

I.1. Disconnect pneum. and electric supply lines.
I.2. Disconnect clamp (2, 4) and withdraw valve upper part (1).
I.3. Remove seal (3).
I.4. Disconnect clamp (5), remove blind cover (6) and dismantle O-ring (7).
I.5. Disconnect clamp (8), remove housing (10) and withdraw seal (9).
I.6. Remove O-ring (12) - see page 20.
I.7. Preload actuator spring

Danger

⇒ ***Control air pressure min. 5 bar (auxiliary assembly air) on connection L1.***

I.8. Unscrew valve disk (11).

Mounting tool
- forked open jaw wrench SW 17 – 19

I.9. Remove double seat insert (13) and dismantle O-rings (14, 15) - see page 20.

I.10. Unload actuator spring

⇒ ***Control air pressure 0 bar (auxiliary assembly air) on connection L1.***
⇒ ***The upper part rises out of the housing***
⇒ ***Loosen the compressed air line.***

I.11. Disconnect clamp (16) and withdraw housing (17).
I.12. Unscrew support (18) and remove O-ring (19) and profile gasket (20).
I.13. Remove O-ring (22) - see page 20.
I.14. Dismantle friction bearing (21).

Replacing seals

I.15. Replace seals and slide bearings.

Please use only original Norit Südmo spare parts
⇒ ***Norit Südmo spare parts see list of spare parts***
⇒ ***Exclusion of liability by using other spare parts.***

I.16. Before assembly grease and lubricate the sealing elements.

Seal materials	Grease type
EPDM	PARALIQ GTE 703
HNBR	PARALIQ GTE 703
FPM	PARALIQ GTE 703
NBR	RENOLIT SI 410 M

⇒ ***If a different grease is used it may attack seals.***
⇒ ***Please do not use mineral or animal greases***
⇒ ***Don't use grease based on petroleum.***

Assembly valve

I.17. Before assembly, clean and grease shafts and sliding surfaces.
I.18. Assemble seal (9) into housing (10) and install housing (10) with clamp (8) into pipe system.
I.19. Assemble O-ring (7) into blind cover (6).
I.20. Mount blind cover (6) with clamp (5) into housing (10).
I.21. Assemble friction bearing (21).
I.22. Mount O-ring (22) - see page 20.
I.23. Mount O-ring (19) and profile gasket (20) into the support (18) and screw complete support onto actuator (23).
I.24. Assemble housing (17) with clamp (16) onto actuator (23).
I.25. Mount O-rings (14, 15) into double seat insert (13).
I.26. Mount double seat insert (13) onto housing (17).
I.27. Mount O-ring (12) onto valve disk (11) - see page 20.
I.28. Preload actuator spring

⇒ ***Control air pressure min. 5 bar (auxiliary assembly air) on connection L1.***

I.29. Mount complete valve disk (11).

Caution

Secure threaded connection with glue (order no. 0630210).

Mounting tools:

- **open-jawed spanner SW 17 – 19.**

I.30. Unload actuator spring

Danger

⇒ ***Control air pressure 0 bar (auxiliary assembly air) on connection L1.***

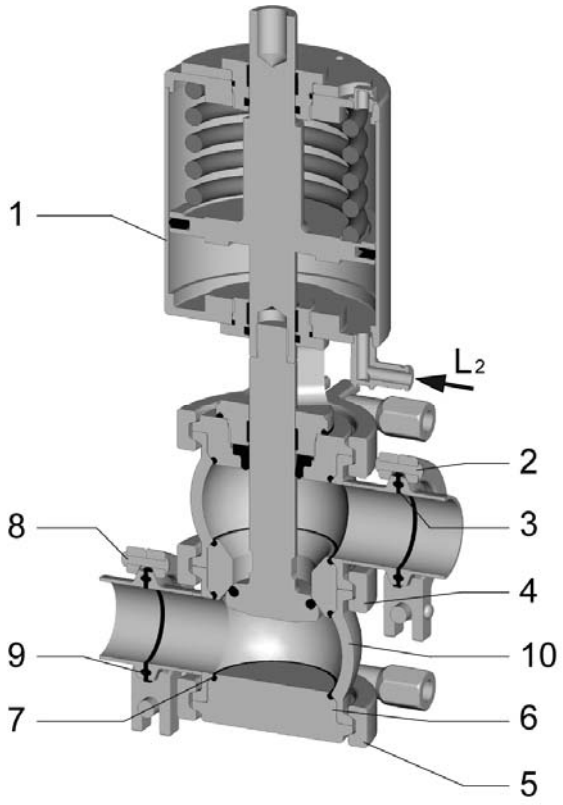
⇒ ***Loosen the compressed air line.***

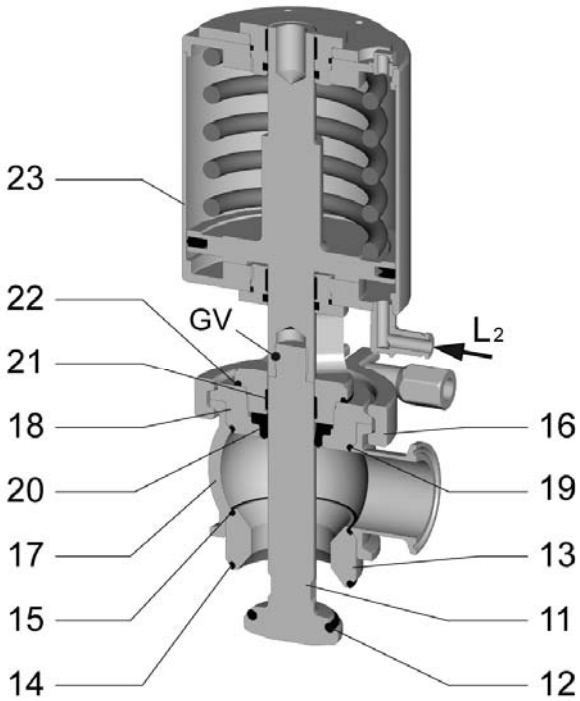
I.31. Mount seal (3) into housing (17).
I.32. Insert valve upper part (1) into housing (10) and mount clamp (4).
I.33. Mount clamp (2).
I.34. Connect electric und pneumatic supply lines.

7.5.2. SVP valve, spring to open - air to close

Caution

Avoid any damage to the metallic surfaces of the valve disks and to the valve disk seals.





Dismantling the valve

II.1. Disconnect pneum. and electric supply lines.

I.35. Preload actuator spring

⇒ ***Control air pressure min. 5 bar (auxiliary assembly air) on connection L2.***

II.2. Disconnect clamp (2, 4) and withdraw valve upper part (1).

I.36. Unload actuator spring

⇒ ***Control air pressure 0 bar (auxiliary assembly air) on connection L2.***

⇒ ***Loosen the compressed air line.***

II.3. Remove seal (3).
II.4. Disconnect clamp (5), remove blind cover (6) and dismantle O-ring (7).
II.5. Disconnect clamp (8), remove housing (10) and withdraw seal (9).
II.6. Unscrew valve disk (11).

Mounting tool
- forked open jaw wrench SW 17 – 19

II.7. Remove O-ring (12) - see page 20.
II.8. Remove double seat insert (13) and dismantle O-rings (14, 15) - see page 20.
II.9. Disconnect clamp (16) and withdraw housing (17).
II.10. Unscrew support (18) and remove O-ring (19) and profile gasket (20).
II.11. Remove O-ring (22) - see page 20.
II.12. Dismantle friction bearing (21).

Replacing seals

II.13. Replace seals and slide bearings.

Please use only original Norit Südmo spare parts

⇒ ***Norit Südmo spare parts see list of spare parts***

⇒ ***Exclusion of liability by using other spare parts.***

II.14. Before assembly grease and lubricate the sealing elements.

Seal materials	Grease type
EPDM	PARALIQ GTE 703
HNBR	PARALIQ GTE 703
FPM	PARALIQ GTE 703
NBR	RENOLIT SI 410 M

⇒ ***If a different grease is used it may attack seals.***

⇒ ***Please do not use mineral or animal greases***

⇒ ***Don't use grease based on petroleum.***

Assembly valve

II.15. Before assembly, clean and grease shafts and sliding surfaces.
II.16. Assemble seal (9) into housing (10) and install housing (10) with clamp (8) into pipe system.
II.17. Assemble O-ring (7) into blind cover (6).
II.18. Mount blind cover (6) with clamp (5) into housing (10).
II.19. Assemble friction bearing (21).

II.20. Mount O-ring (22) - see page 20.
II.21. Mount O-ring (19) and profile gasket (20) into the support (18) and screw complete support onto actuator (23).
II.22. Assemble housing (17) with clamp (16) onto actuator (23).
II.23. Mount O-rings (14, 15) into double seat insert (13).
II.24. Mount double seat insert (13) onto housing (17).
II.25. Mount O-ring (12) onto valve disk (11) - see page 20.
I.37. Preload actuator spring

Danger

⇒ ***Control air pressure min. 5 bar (auxiliary assembly air) on connection L2.***

I.38. Mount complete valve disk (11).

Caution

Secure threaded connection with glue (order no. 0630210).
Mounting tools:
- **open-jawed spanner SW 17 – 19.**

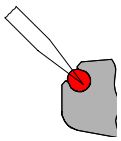
I.39. Unload actuator spring

Danger

⇒ ***Control air pressure 0 bar (auxiliary assembly air) on connection L2.***
⇒ ***Loosen the compressed air line.***

II.26. Mount seal (3) into housing (17).
II.27. Insert valve upper part (1) into housing (10) and mount clamp (4).
II.28. Mount clamp (2).
II.29. Connect electric und pneumatic supply lines.

7.6. Assembly O-ring



7.6.1. Removal

⇒ O-ring is installed in positive contact under pretension.
⇒ It must be removed as shown in drawing.

Caurtion

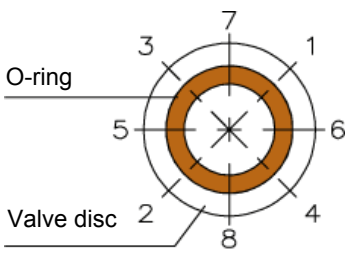
Don't damage sealing groove (edges of groove).

7.6.2. Installation

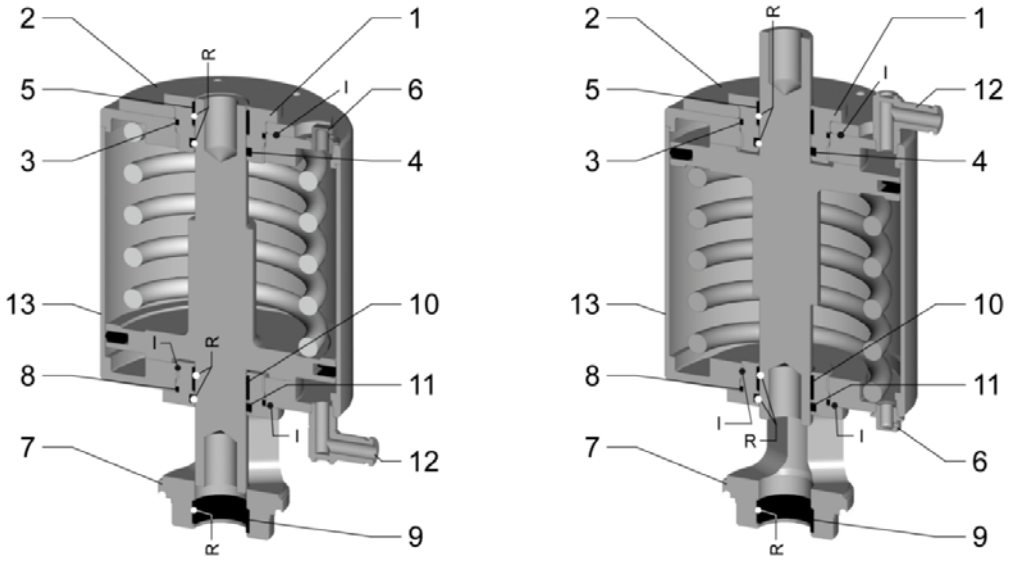
⇒ Press O-ring in sequence 1 – 2, 3 – 4 etc. into groove.
⇒ Roll O-ring section by section 1 – 6, 5 – 2 etc into groove.
⇒ Use round object of plastic or wood for installation.

Caution

Avoid drilling and damging the O-ring by assembly.



7.7. Pneum. actuator



Dismantling of the drive

III.1. Unscrew the locking screw (1) and remove friction bearing (5) and O-rings (3, 4).
III.2. Remove the adapter washer (2)
III.3. Unscrew the threaded plug (6).
III.4. Dismantle closing head support (7) and remove friction bearings (9, 10) and O-rings (8, 11).

Assembly tools

- Fork wrench 17 – 19 mm
- Wrench 46 mm
- Pin wrench 45/50

III.5. Disconnect the air connection (12).

Replacement of the seal

III.6. Replace seals and friction bearings

Caution

Only use original Norit Südmo spare parts
⇒ For Norit Südmo spare parts refer to enclosed spare parts list
⇒ If other spare parts are used
→ Exclusion of liability

III.7. Prior to assembly, clean and grease the shafts and sliding surfaces. Grease the sealing elements before assembly.

Lubrication plan

Apply R = RENOLIT SI 410 M - at the periphery using a brush
Skim I = IFB PW 119 - at the periphery using a brush

Assembling the drive

III.8. Reconnect the air connection (12)
III.9. Install friction bearings (9, 10) and O-rings (8, 11) in the closing head support (7).
III.10. Screw closing head support (7) on the driving cylinder (13).

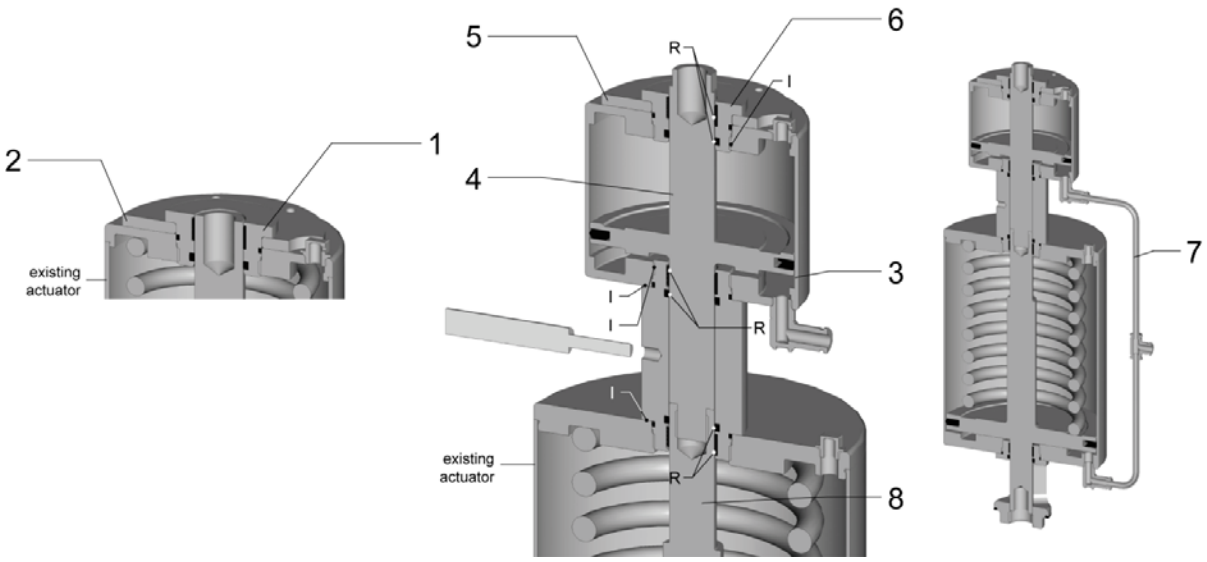
Assembly tools

- Fork wrench 17 – 19 mm
- Wrench 46 mm
- Pin wrench 45/50

III.11. Unscrew the threaded plug (6).
III.12. Install friction bearing (5) and O-rings (3, 4) in the centering screw (1).
III.13. Screw locking screw (1) with adapter washer (2) on driving cylinder (13).

7.8. Booster

7.8.1. Subsequent installation of the booster



Dismantling of the drive

IV.1. Unscrew the locking screw (1) and remove the adapter washer (2).
IV.2. Install the booster (3).

Assembly tools

- Drift punch ø6

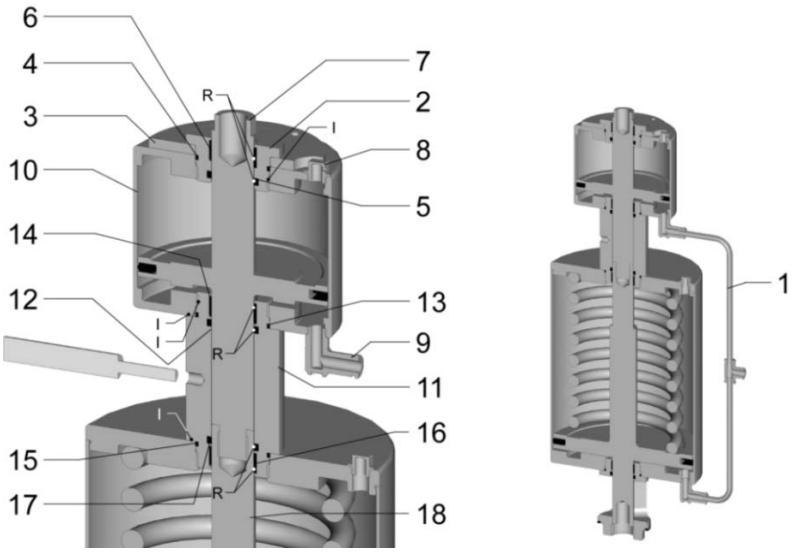
IV.3. Screw piston rod (4) on drive spindle (8).

Caution

Lock the threaded connection with adhesive (article no. 0630210).

IV.4. Screw locking screw (6) with adapter washer (5) on booster (3).
IV.5. Reconnect the air hose (2).

7.8.2. Replacement of the seals



Dismantling of the booster

IV.6. Disconnect the air hose (1).
IV.7. Unscrew the locking screw (2) and remove friction bearing (6) and O-rings (4, 5).
IV.8. Remove the adapter disk (3).
IV.9. Unscrew the threaded plug (8).
IV.10. Disconnect the air connection (9).
IV.11. Unscrew piston rod (7) from drive spindle (18).
IV.12. Remove booster (10).

Assembly tools

- Drift punch ø6

IV.13. Remove adapter (11) and remove friction bearings (13, 16) and O-rings (12, 17).

Assembly tools

- Drift punch ø6

Replacement of the seal

IV.14. Replace seals and friction bearings

Only use original Norit Südmo spare parts
⇒ For Norit Südmo spare parts refer to enclosed spare parts list
⇒ If other spare parts are used
→ Exclusion of liability

IV.15. Prior to assembly, clean and grease the shafts and sliding surfaces. Grease the sealing elements before assembly.

Lubrication plan

Apply R = RENOLIT SI 410 M - at the periphery using a brush
Skim I = IFB PW 119 - at the periphery using a brush

Booster assembly

IV.16. Install friction bearings (13, 16) and O-rings (12, 17) in adapter (11).
IV.17. Install adapter (11) on booster (10).

Assembly tools

- Drift punch ø6

IV.18. Install the booster (10).

Assembly tools

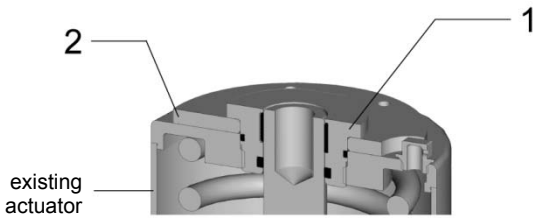
- Drift punch ø6

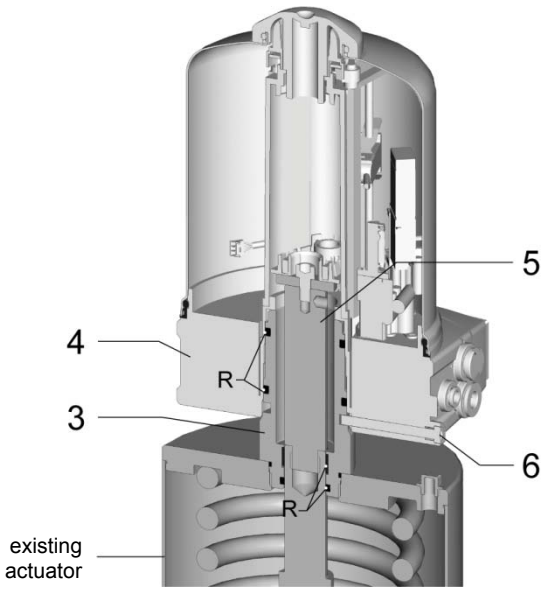
IV.19. Screw piston rod (7) on drive spindle (18).

Lock the threaded connection with adhesive (article no. 0630210).

IV.20. Reconnect the air connection (9)
IV.21. Screw in threaded plug (8).
IV.22. Install friction bearing (6) and O-rings (4, 5) in the centering screw (2).
IV.23. Screw locking screw (2) with adapter washer (3) on booster (10).
IV.24. Reconnect the air hose (2).

7.9. Installation of the process actuator IntelliTop® Type 8680





V.1. Unscrew centering screw (1) and remove adapter washer (2).
V.2. Unscrew the threaded plug (6).
V.3. Install adapter (3). Prior to assembly, clean and grease the shafts and sliding surfaces. Grease the sealing elements before assembly.

Lubrication plan

Apply R = RENOLIT SI 410 M - at the periphery using a brush

V.4. Install contact button (5).
V.5. Put process actuator (4) on adapter (3).
V.6. Screw on the cap screw

8. Start-up

Caution

⇒ ***Ensure that no foreign objects are present in the piping system.***
⇒ ***Avoid temperature shock!***
Component should be heated up carefully till operating temperature is achieved.

8.1. Functional test

Multiple switching of the valve by means of actuation with compressed air.
System must be cleaned before the first product run.

8.2. Leak test

Check visually that all seals are free from leaks.
Defective seals must be replaced.

9. Maintenance

9.1. Before maintenance

⇒ ***Depressurize piping system, drain all liquid and shut off control air supply.***
⇒ ***Preload closing springs with auxiliary assembly air when removing the actuator of spring-closed valves.***
⇒ ***if the closing springs are not preloaded when removing the actuator, there might be danger of injury when the clamping joint is loosened because the drive releases spring tension.***
⇒ ***Pay due regard to the electric supply voltage; switch off the power supply if necessary.***
⇒ ***Maintenance work must be carried out by qualified and trained personnel onl.***

9.2. Inspection

Norit Südmo valves do not special maintenance. Between maintenance intervals, however, the seal tightness and correct operation should be verified by means of a periodic visual inspection

9.3. Preventive maintenance

Practice-oriented maintenance intervals can only be determined by the respective user/operator as they are dependent on the following application parameters:
⇒ Operating frequency
⇒ Switching intervals
⇒ Type of product
⇒ Type of cleaning (CIP / SIP)

We can recommend the following data as guide values:

⇒ for liquids with solid particles and temperatures of 80 °C to 100 °C approx. every 3 – 6 months
⇒ for liquids with solid particles and temperatures of 60 °C approx. every 12 months
⇒ for liquids without solid particles and with temperatures of max. 60 °C approx. every 24 months.

In cleaning systems, intervals of 12 months are recommended.

The intervals stated above are, of course, based on the assumption that the seal materials are sufficiently chemical-resistant.

10. Disorder - trouble shooting

Danger

⇒ ***Never touch the valve or piping system when hot products are in processing or during sterilization.***
⇒ ***Observe strictly the technical data.***
⇒ ***We cannot be held liable for an incorrect use of the valve.***

Caution

⇒ ***In the event of disorders immediately deactivate the valve and secure it against inadvertent reactivation.***
⇒ ***Defects may only be rectified by qualified personnel observing the safety instructions.***

Disorder	Cause	Trouble shooting
Valve does not work	⇒ Error in the control system	⇒ Check the plant configuration
	⇒ no compressed air ⇒ air pressure too low	⇒ check the air supply ⇒ Check the air hoses for free passage and leaks
	⇒ Error in the electric system	⇒ Check actuation / process control head and routing of electric lines
	⇒ Solenoid valve damaged	⇒ Replace the solenoid valve
Discharge of air from the actuator	⇒ faulty gaskets at the spindle ⇒ faulty gasket in the actuator	⇒ change gaskets ⇒ change actuator cylinder
Valve does not close	⇒ Dirt / foreign materials in the seal area	⇒ Clean valve housing and seal area closing sleeve and valve disc
Valve closes too slow	⇒ Actuator seals dry (friction losses)	⇒ Grease the seals - Note grease plan
Leakage on the support or stem extension	⇒ defective gaskets	⇒ change gaskets
Valve closes jerkily	⇒ Seals dry (friction losses)	⇒ Grease the seals - Note grease plan ⇒ Replace seals

11. Disposal

11.1. Before disposal

Do dismantling in accordance with assembly instructions (page 14 – 24).
Please always take the following steps before disposal the SVP valve:

⇒ ***ensure that there is no work being done in that area.***
⇒ ***evacuate all pipeline elements leading to the SVP valve and clean or rinse if necessary.***
⇒ ***shut off the control air if not required for disassembly.***
⇒ ***Preload closing springs with auxiliary assembly air when removing the actuator of spring-closed valves.***
⇒ ***if the closing springs are not preloaded when removing the actuator, there might be danger of injury when the clamping joint is loosened because the drive releases spring tension***
⇒ ***switch off the power supply.***

11.2. Parts of SVP valve

For the manufacture of a SVP valve the following materials are used:

⇒	metal parts	AISI 316L, AISI 304(L)
⇒	all gaskets	elastomer, PEEK and PTFE
⇒	all guidings	plastic

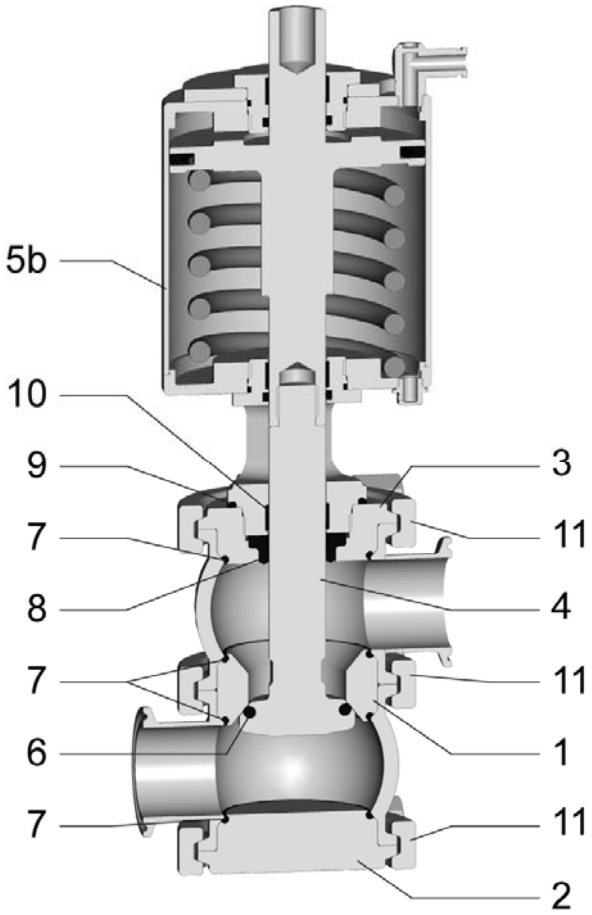
11.3. SVP valve disposal

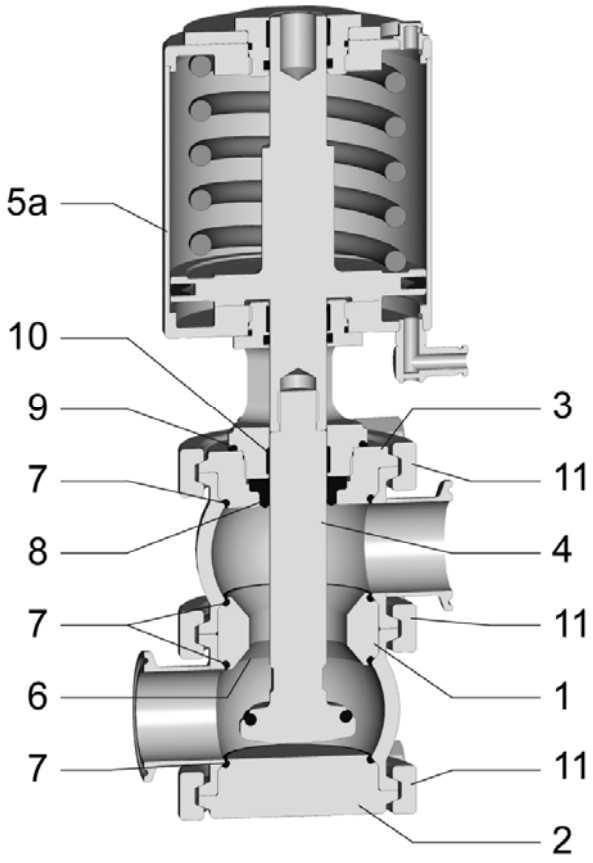
How to prepare the shutdown of a SVP valve:

⇒ Find out how to dispose the component part respectively the complete SVP valve.
→ If necessary, ask your environmental representative.
⇒ Dismount the SVP valve from the connected pipe system.
⇒ Dismount the SVP valve as described in „Dismantling – Assembly“ (page 14 – 24).
⇒ Remove all gaskets from the valve parts of the SVP valve.
⇒ Dispose all parts of the SVP valve in accordance the health and environmental regulations.

12. List of spare parts

12.1. SVP valve



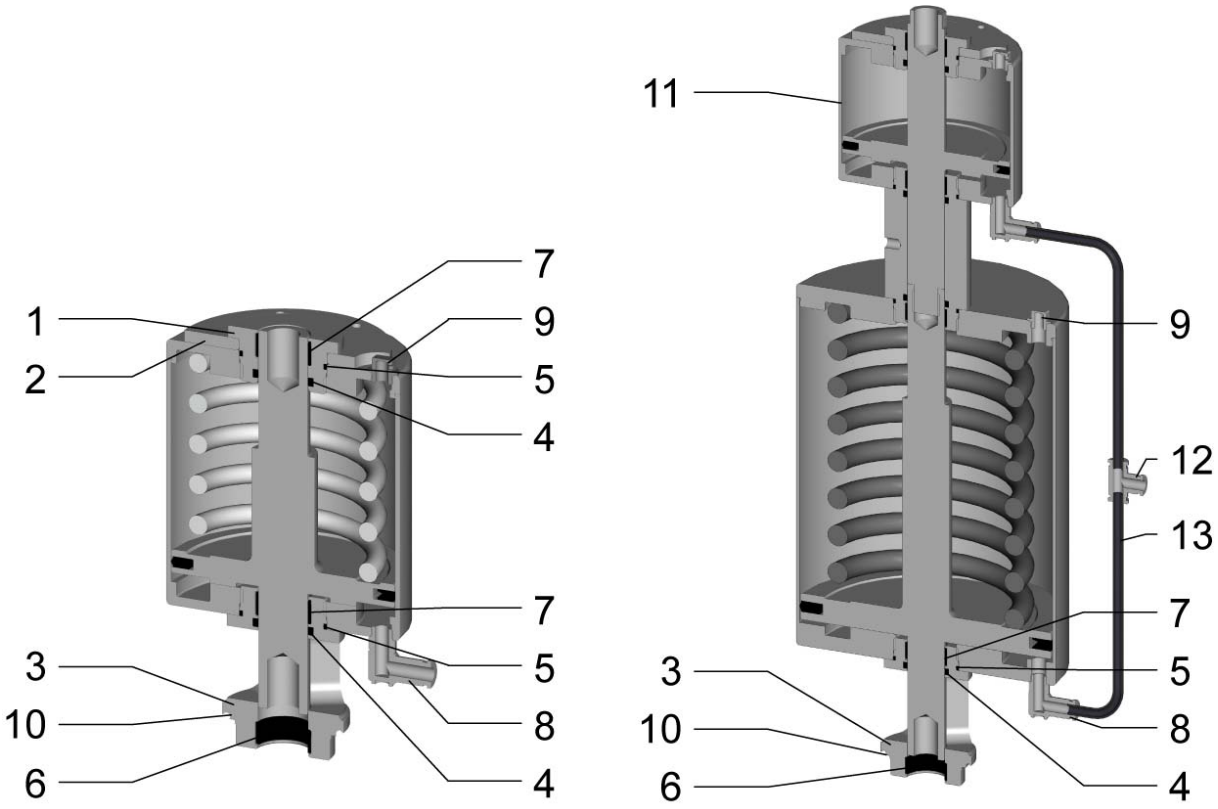


Pos.	Qty.	Designation	Material		Order no.:		Order no.:
1	1	Double seat insert	1.4404	DN 25 / DN 1”		DN 40 / DN 1 ½”	2123109
2	1	Blind cover	1.4404				2123098
3	1	Support	1.4404				2131965
4	1	Valve disk	1.4404				2160123
5a	1	Pneum. actuator air to open - spring to close					2131736
5b	1	Pneum. actuator spring to open – air to close					2155652
6	1	O-ring *	EPDM				2159461
			FPM				
			HNBR				
7	4	O-ring *	EPDM				0939355
			FPM				
			HNBR				
8	1	Profil gasket *	EPDM				2103016
			FPM				
			HNBR				
9	1	O-ring *	EPDM				0962118
10	1	Friction bearing *	PEEK				2131741
11	1	Clamp	1.4301				0034447
	1	Sealing kit consisting of: *	EPDM				2160124
			FPM				
			HNBR				
1	1	Double seat insert	1.4404	DN 50 / DN 2”	2128436	DN 65 / DN 2 ½”	2123159
2	1	Blind cover	1.4404		2128438		2123161
3	1	Support	1.4404		2131744		2131964
4	1	Valve disk	1.4404		2159994		2159991
5a	1	Pneum. actuator air to open - spring to close			2131736		2131737
5b	1	Pneum. actuator spring to open – air to close			2155652		2155853
6	1	O-ring *	EPDM		2159462		2912892
			FPM				2105792
			HNBR				
7	4	O-ring *	EPDM		0966796		0690719
			FPM				2117463
			HNBR				
8	1	Profil gasket *	EPDM		2103016		2103016
			FPM				2128527
			HNBR				
9	1	O-ring *	EPDM		0962118		0962118
10	1	Friction bearing *	PEEK		2131741		2131741
11	1	Clamp	1.4301		0034587		0036590
	1	Sealing kit consisting of: *	EPDM		2159995		2159992
			FPM				2160606
			HNBR				

Pos.	Qty.	Designation	Material		Order no.:		Order no.:
1	1	Double seat insert	1.4404	DN 80 / DN 3”		DN 100 / DN 4”	
2	1	Blind cover	1.4404				
3	1	Support	1.4404				
4	1	Valve disk	1.4404				
5a	1	Pneum. actuator air to open - spring to close					
5b	1	Pneum. actuator spring to open – air to close					
6	1	O-ring ∗	EPDM				
			FPM				
			HNBR				
7	4	O-ring ∗	EPDM				
			FPM				
			HNBR				
8	1	Profil gasket ∗	EPDM				
			FPM				
			HNBR				
9	1	O-ring ∗	EPDM				
10	1	Friction bearing ∗	PEEK				
11	1	Clamp	1.4301				
	1	Sealing kit consisting of: ∗	EPDM				
			FPM				
			HNBR				

12.2. Pneum. actuator

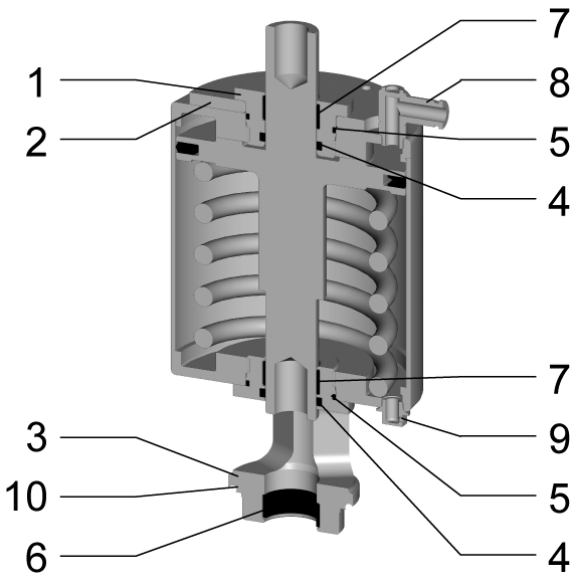
12.2.1. Operating mode air to open - spring to close



Pos.	Qty.	Designation	Material		Order no.:		Order no.:
	1	Pneum. actuator		DN 25 - 50 / DN 1” - 2”	2131736	DN 65 / DN 2 ½”	2131737
1	1	Locking screw	1.4305		2131739		2131739
2	1	Adapter washer	1.4301		2128219		2128219
3	1	Closing head support	1.4301		2131734		2131734
4	1	O-ring ∗	NBR		0116723		0116723
5	1	O-ring ∗	NBR		2128764		2128764
6	1	Friction bearing	PEEK		2131741		213741
7	1	Friction bearing ∗	Iglidur		2131740		2131740
8	1	Angular screw-in union			2116513		2116513
9	1	Threaded plug			2128550		2128550
10	1	O-ring ∗	EPDM		0962118		0962118
	1	Sealing kit consisting of: ∗			2132039		2132039

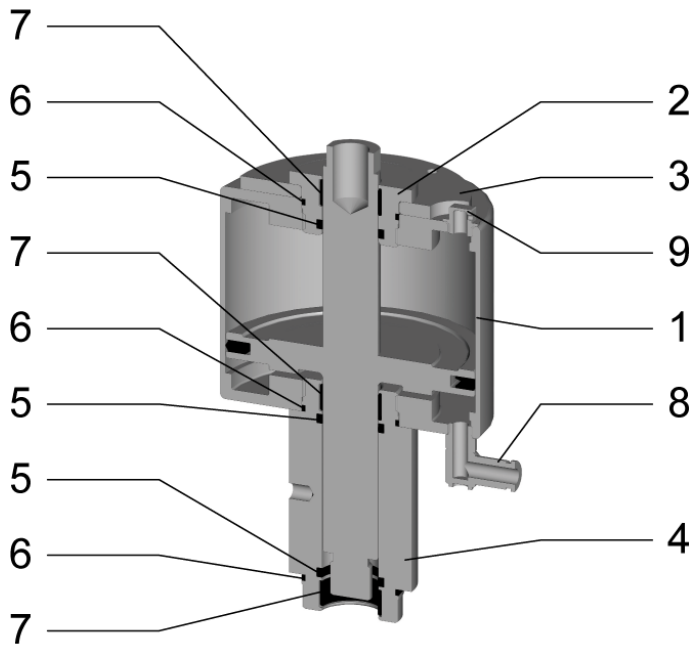
Pos.	Qty.	Designation	Material		Order no.:		Order no.:
		Pneum. actuator		DN 80 / DN 3”	2131738	DN 100 / DN 4”	2154330
1	1	Locking screw	1.4305		2131739		----------
2	1	Adapter washer	1.4301		2128219		----------
3	1	Closing head support	1.4301		2131735		2131735
4	1	O-ring ∗	NBR		0116723		0116723
5	1	O-ring ∗	NBR		2128764		2128764
6	1	Friction bearing	PEEK		2131741		2131741
7	1	Friction bearing ∗	Iglidur		2131740		2131740
8	1	Angular screw-in union			2116513		2116513
9	1	Threaded plug			2128550		2128550
10	1	O-ring ∗	EPDM		0962118		0962118
11	1	Booster			----------		2154327
12	1	Hose			----------		0490235
13	1	T-piece			----------		2108589
	1	Sealing kit consisting of: ∗			2132039		2132039

12.2.2. Operating mode spring to open - air to close



Pos.	Qty.	Designation		Material		Order no.:		Order no.:
	1	Pneum. actuator			DN 25 - 50 / DN 1” - 2”	2155652	DN 65 / DN 2 ½”	2155853
1	1	Locking screw		1.4305		2131739		2131739
2	1	Adapter washer		1.4301		2128219		2128219
3	1	Closing head support		1.4301		2131734		2131734
4	1	O-ring	*	NBR		0116723		0116723
5	1	O-ring	*	NBR		2128764		2128764
6	1	Friction bearing	*	PEEK		2131741		213741
7	1	Friction bearing	*	Iglidur		2131740		2131740
8	1	Angular screw-in union				2116513		2116513
9	1	Threaded plug				2128550		2128550
10	1	O-ring	*	EPDM		0962118		0962118
	1	Sealing kit consisting of:	*			2132039		2132039
		Pneum. actuator			DN 80 / DN 3”	2155854	DN 100 / DN 4”	2158430
1	1	Locking screw		1.4305		2131739		2131739
2	1	Adapter washer		1.4301		2128219		2128219
3	1	Closing head support		1.4301		2131735		2131735
4	1	O-ring	*	NBR		0116723		0116723
5	1	O-ring	*	NBR		2128764		2128764
6	1	Friction bearing	*	PEEK		2131741		2131741
7	1	Friction bearing	*	Iglidur		2131740		2131740
8	1	Angular screw-in union				2116513		2116513
9	1	Threaded plug				2128550		2128550
10	1	O-ring	*	EPDM		0962118		0962118
	1	Sealing kit consisting of:	*			2132039		2132039

12.3. Booster



Pos.	Part	Designation	Material		Order no.:		Order no.:		Order no.:
	1	Booster		DN 25 – 50 / DN 1“ - 2“	2158394	DN 65 – 80 / DN 2 ½“ - 3“	2154327	DN 100 / DN 4“	2158397
1	1	Cylinder			2128572		2128572		2128630
2	1	Locking screw	1.4301		2131739		2131739		2131739
3	1	Adapter washer	1.4301		2128219		2128219		2128219
4	1	Adapter	1.4301		2156716		2154326		2154326
5	3	O-ring *	NBR		0116723		0116723		0116723
6	3	O-ring *	NBR		2128764		2128764		2128764
7	3	Friction bearing *	Iglidur		2131740		2131740		2131740
8	1	Angular screw-in union			2116513		2116513		2116513
9	1	Threaded plug	PP		2128550		2128550		2128550
	1	Sealing kit cpl. consisting of: *							

13. EC Declaration of Incorporation

The manufacturer,

Südmo Components GmbH
Industriestraße 7
D-73469 Riesbürg-Pflaumloch

hereby declares that the:

SVP valve with split valve body

Type:	**S370 2G-U Select**
Article Nos.:	**S370 2G-U Select**
Year of manufacture:	**2010**

comply with the following basic requirements of the **Machinery Directive (2006/42/EC)**.
Appendix I, Articles 1.1.2, 1.1.3, 1.1.5, 1.3.2, 1.3.4, 1.5.3, 1.5.4, 1.5.5, 1.5.13, 1.6, 1.7.1, 1.7.2, 1.7.3, 1.7.4 and 2.1.

The partly completed machine / system component furthermore complies with all regulations of the directives **Electrical equipment (2006/95/EC)** and **Electromagnetic compatibility (2004/108/EC).**

Applied harmonized standards

- ⇒ DIN EN 12100-1 Safety of machinery – Basic terms, general principles for design - Part 1: Basic terminology, methods
- ⇒ DIN EN 12100-2 Safety of machinery – Basic terms, general principles for design, part 2: Technical principles and specifications
- ⇒ DIN EN 60204-1 Safety of machinery - Electrical equipment of machines, Part 1: General requirements
- ⇒ DIN EN 1672-2 Food processing machinery – Basic concepts – Part 2: Hygiene requirements

Do not put the partly complete machine / system component into operation unless it has been verified that the machine/system the partly complete machine/system component is to be built into complies with the regulations of the machinery directive (2006/42/EC).

TD authorized person

Engineering management: Werner Deger,
Südmo Components GmbH
Industriestraße 7, D-73469 Riesbürg

Riesbürg, 09.02.2010

Managing Director
Oliver Rupps

14. Declaration of Conformity

according to Appendix VII of the pressure equipment directive "Directive 97/23/EC"

The manufacturer,

Südmo Components GmbH
Industriestraße 7
D-73469 Riesbürg-Pflaumloch

hereby declares in sole responsibility that the product

SVP valve with split valve body

Type: **S370 2G-U Select**

Article Nos.: **S370 2G-U Select**

to which this declaration refers complies with the pressure equipment directive "Directive 97/23/EC" and has been submitted to the following conformity process:

Module A .

Applied harmonized European standards

⇒ DIN EN 10088-1
⇒ DIN EN 10088-2
⇒ DIN EN 10088-3
⇒ DIN EN 287-1
⇒ DIN EN 287-2

Other applied standards and technical specifications

⇒ AD-2000 regulations
⇒ DIN EN 12266-1

Additions to the Declaration of Conformity

⇒ The nominal diameters DN 125 and larger are not suitable for "Group 1 fluids – hazardous“ according to the definition in the pressure equipment directive 97/23/EC especially "Fluid property according to article 9“
The already mentioned hazardous products are also defined by the pressure equipment directive 97/23/EC especially within the database for hazardous substances.

⇒ The nominal diameters DN 25 and smaller are defined according to the definition in the pressure equipment directive 97/23/EC“ according to Article 3 Paragraph 3 good engineering practice and **must not be marked** with the CE mark.

⇒ Valve manifolds:
The pressure test on the complete valve manifold cannot be carried out in the factory for manufacturing reasons. This test must be carried out when commissioning the complete system at the customer's. The individual valves have been tested by the manufacturer.

Riesbürg, 09.02.2010

Managing Director
Oliver Rupps

15. EC manufacturer’s declaration for the use in explosion area

The manufacturer,

Südmo Components GmbH
Industriestraße 7
D-73469 Riesbürg-Pflaumloch

hereby declares in sole responsibility that the product

SVP valve with split valve body
Type: **S370 2G-U Select**
Article Nos.: **S370 2G-U Select**

when used according to its designated use does not show any potential risk of ignition as defined by the EC directive 94/9/EC Article 1 and thus does not fall within EC directive 94/9/EC.

Information regarding its designated use

- Underground use must be excluded.
- An equipotential bonding of the complete system must be ensured.
- The maximum surface temperature of the fitting depends on the temperature of the substance to be transported, but, due to friction, pneumatically operated fittings will reach up to +80°C at an outside temperature of +40°C. This limits the substances that can be transported through the fitting as a result of their ignition and glowing temperatures.
- The fitting must not be used in zone Zone 0 for fluids of explosion group IIC (according to DIN EN 50014).
  - The surface area of non-conducting components is < 80 cm²
  - All non-conducting components are surrounded by a conducting frame.

Classification of the hazardous area

- We point out that the classification in group, category, zone, protection class and temperature class and the definition of any special operating conditions have to be specified by the system manufacturer.
- Please note that leaks in a sealing element may result in the fluid escaping from the valve interior to the atmosphere.

Applied harmonized European directives and standards and other regulations:

⇒ EN 1127-1
⇒ EN 13463-1
⇒ DIN EN 50014

Other applied standards and technical specifications:

⇒ EC Directive 94/9/EC
⇒ BGR 132

Components not included in the operating instructions are excluded from the manufacturer's declaration. Information must be ordered separately.

Riesbürg, 09.02.2010

Managing Director
Oliver Rupps

16. Service adress

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Copy of original operating instructions