Norit leading in purification | Südmo

Operating instructions

BAA D 365it sp

Double seat valve, rinsable

Type D 365it sp

DN 1 ½” – 6”

Amendment	Date	Name	Amendment	Date	Name	Amendment	Date	Name	Amendment	Date	Name

created on/by 17.11.2010 Graf
reviewed on/by 17.11.2010

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1. Contents

2. Safety instructions

Danger

This symbol denotes an imminent danger to life and health of persons!

Non-observance of these instructions leads to health risks or life-threatening injuries.

Caution

This symbol denotes a potentially imminent danger!

Non-observance of these instructions can lead to light injuries or damage to material property

This symbol gives important information on the proper handling of the double seat valve, which must be strictly observed.

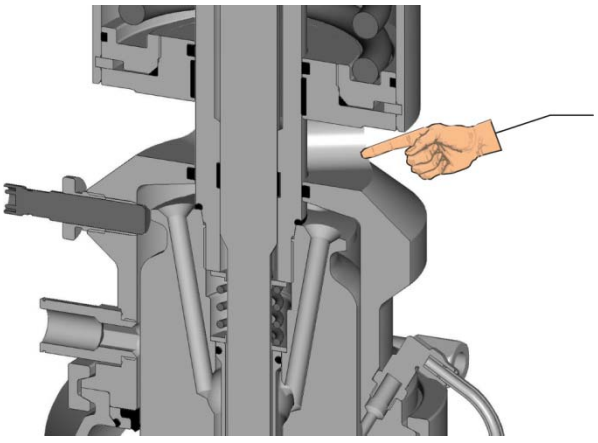
Non-observance of these instructions can result in malfunction of the valve or in the environment.

2.1. General information

⇒ The double seat valves by Südmo Components GmbH have been manufactured in accordance with state-of-the-art standards and the recognized safety rules. However, these double seat valves may constitute a hazard if used by operating personal 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 double seat valve and other material property.

⇒ Anyone who has been designated by the purchaser to assemble, start up, operate and maintain these double seat valves must have read and understood the complete operating instructions (especially all stipulated safety instructions).

⇒ In addition to these operating instructions the following applies as a matter of course:
- → Relevant accident prevention regulations
- → Generally recognized safety rules
- → National regulations in the country of use
- → Company-internal instructions concerning work and safety



Danger

Do not reach into the valve opening or moving parts

⇒ Danger of accident

Risk of limbs being crushed or cut off

2.2. Maintenance and service work

⇒ Any maintenance and service work on the double seat valves must be carried out by specially trained, qualified personnel only.
Qualified personnel in the sense of this instruction manual are persons who are familiar with assembly, start-up and operation of this product and who have the necessary qualifications for their work, e.g.

→ Training or instruction on how to care and use the appropriate safety equipment in accordance with the current safety standards
→ First aid training
→ For systems with explosion protection, training or instruction respectively the authorization to carry out work on systems subject to explosion (observe ATEX regulations).

⇒ Prior to carrying out any maintenance and service work, the following must be ensured or observed:
→ Empty the pipeline
→ Carry out this work only in depressurized condition and when the media supply is shut off
→ Inform about possible risks which could be caused by residues of operating material and take the necessary measures, if necessary (safety gloves, safety goggles etc.)
→ Let the fittings cool down, if necessary
→ Prevent the system being started up by a third person
→ Counteract pressure which could be built in shut pipelines.
→ Carry out the assembly according to the assembly instructions
→ If the closing spring is not pre-tensioned when disassembling the control unit, there is a risk of injury when the clamping joint is released because the spring tension of the drive is released (refer to label – Sketch A)
→ Interrupt the power supply.
→ Remove the double seat valve from the piping section, if possible.

Sketch A

⇒ Avoid every working method which impairs the safety and function of the double seat valve.

2.3. Modifications of the double seat valve

⇒ The user has the obligation to operate the double seat valve in accordance to the designated use and safety-consciously. Occurring changes on the double seat valve which impair the function and safety, must be reported immediately. The user has the obligation to operate the double seat valve only in perfect condition.

Danger

Modifications to the double seat valve are strictly forbidden

2.4. Storage

⇒ Store the valve dry and protected against external influences.
⇒ Prior to handling (disassembly of the body / activation of the drives) temporarily store the valves dry for at least 24 hours at a temperature ≥ 5° C.

2.5. Operation

⇒ ***Never touch the valve or the pipelines if hot media are processed or if the sterilizing process is running.***
⇒ ***Always keep the technical data.***
⇒ ***We cannot be held liable for improper operation of the valve***

2.6. Spare parts

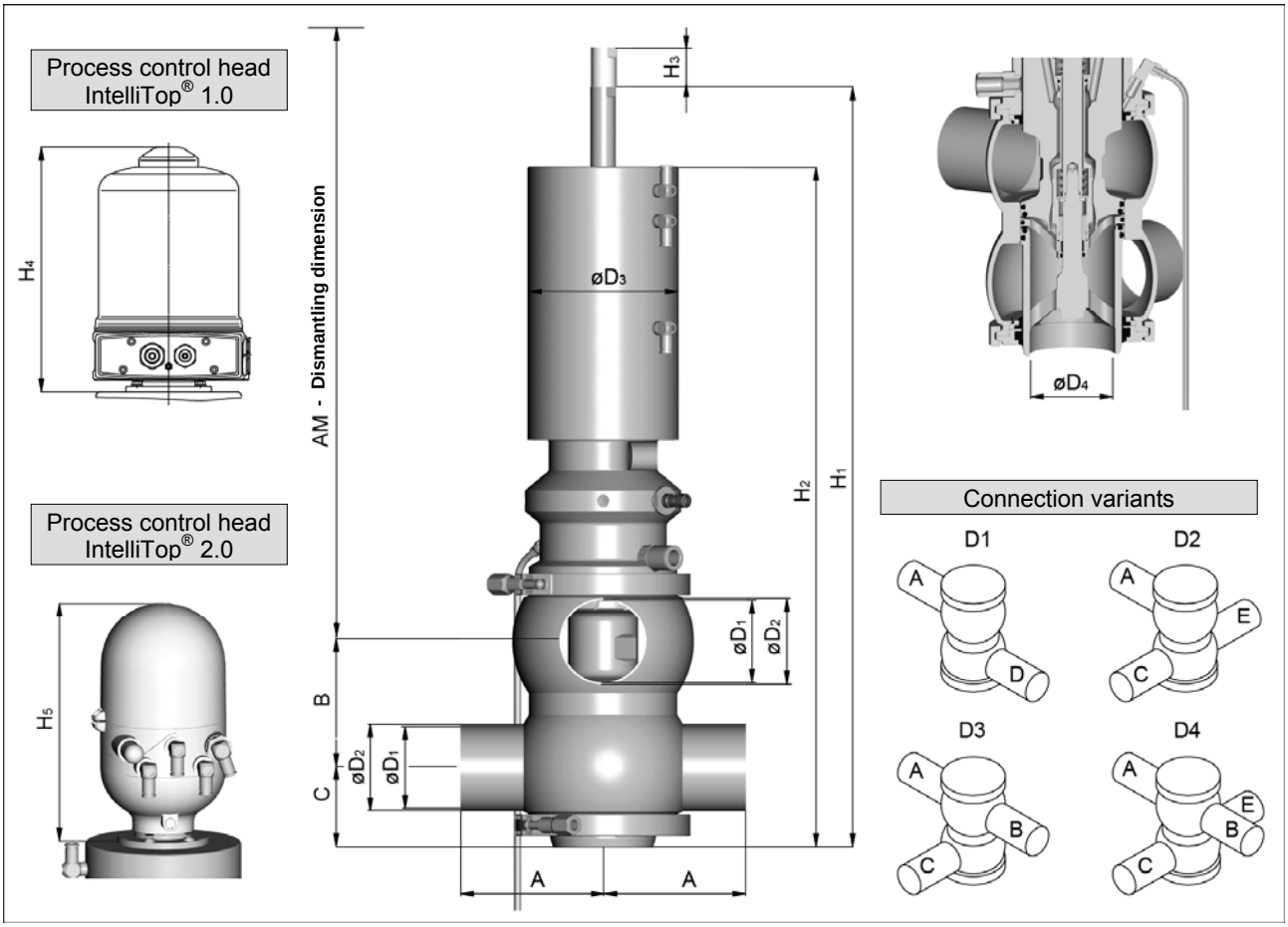
Only use original Norit Südmo spare parts
⇒ ***For Norit Südmo spare parts refer to enclosed spare parts list***
⇒ ***If other spare parts are used***
→ ***Exclusion of liability***

2.7. Risk assessment

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

3. Technical Data

3.1. Dimensions



DN	A	B	C	øD1	øD2	øD3	øD4	H1	H2	H3	H4	H5	AM
1 ½"	124	94	47.7	34.8	38.1	115	63	619	549	40.5	224	206	650
2"	100	94	47.7	47.5	50.8	115	63	619	549	40.5	224	206	650
2 ½"	125	98.2	76.4	60.2	63.5	132.7	80	655	586	42.5	224	206	690
3"	125	110.8	70	72.8	76.1	132.7	80	668	600	51.6	224	206	710
4"	150	135.4	87.8	97.3	101.6	159	102	740	671	57	224	206	800
6"	250	190.4	116.2	152.4	148.2	270	160	963	870	70	224	206	1200

3.2. Valve use

Application	Shut-off valve
For use in	low-germ processes ⇒ Radial seat of valve disk seal disk allows valve to be opened and closed without any product losses. ⇒ Stroke timing for both valve disks during general cleaning process enables leakage room cleaning
Shut-off tightness	6 bar max. / 87 psi max.

3.3. Materials

3.3.1. Sealing materials

⇒ EPDM

Temperature for continuous application in air:		from -40° C to +130° C
Resistant against:	Hot water:	up to 100° C
	Steam:	up to 130° C Steady load, short-time up to 150° C
	Wort:	up to 100° C
	Soda lye:	up to 100° C and a concentration up to 5 %
	Nitric acid:	up to 60° C and a concentration up to 3 %
	Peracetic acid:	up to 80° C and a concentration up to 0.7 %
	Raspberry flavor	at room temperature
	Cherry flavor	at room temperature

⇒ HNBR

Temperature for continuous application in hot water:		from -25° C to +130° C
Resistant against:	Hot water:	up to 100° C
	Steam:	up to 130° C Steady load, short-time up to 150° C
	Soda lye:	up to 100° C and a concentration up to 5 %
	Nitric acid:	up to 60° C and a concentration up to 1.5 %

The application parameters of the seals depend on:
- ⇒ **Operating time per day**
- ⇒ **Switching intervals**
- ⇒ **Type of product, temperature etc.**
- ⇒ **Type of cleaning (CIP / SIP)**

3.3.2. Stainless steels

In contact with product:	1.4404
Not in contact with product:	1.4301

3.4. CIP in-line cleaning

- ⇒ **Valve inner chambers must be cleaned regularly.**
- ⇒ **When selecting the detergent, please observe the following:**
  - → **Do not use abrasive detergents.**
  - → **Use only detergents that are suitable for seals and stainless steel.**
- ⇒ **Do not exceed the concentrations and temperatures recommended by the detergent manufacturer.**
- ⇒ **Observe the safety data sheets issued by the detergent manufacturers!**
- ⇒ **Non-observance of these instructions will exempt the manufacturer from any warranty and liability.**

Cleaning of the upper and lower valve body chamber is carried out using the tube cleaning. At the same time it is possible to clean the leakage room using the tube cleaning by opening the valve disk.

Example:

Cleaning step	Lifting of the valve disk
Pre-rinse	
Caustic	3 x 6 sec.
Intermediate rinse	3 x 6 sec.
Acid	3 x 6 sec.
Final rinse	3 x 6 sec.

3.5. Surfaces

Surfaces in contact with product:	$R_a \leq 0.8$ µm
Optional:	e-polished
Surfaces not in contact with product:	bright turned, $R_a \leq 1.6$ µm

3.6. Feedback systems

3.6.1. Process control head IntelliTop® 1.0

Technical data
refer to BA IntelliTop 1.0

Pneum. connections
refer to BA IntelliTop 1.0

Elektrical Connections
refer to BA IntelliTop 1.0

Maintenance
refer to BA IntelliTop 1.0

3.6.2. Process control head IntelliTop® 2.0

Technical data
refer to BA IntelliTop 2.0

Pneum. connections
refer to BA IntelliTop 2.0

Elektrical Connections
refer to BA IntelliTop 2.0

Maintenance
refer to BA IntelliTop 2.0

3.7. Electrical and pneumatic connections

3.7.1. Electrical connections

Carry out the electrical connections after installation of the valve.

Danger

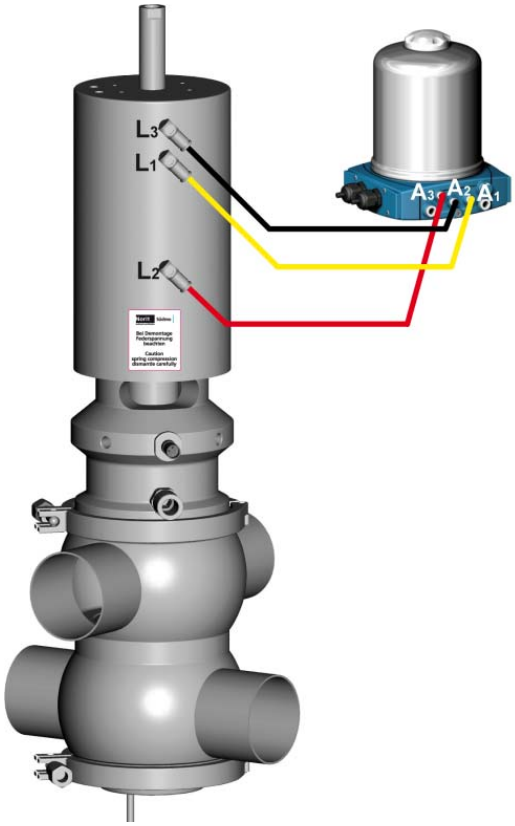
Electrical installation to be carried out by specially trained, qualified personnel

⇒ Observe VDE, power utility and other locally applicable regulations.
⇒ Before carrying out connection work, check that operating voltage and current strength match specifications.

3.7.2. Pneumatic connections

⇒ Angular screw-in union G 1/8, air hose PE ø6/4
⇒ USA: Angular screw-in union G 1/8, air hose PE ¼" (ø 6.35)

3.7.3. Connection diagram - Process control unit IntelliTop® 1.0

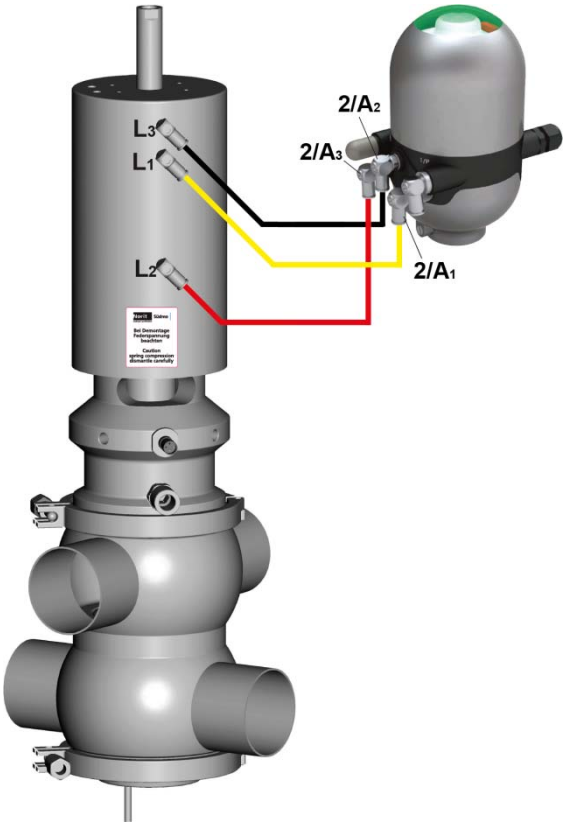


⇒ Main stroke
Connect air connection L1 and control unit output A1 using air hose.

⇒ Pulse stroke - top valve disk
Connect air connection L2 and control unit output A3 using air hose.

⇒ Pulse stroke - bottom valve disk
Connect air connection L3 and control unit output A2 using air hose.

3.7.4. Connection diagram - Process control unit IntelliTop® 2.0



⇒ Main stroke
Connect air connection L1 and control unit output 2/A1 using air hose.

⇒ Pulse stroke - top valve disk
Connect air connection L2 and control unit output 2/A3 using air hose.

⇒ Pulse stroke - bottom valve disk
Connect air connection L3 and control unit output 2/A2 using air hose.

3.7.5. Air hose

Always use hose quality according to Norit Südmo article no. 0490227 (6/4 hose) and 0735563 (8/6 hose) or something equivalent:

⇒ Air hose black

⇒ Material: Polyamide 12
Linear coefficient of expansion: $15x10^{-5}$
Version according to DIN 73378 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 negative effect on the max. operating pressure

⇒ **Only use calibrated hose pipes with an outside diameter of 6 mm or 1/4" resp. 8 mm or 5/16" (tolerance +0.05/-0.1).**

⇒ **Cut the hose pipe only with a special hose cutter, otherwise the pipe can be damaged.**

⇒ **An improper cutting can result in a leak at the cutting point which can cause a pressure loss.**

⇒ **The length of the hose must be dimensioned in a way that the hose cannot buckle. Buckling the hose once damages it permanently. 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 of the air supply.**

3.8. Control air

3.8.1. Control air pressure

Control air pressure	min. 6 bar – max. 8 bar / min. 87 psi – max. 116 psi
Process control unit IntelliTop® Type 8680	see BA 8680

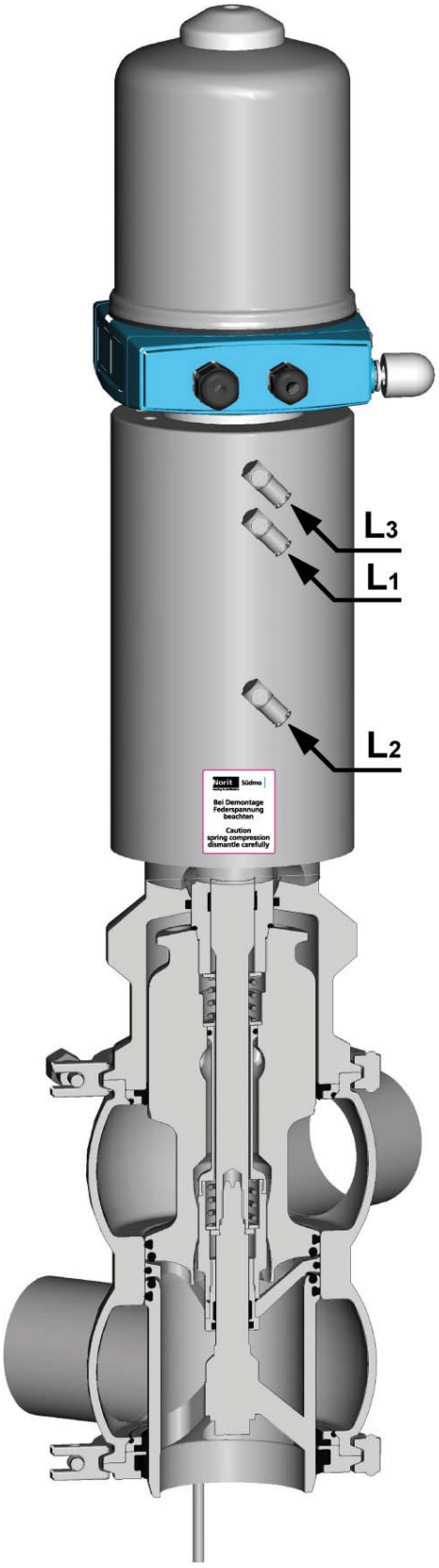
Only use clean and dry control air

3.8.2. Control air quality

to DIN ISO 8573.1

Solid content	Particle size	max. 5 µm
	Particle 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, preferably oil free, max. 25 mg oil in 1 m³ air	

4. Valve function



4.1. Valve position "Closed"

⇒ Control air pressure 0 bar / 0 psi on connection L1 (main stroke)
Control air pressure 0 bar / 0 psi on connection L2 (pulse stroke closing sleeve - top valve disk)
Control air pressure 0 bar / 0 psi on connection L3 (pulse stroke valve disk - bottom valve disk)

⇒ Separation of two hostile media

⇒ Leakages, if any, are guided outwards through the leakage room in a depressurized state

4.2. Valve position "OPEN"

⇒ Control air pressure 6 bar / 87 psi on the connection L1 (main stroke)
Control air pressure 0 bar / 0 psi on the connection L2 (pulse stroke closing sleeve - top valve disk)
Control air pressure 0 bar / 0 psi on the connection L3 (pulse stroke valve disk - bottom valve disk)

⇒ Top valve disk is lowered and closes the leakage room

⇒ Both valve disks in "Open" position

⇒ Top and bottom rail will open in relation to each other.

4.3. Cleaning of the lower valve housing / valve seat

⇒ Control air pressure 0 bar / 0 psi on connection L1 (main stroke)
Control air pressure 0 bar / 0 psi on connection L2 (pulse stroke closing sleeve - top valve disk)
Control air pressure 6 bar / 87 psi on connection L3 (pulse stroke valve disk - bottom valve disk)

⇒ Valve disk is lowered during cleaning

⇒ Clearance is cleaned.

4.4. Cleaning of the upper valve housing / valve seat

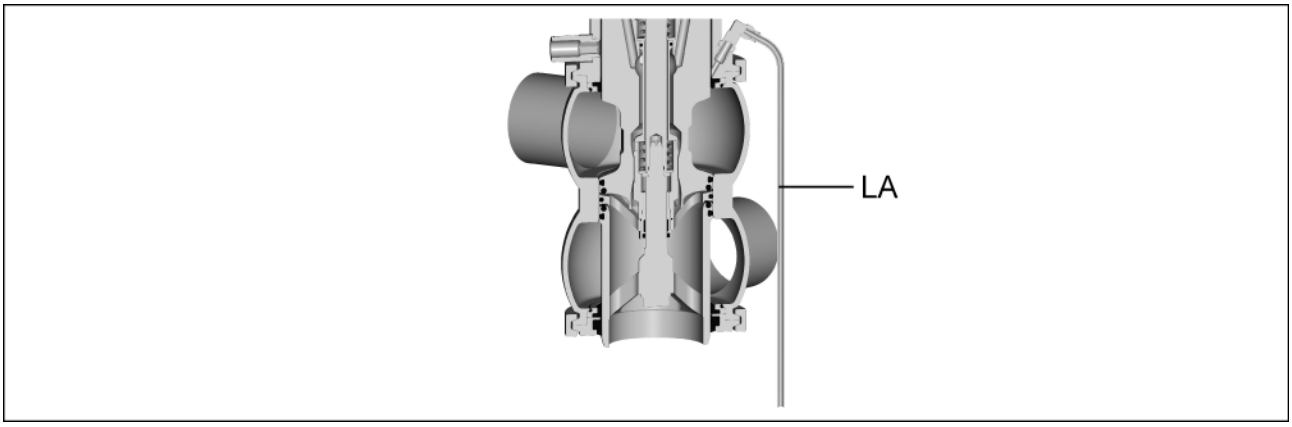
⇒ Control air pressure 0 bar / 0 psi on connection L1 (main stroke)
Control air pressure 6 bar / 87 psi on connection L2 (pulse stroke closing sleeve - top valve disk)
Control air pressure 0 bar / 0 psi on connection L3 (pulse stroke valve disk - bottom valve disk)

⇒ Closing sleeve is lifted during cleaning

⇒ Clearance is cleaned.

⇒ Closing sleeve is cleaned completely.

5. Valve connection piping



5.1. Installation position

⇒ Vertical
⇒ Ensure that product can drain from valve and piping.
⇒ **Always position leakage outlet LA vertically !**

5.2. Valve connections

Welding end

For welding instructions refer to page 16.

5.3. Installation instructions

For valve disassembly refer to page 18.

Caution

⇒ ***Do not change length of the leakage outlet LA!***
⇒ ***Dismantle the seals before carrying out any welding work.***
⇒ ***Valve body must be free from stress and distortions when welded.***
⇒ ***Welding work must be carried out only by qualified personnel (DIN 287-1 W11).***
⇒ ***Do not allow any foreign bodies to enter the piping.***

6. Installation instructions

6.1. General remarks

It is strongly recommended to have any installation work done by specially trained, qualified personnel.

Caution

Welding work must be carried out only by qualified personnel (DIN 287-1 W11).

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

6.2. Delivery condition

⇒ Factory-tested and configured
⇒ Ready for installation respectively prepared for welding in the piping

6.3. Installation instructions

6.3.1. Installation space

Prior to start the assembly work, determine and define the connection axes. Observe the installation dimensions specified in the dimensional drawings.
Ensure that there is sufficient space available for both operation and maintenance.

6.3.2. Installation

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

6.4. Welding instructions

6.4.1. Field of application

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

6.4.2. Welding process

TIG (tungsten inert-gas welding)

6.4.3. Type of weld:

⇒ Preparation of the weld according to DIN 2559 (edge form I / for I-welds)
⇒ Welds correspond to DIN EN ISO 5817 → Quality group B (high)

6.5. Weld preparation

Saw off the pipe ends flat and square 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 quality and corrosion resistance of the welding 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

Material allocation

Material of parts to be welded	Suitable weld filler		
	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 scotching (at accessible points).

6.8.2. Exterior

Weld finishing methods

⇒ Pickling - Ensure proper disposal of pickling paste
⇒ Brushing
⇒ Grinding
⇒ Polishing

6.9. Cleaning

Clean thoroughly before assembly.

6.10. Assembly

Carry out the assembly according to the assembly instructions

7. Disassembly - Assembly

7.1. Prior to disassembly

Carry out the assembly according to the assembly instructions

Before disconnecting the valve connections and the clamp connections of the valve bodies, carry out the following steps:

- ⇒ ***Make sure that no process is running in the respective area while the maintenance and service work is being carried out.***
- ⇒ ***Drain off all piping elements leading to the double seat valve and clean and rinse them, if necessary.***
- ⇒ ***Shut off the control air if it is not needed for disassembly.***
- ⇒ ***When dismantling the control unit of spring-closed valves, the closing spring must be preloaded with auxiliary assembling air. For actuating the valves in manual mode the supply voltage and/or electric signal must be applied.***
- ⇒ ***If the closing spring is not preloaded when disassembling the control unit of spring-closing valves there is a risk of injury when the clamp connection is removed because the spring tension of the drive is released***
- ⇒ ***Secure double seat valves mixing valve against signaling, voltage and signal cut-off, operation and actuation.***
- ⇒ ***Remove the double seat valve from the piping section, if possible.***

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

Sealing material	Grease type
EPDM	PARALIQ GTE 703
HNBR	PARALIQ GTE 703
NBR	RENOLIT SI 410 M

- ⇒ ***If other grease is used***
  → corrosion of the sealing elements.
- ⇒ ***Do not use mineral greases and animal fat.***
- ⇒ ***Do not use petroleum grease.***

7.2. Spare parts

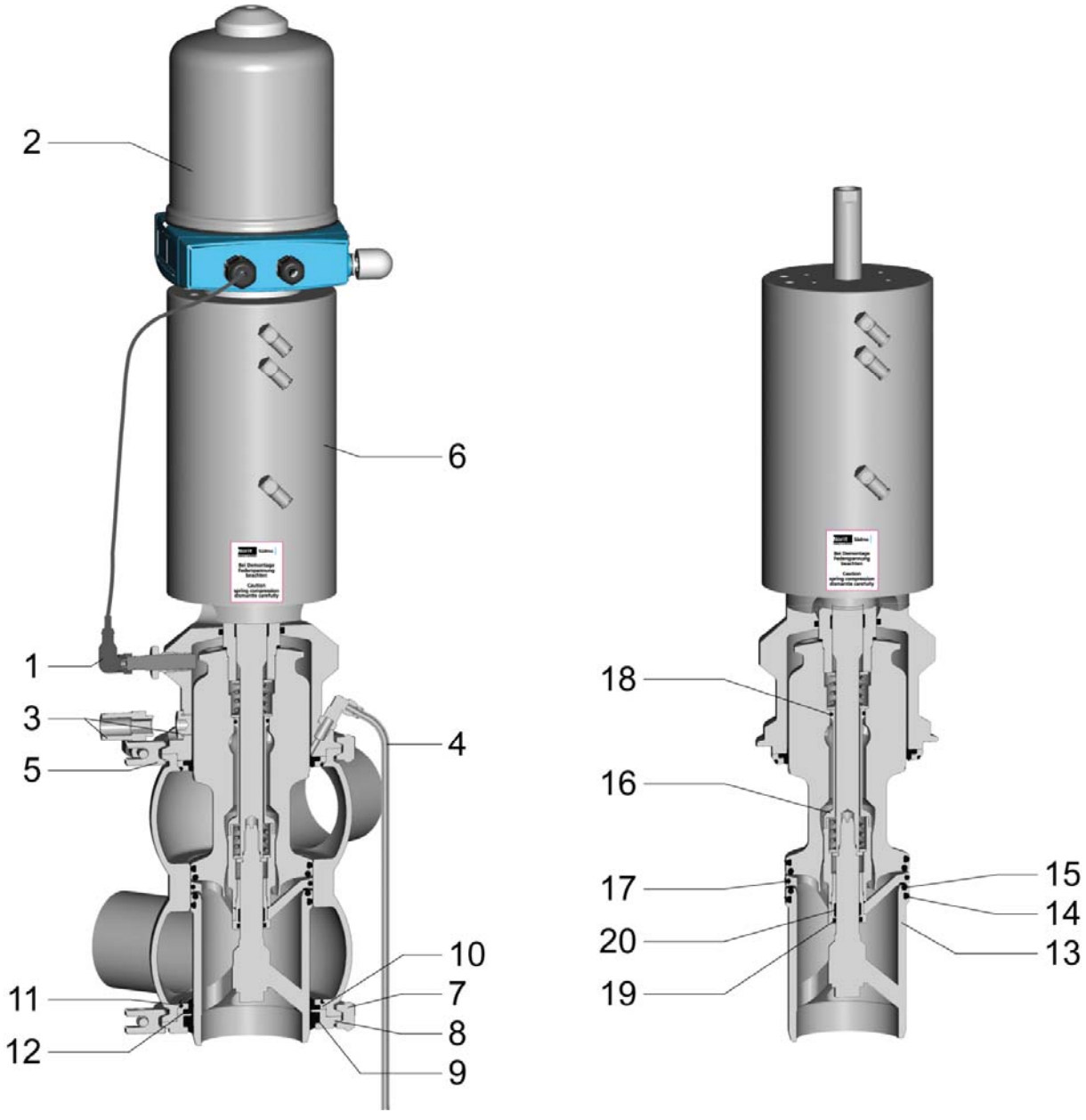
Only use original Norit Südmo spare parts

- ⇒ ***For Norit Südmo spare parts refer to enclosed spare parts list***
- ⇒ ***If other spare parts are used***
  → Exclusion of liability

7.3. Replacement of the seals in contact with the product

Caution

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



Valve disassembly

Mounting steps I.2. – I.4. required only in case of replacement of seals in contact with the product and drive seals.

I.1. Disconnect pneum. and electric supply.
I.2. Dismantle process control unit (2) (see BA 8680).
I.3. Dismantle feedback unit (1) (see page 20).
I.4. Dismantle cpl. leakage outlet (4).

I.5. Remove clamp (5) and dismantle upper part of the valve (6) axially.

Caution

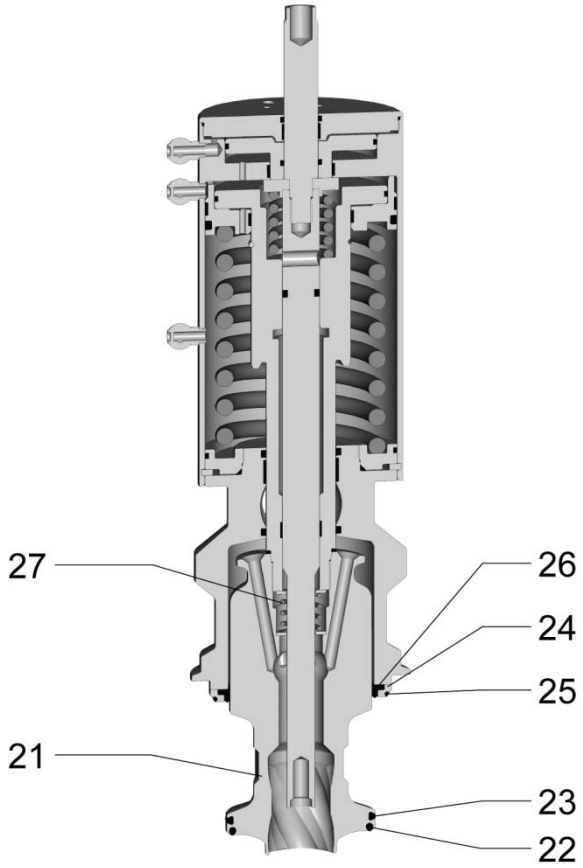
⇒ ***When dismantling the upper part of the valve avoid damaging the metallic seats/supports or seals.***

I.6. Remove clamp (7).

Caution

⇒ ***Entire housing cover is released due its own weight***
⇒ ***support during dismantling.***

I.7. Remove bottom part of housing lid (8) and remove guide ring (9).
I.8. Remove upper part of housing lid (10) and remove O-ring (11) and profile packing (12).
I.9. Dismantle valve disk (13) and remove O-rings (14, 15).
I.10. Dismantle cpl. deflector unit (16).
I.11. Remove O-rings (17, 18, 19) and friction bearing (20).



I.12. Dismantle closing sleeve (21).

Danger

⇒ ***Pay due regard to the spring tension forces during dismantling.***

I.13. Remove O-rings (22, 23)
I.14. Remove support (24) and remove profile packing (26) and O-ring (25).

I.15. Remove compr. spring (27) from closing sleeve (21).

Seal Replacement

I.16. 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***

I.17. Grease the sealing elements before installation.

Sealing material	Grease type
EPDM	PARALIQ GTE 703
HNBR	PARALIQ GTE 703
NBR	RENOLIT SI 410 M


Caution

⇒ ***If other grease is used***
→ ***corrosion of the sealing elements.***
⇒ ***Do not use mineral greases and animal fat.***
⇒ ***Do not use petroleum grease.***

Valve assembly

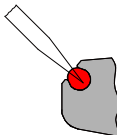
I.18. Prior to assembly, clean and grease the shafts and sliding surfaces.
I.19. Install O-rings (22, 23) in closing sleeve (21).
I.20. Install profile packing (26) and O-ring (25) into the support (24).
I.21. Install entire support (24) onto closing sleeve (21).
I.22. Place compr. spring (27) into closing sleeve (21).
I.23. Screw cpl. closing sleeve (21) onto the drive.
I.24. Install O-rings (17, 18, 19) and friction bearing (20) in deflector unit (16).
I.25. Install cpl. deflector unit (16).
I.26. Install O-rings (14, 15) in valve disk (13).
I.27. Install valve disk (13).
I.28. Install O-ring (11) and profile packing (12) in upper part of housing lid (10).
I.29. Install guide ring (9) in bottom part of housing lid (8).
I.30. Place upper part of housing (10) and bottom part of housing (8) into the valve body and install clamp (7).
I.31. Insert the upper part of the valve (6) axially in the valve body and mount clamp (5).


Caution

⇒ ***When installing the upper part of the valve avoid damaging the metallic seats/supports or seals.***

I.32. Install cpl. leakage outlet (4).
I.33. Install feedback unit (1) (see page 20).
I.34. Install process control unit (2) (see BA 8680).
I.35. Install electric and pneum. supply lines.

7.4. Assembly of the O-ring



7.4.1. Dismantling

⇒ The O-ring is installed in positive contact under pretension.

⇒ Remove the O-ring as shown in the drawing.

Caution

Do not damage the seal groove (edges of groove)

7.4.2. Installation

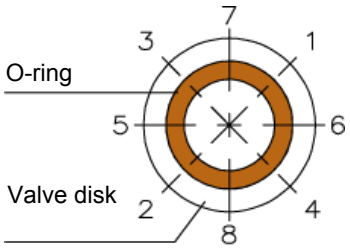
⇒ Press O-ring in sequence 1- 2, 3 – 4 etc. into the groove.

⇒ Roll O-ring section by section 1 – 6, 5 – 2 into the groove.

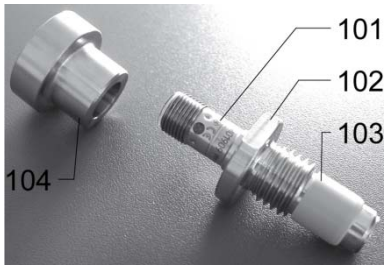
⇒ Use round object made of plastic or wood for the installation.

Caution

Avoid twisting and damaging the O-ring.



7.5. Assembly - Disassembly of Feedback Unit



7.5.1. Required parts

⇒ Feedback unit (101)
⇒ Fastening screw (102)
⇒ Packing sleeve (103)
⇒ Mounting aid (104) - Article no. 2159745

7.5.2. Assembly

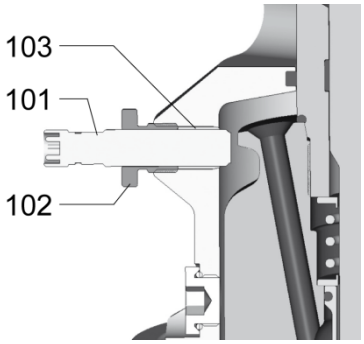
II.1. Install packing sleeve (103) in closing head support.

II.2. Screw fastening screw (102) in closing head support.

II.3. Position the fastening screw (102) in such a way that it rests on packing sleeve (103).

II.4. Screw mounting aid (104) onto feedback unit (101).

II.5. Install feedback unit in fastening screw (102) to the stop.



Caution

Avoid damaging the feedback unit.

II.6. Tighten fastening screw (102) by turning it through maximum ¾ of a turn.

II.7. Dismantle mounting aid (104).

7.5.3. Disassembly

II.8. Screw mounting aid (104) onto feedback unit (101).

II.9. Dismantle fastening screw (102) with feedback unit (101).

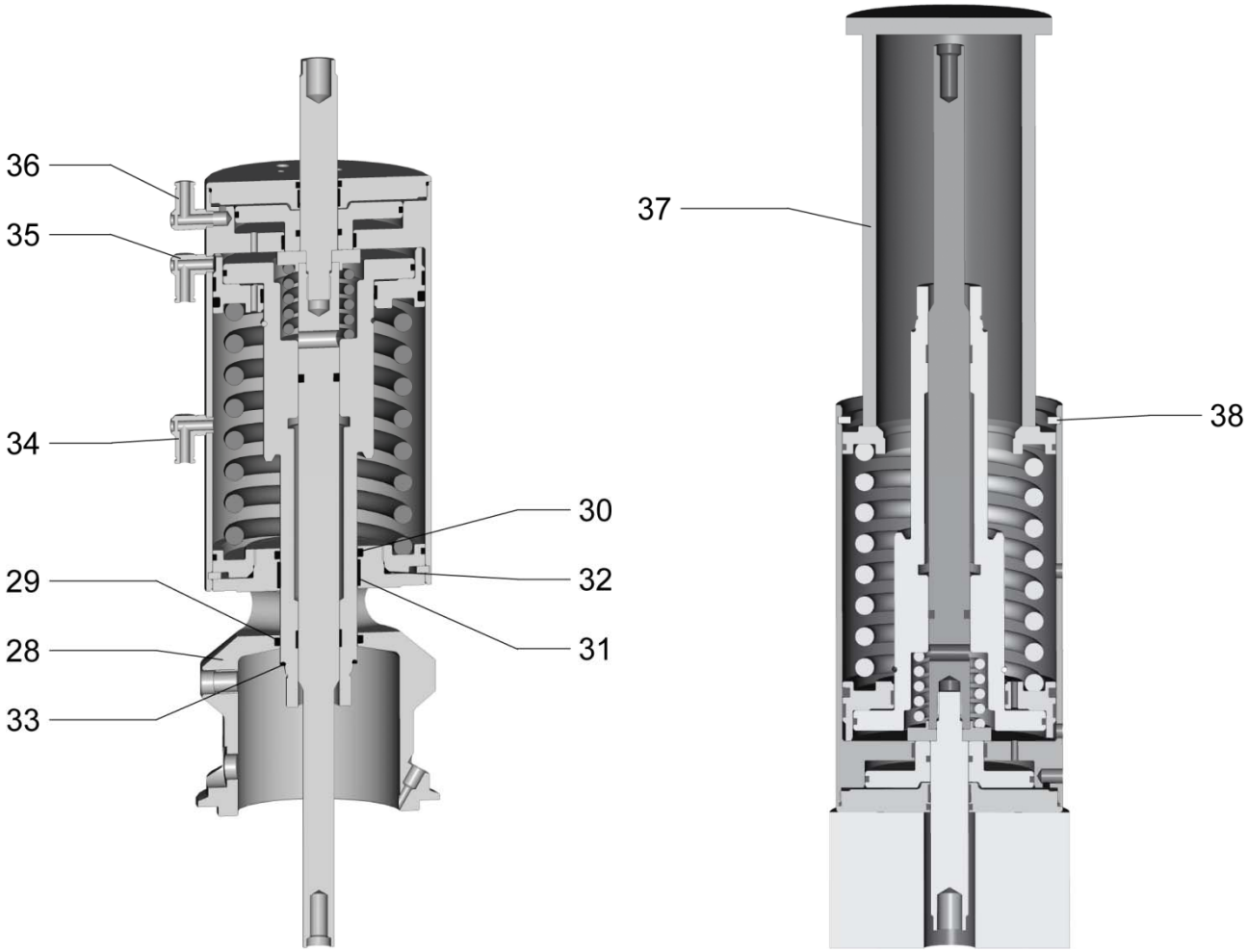
Caution

Avoid damaging the feedback unit.

II.10. Dismantle packing sleeve (103).

II.11. Dismantle mounting aid (104).

7.6. Drive seal replacement



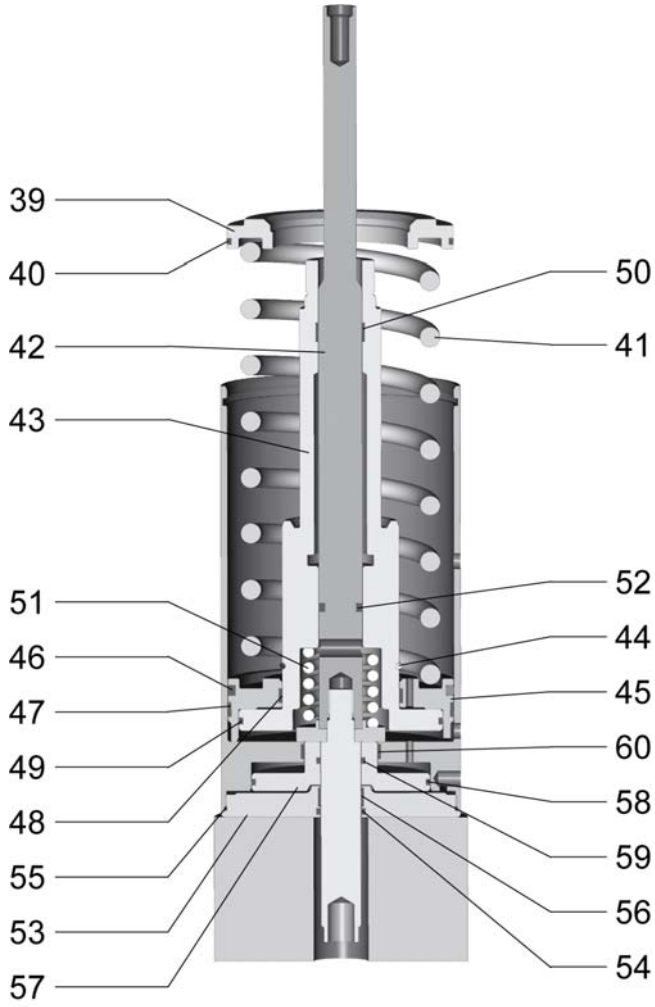
Dismantling of the drive

III.1. Tools and devices required:
- lifting devices, press, upright drilling: hydraulic, pneumatic or mechanic
- Spacer sleeve
- Circlip pliers

III.2. Dismantle closing head support (28).
III.3. Remove O-rings (29, 30, 32) and friction bearing (31).
III.4. Remove O-ring (33).
III.5. Dismantle air connections (34, 35, 36).
III.6. Position pneumatic actuator centrally in lifting device.
III.7. Position spacer sleeve (37).
III.8. Lower plunger of lifting device slowly onto spacer sleeve. Move cylinder base with force F in direction of force.
III.9. Extract guard ring.
III.10.

Danger

Release spring force.



III.11. Remove cylinder plate (39) and remove O-ring (40).
III.12. Remove compr. spring (41).
III.13. Remove cpl. piston packet (42, 43, 45).
III.14. Remove lift piston (43) from piston rod (42).
III.15. Dismantle snap ring (44) and remove piston (45) from lift piston (43).
III.16. Remove O-ring (46) and guiding belts (47, 48).
III.17. Remove compr. spring (51).
III.18. Remove O-ring (49, 52) and friction bearing (50).
III.19. Remove cylinder cover (56) and remove O-ring (54, 55) and friction bearing (56).
III.20. Remove lift piston (57) and dismantle O-rings (58, 59).
III.21. Dismantle guide belt (60).

Seal Replacement

III.22. 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.23. Grease the sealing elements before installation.

Sealing material	Grease type
NBR	RENOLIT SI 410 M


Caution

⇒ ***If other grease is used***
→ ***corrosion of the sealing elements.***
⇒ ***Do not use mineral greases and animal fat.***
⇒ ***Do not use petroleum grease.***

Valve assembly

III.24. Prior to assembly, clean and grease the shafts and sliding surfaces.
III.25. Install guide belt (60).
III.26. Install O-rings (58, 59) in lift piston (57).
III.27. Install lift piston (57) in driving cylinder.
III.28. Install O-ring (54, 55) and friction bearing (56) in cylinder cover (56).
III.29. Screw cylinder cover (56) onto driving cylinder.
III.30. Install O-ring (46) and guide belts (47, 48) in piston (45).
III.31. Install O-ring (49) and friction bearing (50) in lift piston (43).
III.32. Install O-ring (52) onto piston rod (42).
III.33. Install piston (45) using snap ring (44) onto lift piston (43).
III.34. Install compr. spring (51) and cpl. lift piston (43) onto piston rod (42).
III.35. Insert cpl. piston rod (42) into driving cylinder.


Caution

⇒ ***When installing the piston rod avoid damaging the metallic seats or seals.***

III.36. Install O-ring (40) in cylinder base (39).
III.37. Position cpl. driving cylinder centrally in lifting device.
III.38. Insert compr. spring (41) and cylinder base (39) into driving cylinder.
III.39. Position spacer sleeve (37).
III.40. Lower plunger of lifting device slowly onto spacer sleeve. Move cylinder base with force F in direction of force.
III.41. Install guard ring.
III.42.


Danger

Release spring force.

III.43. Install O-ring (33).
III.44. Install O-rings (29, 30, 32) and friction bearing (31) in the closing head support (28).
III.45. Install air connections (34, 35, 36).
III.46. Install closing head support (28) onto cylinder base (39).

8. Start-up

⇒ ***Ensure that no foreign objects are present in the piping system.***
⇒ ***Avoid temperature shock!***
Warm up the fitting slowly to operating temperature.

8.1. Functional check

Switch the valve several times by activation with compressed air.
The system must be cleaned before the first product run.

8.2. Leak test

Check visually that seals are free from leaks.
Replace defective seals.

9. Maintenance

9.1. Before maintenance

⇒ ***Make sure that no process is running in the respective area while the maintenance and service work is being carried out.***
⇒ ***Drain off all piping elements leading to the double seat valve and clean and rinse them, if necessary.***
⇒ ***Shut off the control air if it is not needed for disassembly.***
⇒ ***Secure double seat valves mixing valve against signaling, voltage and signal cut-off, operation and actuation.***
⇒ ***Remove the double seat valve from the piping section, if possible.***
⇒ ***Maintenance work must be carried out by qualified and trained personnel only.***

9.2. Inspection

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

9.3. Preventive maintenance

Practice-oriented maintenance intervals can only be determined by the respective user/operator as they depend on the following application parameters:
⇒ Operating time per day
⇒ 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 every 12 months
⇒ for liquids without solid particles and temperatures of max. 60° C 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 sealing materials are sufficiently chemical-resistant.

10. Malfunctions - Troubleshooting

Danger

⇒ ***Never touch the valve or the pipelines if hot media are processed or if the sterilizing process is running.***
⇒ ***Always keep the technical data.***
⇒ ***We cannot be held liable for improper operation of the valve***

Caution

⇒ ***In case of malfunctions, shut off the valve immediately and secure it against restart.***
⇒ ***Malfunctions must be eliminated by qualified and trained personnel only while observing the safety instructions.***

Malfunctions	Cause	Troubleshooting
Valve does not work	⇒ Fault in the control system	⇒ Check the system configuration
	⇒ No compressed air ⇒ Compressed air too low	⇒ Check compressed air supply ⇒ Check that air hoses are free and tight
	⇒ Fault in the electrical system	⇒ Check activation / process control unit and electrical lines
	⇒ Pilot valve defective	⇒ Replace the pilot valve
Air escapes from the drive	⇒ Seals in the drive defective	⇒ Replace the seals
Valve does not close	⇒ Dirt / foreign objects in the seat area	⇒ Clean valve body and area of the seal, valve disk/closing sleeve
Valve closes too slowly	⇒ Seals in the drive are dry (friction losses)	⇒ Grease the seals - See lubrication plan
Leakage from leakage room	⇒ Valve disk or closing sleeve seal defective	⇒ Replace the seals
Leakage on support	⇒ Seals defective	⇒ Replace the seals
Leakage on housing cover	⇒ Seals defective	⇒ Replace the seals
Valve closes jerkily	⇒ Seals in the drive are dry (friction losses)	⇒ Grease the seals - See lubrication plan ⇒ Replace the seals

11. Disposal

11.1. Before disposal

Carry out the assembly according to the assembly instructions (page 15 - 23).
Before disposing off the double seat valve, the following steps must be carried out:

⇒ ***Make sure that no process is running in the respective area while the maintenance and service work is being carried out.***
⇒ ***Drain off all piping elements leading to the double seat valve and clean and rinse them, if necessary.***
⇒ ***Shut off the control air if it is not needed for disassembly.***
⇒ ***Secure double seat valves mixing valve against signaling, voltage and signal cut-off, operation and actuation.***
⇒ ***Remove the double seat valve from the piping section, if possible.***

11.2. Components of the double seat valve

The following materials have been used for manufacturing the double seat valve:

⇒	Metal parts	AISI 316L, AISI 304(L)
⇒	All seals	Elastomers, PEEK and PTFE
⇒	All guidings	Plastic

11.3. Double seat valve disposal

Carry out the following work to prepare the shutdown of the double seat valve:

⇒ Get information on how to dispose off the individual components or the complete double seat valve.
→ Ask your environmental officer if necessary.
⇒ Dismantle the double seat valve from the shut-off piping system.
⇒ Dismantle the double seat valve as described under Disassembly - Assembly (page 15 - 23).
⇒ Remove all seals from the valve components of the double seat valve.
⇒ Dispose of all components of the double seat valve in such a way that eliminates the possibility of damage to health and environment.

12. EC Declaration of Incorporation

The manufacturer,

Südmo Components GmbH
Industriestraße 7
D-73469 Riesbürg-Pflaumloch

hereby declares that the:

Double seat valves

Type:	**D 365it sp**
Article no.:	**D 365it sp**
Year of manufacture:	**2010**

complies with the following basic requirements of the **Machinery Directive (2006/42/EC)**.
Annex I, Article 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).

The manufacturer commits to send the special documents regarding the partly completed machine **as a hard copy** to the national authorities. The industrial property rights of the manufacturer of the partly completed machine shall not be affected thereby.

TD authorized person

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

Riesbürg, 17.11.2010

Managing Director
Oliver Rupps

13. Service address

Südmo Components GmbH
Industriestraße 7
D-73469 Riesbürg - Germany
T +49 9081 803-0
F +49 9081 803-158
E info@suedmo.de
I www.suedmo.de

Copy of Original operating instructions