SPXFLOW

INSTRUCTION MANUAL

APV DELTA DA3+

DOUBLE SEAT MIX PROOF VALVE

FORM NO.: H179518 REVISION: UK-5

READ AND UNDERSTAND THIS MANUAL PRIOR TO OPERATING OR SERVICING THIS PRODUCT.

Scan for DA3+ Valve
Maintenance Video

APV®

UK

EU Declaration of Conformity for Valves and Valve Manifolds

SPX FLOW TECHNOLOGY GERMANY GMBH
Gottlieb-Daimler-Str. 13, D-59439 Holzwickede
herewith declares that the

APV double seal and double seat valves of the series
SD4, SDT4, SDU4, SDMS4, SDMSU4, SDTMS4, SWcip4, DSV,
DA3, DA3SLD, DE3, DEU3, DET3, DKR2, DKRT2, DKRH2
in the nominal diameters DN 25 - 150, ISO 1“ – 6“ and 1 Sh5 - 6 Sh5

APV butterfly valves of the series SV1 and SVS1F, SVL and SVSL
in the nominal diameters DN 25 - 100, DN 125 - 250 and ISO 1“ – 4“

APV ball valves of the series KHI, KHV
in the nominal diameters DN 15 - 100

APV single seat, diaphragm and spring loaded valves of the series
S2, SW4, SWhp4, SW4DPF, SWmini4, SWT4, SWS4, MF4, MS4, MSP4, AP/T1, CPV,
RG4, RG4DPF, RGMS4, RGE4, RGE4DPF, RGEMS4, PR2, PRD2, SI2, UF/R3, VRA/H
in the nominal diameters DN 10 - 150, ISO 1/2“ – 4“ and 1 Sh5 - 6 Sh5

and the valve manifolds installed thereof

meet the requirements of the Directives 2006/42/EC (superseding 89/392/EEC and 98/37/EC) and ProdSG (superseding GPSG - 9.GPSGV).

For official inspections, SPX FLOW presents
a technical documentation according to Appendix VII of the Machinery Directive,
this documentation consisting of documents of the development and construction,
description of measures taken to meet the conformity and to correspond with
the basic requirements on safety and health, incl. an analysis of the risks,
as well as an operating manual with safety instructions.

The conformity of the valves and valve manifolds is guaranteed.

Authorised person for the documentation:
Frank Baumbach

SPX FLOW TECHNOLOGY GERMANY GMBH
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November 2017

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Frank Baumbach
Regional Engineering Manager, F&B Components

Content — Page

1. General Terms

This instruction manual should be read carefully by the competent operating and maintenance personnel.

We point out that we will not accept any liability for damage or malfunctions resulting from the non-compliance with this instruction manual.

Descriptions and data given herein are subject to technical changes.

2. Safety Instructions

DANGER!

- The technical safety symbol draws your attention to important directions for operating safety. You will find it wherever the activities described are bearing risks of personal injury.

- Disconnect electrical and pneumatic connections.
- **Depressurize** the line and cleaning system and discharge the lines, if possible, before any maintenance work.

- Observe Service Instructions to ensure safe maintenance of the valve.

- Connections which are not used must be sealed by a plug.
- A safe discharge of the cleaning liquids must be ensured.

- The valve must be assembled, disassembled and reassembled only by persons who have been trained in APV valves or by SPX FLOW service team members. If necessary, contact your local SPX FLOW representative.
- Welded actuators are preloaded by spring force.

Opening of the actuators is strictly forbidden. Danger to life!

Actuators which are no longer used and / or defective must be disposed in professional manner.

Defective actuators must be returned to your SPX FLOW company for their professional disposal and free of charge for you.

Please address to your local SPX FLOW company.

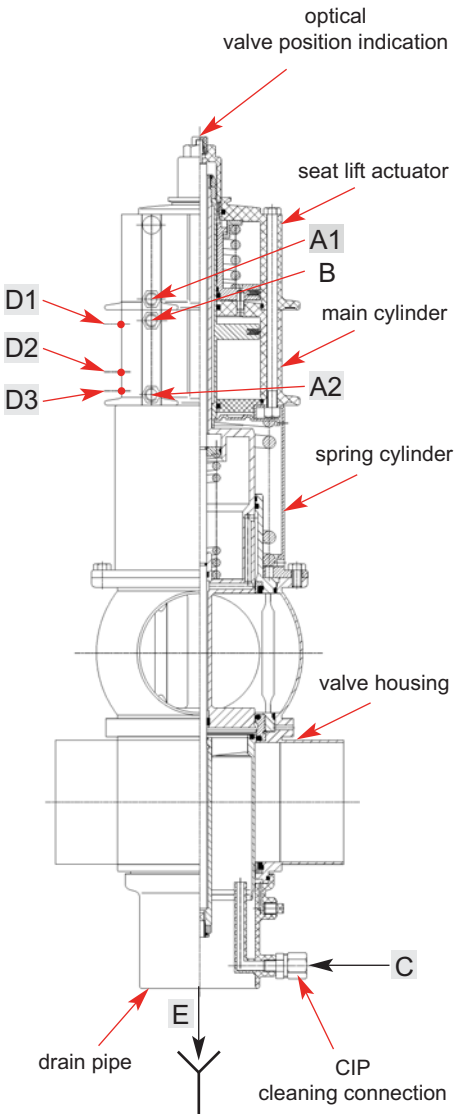
3. Intended Use

The intended use as field of application of the double seat valve is the shut-off of pipeline sections.

Arbitrary, structural changes at the valve may affect safety as well as the intended functionality of the valve and are ***not*** permissible.

Authorizations and External Approvals:
EHEDG Certification
ATEX (Directive 2014/34/EU)

4. Mode of Operation



4.1. General Terms

Due to its construction and mode of operation as well as to the use of high quality stainless steel and adequate seal materials, the double-seat mixproof valve DELTA DA3 is suited for applications in the food and beverage industries as well as in the pharmaceutical and chemical industries

- The valve opens from the top to the bottom in low leakage operation (unpressurized drain of fluid residues via the annular cleaning gaps in the seat area).
- Separation of two line passages by two balanced and independently operating valve slides with intervening leakage chamber.
- Arising leakages at the seat seals are discharged at **(E)** in depressurized state.
- Proximity switches can be installed as valve position indicators.
  D1 = valve position "closed"
  D2 = valve position "open" (DN 40, 1,5” only)
  D3 = valve position "open" (DN 50 to 150, 2” - 4”)
- An optical indication of the valve position is installed in the upper area.
- Operation by pneumatic actuator with air connection at **(B)**. Reset by spring force into the safety limit position “closed”.

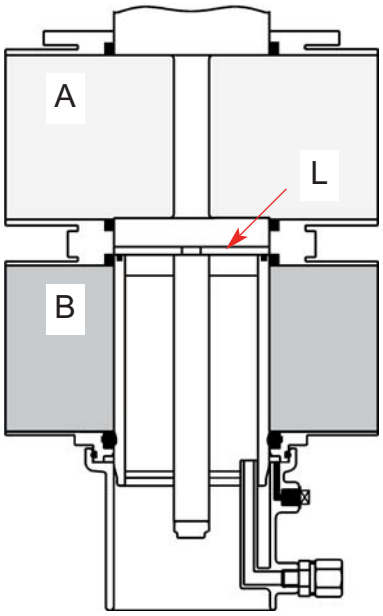
  B = valve open 
- Maintainable actuator (see **11.3.**).
- Cleaning of the leakage chamber is undertaken via the cleaning connection **(C)**.
- Cleaning of the seat and shaft seal areas is realized by operation of the air connections::

  A1 = lifting of lower shaft 

  A2 = lifting of upper shaft 
- Reset by spring force.

4. Mode of Operation

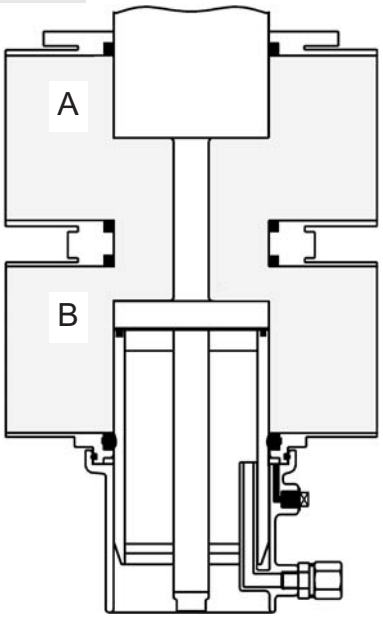
fig. 4.2.



4.2. Valve in “closed” position

The lower and upper valve shafts are closed by spring force and safely separate the different fluids **A** and **B**. The leakage chamber **L** which is situated between the two valve shafts, provides for a free and absolutely depressurized discharge to the bottom. The valve shafts are balanced and, thus, safe against pressure hammers.

fig. 4.3.

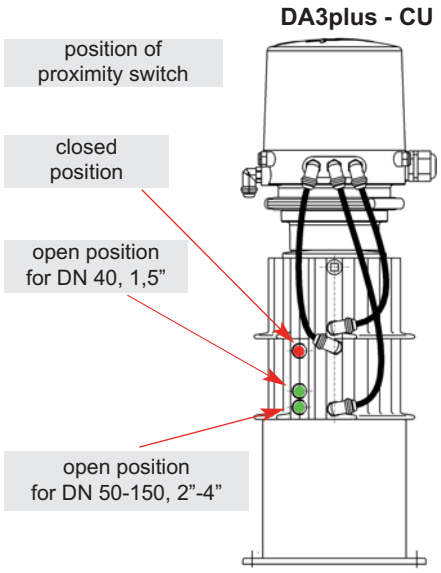


4.3. Valve in “open” postion

By control of the actuator, the upper valve shaft is pressed against the seal of the lower valve shaft. Thus, the leakage chamber **L** is closed against the product chamber.
Then the two valve shafts move downwards into the open position. A connection between the two pipelines **A** and **B** is produced.

5. Auxiliary Equipment

fig. 5.1.



5.1. Valve position indication

Proximity switches to signal the limit position of the valve shafts can be installed at the actuator if requested (fig. 5.1.).

We recommend to use our APV standard types:
three-wire proximity switch
operating distance: 5 mm / diameter: 11 mm.
operating voltage 10 - 30 V DC
pnp pulse-shifting, closing function
installation “non-flush”

If the customer decides to use valve position indicators other than APV type, we cannot take over any liability for a faultless function.

5.2. Control unit

The installation of a control unit of the DA3+ valve is possible.

The following different designs are available:

Control Unit CU3

Control Unit CU4

3 solenoid valves	
Direct Connect reference number:	**CU43-M-Direct Connect** 08 - 45 - 105/93 **H320465**
Profibus reference number:	**CU33-DA3 Profibus** 08 - 45 - 004/93 **H315498**
DeviceNet reference number:	**CU33 - DeviceNet** 16 - 31 - 242/93 **H209425**
AS-interface reference number:	**CU43-M-AS-i extended 62 slaves** 08 - 45 - 115/93 **H320472**

- For the installation of the control unit on the DA3+ valve an adapter is required:

5.3. Adapter for control unit

CU33 Profibus, CU33 DeviceNet, CU33 AS-interface 2.1
CU33 adapter DA3
reference number: 000 08 - 48 - 471/93, H314469

- **Adapter for control unit**
  CU43 M - Direct Connect, CU43 M - AS-i extended
  reference number: 000 08 - 48 - 602/93, H320476

6. Cleaning

Cleaning the DELTA DA3+ valve, one has to distinguish between three areas:

6.1. The flow areas

The upper and lower passages are cleaned by the passing cleaning liquid during the cleaning of the connected pipelines.

6.2. The seal surfaces

The seal surfaces of the **upper area** (upper shaft and seat seal) and the **lower area** (lower shaft and seat seal) are **flushed and cleaned** by cleaning liquid through lifting of the individual valve shafts during the cleaning of the respective passage.

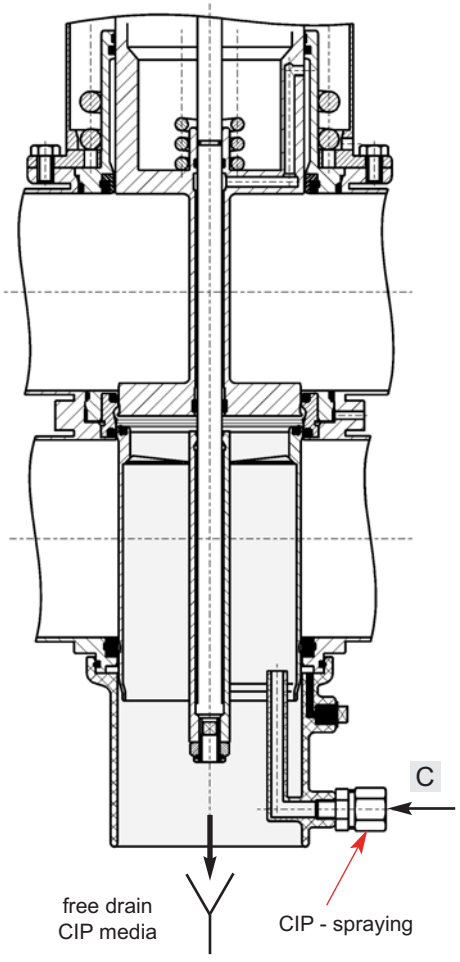
6.3. The lekage chamber

The cleaning of the leakage chamber is undertaken by CIP spraying. CIP cleaning connection **(C)**.
The valve shafts being lifted, the CIP liquid also cleans the leakage chamber.

The spraying does not produce pressure build-up in the leakage chamber and can be carried out in closed and in open valve position. The conduct of the cleaning liquid provides for a biologically perfect cleaning of the whole leakage chamber.

Under standard conditions
15 valves DN 40 - 100 / 1,5" - 4"
10 valves DN 125 - 150 can be cleaned
via one spray distribution line DN 25.

fig. 6.3.



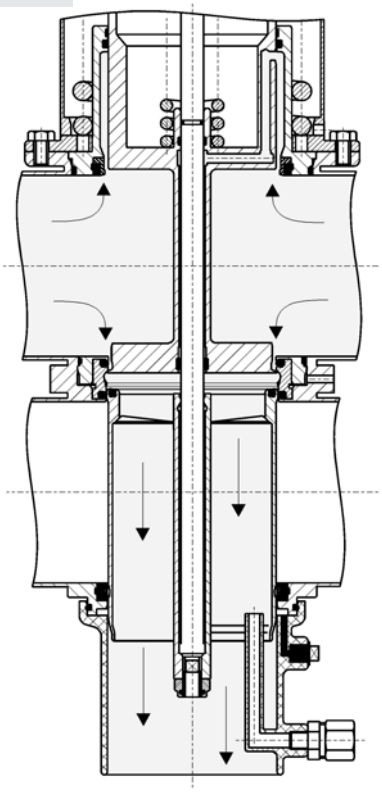
6.4. Cleaning recommendation:

Cleaning steps	lifting cycle	CIP spraying
pre-flushing	———	3 x 10 sec.
caustic flushing 80 °C	3 x 5 sec.	3 x 10 sec.
intermediate flushing	2 x 5 sec.	2 x 10 sec.
acid flushing	3 x 5 sec.	3 x 10 sec.
subsequent flushing	2 x 5 sec.	2x 10 sec.

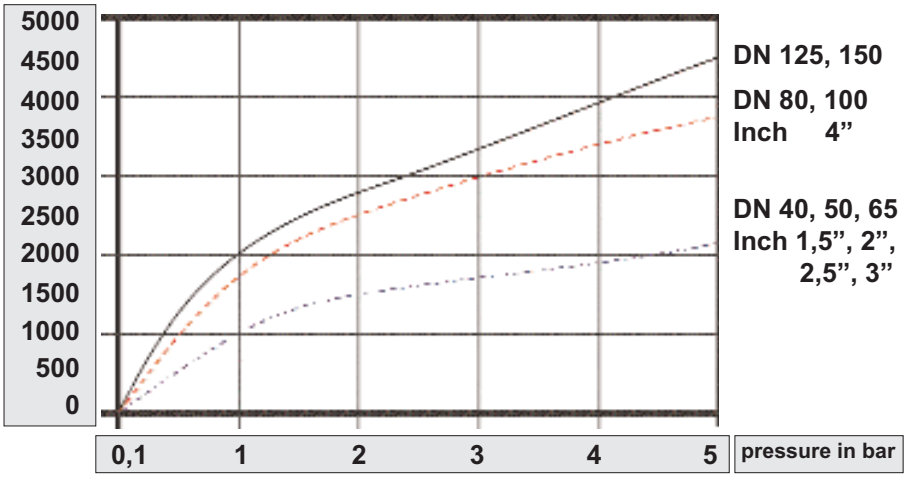
- The lifting cycles refer to a cleaning pressure of **p = 2 - 5 bar**
- Depending on the pressure ratio, cleaning temperatures, cleaning steps and degree of soiling, different cycles must be adjusted.
- Flushing quantities per CIP spraying cycle:
  DN 40 -100 / 1,5" - 4" **about 1,2ltr/10s**
  DN 125, 150 **about 5ltr/10s**
- Cleaning pressure at CIP cleaning connection: **min. 2 bar.**
  max. 5 bar.

6. Cleaning

fig. 6.6.



6.5. Flushing quantity in ml per lifting cycle / 5 sec.



6.6. Cleaning of upper area (fig. 6.6.)

The upper valve shaft is lifted via the connection

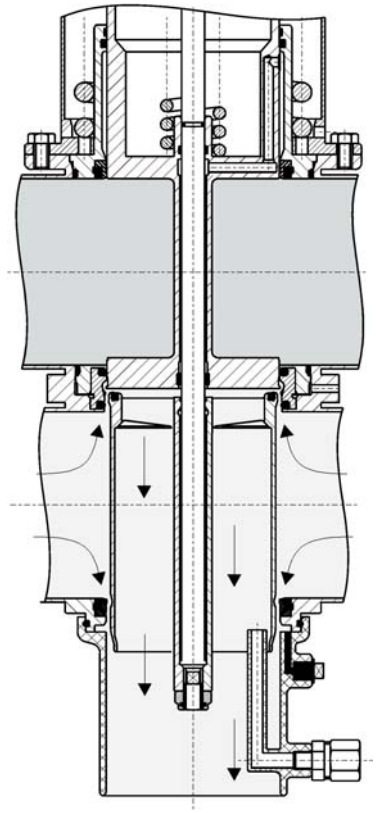
(A2)

By lifting of the upper valve shaft, the cleaning liquid flushes over the upper seat seal and the upper valve seat into the leakage chamber and cleans this area. The cleaning liquid is drained off to the bottom in depressurized state.

Simultaneously, the upper shaft seal and the outer surface of the upper valve shaft are cleaned. Then the cleaning liquid is drained off at the inner tube of the lower valve shaft to the bottom.

The lifting stroke is limited by a metallic stop.

fig. 6.7.



6.7. Cleaning of lower area (fig. 6.7.)

The lower valve shaft is lifted via the connection

(A1)

By lifting of the lower valve shaft, the cleaning liquid flushes over the lower seat seal into the leakage chamber and cleans this area. The cleaning liquid is drained off to the bottom in depressurized state.

Simultaneously, the lower shaft seal and the outer surfaces of the lower valve shaft are cleaned. The cleaning liquid flushes the spray connection and is then drained off to the bottom in depressurized state.

The lifting stroke is limited by a metallic stop.

7. Installation

- The valve must be installed in vertical position. Fluids are, therefore, freely drainable from the valve housing and the leakage chamber.

- Valve housings can be welded direct into the pipelines (completely dismantable valve insert).

- **Attention:** Observe welding instructions.

- Heights of installation and dismantling (see **chapter 7**).

7.1. Welding Instructions

DA3+

- Before welding of the valve, the valve insert must be dismantled from the housing. Careful handling to avoid damage to the parts is necessary **(see 11.1)**.
  It is not necessary to remove the lower shaft seal as it can be destroyed during dismantling

- Welding should only be carried out by certified welders (DIN EN ISO 9606-1). (Seam quality DIN EN ISO 5817).

- The welding of the valve housings must be undertaken in such a way that the valve body is not deformed.

- The preparation of the weld seam up to 3 mm thickness must be carried out as a square butt joint without air. (Consider shrinkage!)

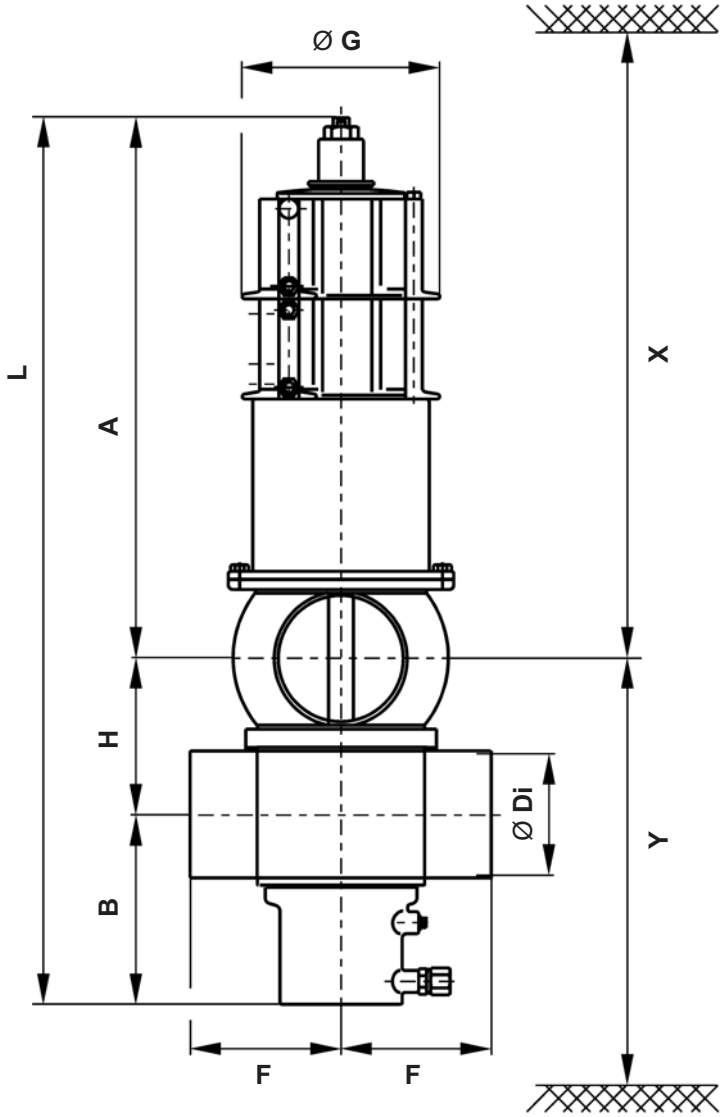
- TIG orbital welding is best!

- After welding of the valve housing or of the mating flanges and after work at the pipelines, the corresponding parts of the installation and pipelines must be cleaned from welding residues and soiling before operation of the valves to avoid damage to the valves and seals.
  If these cleaning instructions are not observed, welding residues and dirt particles can settle in the valve and cause damage.

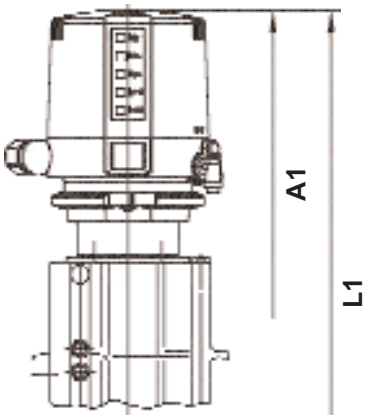
- Any damage resulting from the non-observance of these welding instructions is not subject to our guarantee.

- Welding directives for aseptic applications shall be drawn from the AWS/ANSI Directives and EHEDG Guidelines.

8. Dimensions / Weights



Control Unit DELTA CU4



Dimensions in mm										inst. dimensions min.in mm		weights in kg
DN	**A**	**A1**	**B**	**Ø Di**	**F**	**Ø G**	**H**	**L**	**L1**	**X**	**Y**	
40	378	502	120	38	100	163	63	561	715	660	200	13,7
50	384	508	126	50	100	163	75	585	739	680	218	13,8
65	392	516	134	66	100	163	91	617	771	700	242	14,0
80	419	543	146	81	120	188	106	671	825	790	274	19,2
100	429	553	156	100	120	188	125	710	864	820	303	20,3
125	507	631	176	125	150	236	150	833	987	950	342	46,6
150	519	643	189	150	150	236	175	883	1037	1010	392	47,5
Inch												
1,5”	379	503	119	34,9	100	163	63	561	715	660	197	13,7
2”	385	509	125	47,6	100	163	75	585	739	680	216	13,8
2,5”	389	513	131	60,3	100	163	85	605	759	700	233	14,0
3”	395	519	137	72,9	100	163	97	629	783	730	251	14,2
4”	430	554	155	97,6	120	188	125	710	864	820	301	20,3

9. Technical Data

9.1. General data

product-wetted parts:	**1.4571, 1.4404** (DIN EN 10088)
other parts:	**1.4301**(DIN EN 10088)
seals:	
standard design:	**EPDM/ PTFE**
option:	**HNBR/ PTFE** **FPM/ PTFE** **VMQ/ PTFE**
actuator:	**PA 12 GF 30**
spray connection:	**PP**
max. line pressure:	**10 bar**
max. operating temperature:	**135°C EPDM, HNBR** ***VMQ, *FPM**
short-term load:	**140°C EPDM, HNBR** ***VMQ, *FPM** *** (no steam)**
Tightening torque for stop screw **(11)** :	**15Nm**
Tightening torque for safety nuts **(42, 16)** at lower and upper valve shaft:	**40Nm**
cleaning connection (for hose)	
DN 40 - 100 / 1,5” - 4” :	**8 x 1mm**
DN 125 - 150 :	**10 x 1mm**
air connection (for hose):	**6 x 1mm**
max. pneumatic air pressure:	**10 bar**
min. pneumatic air pressure:	**6 bar**

9.2. Compressed air quality: Quality class acc. to DIN ISO 8573-1

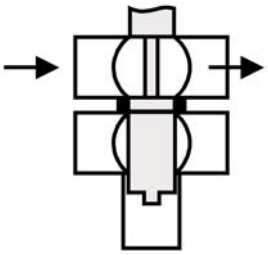
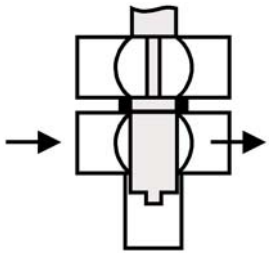
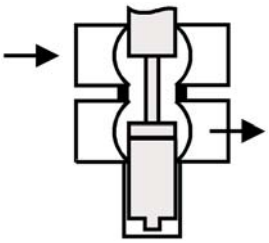
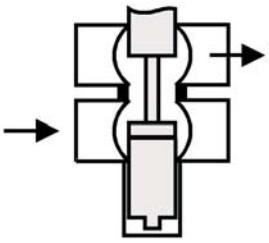
content of solid particles: **quality class *3***
max. size of solid particles per m³
10000 of 0,5µm < d < 1,0µm
500 of 1,0µm < d < 5,0µm

content of water: ***quality class 3***
max. dew point temperature -20°C
For installations at lower temperatures or at higher altitudes, additional measures must be considered to reduce the pressure dew point accordingly.

content of oil: ***quality class 1***
max. 0,01mg/m³

The oil applied must be compatible with Polyurethane elastomer materials.

9. Technical Data

9.3.	Kvs values in m^3/ h			
				
DN				
40	57	46	23	25
50	120	95	42	45
65	219	148	69	78
80	296	200	120	130
100	505	320	164	170
125	**800***	**500***	300	330
150	**1200***	**700***	360	380
Inch				
1,5”	47	40	21	24
2”	100	73	43	46
2,5”	170	122	59	66
3”	213	160	71	80
4”	490	294	150	160

*** no measuring value**

9.4.		Air consumption actuator	Air consumption seat lift actuator		Closing times in sec.	
DN	**Inch**	NL / stroke valve open	NL / stroke upper seat lift	NL / stroke lower seat lift	1 m	10 m
40	1,5”	0,9	1,1	0,3	1,5	2,5
50	2”	1,1	1,3	0,3	1,5	2,5
65	2,5”	1,3	1,5	0,3	1,5	2,5
	3”	1,3	1,5	0,3	1,5	2,5
80		2,3	2,6	0,45	3,0	4,0
100	4”	2,3	2,6	0,45	3,0	4,0
125		6,4	7,0	1,1	5,0	6,0
150		6,4	7,0	1,1	8,0	9,0

9. Technical Data

9.5. Valve stroke / Opening cross section

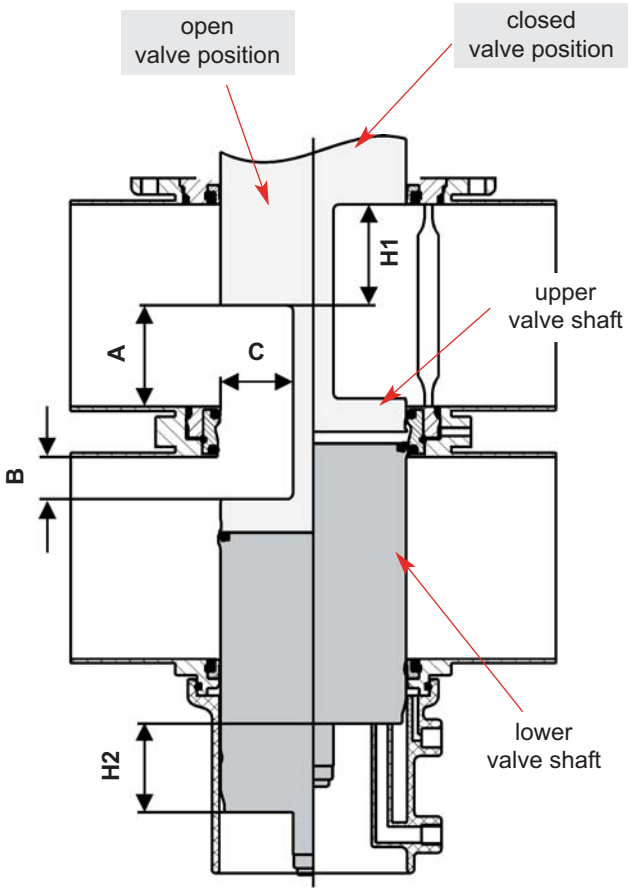


Table to fig. 9.5.
Dimensions in mm

DN	A	B	C	stroke **H1** upper shaft	stroke **H2** lower shaft
40	6	3	21,2	32	26
50	11	10	21,2	39	33
65	21	16	21,2	45	39
80	31	21	36,2	50	44
100	50	21	36,2	50	44
125	63	33	55,2	62	56
150	88	33	55,2	62	56
Inch					
1,5”	6	3	21,2	32	26
2”	11	10	21,2	39	33
2,5”	15	16	21,2	45	39
3”	27	16	21,2	45	39
4”	50	21	36,2	50	44

10. Maintenance

Scan for DA3+ Valve Maintenance Video

The maintenance intervals are different depending on the application and must be determined by the operator himself carrying out **temporary checks**.

- For the dismantling of the valve, compressed air is not required.

- Required tools:
- 1 x wrench SW13
- 2 x wrench SW17
- 2 x wrench SW24
- disassembly and assembly tool for the lower shaft seal, **ref.-No. 000 51-13-100/17; H171889**

- For the valve maintenance we supply complete seal kits (see spare parts lists).

- Replacement of seals, see Service Instructions.

- To simplify the installation of the middle seal, the following assembly tools are available.

Assembly tool for middle seal (see page 21)

DN	Inch	Designation	Reference number
40 50 65	1,5” 2” 2,5” 3”	DA3 - 62	51 - 13 - 210/17 H207310
80 100	4”	DA3 - 92	51 - 13 - 211/17 H207311
125* 150*		D3 - 138	51 - 13 - 676/17 H151824

Provide all seals with a thin layer of grease before their installation (see lubrication chart)!

Recommendation:
APV assembly grease for EPDM, HNBR and FPM (Viton)
(0,75 kg/ tin - ref.-No. 000 70-01-019/93; H147382)
(60 g/ tube - ref.-No. 000 70-01-018/93; H147381)

APV assembly grease for VMQ (Silikon)
(0,60kg/ tin - ref.-No. 000 70-01-017/93; H147380)
(60 g/ tube - ref.-No. 000 70-01-016/93; H147379)

Recommendation for actuator:
APV pneumatic grease:
(25 ml-tube - ref.-No. 000 70-01-008/93; H164725)

- Assembly of valve according to Service Instructions.

11. Service Instructions

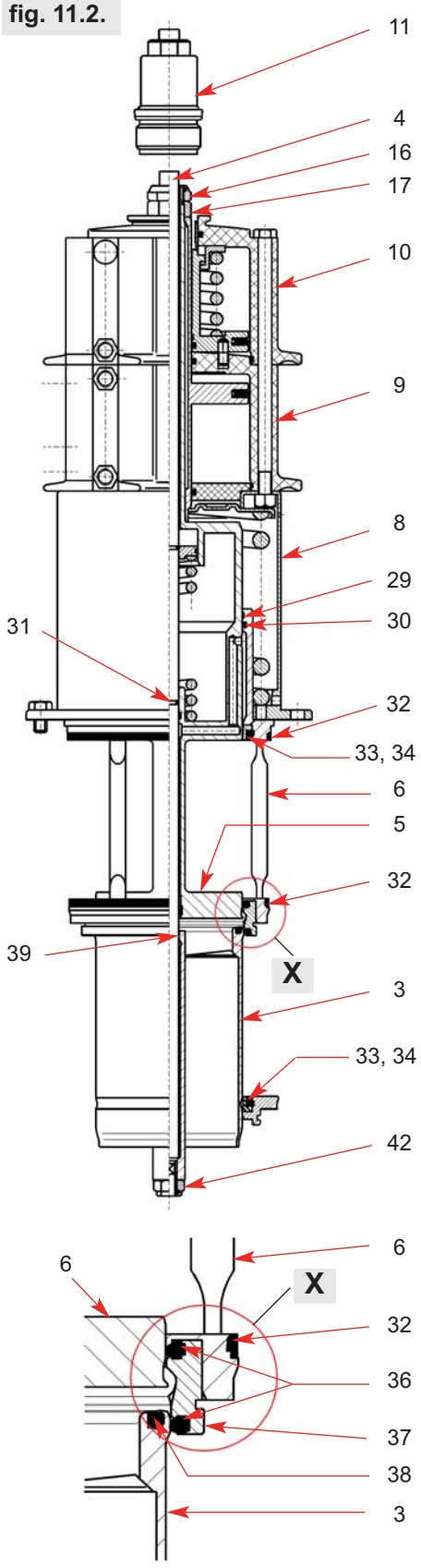
The item numbers refer to the spare parts drawings
DIN design: **RN 01.053.73**
Inch design: **RN 01.053.73-1**

11.1. Dismantling from the line system

1. Shut off the line pressure in the product and cleaning lines, discharge the pipes if possible.
2. Remove the pneumatic air line.
3. Release the nut of the proximity switch holder **(13)** and pull off the proximity switch (remove CU if necessary).
4. Remove the flange screws **(7)** at the spring cylinder **(8)**.
5. Screw in one flange screw into the threaded bore of the spring cylinder to lift the complete valve insert. Do **not** remove the screw which will help to re-install the valve insert.
6. Carefully lift the valve insert vertically out of the valve housing.

11. Service Instructions

fig. 11.2.

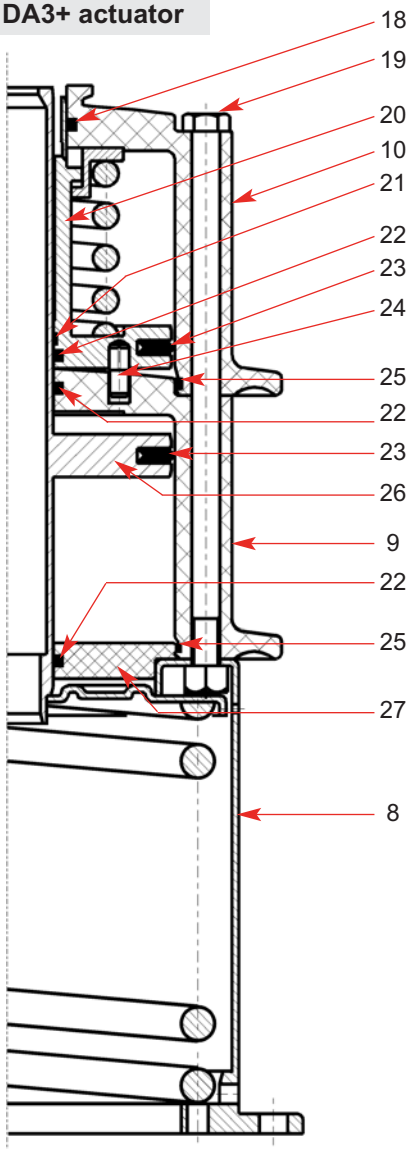


11.2. Dismantling of product-wetted parts (service, fig. 11.2.)

1. Remove the lower and upper housing seal **(32)** from the valve seat **(6)**.
2. Release the lower safety nut **(42)**. Holding the lower shaft **(3)** with a wrench SW17 prevents it from turning.
3. After removal of the nut, draw off the lower shaft.
4. Take a pointed tool to stick into the middle seal **(38)** and to pull it out of the groove. Take the o-ring **(39)** out of the groove.
5. Unscrew the stop screw **(11)**.
6. Lift the guide rod **(4)** out to the top and remove the o-ring **(31)**.
7. Remove the safety nut **(16)**. By holding the safety disc **(17)** with a wrench SW24 it is prevented from turning. Remove the safety disc.
8. Lift off the spring cylinder **(8)** with main cylinder **(9)** and seat lift cylinder **(10)**. (Service of main and seat lift cylinder, see 11.3).
9. Press the upper valve shaft **(5)** with seat ring **(37)** to the bottom out of the valve seat **(6)**.
10. Slide the seat ring **(37)** over the compensating piston of the upper valve shaft.
11. Remove the seat seals **(36)** from the groove. (see fig. **X**)
12. **Dismantling of upper shaft seal (33, 34)**
    Take a peaked object to stick into the seat seal **(33)** and pull it out of the valve seat. Afterwards, remove the PTFE seal **(34)**.
13. **Dismantling of lower shaft seal (33, 34) from the housing**
    Take the metal point of the disassembly tool to stick into the seat seal **(33)** and pull it off to the top.
    Afterwards, remove the PTFE seal **(34)** to the top through the housing by means of the mandril of the assembly tool.
14. Remove the seal ring **(30)** and guide band **(29)** from the groove of the valve seat **(6)**.

11. Service Instructions

DA3+ actuator



The spring cylinder **(8)** is preloaded by spring force.
Opening of the spring cylinders is strictly forbidden.
Danger to life!

11.3. Actuator / Cylinder (service)

1. The actuator (seat lift cylinder **(10)**, main cylinder **(9)** and spring cylinder **(8)** must be dismantled from the valve insert as described in **11.2 1.-8.**

2. Remove the hexagon screws **(19)**.
   Lift the seat lift cylinder with the main cylinder from the spring cylinder.

11.3.1. Dismantling of seals and disassembly of the seat lift and main cylinder

1. Lift the seat lift cylinder **(10)** from the main cylinder **(9)**.
   Push the piston rod **(20)** out of the seat lift cylinder.

2. Remove the piston seal **(23)**, quadrings **(18, 22)**, guide band **(21)** and o-ring **(25)**.

3. Clean the seat lift cylinder and the piston rod.

4. Press the piston of the main cylinder **(26)** with cover **(27)** out of the main cylinder. Slide the cover from the piston.

5. Remove the quadrings **(22)**, o-ring **(25)** and piston seal **(23).**

6. Clean the main cylinder, cover and piston.

11.3.2. Installation of seals and assembly of the seat lift and main cylinder

1. Slightly grease all seals.
   Attention: See to all seals and bearing surfaces in the seat lift cylinder and main cylinder being greased sufficiently!
   (see lubrication chart: RN 260.064-1)
   Use appropriate pneumatic grease.
   Recommendation for the actuator (main cylinder):
   APV pneumatic grease: (25 ml tube - ref.-No. 000-70-01-008/93; H164725)

2. Insert the seals into their corresponding grooves.

3. Insert the piston rod **(20)** in the seat lift actuator.

4. Slide the piston of the main cylinder **(26)** into the main cylinder until it stops.

5 Slide the cover **(27)** over the piston **(26)**. Press the cover into the main cylinder.

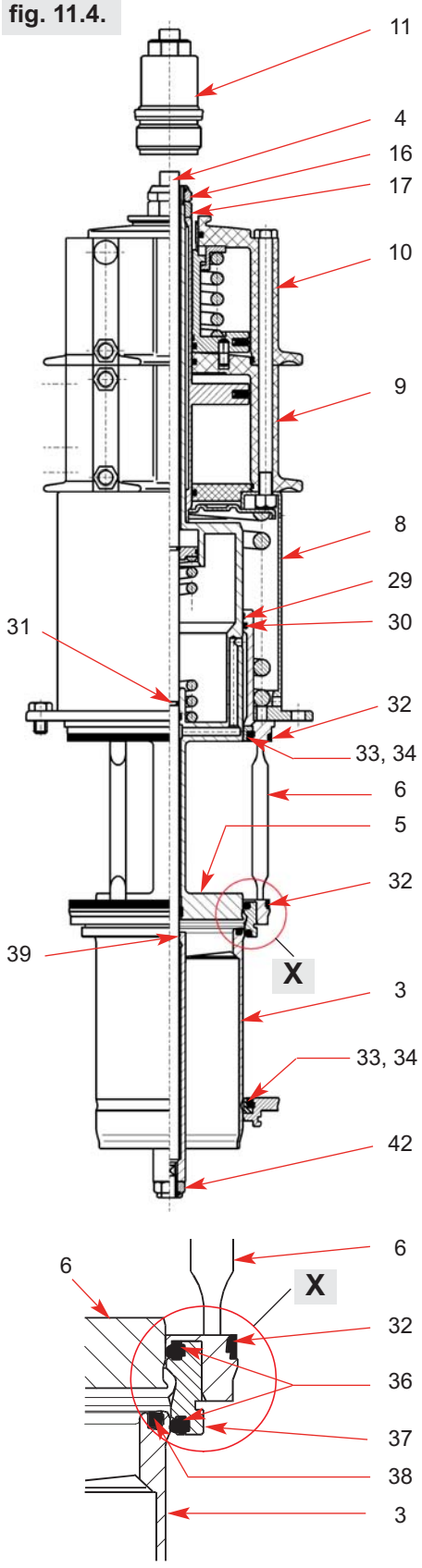
6. Place the seat lift cylinder on the main cylinder:
   The cylindrical dowel pin **(24)** must engage in the bore of the housing of the main cylinder.

7. Place the main cylinder with the seat lift cylinder on the spring cylinder **(8)**.

8. Insert the hexagon screws **(19)** and tighten them crosswise.

11. Service Instructions

fig. 11.4.



11.4. Installation of product-wetted seals and assembly of the valve DELTA DA3+

Attention: See to all seals and bearing surfaces in the product area being slightly greased before their installation (see **lubrication chart: RN 260.064-1**).

1. Install the lower shaft seal **(33, 34)** in the lower housing flange (see **page 19**).
2. Place the quadring **(30)** and the guide band **(29)** in the valve seat **(6)**.
3. Install the upper shaft seal **(33, 34)** in the valve seat. Insert the PTFE ring **(34)**, at first. Then press the elastomer ring **(33)**, the wide side to the front, into the groove between PTFE seal and valve seat.
4. Install the upper and lower housing seals **(32)**.
5. Press the upper and lower seat seal **(36)** into the seat ring **(37)**.

Attention: **The seal shoulder must fit properly into the groove (see fig. X).**

6. Slide the seat ring **(37)** from the top over the compensating piston of the upper valve shaft **(5)**.
7. Slide the valve seat **(6)** over the compensating piston of the upper valve shaft **(5)** in the same way.
8. Insert the upper valve shaft **(5)** with seat ring **(37)** and valve seat **(6)** through the actuator until it stops.
9. Fasten the valve shaft with safety disc **(17)** and safety nut **(16)**. Holding the safety disc with a wrench SW24 prevents the safety nut from turning.
   Tightenting torque: Md = 40 Nm
10. Insert the middle seal **(38)** into the lower shaft **(3)** by means of the assembly tool (see **page 21**).

    Assembly without assembly tool:
    Press the slightly greased seal at four spots into the groove. Then press the four loops in by means of an even object. Vent the seal groove at this occasion.
11. Insert the o-ring **(39)** in the lower valve shaft.
12. Install the o-ring **(31)** on the guide rod **(4)**.
13. Slide in the guide rod from the top through the actuator until it stops.
14. Slide the lower valve shaft on the guide rod and fasten it with the safety nut **(42)**.

    Tightening torque: Md = 40 Nm
    Attention: **Check the position of the lower seat seal (36) (section X).**
15. Screw in the stop screw **(11)** until it stops.
    Tightening torque: Md = 15 Nm

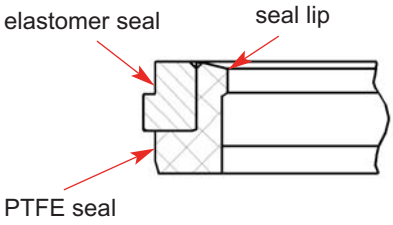
11. Service Instructions

11.5. Installation of the valve insert

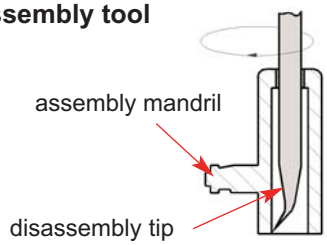
1. Carefully place the valve insert in the valve housing until the screw stops **(see 11.1.5.)**.
2. Remove the stop screw and carefully press the valve insert into the housing.
3. Enter screws **(7)** and tighten them crosswise.
4. Install the pneumatic air and cleaning lines.
   upper air connection A1 : lifting of lower shaft
   medium air connection B : valve open
   lower air connection A2 : lifting of upper shaft
5. Installation of valve position indication.
   Release nut and push the proximitiy switches into the sleeve until they stop.
6. Fix the proximity switches by the nut.
   (Install CU if necessary.)
7. The spray connection **(1)** can be disassembled from the housing **(2)** by levering it by means of a wide screw driver.

12. Disassembly and Assembly Tool

Seal 33, 34



Assembly tool



12.1. Assembly of lower shaft seal, pos. 33, 34

For a simple disassembly and assembly of the lower shaft seal a universal tool **(ref.-No. 000 51-13-100/17; H171889)** can be used.
The use of this tool is especially recommended for valves of the small series (DN 40-65, 1,5”-3”), as access to the lower shaft seal from the top is impossible as a result of the narrow seat.

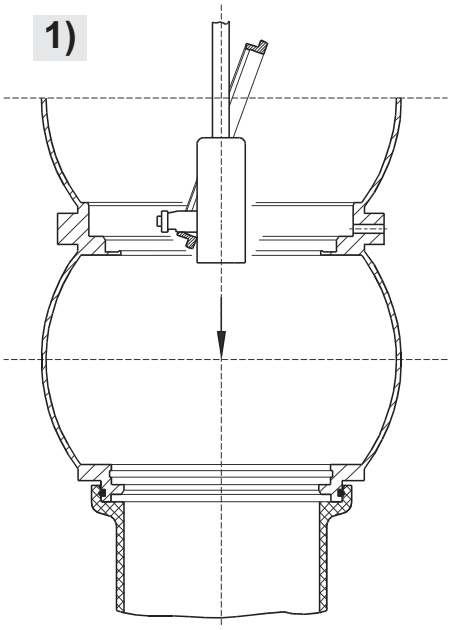
Attention:
Do not damage the seal lip of the PTFE seal during assembly.
To avoid injuries the disassembly tip must be covered by the assembly mandril if not used.

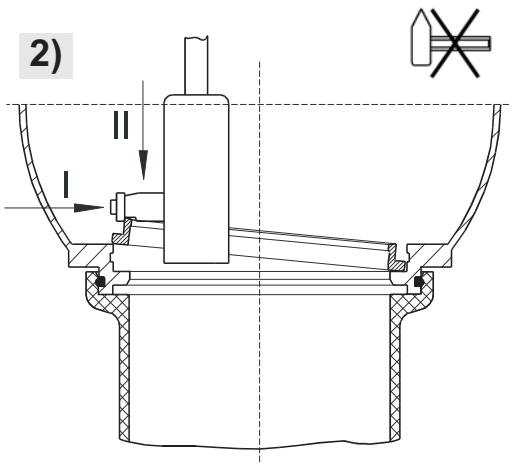
12.1.1. Assembly of the PTFE seal (fig. 1,2)

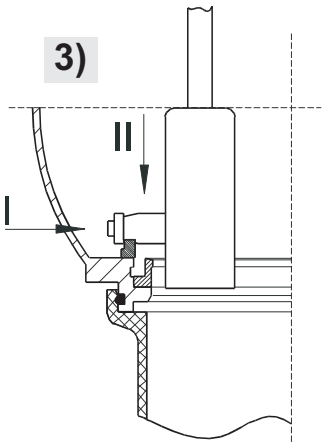
1. Press the PTFE ring into an oval shape.
2. Introduce the PTFE ring from the top by means of the assembly tool, the wide side to the front, through the intermediate ring of the housing into the lower housing **(fig. 1)**.
3. Pull the PTFE ring into a round shape by means of the assembly mandril **(fig. 2/I)** and press it into the groove - **do not knock or beat (fig. 2/II).**

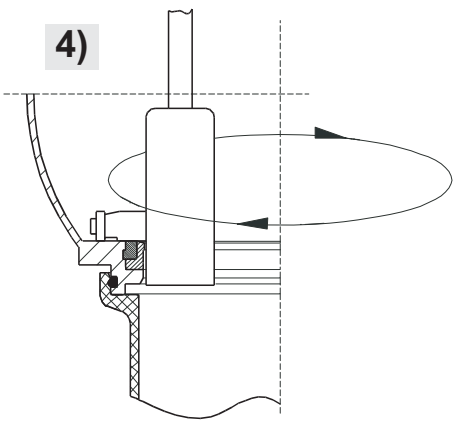
12.1.2. Assembly of the elastomer seal (fig. 1,3,4)

1. Slightly grease the seal.
2. Insert the elastomer from the top by means of the assembly tool, the wide side to the front, through the intermediate ring of the housing into the lower housing **(fig. 1)**.
3. Fix the seal by means of the groove of the assembly mandril **(fig. 3/I)**.
4. Press in the elastomer at one spot between the housing flange and the PTFE **(fig. 3/II)**.
5. By sliding the assembly mandril around the seal, the seal is inserted completely into the groove **(fig. 4)**. See to an even fit of the elastomer seal in the groove.



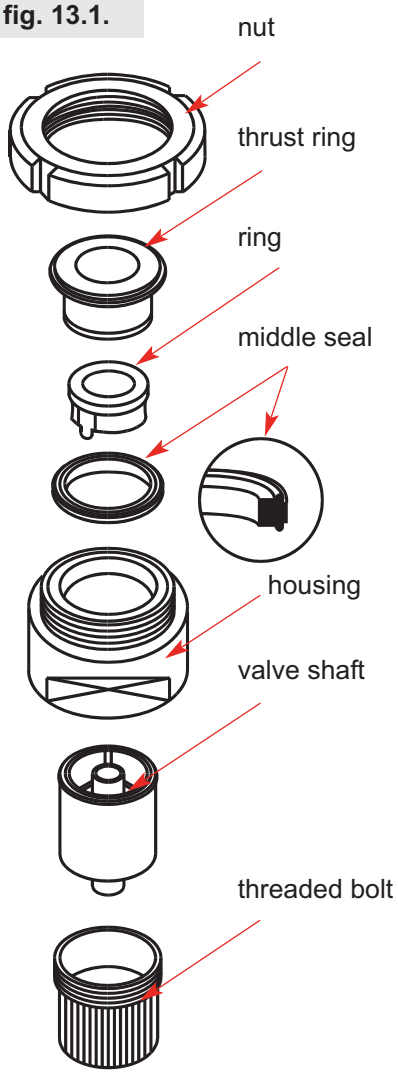






13. Assembly Tool for Middle Seal

fig. 13.1.



The assembly tool consists of:

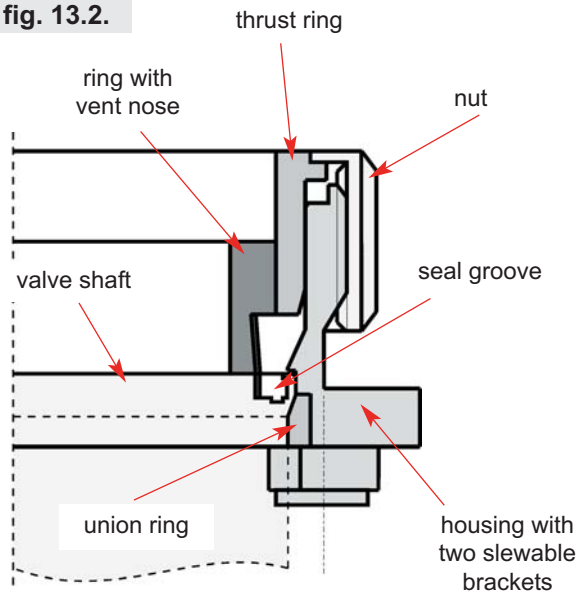
- nut
- thrust ring
- ring with vent nose
- housing
- threaded bolt

Installation of the middle seal in the valve shaft (fig. 13.1)

1. Insert the valve shaft into the housing in such a way that the seal groove is in the housing.
2. Clamp the shaft into the housing by means of the threaded bolt. Clamp the housing into a vice.
3. Slightly grease the middle seal with APV food-grade grease. Then install the seal on the ring.
4. Introduce the ring with the installed seat seal into the housing. The vent nose is positioned in the seal groove.
5. Insert the thrust ring around the ring in the housing. Screw on the nut and tighten it with a hook spanner until it stops.
6. Release the nut. Take ring and thrust ring off the housing.
7. Take housing out of the vice, take off the threaded bolt. Detach the valve shaft from the housing.

Check the even fit of the middle seal.

fig. 13.2.



Assembly tool for middle seal (fig. 13.1.)			
DN	**Inch**	**Designation**	**Reference number**
40 50 65	**1,5” 2” 2,5” 3”**	**DA3 - 62**	**51 - 13 - 210/17 H207310**
80 100	**4”**	**DA3 - 92**	**51 - 13 - 211/17 H207311**
125* 150*		**D3 - 138** (fig. 12.2.)	**51 - 13 - 676/17 H151824**

* **For the valves of the series DN 125, 150 the assembly tool in the old design must be used. See fig. 13.2.**

14. Trouble Shooting

Failure	***Remedy***
Leakage at the upper housing flange	**Replace upper housing seal (32).**
Leakage from the leakage bore between the connecting ports	**Replace lower housing seal (32) and seat seals (36).**
Leakage from the bore of the spring cylinder **(8)**	**Replace upper shaft seal (33, 34) and seals in flushing chamber (29, 30).**
Liquids from the drain pipe	**To be able to make a detailed diagnosis, remove the drain pipe (1).**
Valve closed and pressure in the upper housing	
Leakage at the inner side of the lower valve shaft **(3)**	**Replace upper seat seal (36).**
Leakage at the inner tube of the lower valve shaft **(3)**	**Replace upper shaft seal (33, 34).**
Valve closed and pressure in the lower housing	
Leakage at the inner side of the lower valve shaft **(3)**	**Replace lower seat seal (36).**
Leakage at the outer side of the lower valve shaft **(3)**	**Replace lower shaft seal (33, 34).**
Open valve position	
Leakage at the inner side of the lower valve shaft **(3)**	**Replace middle seal (38).**

! When damaged seals are changed, generally all seals should be replaced. For valve service actions we supply complete seal kits (see spare parts lists).

15. Spare Parts Lists and Lubrication Chart

The reference numbers of the spare parts for the different valve designs and sizes are included in the attached spare parts drawings with corresponding lists.

Please indicate the following data to place an order for spare parts:

- number of required parts
- reference number
- designation.

Data are subject to change

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 DN40 - 150 ; 1.5 "- 4"
Double seat valve DA3 DN40 - 150 ; 1.5" - 4"

Datum:	17.01.13	08.05.13	04.03.14	18.09.14
Name:	Trytko	Trytko	Trytko	Trytko
Geprüft:				

Datum:	21.09.16			
Name:	C.Keil			
Geprüft:				

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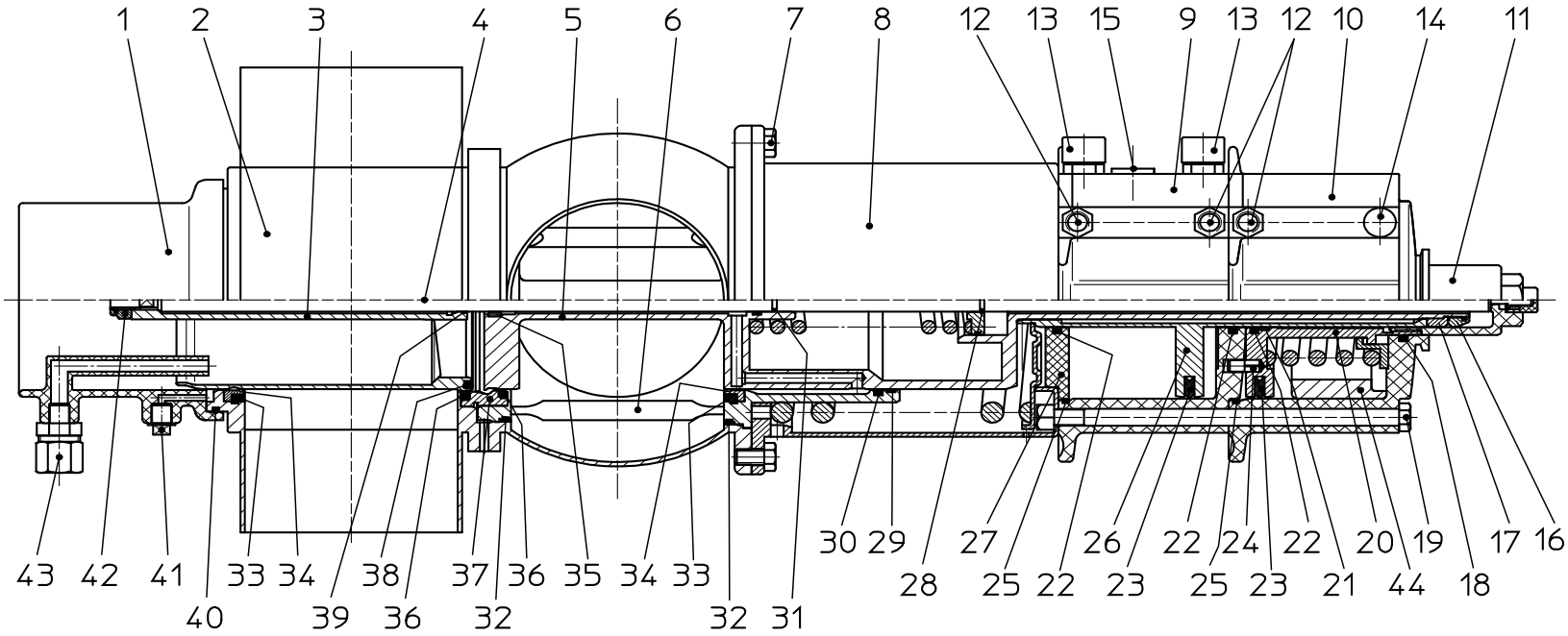

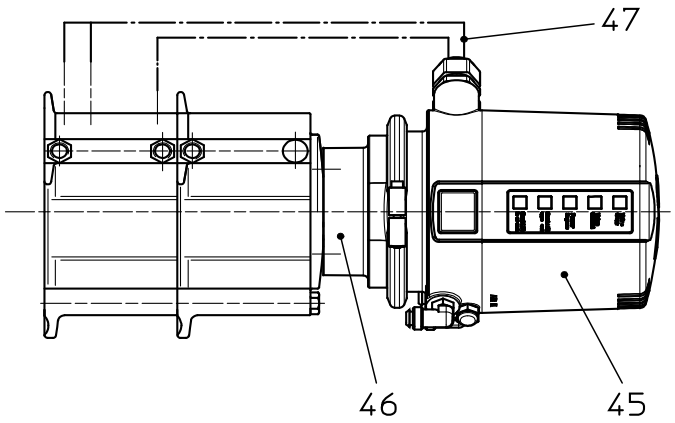

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 DN40 - 150 ; 1.5 "- 4"
Double seat valve DA3 DN40 - 150 ; 1.5" - 4"

Datum:	17.01.13	08.05.13	04.03.14	18.09.14
Name:	Trytko	Trytko	Trytko	Trytko
Geprüft:				

Datum:				
Name:				
Geprüft:				

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RN 01.053.73

pos. item	Menge quantity	Beschreibung description	Material material	DN40 WS-Nr. ref.-no.	1,5" WS-Nr. ref.-no.	DN50 WS-Nr. ref.-no.	2" WS-Nr. ref.-no.	DN65 WS-Nr. ref.-no.	2,5" WS-Nr. ref.-no.
1	1	Spritz Anschluss CIP connection	PP GF30 HOSTAC	09-40-114/93 H168321					
2	1	Gehäuse DA31 1+2S Housing	1.4404	16-61-382/47 H176634	16-61-407/47 H176629	16-61-432/47 H176635	16-61-457/47 H176630	16-61-482/47 H176636	16-61-507/47 H176631
	1	Gehäuse DA32 1+2+3S Housing	1.4404	16-62-382/47 H176645	16-62-407/47 H176640	16-62-432/47 H176646	16-62-457/47 H176641	16-62-482/47 H176647	16-62-507/47 H176642
	1	Gehäuse DA33 1+2+3S Housing	1.4404	16-63-382/47 H176655	16-63-407/47 H176650	16-63-432/47 H176656	16-63-457/47 H176651	16-63-482/47 H176657	16-63-507/47 H176652
	1	Gehäuse DA34 1+2+3+4S Housing	1.4404	16-64-382/47 H176320	16-64-407/47 H176325	16-64-432/47 H176321	16-64-457/47 H176326	16-64-482/47 H176322	16-64-507/47 H176327
3	1	Schaft unten Lower valve shaft	1.4404	16-22-393/42 H176351		16-22-443/42 H176356		16-22-493/42 H176368	16-22-518/42 H176363
4	1	Zugstange Guide rod	1.4404	16-24-392/42 H176393		16-24-442/42 H176394		16-24-492/42 H176396	16-24-517/42 H176395
5	1	Schaft oben Upper valve shaft	1.4404	16-22-210/42 H149299		16-22-211/42 H149300		16-22-213/42 H149302	16-22-212/42 H149301
6	1	Ventilsitz mit Spülkammer Valve seat with flushing chamber	1.4404	16-37-394/43 H176344		16-37-444/43 H176345		16-37-494/43 H176347	16-37-519/43 H176346
7	4	Skt. Schraube DIN EN 24017- Hex. Screw M8x14-A2-70	1.4301	65-01-079/15 H78768					
8	1	Federzylinder Spring actuator	1.4301	16-30-500/17 H323172					
9	1	Hauptzylinder Main actuator	Vestamid	15-31-239/93 H151072					
10	1	Anlüftzylinder Seat lifting device	Vestamid	16-30-225/93 H151130					
11	1	Anschlagschraube Stop sleeve	Vestamid	16-28-260/93 H176400					
12	3	W-Verschraubung G1/8" 6x1 Angular union	1.4301	08-60-750/93 H208825					
13	2	Initiatorhalterung Mounting block	PA6.6 schwarz	15-33-918/93 H154913					

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 DN40 - 150 ; 1.5 "- 4"
Double seat valve DA3 DN40 - 150 ; 1.5" - 4"

Datum:	17.01.13	08.05.13	04.03.14	18.09.14
Name:	Trytko	Trytko	Trytko	Trytko
Geprüft:				

Datum:				
Name:				
Geprüft:				

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pos. item	Menge quantity	Beschreibung description	Material material	DN40 WS-Nr. ref.-no.	1,5" WS-Nr. ref.-no.	DN50 WS-Nr. ref.-no.	2" WS-Nr. ref.-no.	DN65 WS-Nr. ref.-no.	2,5" WS-Nr. ref.-no.
14	1	Entlüftungsstopfen Venting plug G1/8"	PE-Hard/Yellow	08-60-005/93 H16218					
15	1	Verschlußkappe Cap ø11,1x5	PVC	08-05-066/93 H154816					
16	1	Sicherungsmutter Stop nut	1.4301	65-50-137/15 H147640					
17	1	Sicherungsscheibe Lock washer	1.4301	67-03-001/15 H147639					
18	1	Quadring Q4221-N7004 Quadring 36x3,53	NBR	58-01-237/83 H148386					
19	4	Skt. Schraube Hex. Screw DIN EN 24017-A2-70	1.4301	65-01-114/15 M8x156 H152060					
20	1	Kolbenstange Anlüftzylinder kpl. Piston shaft for seat lifting device cpl.	1.4301	16-29-065/17 H149396					
21	1	Führungsband PTFE driving band	Turcite 51	08-39-187/93 H147972					
22	3	Quadring Q4216-N7004 Quadring 28,1x3,53	NBR	58-01-236/83 H148385					
23	2	Kolbendichtung Piston seal	NBR	58-01-760/83 H76868					
24	1	Zylinderkerbstift Cyl. Pin 6x 14,8	1.4305	67-15-055/12 H147811					
25	2	O-Ring O-ring	NBR	58-06-372/83 OR 82,22x2,62 H150893					
26	1	Kolben Hauptzylinder Piston for main actuator	1.4301	16-29-070/12 H149389					
27	1	Deckel Hzyl. Cover for main actuator	PA12	16-00-209/93 H149352		16-00-208/93 H149351		16-00-207/93 H149350	
28	1	Sprengring Retainer ring	1.4310	08-39-083/13 H14883					
29	1	Führungsband PTFE driving band		08-39-198/93 H150892					

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 DN40 - 150 ; 1.5 "- 4"
Double seat valve DA3 DN40 - 150 ; 1.5" - 4"

Datum:	17.01.13	08.05.13	04.03.14	18.09.14
Name:	Trytko	Trytko	Trytko	Trytko
Geprüft:				

Datum:				
Name:				
Geprüft:				

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RN 01.053.73

pos. item	Menge quantity	Beschreibung description	Material material	DN40 WS-Nr. ref.-no.	1,5" WS-Nr. ref.-no.	DN50 WS-Nr. ref.-no.	2" WS-Nr. ref.-no.	DN65 WS-Nr. ref.-no.	2,5" WS-Nr. ref.-no.
30	1	Quadring Quadring Q4230-N7502	EPDM	58-01-329/63 H150898					
31	1	O-Ring O-ring OR 9,25x1,78	EPDM FDA-konform	58-06-029/64 H148388					
32	2	Gehäusedichtung Housing seal	EPDM FDA-konform	58-33-542/93 H77543					
	2	Gehäusedichtung Housing seal	FPM FDA-konform	58-33-542/73 H77542					
	2	Gehäusedichtung Housing seal	HNBR FDA-konform	58-33-542/33 H170075					
33	2	Tellerdichtung Seat seal	EPDM FDA-konform	58-33-493/93 H77515					
	2	Tellerdichtung Seat seal	FPM FDA-konform	58-33-493/73 H77514					
	2	Tellerdichtung Seat seal	HNBR FDA-konform	58-33-493/33 H166678					
	2	Tellerdichtung Seat seal	VMQ FDA-konform	58-33-493/13 H77513					
34	2	Schaftdichtung Shaft seal	PTFE	58-33-016/23 H149620					
35	1	Führungsring Quide ring	PTFE 25%Kohle	08-39-080/93 H14880					
36	2	Sitzdichtung Seat seal	EPDM FDA-konform	58-33-044/93 H149618					
	2	Sitzdichtung Seat seal	FPM FDA-konform	58-33-044/73 H153316					
	2	Sitzdichtung Seat seal	HNBR FDA-konform	58-33-044/33 H168900					
	2	Sitzdichtung Seat seal	VMQ FDA-konform	58-33-044/13 H153317					
37	1	Sitzring Seat ring	1.4404	16-00-190/42 H149397					

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 DN40 - 150 ; 1.5 "- 4"
Double seat valve DA3 DN40 - 150 ; 1.5" - 4"

Datum:	17.01.13	08.05.13	04.03.14	18.09.14
Name:	Trytko	Trytko	Trytko	Trytko
Geprüft:				

Datum:				
Name:				
Geprüft:				

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RN 01.053.73

pos. item	Menge quantity	Beschreibung description	Material material	DN40 WS-Nr. ref.-no.	1,5" WS-Nr. ref.-no.	DN50 WS-Nr. ref.-no.	2" WS-Nr. ref.-no.	DN65 WS-Nr. ref.-no.	2,5" WS-Nr. ref.-no.
38	1	Mitteldichtung Seal	EPDM FDA-konform	58-33-047/93 H149617					
	1	Mitteldichtung Seal	FPM FDA-konform	58-33-047/73 H153324					
	1	Mitteldichtung Seal	HNBR FDA-konform	58-33-047/33 H168903					
	1	Mitteldichtung Seal	VMQ FDA-konform	58-33-047/13 H153325					
39	1	O-Ring O-ring OR 12x1	EPDM	58-06-040/63 H169477					
40	1	O-Ring O-ring	EPDM FDA-konform	58-06-295/63 69 x3 H77039					
41	1	Verschluß-Stopfen Locking plug G 1/8"	Kunst. schwarz	08-74-014/93 H16507					
42	1	Sechskant Mutter m. Klemmteil Hexagon nut with clamp part M10x1	1.4301	65-50-087/15 H118903					
43	1	G-Verschraubung Straight union	PVDF-schwarz	08-63-003/13 H16388					
44	1	Anschlagring nur bei DN125+150 Stop ring only for DN125+150	POM						
45	1	CU43-M-DC CU43-M-DC	PA 6.6 GF30 schwarz	08-45-105/93 H320465					
	1	CU43-M-AS-I-extended CU43-M-AS-I-extended	PA 6.6 GF30 schwarz	08-45-115/93 H320472					
	1	CU43-M-AS-I-standard CU43-M-AS-I-standard	PA 6.6 GF30 schwarz	08-45-255/93 H324678					
46	1	CU4-M-Adapter komplett CU4-M-adapter complete	PA 6.6 GF30 schwarz	08-48-602/93 H320476					
47	1	Luftschlauch 6 x 1 Air Hose (øAxl 6x4)	PA 12 "W	08-75-020/53 H16516					

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 DN40 - 150 ; 1.5 "- 4"
Double seat valve DA3 DN40 - 150 ; 1.5" - 4"

Datum:	17.01.13	08.05.13	04.03.14	18.09.14
Name:	Trytko	Trytko	Trytko	Trytko
Geprüft:				

Datum:	21.09.16			
Name:	C.Keil			
Geprüft:				

SPX FLOW
Germany

RN 01.053.73

pos. item	Menge quantity	Beschreibung description	Material material	DN40 WS-Nr. ref.-no.	1,5" WS-Nr. ref.-no.	DN50 WS-Nr. ref.-no.	2" WS-Nr. ref.-no.	DN65 WS-Nr. ref.-no.	2,5" WS-Nr. ref.-no.
	1	Ventileinsatz Valve insert	EPDM	16-36-394/59 H176402		16-36-444/59 H176403		16-36-494/59 H176405	16-36-519/59 H176404
	1	Ventileinsatz Valve insert	FPM	16-36-394/69 H201818		16-36-444/69 H200979		16-36-494/69 H207260	16-36-519/69 H200978
	1	Ventileinsatz Valve insert	HNBR	16-36-394/29 H201779		16-36-444/29 H202157		16-36-494/29 H204846	16-36-519/29 H200295
	1	Ventileinsatz Valve insert	VMQ	16-36-394/61 H207519		16-36-444/61 H179716		16-36-494/61 H321273	16-36-519/61 H179603
		Pos. 29, 30, 31, 32, 33, 34, 36, 38, 39 nur im kompletten Dichtungssatz erhältlich **Item 29, 30, 31, 32, 33, 34, 36, 38, 39 available as complete seal kits only**						
	1	Dichtungssatz Seal kit	FPM	58-34-686/00 H202536					
	1	Dichtungssatz Seal kit	EPDM	58-34-686/01 H179206					
	1	Dichtungssatz Seal kit	VMQ	58-34-686/02 H201989					
	1	Dichtungssatz Seal kit	HNBR	58-34-686/06 H179208					

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 DN40 - 150 ; 1.5 "- 4"
Double seat valve DA3 DN40 - 150 ; 1.5" - 4"

Datum:	17.01.13	08.05.13	04.03.14	18.09.14
Name:	Trytko	Trytko	Trytko	Trytko
Geprüft:				

Datum:	21.09.16			
Name:	C.Keil			
Geprüft:				

APV
SPX FLOW
Germany

RN 01.053.73

pos. item	Menge quantity	Beschreibung description	Material material	3" WS-Nr. ref.-no.	DN80 WS-Nr. ref.-no.	DN100 WS-Nr. ref.-no.	4" WS-Nr. ref.-no.	DN125 WS-Nr. ref.-no.	DN150 WS-Nr. ref.-no.
1	1	Spritz Anschluss CIP connection	PP GF30 HOSTAC	09-40-114/93 H168321	09-40-115/93 H168322			09-40-118/93 H200320	
2	1	Gehäuse DA31 1+2S Housing	1.4404	16-61-557/47 H176632	16-61-532/47 H176637	16-61-632/47 H176638	16-61-657/47 H176633	16-61-682/47 H200718	16-61-732/47 H200719
	1	Gehäuse DA32 1+2+3S Housing	1.4404	16-62-557/47 H176643	16-62-532/47 H176648	16-62-632/47 H176649	16-62-657/47 H176644	16-62-682/47 H200785	16-62-732/47 H200780
	1	Gehäuse DA33 1+2+3S Housing	1.4404	16-63-557/47 H176653	16-63-532/47 H176658	16-63-632/47 H176659	16-63-657/47 H176654	16-63-682/47 H200778	16-63-732/47 H200781
	1	Gehäuse DA34 1+2+3+4S Housing	1.4404	16-64-557/47 H176328	16-64-532/47 H176323	16-64-632/47 H176324	16-64-657/47 H176329	16-64-682/47 H200779	16-64-732/47 H200782
3	1	Schaft unten Lower valve shaft	1.4404	16-22-568/42 H176374	16-22-543/42 H176379	16-22-668/42 H176381		16-22-965/42 H200422	16-22-966/42 H200423
4	1	Zugstange Guide rod	1.4404	16-24-567/42 H176397	16-24-542/42 H176398	16-24-642/42 H176399		16-24-692/42 H200438	16-24-742/42 H200437
5	1	Schaft oben Upper valve shaft	1.4404	16-22-214/42 H149303	16-22-215/42 H149304	16-22-216/42 H147572		16-22-217/42 H150161	16-22-218/42 H150162
6	1	Ventilsitz mit Spülkammer Valve seat with flushing chamber	1.4404	16-37-569/43 H176348	16-37-544/43 H176349	16-37-644/43 H176350		16-37-080/43 H200441	16-37-081/43 H200439
7	4	Skt. Schraube DIN EN24017-A2-70 Hex. Screw	1.4301	65-01-079/15 M8x14 H78768				65-01-130/15 M10x16 H78806	
8	1	Federzylinder Spring actuator	1.4301	16-30-500/17 H323172	16-30-501/17 H323201			16-30-108/17 H150229	
9	1	Hauptzylinder Main actuator	Vestamid	15-31-239/93 H151072	15-31-240/93 H147795			15-31-241/93 H150526	
10	1	Anlüftzylinder Seat lifting device	Vestamid	16-30-225/93 H151130	16-30-226/93 H147794			16-30-227/93 H150525	
11	1	Anschlagschraube Stop sleeve	Vestamid 1.4057	16-28-260/93 H176400				16-28-262/32 H200728	
12	3	W-Verschraubung G1/8" 6x1 Angular union	1.4301	08-60-750/93 H208825					
13	2	Initiatorhalterung Mounting block	PA6.6 schwarz	15-33-918/93 H154913					

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 DN40 - 150 ; 1.5 "- 4"
Double seat valve DA3 DN40 - 150 ; 1.5" - 4"

Datum:	17.01.13	08.05.13	04.03.14	18.09.14
Name:	Trytko	Trytko	Trytko	Trytko
Geprüft:				

Datum:	21.09.16			
Name:	C.Keil			
Geprüft:				

SPX FLOW
Germany

RN 01.053.73

pos. item	Menge quantity	Beschreibung description	Material material	3" WS-Nr. ref.-no.	DN80 WS-Nr. ref.-no.	DN100 WS-Nr. ref.-no.	4" WS-Nr. ref.-no.	DN125 WS-Nr. ref.-no.	DN150 WS-Nr. ref.-no.
14	1	Entlüftungsstopfen G1/8" Venting plug	PE-Hard/Yellow	08-60-005/93 H16218					
15	1	Verschlußkappe ø11,1x5 Cap	PVC	08-05-066/93 H154816					
16	1	Sicherungsmutter Stop nut	1.4301	65-50-137/15 H147640					
17	1	Sicherungsscheibe Lock washer	1.4301	67-03-001/15 H147639					
18	1	Quadring Q4221-N7004 Quadring 36x3,53	NBR	58-01-237/83 H148386					
19	4	Skt. Schraube DIN EN 24017-A2-70 Hex. Screw	1.4301	65-01-114/15 M8x156 H152060	65-01-115/15 M8x168 H313215			65-01-157/15 M10x204 H152018	
20	1	Kolbenstange Anlüftzylinder kpl. Piston shaft for seat lifting device cpl.	1.4301	16-29-065/17 H149396	16-29-066/17 H149654			16-29-067/17 H150503	
21	1	Führungsband PTFE driving band	Turcite 51	08-39-187/93 H147972					
22	3	Quadring Q4216-N7004 Quadring 28,1x3,53	NBR	58-01-236/83 H148385					
23	2	Kolbendichtung Piston seal	NBR	58-01-760/83 H76868	58-01-761/83 H76869			58-01-763/83 H76871	
24	1	Zylinderkerbstift 6x 14,8 Cyl. Pin	1.4305	67-15-055/12 H147811					
25	2	O-Ring O-ring	NBR	58-06-372/83 82,22x2,62 H150893	58-06-493/83 101,27x2,62 H148389			58-06-696/83 154x3 H174262	
26	1	Kolben Hauptzylinder Piston for main actuator	1.4301	16-29-070/12 H149389	16-29-071/12 H147594			16-29-072/12 H150291	
27	1	Deckel Hauptzylinder Cover for main actuator	PA12	16-00-207/93 H149350	16-00-210/93 H147750			16-00-211/93 H150918	
28	1	Sprengring Retainer ring	1.4310	08-39-083/13 H14883					
29	1	Führungsband PTFE driving band	Turcite	08-39-198/93 H150892	08-39-188/93 H147973			08-39-185/93 H152006	

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 DN40 - 150 ; 1.5 "- 4"
Double seat valve DA3 DN40 - 150 ; 1.5" - 4"

Datum:	17.01.13	08.05.13	04.03.14	18.09.14
Name:	Trytko	Trytko	Trytko	Trytko
Geprüft:				

Datum:	21.09.16			
Name:	C.Keil			
Geprüft:				

APV
SPX FLOW
Germany

RN 01.053.73

pos. item	Menge quantity	Beschreibung description	Material material	3" WS-Nr. ref.-no.	DN80 WS-Nr. ref.-no.	DN100 WS-Nr. ref.-no.	4" WS-Nr. ref.-no.	DN125 WS-Nr. ref.-no.	DN150 WS-Nr. ref.-no.
30	1	Quadring Quadring Q4230-N7502	EPDM	58-01-329/63 H150898	58-01-238/63 H148387			58-01-791/63 H152005	
31	1	O-Ring O-ring OR 9,25x1,78	EPDM FDA-konform	58-06-029/64 H148388					
32	2	Gehäusedichtung Housing seal	EPDM FDA-konform	58-33-542/93 H77543	58-33-642/93 H77583			58-33-742/93 H77625	
	2	Gehäusedichtung Housing seal	FPM FDA-konform	58-33-542/73 H77542	58-33-642/73 H77582			58-33-742/73 H77624	
	2	Gehäusedichtung Housing seal	HNBR FDA-konform	58-33-542/33 H170075	58-33-642/33 H170074			58-33-742/33 H172126	
33	2	Tellerdichtung Seat seal	EPDM FDA-konform	58-33-493/93 H77515	58-33-643/93 H77586			58-33-743/93 H77628	
	2	Tellerdichtung Seat seal	FPM FDA-konform	58-33-493/73 H77514	58-33-643/73 H77585			58-33-743/73 H77627	
	2	Tellerdichtung Seat seal	HNBR FDA-konform	58-33-493/33 H166678	58-33-643/33 H166682			58-33-743/33 H170177	
	2	Tellerdichtung Seat seal	VMQ FDA-konform	58-33-493/13 H77513	58-33-643/13 H77584			58-33-743/13 H77626	
34	2	Schaftdichtung Shaft seal	PTFE	58-33-016/23 H149620	58-33-017/23 H150708			58-33-018/23 H150531	
35	1	Führungsring Quide ring	PTFE 25%Kohle	08-39-080/93 H14880					
36	2	Sitzdichtung Seat seal	EPDM FDA-konform	58-33-044/93 H149618	58-33-045/93 H149619			58-33-046/93 H150529	
	2	Sitzdichtung Seat seal	FPM FDA-konform	58-33-044/73 H153316	58-33-045/73 H153318			58-33-046/73 H153937	
	2	Sitzdichtung Seat seal	HNBR FDA-konform	58-33-044/33 H168900	58-33-045/33 H168901			58-33-046/33 H168902	
	2	Sitzdichtung Seat seal	VMQ FDA-konform	58-33-044/13 H153317	58-33-045/13 H153319			58-33-046/13 H153938	
37	1	Sitzring Seat ring	1.4404	16-00-190/42 H149397	16-00-191/42 H148255			16-00-193/42 H150409	

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 DN40 - 150 ; 1.5 "- 4"
Double seat valve DA3 DN40 - 150 ; 1.5" - 4"

Datum:	17.01.13	08.05.13	04.03.14	18.09.14
Name:	Trytko	Trytko	Trytko	Trytko
Geprüft:				

Datum:	21.09.16			
Name:	C.Keil			
Geprüft:				

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RN 01.053.73

pos. item	Menge quantity	Beschreibung description	Material material	3" WS-Nr. ref.-no.	DN80 WS-Nr. ref.-no.	DN100 WS-Nr. ref.-no.	4" WS-Nr. ref.-no.	DN125 WS-Nr. ref.-no.	DN150 WS-Nr. ref.-no.
38	1	Mitteldichtung Seal	EPDM FDA-konform	58-33-047/93 H149617	58-33-048/93 H149621			58-33-049/93 H150530	
	1	Mitteldichtung Seal	FPM FDA-konform	58-33-047/73 H153324	58-33-048/73 H153322			58-33-049/73 H153939	
	1	Mitteldichtung Seal	HNBR FDA-konform	58-33-047/33 H168903	58-33-048/33 H168904			58-33-049/33 H168905	
	1	Mitteldichtung Seal	VMQ FDA-konform	58-33-047/13 H153325	58-33-048/13 H153323			58-33-049/13 H153940	
39	1	O-Ring O-ring OR 12x1	EPDM	58-06-040/63 H169477					
40	1	O-Ring O-ring	EPDM FDA-konform	58-06-295/63 69 x3 H77039	58-06-490/63 100x3 H77061			58-06-655/63 135x3 H77081	
41	1	Verschluß-Stopfen Locking plug	Kunst. schwarz	08-74-014/93 G 1/8" H16507				08-60-007/93 G 1/4" H176010	
42	1	Sechskant Mutter mit Klemmteil Hexagon nut with clamp part M10x1	1.4301	65-50-087/15 H118903					
43	1	G-Verschraubung Straight union	PVDF-schwarz / PA6.6	08-63-003/13 G1/8" H16388				16-38-200/42 10/8-G1/4" H329696	
44	1	Anschlagring nur bei DN125+150 Stop ring only for DN125+150	POM					08-39-001/93 H314101	
45	1	CU43-M-DC CU43-M-DC	PA 6.6 GF30 schwarz	08-45-105/93 H320465					
	1	CU43-M-AS-I-extended CU43-M-AS-I-extended	PA 6.6 GF30 schwarz	08-45-115/93 H320472					
	1	CU43-M-AS-I-standard CU43-M-AS-I-standard	PA 6.6 GF30 schwarz	08-45-255/93 H324678					
46	1	CU4-M-Adapter komplett CU4-M-adapter complete	PA 6.6 GF30 schwarz	08-48-602/93 H320476					
47	1	Luftschlauch 6 x 1 Air Hose (øAxI 6x4)	PA 12 W	08-75-020/53 H16516					

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 DN40 - 150 ; 1.5 "- 4"
Double seat valve DA3 DN40 - 150 ; 1.5" - 4"

Datum:	17.01.13	08.05.13	04.03.14	18.09.14
Name:	Trytko	Trytko	Trytko	Trytko
Geprüft:				

Datum:	21.09.16			
Name:	C.Keil			
Geprüft:				

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SPX FLOW
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Blatt 11 von 11

RN 01.053.73

pos. item	Menge quantity	Beschreibung description	Material material	3" WS-Nr. ref.-no.	DN80 WS-Nr. ref.-no.	DN100 WS-Nr. ref.-no.	4" WS-Nr. ref.-no.	DN125 WS-Nr. ref.-no.	DN150 WS-Nr. ref.-no.
	1	Ventileinsatz Valve insert	EPDM	16-36-569/59 H176406	16-36-544/59 H176407	16-36-644/59 H176408		16-36-694/59 H200959	16-36-744/59 H200961
	1	Ventileinsatz Valve insert	FPM	16-36-569/69 H205659	16-36-544/69 H180818	16-36-644/69 H206984		16-36-694/69	16-36-744/69
	1	Ventileinsatz Valve insert	HNBR	16-36-569/29 H201115	16-36-544/29 H204847	16-36-644/29 H202592		16-36-694/29	16-36-744/29 H331178
	1	Ventileinsatz Valve insert	VMQ	16-36-569/61 H179715	16-36-544/61 H207015	16-36-644/61		16-36-694/61	16-36-744/61
		Pos. 29, 30, 31, 32, 33, 34, 36, 38, 39 nur im kompletten Dichtungssatz erhältlich **Item 29, 30, 31, 32, 33, 34, 36, 38, 39 available as complete seal kits only**						
	1	Dichtungssatz Seal kit	FPM	58-34-686/00 H202536	58-34-689/00 H202535			58-34-692/00	
	1	Dichtungssatz Seal kit	EPDM	58-34-686/01 H179206	58-34-689/01 H179207			58-34-692/01 H201787	
	1	Dichtungssatz Seal kit	VMQ	58-34-686/02 H201989	58-34-689/02 H201990			58-34-692/02 H331164	
	1	Dichtungssatz Seal kit	HNBR	58-34-686/06 H179208	58-34-689/06 H179209			58-34-692/06 H201786	

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 Mitteldichtung Version 2 DN40 - 150, 1,5"-4"
Double seat valve middle seal version 2 DA3 DN40 - 150, 1,5"-4"

Datum:	10.10.16			
Name:	C.Keil			
Geprüft:				

Datum:				
Name:				
Geprüft:				

SPX FLOW
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Blatt 1 von 1

RN 01.053.73

pos. item	Menge quantity	Beschreibung description	Material material	40 WS-Nr. ref.-no.	50 WS-Nr. ref.-no.	65 WS-Nr. ref.-no.	80 WS-Nr. ref.-no.	100 WS-Nr. ref.-no.
3	1	DA3 Schaft Unten Version 2 DA3 lower shaft version 2	1.4404	000 16-24-400/42 H328270	000 16-24-450/42 H328271	000 16-24-500/42 H328272	000 16-24-550/42 H328274	000 16-24-675/42 H328276
5	1	DA3 Schaft oben Version 2 DA3 upper shaft version 2	1.4404	-	-	-	000 16-22-546/42 H333592	000 16-22-646/42 H333619
35	1	Führungsbuchse guide ring	PTFE	-	-	-	000 08-39-080/93 H14880	
38	1	Mitteldichtung Version 2 middle seal version 2	EPDM	000 58-33-998/93 H327602			000 58-33-997/93 H327985	
38	1	Mitteldichtung Version 2 middle seal version 2	HNBR	000 58-33-998/33 H332652			000 58-33-997/33 H332649	
38	1	Mitteldichtung Version 2 middle seal version 2	FPM	000 58-33-998/71 H332653			000 58-33-997/71 H332648	
39	1	O-Ring 12x1 O-ring 12x1	EPDM	000 58-06-040/63 H169477				

pos. item	Menge quantity	Beschreibung description	Material material	1.5" WS-Nr. ref.-no.	2" WS-Nr. ref.-no.	2.5" WS-Nr. ref.-no.	3" WS-Nr. ref.-no.	4" WS-Nr. ref.-no.
3	1	DA3 Schaft Unten Version 2 DA3 lower shaft version 2	1.4404	000 16-24-400/42 H328270	000 16-24-450/42 H328271	000 16-24-525/42 H328273	000 16-24-575/42 H328275	000 16-24-675/42 H328276
5	1	DA3 Schaft oben Version 2 DA3 upper shaft version 2	1.4404	-	-	-	-	000 16-22-646/42 H333619
35	1	Führungsbuchse guide ring	PTFE	-	-	-	-	000 08-39-080/93 H14880
38	1	Mitteldichtung Version 2 middle seal version 2	EPDM	000 58-33-998/93 H327602				000 58-33-997/93 H327985
38	1	Mitteldichtung Version 2 middle seal version 2	HNBR	000 58-33-998/33 H332652				000 58-33-997/93 H327985
38	1	Mitteldichtung Version 2 middle seal version 2	FPM	000 58-33-998/71 H332653				000 58-33-997/71 H332648
39	1	O-Ring 12x1 O-ring 12x1	EPDM	000 58-06-040/63 H169477				

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 1.5 - 6 Sh5
Double seat valve DA3 1,5 - 6 Sh5

Datum:	23.01.13	12.03.15		
Name:	Trytko	Trytko		
Geprüft:				

Datum:				
Name:				
Geprüft:				

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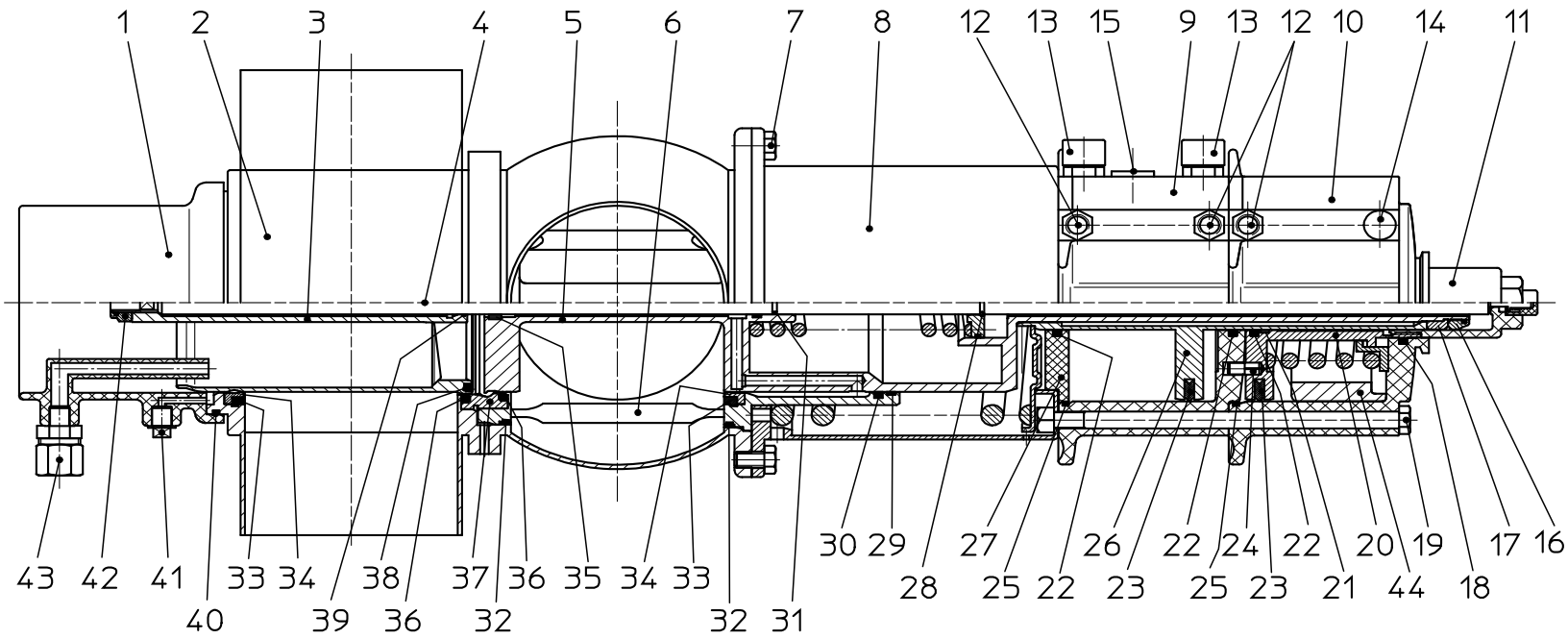
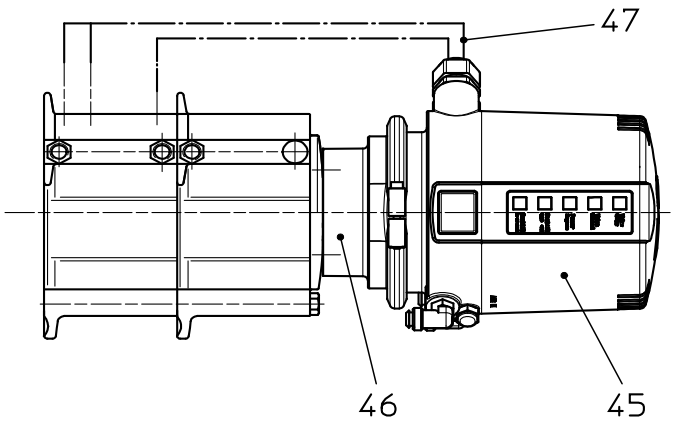
RN 01.053.73-2





Ersatzteilliste: spare parts list

Doppelsitzventil DA3 1.5 - 6 Sh5
Double seat valve DA3 1,5 - 6 Sh5

Datum:	23.01.13	12.03.15		
Name:	Trytko	Trytko		
Geprüft:				

Datum:				
Name:				
Geprüft:				

APV
SPX FLOW
Germany

RN 01.053.73-2

pos. item	Menge quantity	Beschreibung description	Material material	1,5 Sh5 WS-Nr. ref.-no.	2 Sh5 WS-Nr. ref.-no.	2,5 Sh5 WS-Nr. ref.-no.	3 Sh5 WS-Nr. ref.-no.	4 Sh5 WS-Nr. ref.-no.	6 Sh5 WS-Nr. ref.-no.
1	1	Spritz Anschluss CIP connection	PP GF30 HOSTAC	09-40-114/93 H168321			09-40-115/93 H168322		09-40-118/93 H200320
2	1	Gehäuse DA31 1+2S Housing	1.4404	16-61-408/47 H179065	16-61-458/47 H179066	16-61-508/47 H179067	16-61-558/47 H179068	16-61-658/47 H179069	16-61-808/47
	1	Gehäuse DA32 1+2+3S Housing	1.4404	16-62-408/47	16-62-458/47	16-62-508/47	16-62-558/47	16-62-658/47	16-62-808/47
	1	Gehäuse DA33 1+2+3S Housing	1.4404	16-63-408/47	16-63-458/47	16-63-508/47	16-63-558/47	16-63-658/47	16-63-658/47
	1	Gehäuse DA34 1+2+3+4S Housing	1.4404	16-64-408/47 H179408	16-64-458/47 H179410	16-64-508/47 H179411	16-64-558/47 H179412	16-64-658/47 H179413	16-64-808/47 H328628
3	1	Schaft unten Lower valve shaft	1.4404	16-22-193/42 H178877	16-22-194/42 H178878	16-22-195/42 H178879	16-22-196/42 H178880	16-22-197/42 H178881	16-22-039/42 H328631
4	1	Zugstange Guide rod	1.4404	16-24-016/42 H178826	16-24-017/42 H178827	16-24-018/42 H178828	16-24-019/42 H178829	16-24-020/42 H178830	16-24-817/42 H328641
5	1	Schaft oben Upper valve shaft	1.4404	16-22-187/42 H178842	16-22-188/42 H178843	16-22-189/42 H178844	16-22-190/42 H178845	16-22-191/42 H178846	16-22-040/42 H328637
6	1	Ventilsitz mit Spülkammer Valve seat with flushing chamber	1.4404	16-37-059/43 H178937	16-37-060/43 H178942	16-37-494/43 H176347	16-37-062/43 H178948	16-37-063/43 H178950	16-37-064/43 H328638
7	4	Skt. Schraube DIN EN 24017-A2-70 Hex. Screw	1.4301	65-01-079/15 M8x14 H78768					65-01-130/15 M10x16 H78806
8	1	Federzylinder Spring actuator	1.4301	16-30-500/17 H323172			16-30-501/17 H323201		16-30-108/17 H150229
9	1	Hauptzylinder Main actuator	Vestamid	15-31-239/93 H151072			15-31-240/93 H147795		15-31-241/93 H150526
10	1	Anlüftzylinder Seat lifting device	Vestamid	16-30-225/93 H151130			16-30-226/93 H147794		16-30-227/93 H150525
11	1	Anschlagschraube Stop sleeve	Vestamid / 1.4057	16-28-260/93 H176400					16--28-262/32 H200728
12	3	W-Verschraubung G1/8" 6x1 Angular union	1.4301	08-60-750/93 H208825					
13	2	Initiatorhalterung Mounting block	PA6.6 schwarz	15-33-918/93 H154913					

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 1.5 - 6 Sh5
Double seat valve DA3 1,5 - 6 Sh5

Datum:	23.01.13	12.03.15		
Name:	Trytko	Trytko		
Geprüft:				

Datum:				
Name:				
Geprüft:				

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RN 01.053.73-2

pos. item	Menge quantity	Beschreibung description	Material material	1,5 Sh5 WS-Nr. ref.-no.	2 Sh5 WS-Nr. ref.-no.	2,5 Sh5 WS-Nr. ref.-no.	3 Sh5 WS-Nr. ref.-no.	4 Sh5 WS-Nr. ref.-no.	6 Sh5 WS-Nr. ref.-no.
14	1	Entlüftungsstopfen Venting plug G1/8"	PE-Hard/Yellow	08-60-005/93 H16218					
15	1	Verschlußkappe Cap ø11,1x5	PVC	08-05-066/93 H154816					
16	1	Sicherungsmutter Stop nut	1.4301	65-50-137/15 H147640					
17	1	Sicherungsscheibe Lock washer	1.4301	67-03-001/15 H147639					
18	1	Quadring Q4221-N7004 Quadring 36x3,53	NBR	58-01-237/83 H148386					
19	4	Skt. Schraube Hex. Screw DIN EN 24017-A2-70	1.4301	65-01-114/15 M8x156 H152060			65-01-115/15 M8x168 H313215H		65-01-157/15 M10x204 H152018
20	1	Kolbenstange Anlüftzylinder kpl. Piston shaft for seat lifting device cpl.	1.4301	16-29-065/17 H149396			16-29-066/17 H149654		16-29-067/17 H150503
21	1	Führungsband PTFE driving band	Turcite 51	08-39-187/93 H147972					
22	3	Quadring Quadring 28,1x3,53	NBR	58-01-236/83 H148385					
23	2	Kolbendichtung Piston seal	NBR	58-01-760/83 H76868			58-01-761/83 H76869		58-01-763/83 H76871
24	1	Zylinderkerbstift Cyl. Pin 6x 14,8	1.4305	67-15-055/12 H147811					
25	2	O-Ring O-ring	NBR	58-06-372/83 82,22x2,62 H150893			58-06-493/83 101,27x2,62 H148385		58-06-696/83 154x3 H174262
26	1	Kolben Hauptzylinder Piston for main actuator	1.4301	16-29-070/12 H149389			16-29-071/12 H147594		16-29-072/12 H150291
27	1	Deckel Hzyl. Cover for main actuator	PA12	16-00-208/93 H149351	16-00-207/93 H149350		16-00-210/93 H147750		16-00-211/93 H150918
28	1	Sprengring Retainer ring	1.4310	08-39-083/13 H14883					
29	1	Führungsband PTFE driving band		08-39-198/93 H150892			08-39-188/93 H147973		08-39-185/93 H152006

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 1.5 - 6 Sh5
Double seat valve DA3 1,5 - 6 Sh5

Datum:	23.01.13	12.03.15		
Name:	Trytko	Trytko		
Geprüft:				

Datum:				
Name:				
Geprüft:				

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pos. item	Menge quantity	Beschreibung description	Material material	1,5 Sh5 WS-Nr. ref.-no.	2 Sh5 WS-Nr. ref.-no.	2,5 Sh5 WS-Nr. ref.-no.	3 Sh5 WS-Nr. ref.-no.	4 Sh5 WS-Nr. ref.-no.	6 Sh5 WS-Nr. ref.-no.
30	1	Quadring Quadring Q4230-N7502	EPDM	58-01-329/63 H150898			58-01-238/63 H148387		58-01-791/63 H152005
31	1	O-Ring O-ring OR 9,25x1,78	EPDM FDA-konform	58-06-029/64 H148388					
32	2	Gehäusedichtung Housing seal	EPDM FDA-konform	58-33-542/93 H77543			58-33-642/93 H77583		58-33-742/93 H77625
	2	Gehäusedichtung Housing seal	FPM FDA-konform	58-33-542/73 H77542			58-33-642/73 H77582		58-33-742/73 H77624
	2	Gehäusedichtung Housing seal	HNBR FDA-konform	58-33-542/33 H170075			58-33-642/33 H170074		58-33-742/33 H172126
33	2	Tellerdichtung Seat seal	EPDM FDA-konform	58-33-493/93 H77515			58-33-643/93 H77586		58-33-743/93 H77628
	2	Tellerdichtung Seat seal	FPM FDA-konform	58-33-493/73 H77514			58-33-643/73 H77585		58-33-743/73 H77627
	2	Tellerdichtung Seat seal	HNBR FDA-konform	58-33-493/33 H166678			58-33-643/33 H166682		58-33-743/33 H170177
	2	Tellerdichtung Seat seal	VMQ FDA-konform	58-33-493/13 H77513			58-33-643/13 H77584		58-33-743/13 H77626
34	2	Schaftdichtung Shaft seal	PTFE	58-33-016/23 H149620			58-33-017/23 H150708		58-33-018/23 H150531
35	1	Führungsring Quide ring	PTFE 25%Kohle	08-39-080/93 H14880					
36	2	Sitzdichtung Seat seal	EPDM FDA-konform	58-33-044/93 H149618			58-33-045/93 H149619		58-33-046/93 H150529
	2	Sitzdichtung Seat seal	FPM FDA-konform	58-33-044/73 H153316			58-33-045/73 H153318		58-33-046/73 H153937
	2	Sitzdichtung Seat seal	HNBR FDA-konform	58-33-044/33 H168900			58-33-045/33 H168901		58-33-046/33 H168902
	2	Sitzdichtung Seat seal	VMQ FDA-konform	58-33-044/13 H153317			58-33-045/13 H153319		58-33-046/13 H153938
37	1	Sitzring Seat ring	1.4404	16-00-190/42 H149397			16-00-191/42 H148255		16-00-193/42 H150409

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 1.5 - 6 Sh5
Double seat valve DA3 1,5 - 6 Sh5

Datum:	23.01.13	12.03.15		
Name:	Trytko	Trytko		
Geprüft:				

Datum:				
Name:				
Geprüft:				

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pos. item	Menge quantity	Beschreibung description	Material material	1,5 Sh5 WS-Nr. ref.-no.	2 Sh5 WS-Nr. ref.-no.	2,5 Sh5 WS-Nr. ref.-no.	3 Sh5 WS-Nr. ref.-no.	4 Sh5 WS-Nr. ref.-no.	6 Sh5 WS-Nr. ref.-no.
38	1	Mitteldichtung Seal	EPDM FDA-konform	58-33-047/93 H149617			58-33-048/93 H149621		58-33-049/93 H150530
	1	Mitteldichtung Seal	FPM FDA-konform	58-33-047/73 H153324			58-33-048/73 H153322		58-33-049/73 H153939
	1	Mitteldichtung Seal	HNBR FDA-konform	58-33-047/33 H168903			58-33-048/33 H168904		58-33-049/33 H168905
	1	Mitteldichtung Seal	VMQ FDA-konform	58-33-047/13 H153325			58-33-048/13 H153323		58-33-049/13 H153940
39	1	O-Ring O-ring OR 12x1	EPDM	58-06-040/63 H169477					
40	1	O-Ring O-ring	EPDM FDA-konform	58-06-295/63 69 x3 H77039			58-06-490/63 100x3 H77061		58-06-655/63 135x3 H77081
41	1	Verschluß-Stopfen Locking plug	Kunst. schwarz	08-74-014/93 G 1/8" H16507					08-74-007/93 G 1/4" H176010
42	1	Sechskant Mutter m. Klemmteil Hexagon nut with clamp part M10x1	1.4301	65-50-087/15 H118903					
43	1	G-Verschraubung Straight union	PVDF-schwarz / PA6.6	08-63-003/13 G 1/8" H16388					08-63-006/13 G 1/4" H176011
44	1	Anschlagring nur bei 6 Sh5 Stop ring only for 6 Sh5	POM						08-39-001/93 H314101
45	1	CU43-M-DC CU43-M-DC	PA 6.6 GF30 schwarz	08-45-105/93 H320465					
	1	CU43-M-AS-I-extended CU43-M-AS-I-extended	PA 6.6 GF30 schwarz	08-45-115/93 H320472					
	1	CU43-M-AS-I-standard CU43-M-AS-I-standard	PA 6.6 GF30 schwarz	08-45-255/93 H324678					
46	1	CU4-M-Adapter komplett CU4-M-adapter complete	PA 6.6 GF30 schwarz	08-48-602/93 H320476					
47	1	Luftschlauch 6 x 1 Air Hose (øAxl 6x4)	PA 12 "W	08-75-020/53 H16516					

Ersatzteilliste: spare parts list

Doppelsitzventil DA3 1.5 - 6 Sh5
Double seat valve DA3 1,5 - 6 Sh5

Datum:	23.01.13	12.03.15		
Name:	Trytko	Trytko		
Geprüft:				

Datum:				
Name:				
Geprüft:				

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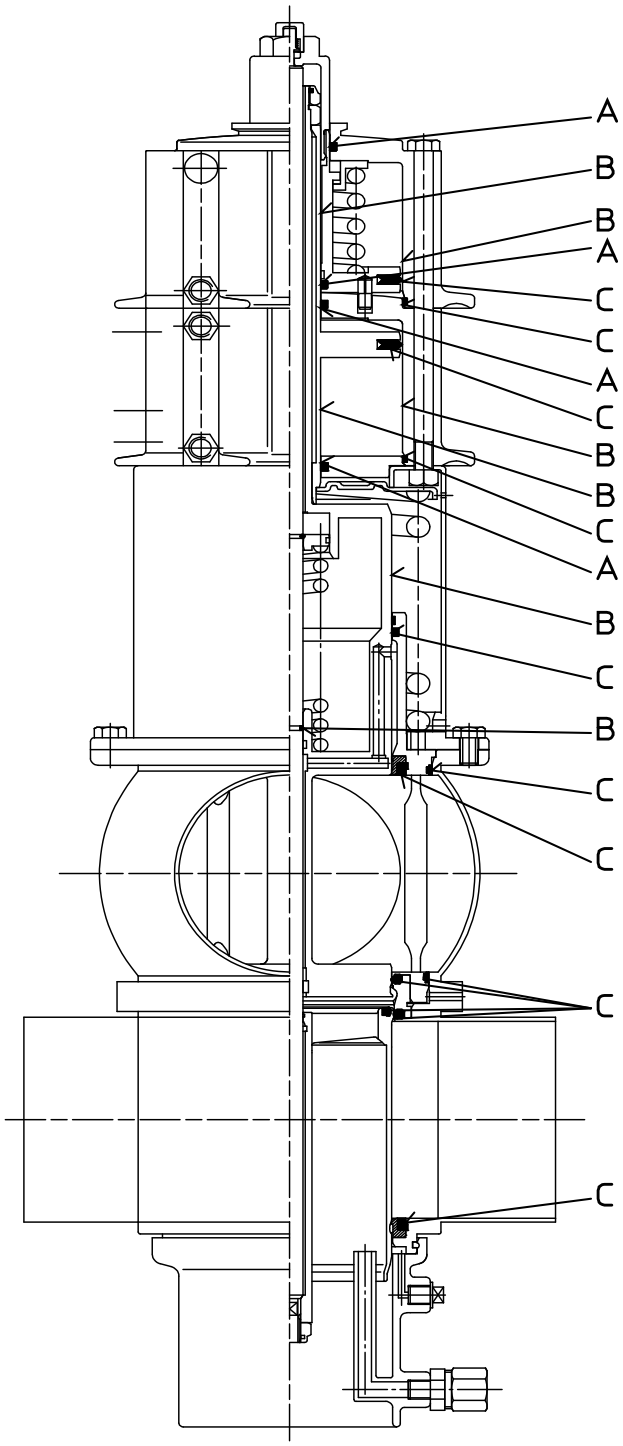
RN 01.053.73-2

pos. item	Menge quantity	Beschreibung description	Material material	1,5 Sh5 WS-Nr. ref.-no.	2 Sh5 WS-Nr. ref.-no.	2,5 Sh5 WS-Nr. ref.-no.	3 Sh5 WS-Nr. ref.-no.	4 Sh5 WS-Nr. ref.-no.	6 Sh5 WS-Nr. ref.-no.
	1	Ventileinsatz Valve insert	EPDM	16-37-415/59 H178993	16-37-465/59 H178995	16-37-515/59 H178998	16-37-565/59 H179000	16-37-665/59 H179002	16-36-152/59 H328625
	1	Ventileinsatz Valve insert	FPM	16-37-415/69	16-37-465/69	16-37-515/69	16-37-565/69	16-37-665/69	16-36-152/69
	1	Ventileinsatz Valve insert	HNBR	16-37-415/29	16-37-465/29	16-37-515/29	16-37-565/29	16-37-665/29	16-36-152/29
	1	Ventileinsatz Valve insert	VMQ	16-37-415/61	16-37-465/61	16-37-515/61	16-37-565/61	16-37-665/61	16-36-152/61
		Pos. 29, 30, 31, 32, 33, 34, 36, 38, 39 nur im kompletten Dichtungssatz erhältlich **Item 29, 30, 31, 32, 33, 34, 36, 38, 39 available as complete seal kits only**						
	1	Dichtungssatz Seal kit	FPM	58-34-686/00 H202536			58-34-689/00 H202535		58-34-692/00
	1	Dichtungssatz Seal kit	EPDM	58-34-686/01 H179206			58-34-689/01 H179207		58-34-692/01 H201787
	1	Dichtungssatz Seal kit	VMQ	58-34-686/02 H201989			58-34-689/02 H201990		58-34-692/02
	1	Dichtungssatz Seal kit	HNBR	58-34-686/06 H179208			58-34-689/06 H179209		58-34-692/06 H201786



Actuator parts:

Grease: Autol Top 2000
25 ml tube. ref.-No.:70-01-008/93

A - bearing surface and dynamic seal with continuous coating.

B - surface of cylinder and rod with continuous coating.

C - lightly grease seals for installation.

Parts in contact with product:

Grease: for EPDM, HNBR and FPM
Klüber Paraliq GTE 703
0,75 kg can ref.-No.: 70-01-019/93
60 g tube ref.-No.: 70-01-018/93.

for VMQ.
Klüber UH1 84-201
0,6 kg can ref.-No.: 70-01-017/93
60 g tube ref.-No.: 70-01-016/93.

C A U T I O N !

Avoid grease residues in product area.

Grease all screws and threads before installation.
Recommendation: Klüber Grease UH1 84-201

Datum:	17.01.13									
Name:	Trytko									
Geprüft:										

Ersatzteilliste: spare parts list

DA3 Lubrication Chart

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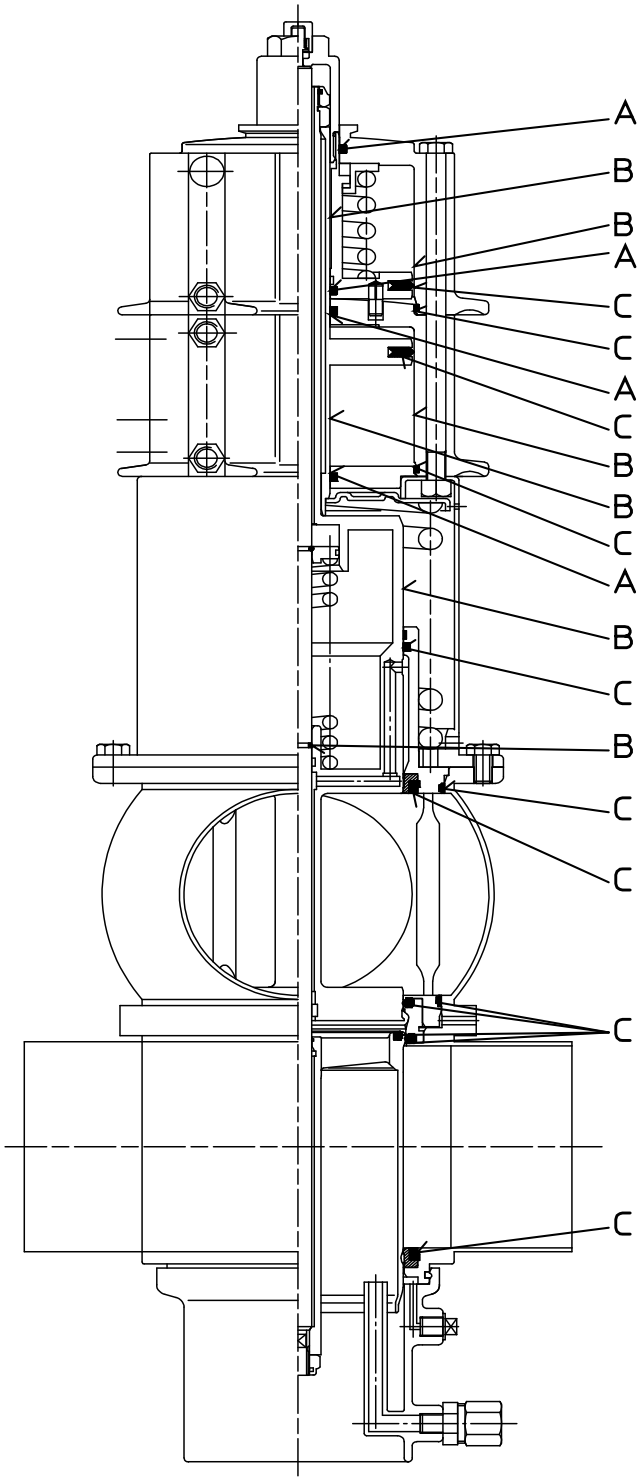
RNGB 260.064-1



Antriebsteile:

Fett: Autol Top 2000
25 ml Tube. WS-Nr.:70-01-008/93

A - Lagerlauffläche und dynamische Dichtung mit durchgehendem Fettfilm.

B - Lauffläche Zylinder bzw. Stange mit durchgehendem Fettfilm.

C - Dichtung für Montage leicht fetten.

Produktberührte Bauteile:

Fett: Für EPDM, HNBR und FPM
Klüber Paraliq GTE 703
0,75 kg Dose WS-Nr.: 70-01-019/93
60 g Tube WS-Nr.: 70-01-018/93.

Für VMQ
Klüber UH1 84-201
0,6 kg Dose WS-Nr.: 70-01-017/93
60 g Tube WS-Nr.: 70-01-016/93.

A C H T U N G !

Keine Fettreste im Produktraum.

Alle Schrauben und Gewindeteile vor Montage mit Fett versehen.
Empfehlung: Klüberpaste UH1 84-201

Datum:	17.01.13									
Name:	Trytko									
Geprüft:										

Ersatzteilliste: spare parts list

DA3 Schmierplan

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APV DELTA DA3+

DOUBLE SEAT MIX PROOF VALVE

SPXFLOW

SPX FLOW

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SPX FLOW

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Scan for DA3+ Valve Maintenance Video

ISSUED 08/2017 - Translation of original manual