

APV DELTA DE3

DOUBLE SEAT VALVE

FORM NO.: 170731 REVISION: UK-7

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



Scan for DE3 Valve
Maintenance Video



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:
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1. General Terms

This instruction manual must be read and observed by the responsible 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.



- Safe discharge of the cleaning liquids must be ensured!
- The valve must only be assembled, disassembled and reassembled by persons who have been trained in APV valves or by SPX FLOW service team members. If necessary, contact your local SPX FLOW representative.

2. Safety Instructions

**Danger!**

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 partner
for their professional disposal and
free of charge for you.

Please address to your local SPX FLOW representative.

3. Intended Use

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

Arbitrary, constructive changes at the valve will influence safety as well as the intended functionality of the valve and are **not** permissible.

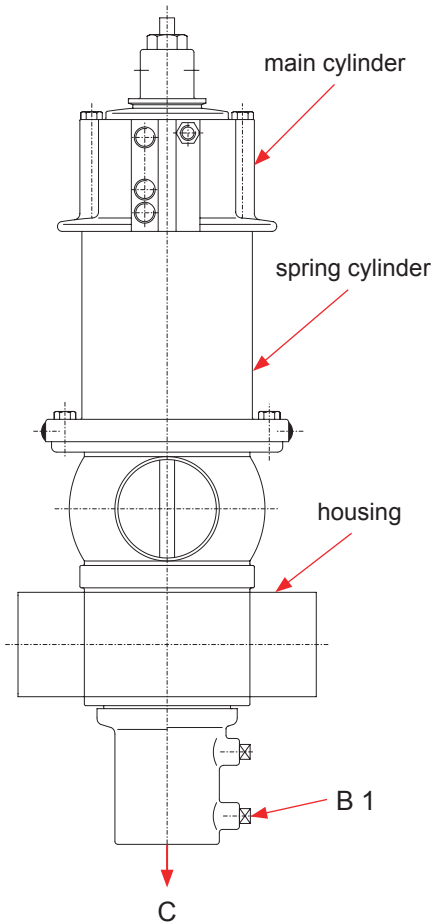
Authorizations and External Approvals:

EHEDG Certification

ATEX (Directive 2014/34/EU)

4. Mode of Operation

DE3 double seat valve



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 DE3 is suited for applications in the food and beverage industries as well as in the pharmaceutical and chemical industries.

The valves are designed for universal applications and stand out for their increased mechanical reliability and absolute ease of service.

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. Flushing connection at **(B1)**.

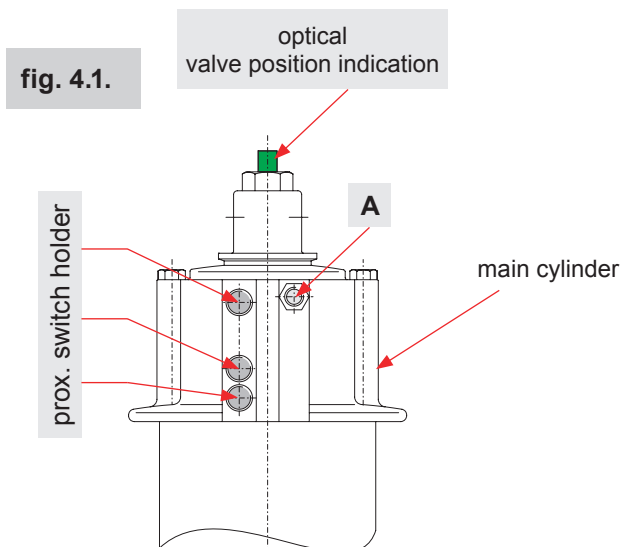
Double sealing function by two seals acting independently of one another.

Arising leakages at the seat seals are discharged at **(C)** in depressurized state.

Proximity switches can be installed at the main cylinder as valve position indicators. **(fig. 4.1.)**

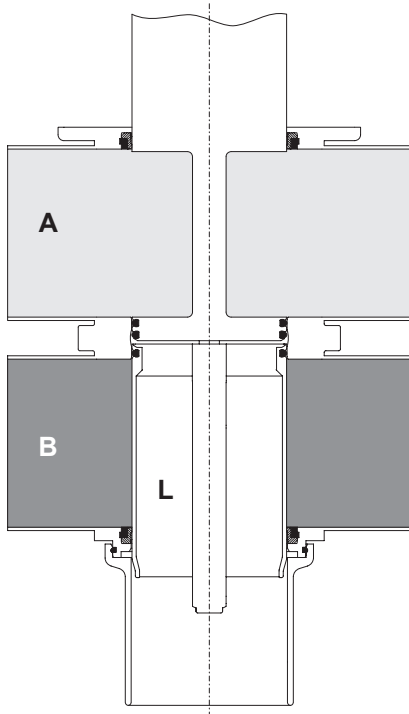
Operation by pneumatic actuator with air connection at **(A)**. Reset by spring force into the safety limit position "closed". Main cylinder can be maintained.

Optical indication of the valve position at the main cylinder.



4. Mode of Operation

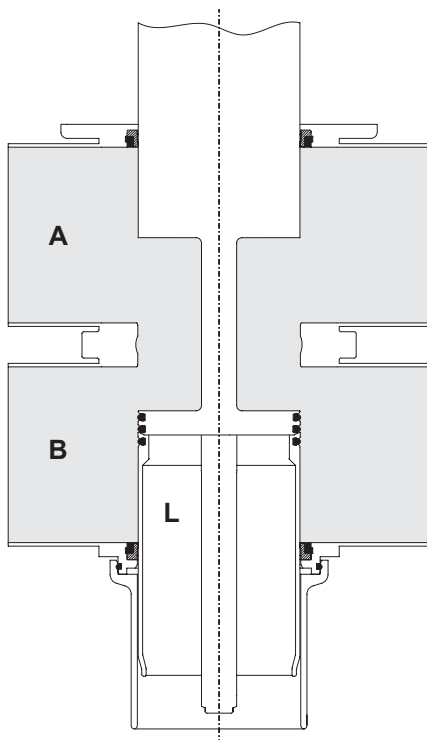
fig. 4.2.



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" position

During the opening process, the leakage chamber **L** is closed against the product area and the pipelines **A** and **B** are connected. In open valve position, the valve shafts are also balanced and, thus, safe against pressure hammers.

5. Auxiliary Equipment

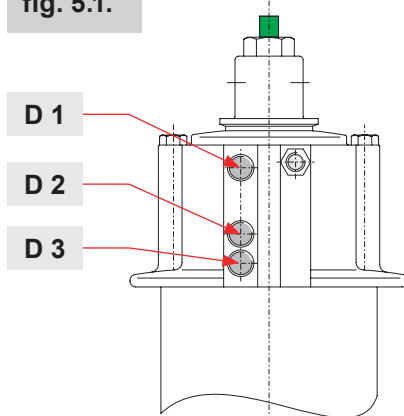
5.1. Valve position indication

Proximity switches to signal the limit positions of the valve shafts can be installed at the main cylinder if required (**fig. 5.1.**)

- D1** = valve position "closed"
- D2** = valve position "open" (only for DN 40 - 50, 1,5" - 2")
- D3** = valve position "open" (only for DN 65 - 150, 2,5" - 6")

We recommend to use our APV standard types:
 operating distance: 5 mm / diameter: 11 mm
 If the customer decides to use valve position indicators other than APV type, we cannot take over any liability for a faultless function.

fig. 5.1.



5.2. Control Unit

The installation of a control unit on the DE3 valve is possible. Start-up, assembly and dismantling of the different designs are described in the corresponding instruction manual.

The following different designs are available:

Direct Connect	CU41-M-Direct Connect 08 - 45 - 102/93 ; H320462
AS-interface extended	CU41-M-AS-i extended 62 slaves 08 - 45 - 112/93 ; H320469
Profibus	CU31-DE3 Profibus 08 - 45 - 003/93 ; H315497
Device Net	CU31-DE3 DeviceNet 16 - 31 - 242/93 ; H209424

- For the installation of the control unit on the DE3 valve an adapter is required.

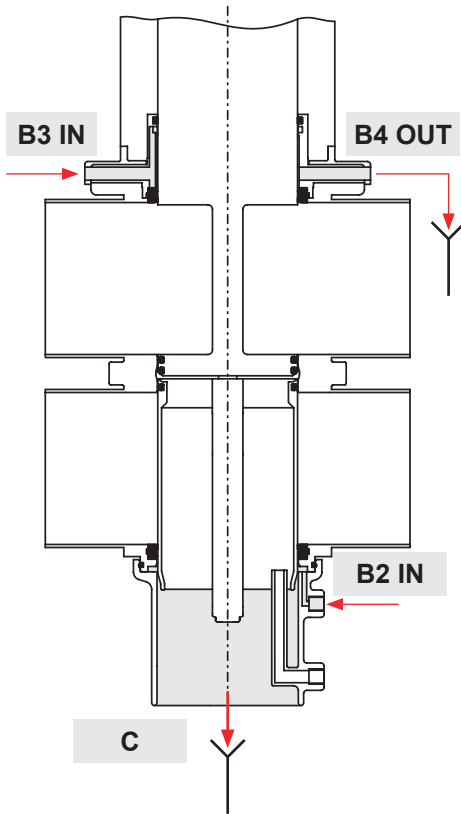
5.3. Adapter for control unit CU31 Profibus, CU31 DeviceNet

CU31 - adapter DA3 / DE3
 reference number: 000 08 - 48 - 470/93; H314470

- **Adapter for control unit
 CU41 M - Direct Connect, CU41 M - AS-interface**
 reference number: 000 08 - 48 - 602/93; H320476

6. Cleaning

fig. 6.3.



6.3. Shaft surfaces outside the flow passages (option)

The DE3 valve provides for the areas of the upper and lower shaft rod which are not subject to cleaning, to be flushed (fig. 6.3.).

The valve is prepared for shaft flushing.
(see chapter 15).

Shaft flushing is recommended with sensible products to increase product safety and the service life of seals.

The connection of the flushing device is done according to the pattern described on the left via flushing connections.

6.3.1. Flushing and sterilisation of shaft surfaces

The following flushing liquids are permissible:

- hot water
- (slightly sour to avoid lime residues): **max. 85°C**
- common CIP liquids: **max. 80°C**

supply pressure at CIP cleaning connection:

min. 1 bar
max. 3 bar

flushing quantity per CIP cycle:

about 1.2ltr. / 10s

cleaning period:

30s

interval:

1x / day (e.g. milk)

depending on product and operating frequency:

1x / week (e.g. beer)

The free discharge of cleaning liquids must be ensured.

The upper and lower shaft flushing may only be carried out if product is not imminent in the appertaining part of the housing.

6.3.2. Installation of hoses:

upper shaft flushing	identification on spring cylinder
cleaning liquid supply at B3	IN
cleaning liquid discharge at B4	OUT
lower shaft flushing	
cleaning liquid supply at B2 cleaning liquid discharge at C	at drain pipe

7. Installation

7.1. General terms

- 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 9).

7.2. Welding Instructions

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 12.1.5**).

It is not necessary to remove the lower shaft seal as it can be destroyed during dismantling.

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

Welding 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 shall be carried out as a square butt joint without air. Consider shrinkage!

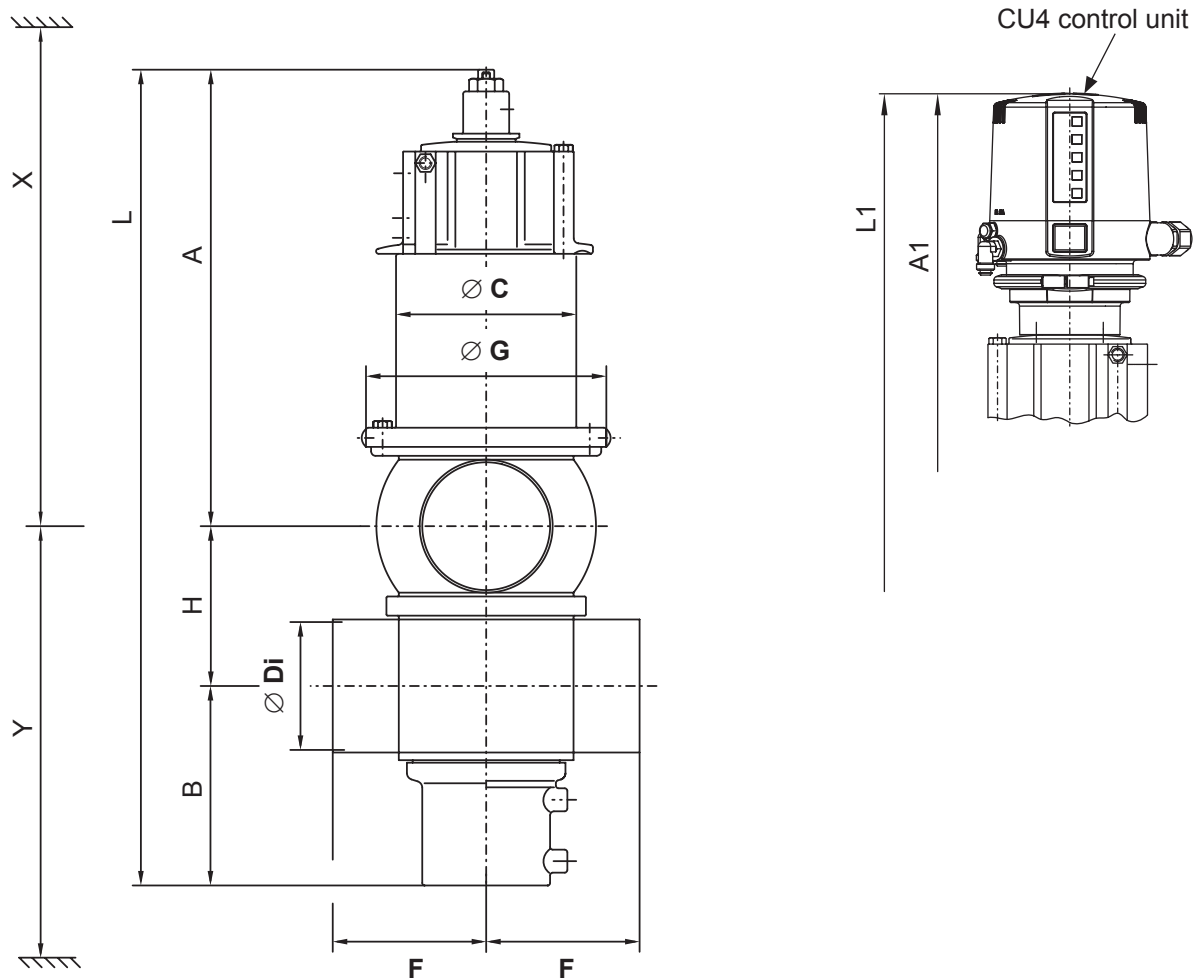
- TIG orbital welding is best!

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



Dimensions in mm											install. dimension min. in mm		weight in kg
DN	A	A1	B	∅ C	∅ Di	F	∅ G	H	L	L1	X	Y	
40	311	462	120	114,3	38	100	163	63	494	645	559	200	10,1
50	317	468	126	114,3	50	100	163	75	518	669	579	218	10,2
65	325	476	134	114,3	66	100	163	91	550	701	599	242	10,4
80	347	498,5	146,5	141	81	120	188	106	599,5	751	680	274	14,6
100	357	508	156	141	100	120	188	125	638	789	710	303	15,5
125	426	584	176	189	125	130	230	150	752	910	747	342	30,8
150	478	636	189	204	150	150	264	175	842	1000	978	392	-----
Inch													
1,5"	312	463	119	114,3	35,1	100	163	63	494	645	559	197	10,1
2"	318	469	125	114,3	47,8	100	163	75	518	669	579	216	10,2
2,5"	322	473	131	114,3	60,3	100	163	85	538	689	599	233	10,4
3"	328	479	137	114,3	72,9	100	163	97	562	713	626	251	10,5
4"	358	509	155	141	97,6	120	188	125	638	789	710	301	15,5
6"	479	637	188	204	146,9	150	264	175	844	1000	978	391	-----

9. Technical Data

9.1. General data

max. line pressure:	10bar
max. operating temperature:	135°C EPDM, HNBR *FPM

short-term load: **140°C EPDM, HNBR**
*FPM, *(no steam)

tightening torque of stop screw
at upper valve shaft: **25Nm**

tightening torque of safety nut
at upper and lower valve shaft: **40Nm**

leakage gap between
upper and lower valve shaft: **about 4mm**

Fig. 9.
(check after stop screw having been screwed in)

cleaning connection B1 (for hose)	
DN 40 - 100, 1,5" - 4" :	8x1 mm
DN125 - 150, 6" :	10x1 mm

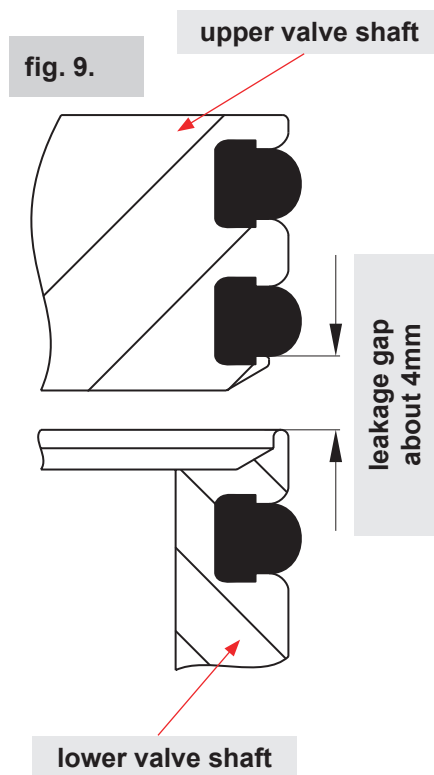
air connection (for hose):	6x1mm
max. pneumatic air pressure:	10bar
min. pneumatic air pressure:	6bar

Use dry and clean pneumatic air only.

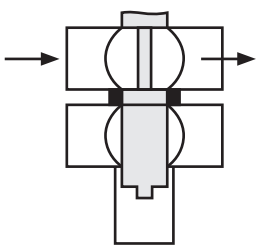
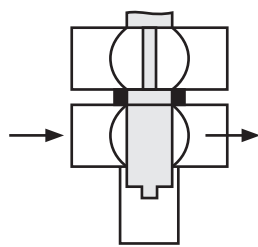
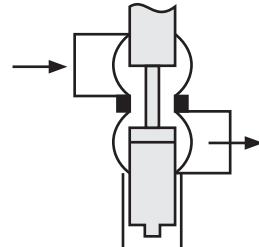
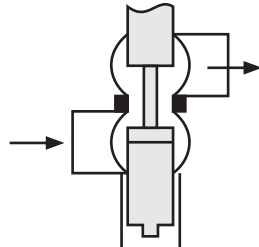
9.2. Compressed air quality

- Compressed air quality: Quality class acc. to DIN ISO 8573-1
- content of solid particles: quality class 3,
max. number of 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

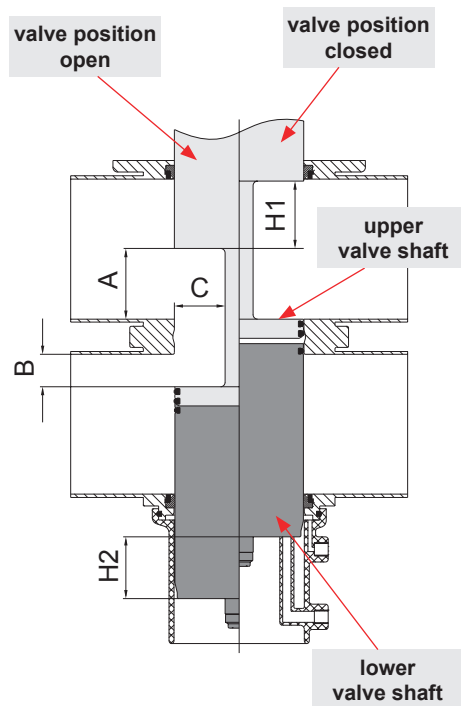
9.3.	Kvs - values in m ³ /h			
				
DN				
40	57	46	23	25
50	120	95	42	45
65	219	148	69	78
80	296	200	120	130
100	505	320	164	170
125	800*	500*	300	330
150	1200*	700*	360	380
Inch				
1,5"	47	70	21	24
2"	100	73	43	46
2,5"	170	122	59	66
3"	213	160	71	80
4"	490	294	150	160
6"	1150*	670*	340	360

* no measuring value

9.4.		Air consumption actuator at 6 bar pneum. pressure	Closing times in sec.	
		in NL / stroke	hose length	
DN	Inch		1 m	10 m
25	1"	0,9	1,5	2,5
40	1,5"	1,1	1,5	2,5
50	2"	1,3	1,5	2,5
65	2,5"	1,3	1,5	2,5
	3"	1,3	1,5	2,5
80		2,3	3,0	4,0
100	4"	2,3	3,0	4,0
125		4,0	5,0	6,0
150	6"	6,4	8,0	9,0

9. Technical Data

fig. 9.5.



9.5.		Valve stroke open / closed dimensions in mm				
DN	Inch	A	B	C	stroke H1 upper shaft	stroke H2 lower shaft
40	1,5"	6,5	5	21,2	30	26
50	2"	11,5	12	21,2	37	33
	2,5"	15,5	18	21,2	43	39
65		21,5	18	21,2	43	39
	3"	27,6	18	21,2	43	39
80		31,5	23	36,2	48	44
100	4"	50,5	23	36,2	48	44
125		69,5	29	42,7	54	50
150	6"	86,5	37	54,7	62	58

10. Materials

Product-wetted parts: **1.4571, 1.4404 (DIN EN 10088)**

Other parts: **1.4301 (DIN EN 10088)**

Seals:

Standard design:

Option:

EPDM/ PTFE

HNBR/ PTFE

FPM/ PTFE

Actuator:

PA 12 GF 30

Shaft bearing:

PPS

Drain pipe:

PP GF30

11. Maintenance

Scan for DE3 Valve
Maintenance Video



- The maintenance intervals depend on the application and should be determined by the user carrying out regular checks.

- Compressed air is not required to dismantle the valve.

Required tools:

- 1 x spanner SW13
- 2 x spanner SW17
- 2 x spanner SW24
- disassembly and assembly support for the lower shaft seal ref.-No. 000 51-13-100/1; H171889
- Replacement of seals according to Service Instructions. The customer is recommended to hold spare seals on stock. For valve maintenance SPX FLOW supplies complete seal kits including seal grease (pl. see spare parts lists).
- The valve must not be cleaned with products containing abrasive or polishing substances. Especially the valve shafts must not be cleaned with such agents under any circumstances. Damage of the valve shaft can produce leakages.
- Assembly of the valve according to Service Instructions.

All seals must be provided with a thin layer of grease before their installation. (see lubrication chart)

Attention! Use only food-grade special grease being suited for the respective seal material.

Recommendation:

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

! Do not use grease on mineral oil basis for EPDM seals.

Recommendation for actuator (main cylinder):

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

Less suited grease types can influence function and lifetime.

12. Service Instructions

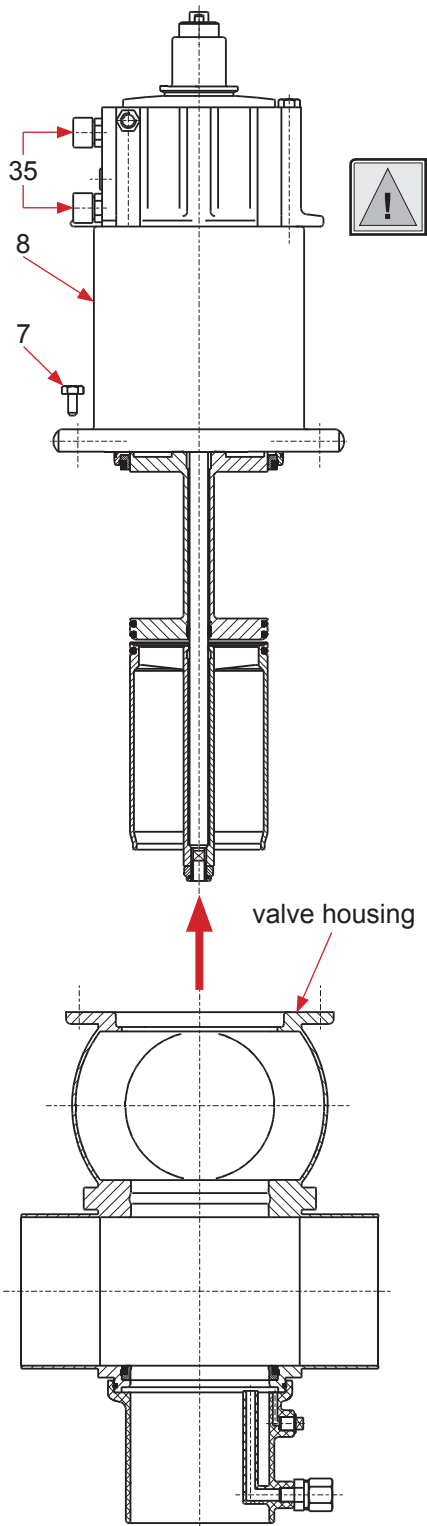
The item numbers refer to the spare parts drawings.

DE3 - DN 40 - 150 ; 1,5 " - 6" : **RN 01.053.71**

DE3 - 1,5 - 4 Sh5: **RN 01.053.71-4**

12.1. Dismantling from the piping system

1. Shut off the line pressure in the product and cleaning lines, discharge the pipes if possible.
2. Remove the pneumatic air line and the flushing connection lines.
3. Release the nut of the proximity switch holder (35) and pull off the proximity switch.
- CU design:
Take off the control unit.
4. Remove the hex. 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.

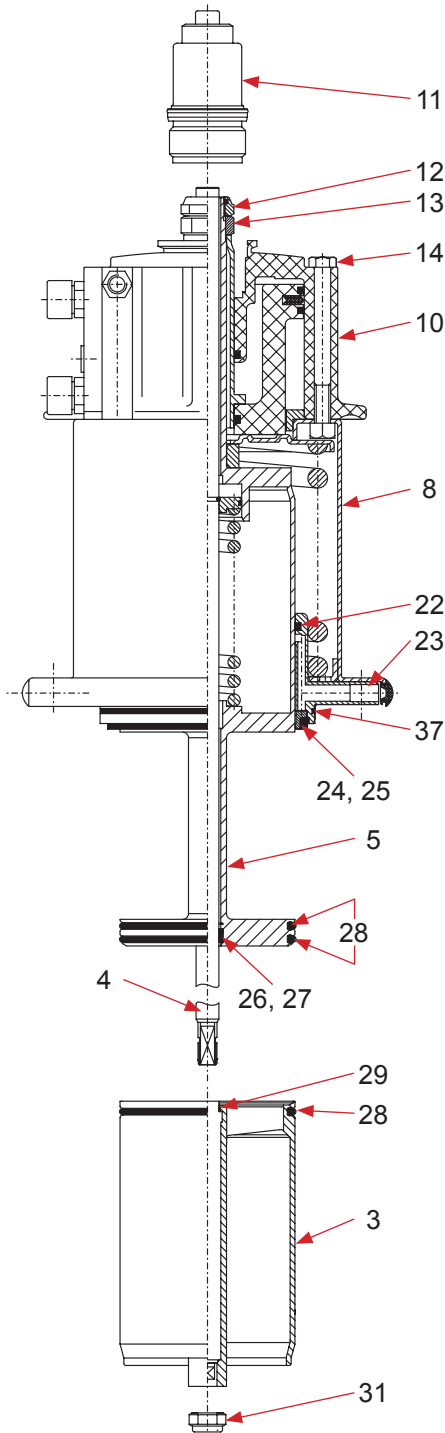


12. Service Instructions

12.2. Dismantling of product-wetted parts (service)

- **CU design:**

Release the 4 inner hex. screws and take off the CU adapter.



1. Screw off the stop screw (11).

2. Release the lower safety nut (31). Hold up the lower shaft (3) with a spanner SW17 to prevent it from turning.

3. Having removed the nut (31), pull the lower shaft (3) off the guide rod (4).

4. Dismantling of seals from the lower shaft (3)

Stick a peaked object into the lower seat seal (28) and pull the seal out of the groove. Pull the o-ring (29) out of the groove.

5. Pull off the guide rod to the top.

6. Remove the safety nut (12). Holding up the safety disc (13) with a spanner SW24 prevents the upper shaft (5) from turning.

7. Lift off the main cylinder (10) with spring cylinder (8) and shaft bearing (23) (**maintenance of spring cylinder, see 12.3**).

8. Dismantling of seals from the upper shaft (5)

Stick a peaked object into the upper and middle seat seal and pull them out of the groove. Afterwards, lift the two supporting rings (26) and the quadding (27) off the groove.

9. Dismantling of seals from the shaft bearing (23)

Remove the upper shaft seal (24, 25) from the groove. Take the quadding (22) and o-ring (37) out of the groove.

10. Dismantling of lower shaft seal (24, 25) from the housing

Take the metallic tip of the dismantling tool to stick into the elastomer seal (25) from the top and pull the seal off to the top. Then, take the tip of the assembly tool to pull the PTFE seal (24) off to the top through the housing.

12. Service Instructions

12.3. Maintenance of main cylinder

Dismantle the actuator, main cylinder (10) and spring cylinder (8) from the valve insert as described in 12.2 1.-7.

12.3.1. Disassembly of main cylinder and dismantling of seals

1. Remove the fastening screws (14). Remove the main cylinder (10) from the spring cylinder (8).
2. Press the piston rod out of the main cylinder. Remove the cover and the piston with piston rod.
3. Draw the piston rod out of the piston.
4. Remove the quadding in the piston and in the main cylinder.
5. Remove the piston seal.
6. Clean the main cylinder, cover, piston rod and piston.

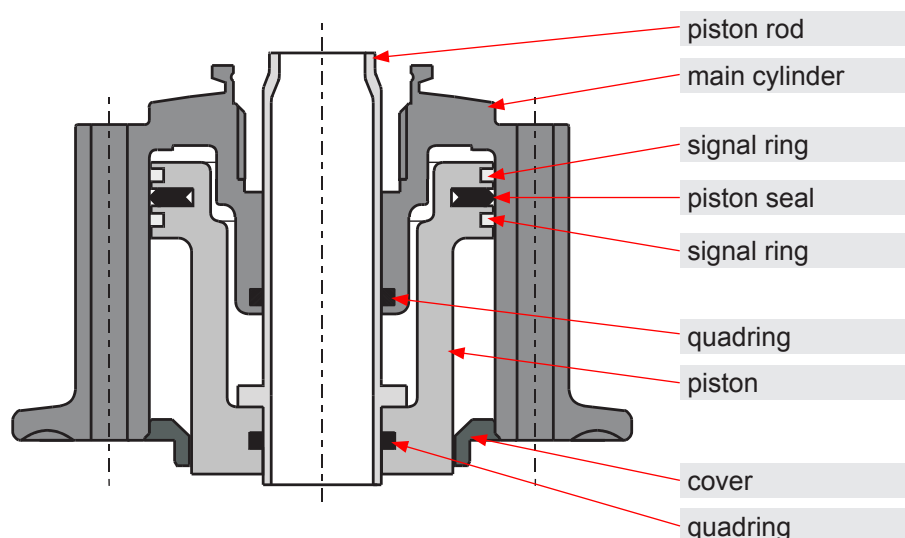
12.3.2. Installation of seals and assembly of main cylinder

Slightly grease the quadrings and the piston seal.
Use appropriate pneumatic grease.

- Recommendation for actuator (main cylinder):

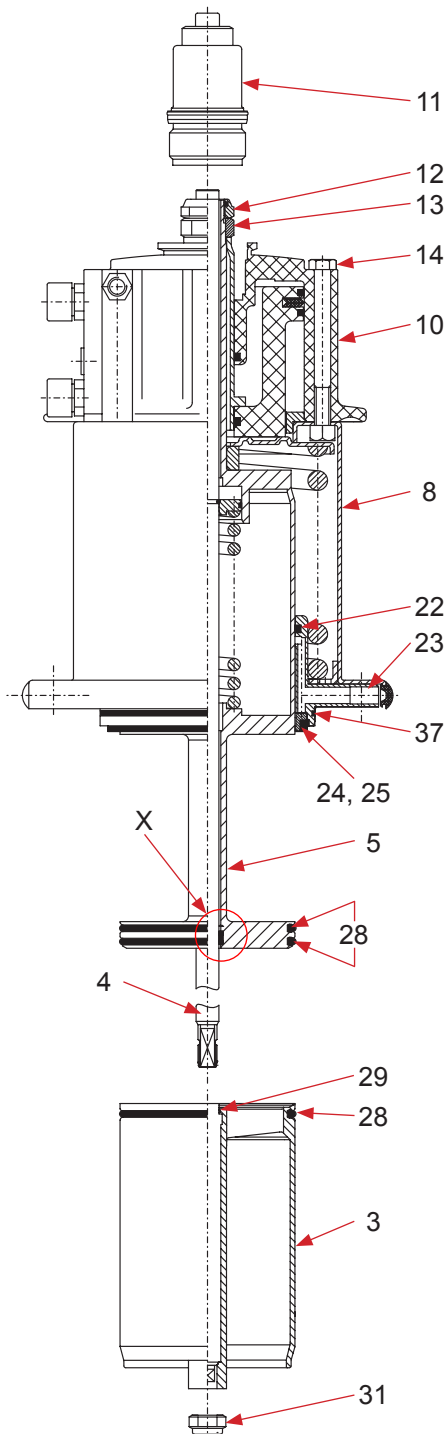
APV pneumatic grease:
(25 ml tube - ref.-No. 000 70-01-008/93; H164725)

7. Insert the quadrings and the piston seal.
8. Assembly to be undertaken in reverse order to the procedure described in 12.3.1.



12. Service Instructions

12.4. Installation of product-wetted seals and assembly of valve



All seals and guides can be serviced.

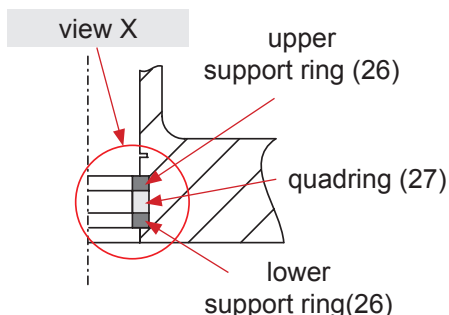
Attention: See to all seals and bearing surfaces in the product area being carefully greased before their assembly. (see Lubrication Chart: RN 260.086-1)

1. Install the lower shaft seal (24, 25) in the lower housing flanges (see page 20).
2. Install the quading (22) and o-ring (37) in the shaft bearing (23).
3. Afterwards insert the first supporting ring (26), then the quading (27) and then the second supporting ring (26) into the upper shaft (see fig. X).
4. Install the o-ring (29) in the lower shaft (3).
5. Insert the 3 seat seals (28) into the grooves of the upper and lower shafts. (see page 23 Service Instructions for Seat Seals) (Seals are symmetric).
6. Slide the upper shaft through the shaft bearing and the actuator. Screw up the upper shaft and actuator with the safety nut (12) and safety disc (13). **Tightening torque: Md = 40 Nm**
7. Installation of the upper shaft seal (24, 25).
8. First of all, slide the PTFE-ring (24) over the seat of the upper shaft and place it in the open groove of the shaft bearing (23). Then press the elastomer ring (25) with the wide side to the front into the groove.
9. Push in the guide rod (5) from the top until it stops.
10. Fasten the stop screw (11) until stop. **Tightening torque: Md = 25 Nm**
11. Slide the lower valve shaft (3) on the guide rod. Fasten the valve shaft with the safety nut (31). **Tightening torque: Md = 40 Nm**

Attention: Check the leakage gap (4 mm) between the upper and lower valve shaft (see page 14).

- **CU design:**

Place the CU adapter and fasten it with the inner hexagon screws.



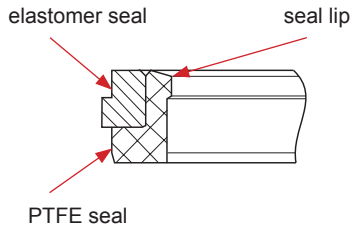
12. Service Instructions

12.5. Installation of valve insert

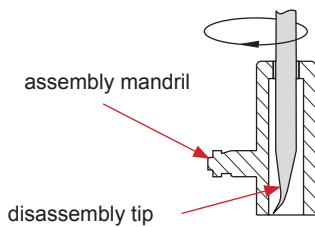
1. Carefully place the valve insert in the valve housing until the screw stops.
2. Remove the pulling screw and carefully press the valve insert into the housing.
3. Screw in the screws (7) and tighten them crosswise.
4. **CU design:** Place the control unit and fasten it.
5. Install the pneumatic air and cleaning lines.
6. Install the valve position indicator.
Release the union nut and slide the proximity switches into the socket until they stop.
7. Tighten the proximity switches with the nut.

13. Disassembly and Assembly Tool (for lower shaft seal, pos. 24, 25)

seal 24, 25



assembly tool



For a simple dismantling and installation of the lower shaft seal, the combi tool (ref.-No. 000 51-13-100/17; H171889) should be used.

Support by this tool is especially recommended for valves of the small series (DN 40 - 65, 1.5" - 3") for the lower shaft seal cannot be reached from the top as a result of the narrow fit.

Attention:

Do not damage the seal lip of the PTFE seal during assembly. To prevent injuries, the disassembly point, if not used, must be covered by the assembly mandril.

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

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

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

- 1) Slightly grease the seal.
- 2) Introduce the elastomer, the wide side to the front, from the top through the housing intermediate ring into the lower housing by means of the assembly tool (fig. 1).
- 3) Fix the seal by means of the locating groove of the assembly mandril (fig. 3 / I).
- 4) Press in the elastomer at one spot between housing flange and PTFE (fig. 3 / II).
- 5) Pull the seal completely into the groove by passing around it with the assembly mandril (fig. 4). Check if the elastomer seal is evenly installed in the groove.

fig. 1

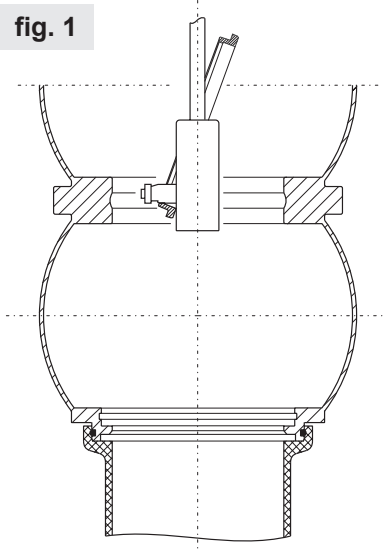


fig. 2

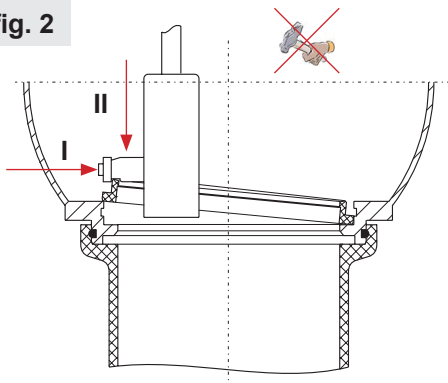


fig. 3

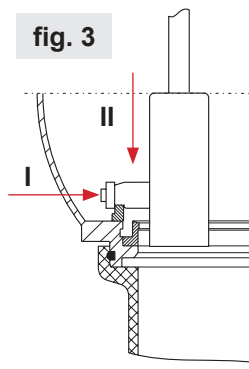
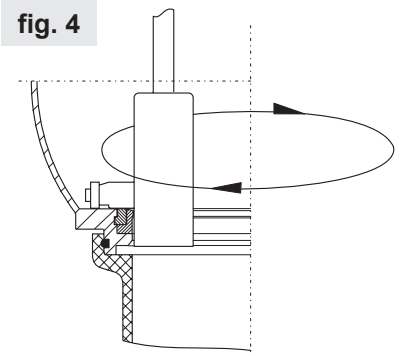


fig. 4



14. Special Accessory - Shaft flushing

The valve is prepared for the shaft flushing.
The required construction kit is available as accessory.

Construction kit for assembly of shaft flushing, complete
DN40 - 100, 1,5" - 4" H201675
DN125 - 150, 6" H312958

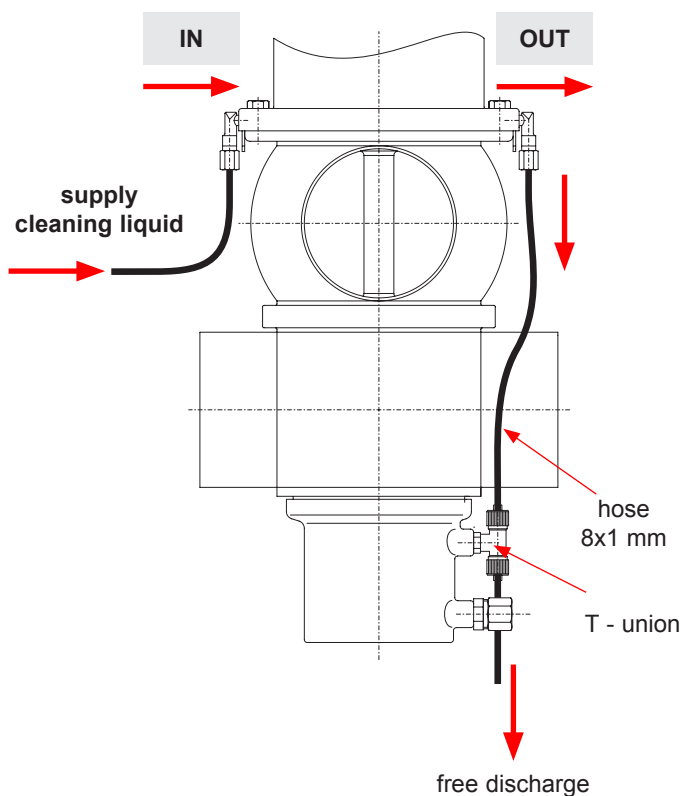
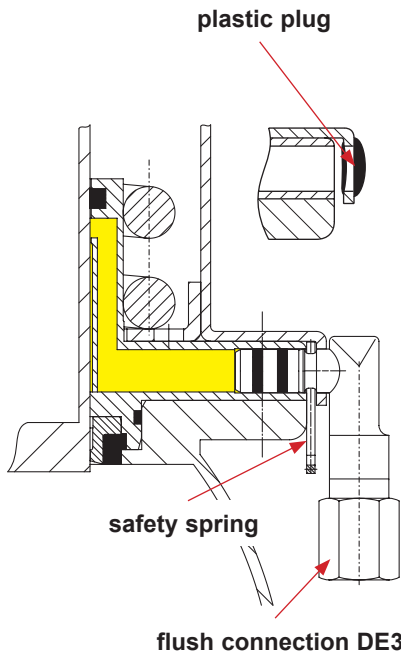
14.1. Assembly of shaft flushing

- Remove the plastic plug.
- Insert the flush connections in the shaft bearing and arrest them with the locking spring.

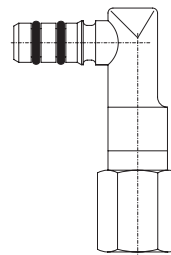
Bolt the supply hose for cleaning liquids to the flush connection.
Identification: IN

Bolt the discharge hose for cleaning liquids to the flush connection.
Identification: OUT

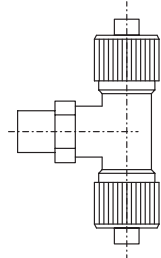
- Screw the T-union into the drain pipe and hose it.
- Check the passage of the cleaning liquid.



The construction kit for the shaft flushing consists of the following components:

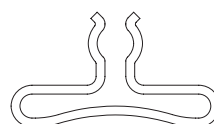


DN 40 - 150, 1,5" - 6"
 2 x flushing connection DE3
 ref.-No.: 000 16-38-070/93
H201674



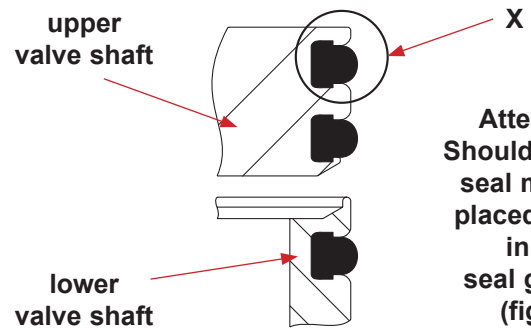
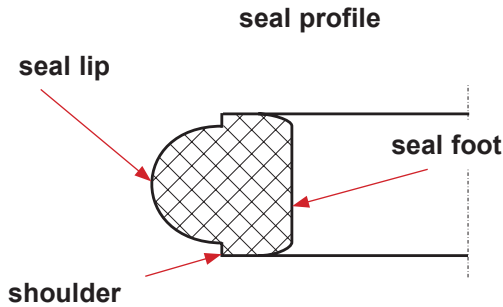
DN 40 - 100, 1,5" - 4"
 1 x T - union 8-1/8"-8
 ref.-No.: 000 08-63-371/93
H176993

DN 125 - 150, 6"
 1 x T - union 8-1/4"-8
 ref.-No.: 000 08-63-372/93
H312957

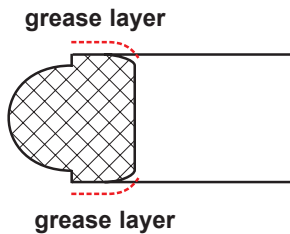


DN 40 - 150, 1,5" - 6"
 2 x safety spring DE3
 ref.-No.: 000 67-03-015/13
H171289

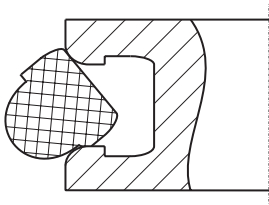
15. Service Instructions for the installation of seat seals



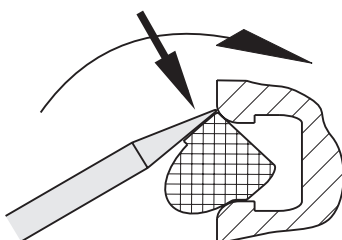
1. Provide the seal shoulder with a thin layer of grease.



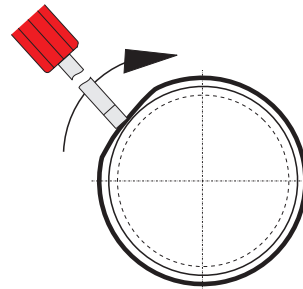
2. Insert the seat seal into the valve shaft; see to an even inclined position of the seal.



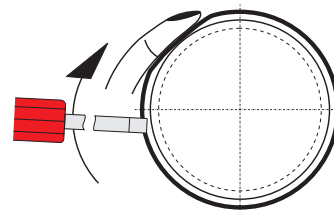
3. Press the seal circumferentially into the groove by means of an assembly tool (use screw driver with round edges). Place the assembly tool at the upper seal shoulder. To get an even fit of the seal, proceed step by step:



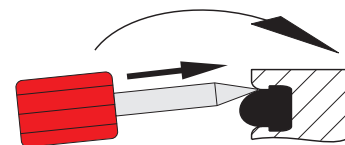
- 3.1. Press a short piece part of the seal into the groove.



- 3.2. Fix the seal - already pressed in - by your finger (to prevent loops). Use the assembly tool to press a short part of the seal into finger direction. Install the seal in the groove circumferences.



4. Press the assembly tool between the seal shoulder and the groove edge (both sides). Proceed around the circumferences. Then proceed around the circumferences of the lower seal shoulder. This is to vent the seal groove and to lock the seal shoulder.



16. Detection of seal damage

Failure	Remedy
Leakage at upper housing flange	Replace upper shaft seal (24, 25).
Leakage at drain pipe	Remove the drain pipe (1) to verify the leakage.
Leakage at the outside of the lower valve shaft	Replace lower shaft seal (24, 25).
Valve closed and pressure in upper housing	
Leakage from the leakage chamber of the lower valve shaft	Replace upper seat seal (28).
Valve closed and pressure in lower housing Remove spray connection.	
Leakage from the leakage chamber of the lower valve shaft	Replace lower seat seal (28).
Valve open	
Leakage from the leakage chamber of the lower valve shaft	Replace middle seal (28).
<p>! When damaged seals are changed, generally all seals should be replaced. For valve service actions SPX FLOW supplies complete seal kits (see spare parts lists).</p>	

17. Spare Parts Lists

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.

subject to change

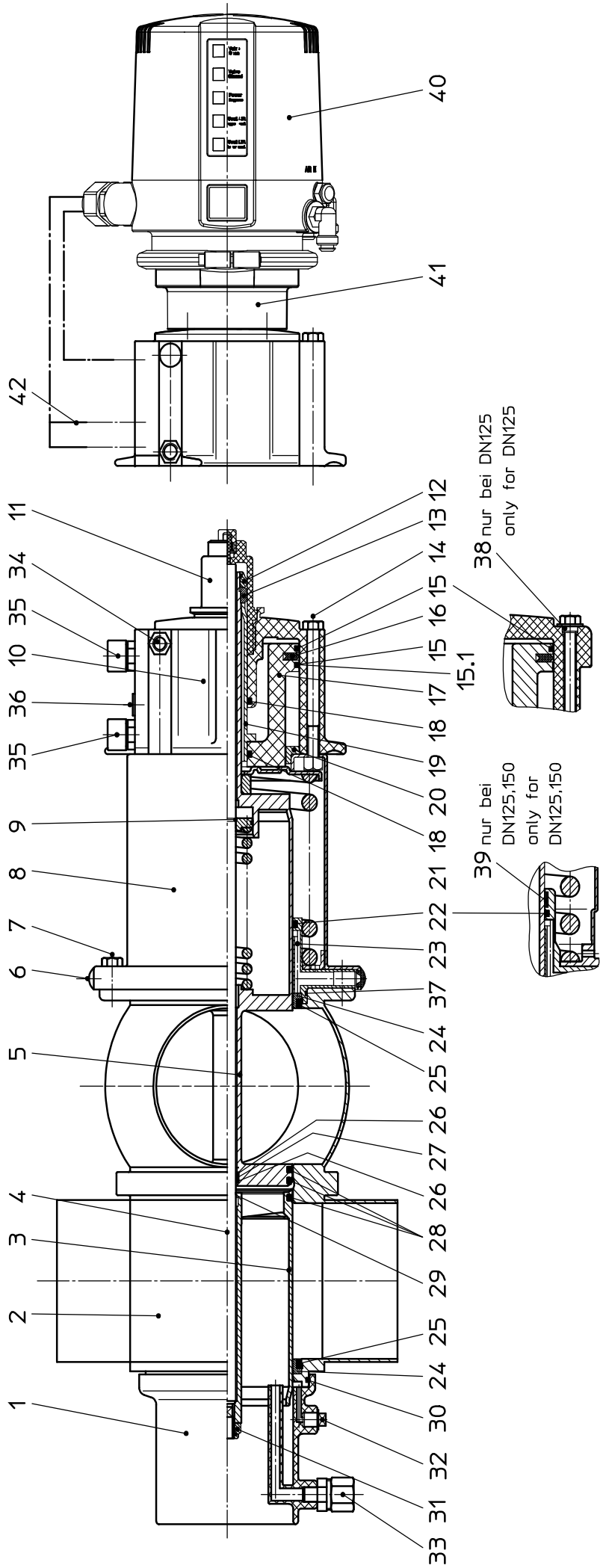
Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstößt verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraf 18 UWG, Paragraf 106 UrhG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmustereintragung, vorbehalten. SPX FLOW, Germany

Ersatzteilliste: spare parts list

Doppelsitzventil DE3 DN40 - 150 ; 1.5 - 6"
Double seat valve DE3 DN40 - 150 ; 1.5 - 6"

Datum:	11/08	21.06.16	08.08.16
Name:	Peters	Trytko	Trytko
Geprüft:			
Datum:			
Name:			
Geprüft:			

	
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RN 01.053.71	



38 nur bei DN125
only for DN125

39 nur bei
DN125,150
only for
DN125,150

15.1

Ersatzteilliste: spare parts list

Doppelsitzventil DE3 DN40 - 150 ; 1.5 - 6"
Double seat valve DE3 DN40 - 150 ; 1.5 - 6"

Datum:	11/09	21.06.16	08.08.16
Name:	Peters	Trytko	Trytko
Geprüft:			
Datum:			
Name:			
Geprüft:			
		Blatt	2 von 13
RN 01.053.71			

			
		SPX FLOW Germany	

pos. item	Menge Quantity	Beschreibung description	Material	DN25	1"	DN40	1,5"	DN50	2"
				WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	
1	1	Spritzanschluss CIP connection	PP					09-40-114/93 H168321	
2	1	Gehäuse Housing	1.4404			16-66-376/47 H170237	16-66-401/47 H170242	16-66-426/47 H170238	16-66-451/47 H170243
	1	Gehäuse Housing	1.4404			16-67-376/47 H170247	16-67-401/47 H170252	16-67-426/47 H170248	16-67-451/47 H170253
	1	Gehäuse Housing	1.4404			16-68-376/47 H170257	16-68-401/47 H170262	16-68-426/47 H170258	16-68-451/47 H170263
3	1	Gehäuse Housing	1.4404			16-69-376/47 H168999	16-69-401/47 H169001	16-69-426/47 H169000	16-69-451/47 H169002
	1	Schaft unten Lower valve shaft	1.4404			16-21-377/42 H169046		16-21-427/42 H169047	
4	1	Zugstange Guide rod	1.4404			16-24-398/42 H169069		16-24-448/42 H169068	
	1	Schaft oben Upper valve shaft	1.4404			16-21-376/42 H169032		16-21-426/42 H169033	
6	2	Verschlußstopfen Plug	PVC				08-74-030/93 H200514		
7	4	Skt. Schraube Hex. Screw	A2-70				65-01-089/15 H120284		
	1	Federzylinder Spring actuator	1.4301				16-30-250/12 H168223		
9	1	Sprengring Retainer ring	1.4310				08-39-083/13 H14883		
	1	Hauptzylinder Main actuator	Vestamid				16-30-244/93 H168555		
11	1	Anschlagschraube Stop sleeve	Vestamid				16-28-704/93 H168553		
	1	Sicherungsmutter Stop nut	1.4301				65-50-137/15 H147640		
13	1	Sicherungsscheibe Lock washer	1.4301				67-03-001/15 H147639		

Ersatzteilliste: spare parts list

Doppelsitzventil DE3 DN40 - 150 ; 1.5 - 6"
Double seat valve DE3 DN40 - 150 ; 1.5 - 6"

Datum:	11/09	21.06.16	08.08.16
Name:	Peters	Tytko	Tytko
Geprüft:			
Datum:			
Name:			
Geprüft:			

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		RN 01.053.71	



pos. item	Menge quantity	Beschreibung description	Material	DN25	1"	DN40	1,5"	DN50	2"
				WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.
14	4	Skt. Schraube Hex. Screw DIN EN 24017	A2-70						
15		Signalring Signal ring	1.4310						
15.1		Signalring Signal ring	1.4310						
16	1	Kolben-Dichtung Piston seal	NBR						
17	1	Kolben Piston	POM						
18	2	Quadring Quadring Q4216-N7004	NBR						
19	1	Kolbenstange Piston shaft	1.4301						
20	1	Deckel Hzyl. Cover for main actuator	POM						
21	1	Distanzhülse Spacer bush	1.4301						
22	1	Quadring Quadring Q4230-N7502	EPDM						
23	1	Schafthlager Shaft bearing	PPS GF40						
24	2	Schafthdichtung Shaft seal	PTFE						
25	2	Tellerdichtung Seat seal	EPDM						
			FDA-konform						
	2	Tellerdichtung Seat seal	HNBR						
			FDA-konform						
	2	Tellerdichtung Seat seal	FPM						
			FDA-konform						
26	2	Stützring Support ring	PTFE						

Ersatzteilliste: spare parts list

Doppelsitzventil DE3 DN40 - 150 ; 1.5 - 6"
Double seat valve DE3 DN40 - 150 ; 1.5 - 6"

pos. item	Menge quantity	Beschreibung description	Material	DN25 WS-Nr. ref.-no.	1" WS-Nr. ref.-no.	DN40 WS-Nr. ref.-no.	1,5" WS-Nr. ref.-no.	DN50 WS-Nr. ref.-no.	APV SPX FLOW Germany					
									11/09 Peters	09/11 Trytko	21.06.16 Trytko	08.08.16 Trytko	Blatt 4	von 13
27	1	Quadring Q4112-N7004	NBR						58-01-049/93 H76310					
	3	Sitzdichtung Seat seal	EPDM						58-33-132/93 H168192					
28	3	Sitzdichtung Seat seal	HNBR						58-33-132/33 H171561					
	3	Sitzdichtung Seat seal	FPM						58-33-132/73 H171559					
29	1	O-Ring OR12x1	EPDM						58-06-040/63 H169477					
30	1	O-Ring O-ring	EPDM						58-06-295/64 H77039					
31	1	Sicherungsmutter Self-locking nut	1.4301						65-50-087/15 H118903					
32	1	Entlüftungstopfen Venting plug	PE						08-60-005/93 H16218					
33	1	G-Verschraubung Straigh union	PVDF-schwarz						08-63-003/13 H16388					
34	1	W-Verschraubung Angular union							08-60-750/93 H208825					
35	2	Initiatorhalterung Mounting block	PA						15-33-918/93 H154913					
36	1	Verschlußkappe Cap	PVC						08-05-066/93 H154816					
37	1	O-Ring O-ring	FPM						58-06-332/73 H171616					
38	4	Buchse Bushing	1.4301											
39	1	Führungsband PTFE driving band	PTFE											
40	1	CU41-M-Direct Connect CU41-M-Direct Connect	PA6.6 GF30 schwarz						08-45-102/93 H320462					

Ersatzteilliste: spare parts list

Doppelsitzventil DE3 DN40 - 150 ; 1.5 - 6"
Double seat valve DE3 DN40 - 150 ; 1.5 - 6"

Datum:	11/08	21.06.16	08.08.16
Name:	Peters	Trytko	Trytko
Geprüft:			
Datum:			
Name:			
Geprüft:			
Blatt		5	von 13
RN 01.053.71			

Datum:		11/08	21.06.16	08.08.16
Name:		Peters	Trytko	Trytko
Geprüft:				
Datum:				
Name:				
Geprüft:				
Blatt		5	von	13
RN 01.053.71				

pos.	item	Menge	Beschreibung	Material	DN25	1"	DN40	1,5"	DN50	2"	
			description	material	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	
40		1	CU41-M-AS-I-extended	PA6.6 GF30 schwarz			08-45-112/93 H320469				
		1	CU41-M-AS-I-extended	PA6.6 GF30 schwarz			08-45-252/93 H324675				
41		1	CU41-M-Adapter	PA6.6 GF30 schwarz			08-48-602/93 H320476				
42		1	Luftschlauch Air hose	PA 12W			08-75-020/53 H16516				
		1	Ventileinsatz Valve insert	1.4404/EPDM			16-36-382/59 H169410		16-36-432/59 H169411		
		1	Ventileinsatz Valve insert	1.4404/HNBR			16-36-382/29 H171580		16-36-432/29 H171581		
		1	Ventileinsatz Valve insert	1.4404/FPM			16-36-382/69 H171573		16-36-432/69 H171574		
			Pos. 22, 24, 25, 26, 27, 28, 29, 37, 39 nur im kompletten Dichtungssatz erhältlich Item 22, 24, 25, 26, 27, 28, 29, 37, 39 available as complete seal kits only								
		1	Dichtungssatz Seal kit	FPM					58-34-660/00 H170207		
		1	Dichtungssatz Seal kit	EPDM					58-34-660/01 H170212		
		1	Dichtungssatz Seal kit	HNBR					58-34-660/06 H171750		
		1	Anbauteile für den Umbau der Ventile für die obere Schaftspülung Mounting kit for reconstruction of valves for upper shaft flushing							34-12-299/99 H201675	

Ersatzteilliste: spare parts list

Doppelsitzventil DE3 DN40 - 150 ; 1.5 - 6"
Double seat valve DE3 DN40 - 150 ; 1.5 - 6"

Datum:	11/09	21.06.16	08.08.16
Name:	Peters	Tytko	Tytko
Geprüft:			
Datum:			
Name:			
Geprüft:			

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RN 01.053.71	



pos. item	Menge quantity	Beschreibung description	Material	DN65	2.5"	3"	DN80	DN100	4"
				WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.
14	4	Skt. Schraube Hex. Screw DIN EN 24017	A2-70	65-01-104/15 M8x85 H172965					
15		Signalring Signal ring	1.4310	16-02-020/17 2x H169419					
15.1		Signalring Signal ring	1.4310						
16	1	Kolben-Dichtung Piston seal	NBR	58-01-760/83 H76868					
17	1	Kolben Piston	POM	16-29-124/93 H169390					
18	2	Quadring Quadring	NBR		58-01-236/83 H148385				
19	1	Kolbenstange Piston shaft	1.4301	16-29-130/12 H169391					
20	1	Deckel Hzyl. Cover for main actuator	POM	16-24-124/93 H169389					
21	1	Distanzhülse Spacer bush	1.4301		16-28-230/12 H168541				
22	1	Quadring Quadring	EPDM	58-01-329/63 H150898					
23	1	Schaftlager Shaft bearing	PPS GF40	16-28-212/93 H168233					
24	2	Schaftdichtung Shaft seal	PTFE	58-33-016/23 H149620					
	2	Tellerdichtung Seat seal	EPDM	58-33-493/93 H77515					
	2	Tellerdichtung Seat seal	FDA-konform	58-33-493/33 H166678					
25	2	Tellerdichtung Seat seal	HNBR	58-33-493/73 H77514					
	2	Tellerdichtung Seat seal	FDA-konform						
26	2	Stützing Support ring	PTFE		58-01-048/23 H76309				

Ersatzteilliste: spare parts list

Doppelsitzventil DE3 DN40 - 150 ; 1.5 - 6"
Double seat valve DE3 DN40 - 150 ; 1.5 - 6"

		Datum: 11/09		21.06.16		08.08.16		Blatt 8 von 13			
		Name: Peters		Trytko		Trytko		RN 01.053.71			
		Geprüft:									
		Datum:									
		Name:									
		Geprüft:									
27	1	Quadrang Quadrang	Q4112-N7004	Material	NBR	DN65	2,5"	3"	DN80	DN100	4"
	3	Sitzdichtung Seat seal		material	EPDM	WS-Nr. ref.-no.	58-33-132/93 H168192	WS-Nr. ref.-no.	58-33-133/93 H168153	WS-Nr. ref.-no.	WS-Nr. ref.-no.
28	3	Sitzdichtung Seat seal		material	HNBR	WS-Nr. ref.-no.	58-33-132/33 H171561	WS-Nr. ref.-no.	58-33-133/33 H171565	WS-Nr. ref.-no.	58-33-133/73 H171563
	3	Sitzdichtung Seat seal		material	FPM	WS-Nr. ref.-no.	58-33-132/73 H171559	WS-Nr. ref.-no.	58-33-133/73 H171563	WS-Nr. ref.-no.	58-33-133/73 H171563
29	1	O-Ring O-ring	OR12x1	Material	EPDM	DN65	2,5"	3"	DN80	DN100	4"
30	1	O-Ring O-ring		material	EPDM	WS-Nr. ref.-no.	58-06-295/63 H77039	WS-Nr. ref.-no.	58-06-040/63 H169477	WS-Nr. ref.-no.	58-06-490/63 H77061
31	1	Sicherungsmutter Self-locking nut	M10x1	Material	1.4301	DN65	2,5"	3"	DN80	DN100	4"
32	1	Entlüftungstopfen Venting plug	G1/8"	material	PE	WS-Nr. ref.-no.	08-60-005/93 H16218	WS-Nr. ref.-no.	08-60-005/93 H16218	WS-Nr. ref.-no.	08-60-005/93 H16218
33	1	G-Verschraubung Straigh union	G1/8" 8x1	Material	PVDF-schwarz	DN65	2,5"	3"	DN80	DN100	4"
34	1	W-Verschraubung Angular union	G1/8" 6x1	material		WS-Nr. ref.-no.	08-63-003/13 H16388	WS-Nr. ref.-no.	08-63-003/13 H16388	WS-Nr. ref.-no.	08-63-003/13 H16388
35	2	Initiatorhalterung Mounting block	ø11	Material	PA	DN65	2,5"	3"	DN80	DN100	4"
36	1	Verschlußkappe Cap	11,1x5	material	PVC	WS-Nr. ref.-no.	08-05-066/93 H154816	WS-Nr. ref.-no.	08-05-066/93 H154913	WS-Nr. ref.-no.	08-05-066/93 H154913
37	1	O-Ring O-ring		Material	FPM	DN65	2,5"	3"	DN80	DN100	4"
38	4	Buchse Bushing		material	1.4301	WS-Nr. ref.-no.	58-06-332/73 H171616	WS-Nr. ref.-no.	58-06-332/73 H171616	WS-Nr. ref.-no.	58-06-503/73 H171288
39	1	Führungsband PTFE driving band		Material	PTFE	DN65	2,5"	3"	DN80	DN100	4"
40	1	CU41-M-Direct Connect CU41-M-Direct Connect		Material	PA6.6 GF30 schwarz	WS-Nr. ref.-no.	08-45-102/93 H320462	WS-Nr. ref.-no.	08-45-102/93 H320462	WS-Nr. ref.-no.	08-45-102/93 H320462



Ersatzteilliste: spare parts list

Doppelsitzventil DE3 DN40 - 150 ; 1.5 - 6"
Double seat valve DE3 DN40 - 150 ; 1.5 - 6"

Datum:	11/08	21.06.16	08.08.16
Name:	Peters	Trytko	Trytko
Geprüft:			
Datum:			
Name:			
Geprüft:			
Blatt		9	von 13
RN 01.053.71			

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pos.	item	Menge Quantity	Beschreibung description	Material	DN65	2,5"	3"	DN80	DN100	4"
				material	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.
40	CU41-M-AS-I-extended CU41-M-AS-I-extended	1		PA6.6 GF30 schwarz	08-45-112/93 H320469					
	CU41-M-AS-I-standard CU41-M-AS-I-standard	1		PA6.6 GF30 schwarz	08-45-252/93 H324675					
41	CU41-M-Adapter CU41-M-adapter	1		PA6.6 GF30 schwarz	08-48-602/93 H320476					
42	Luftschlauch Air hose	1	6x1 (øA x l 6x4)	PA 12W	08-75-020/53 H16516					
1	Ventileinsatz Valve insert	1		1.4404/EPDM	16-36-482/59 H169413	16-36-507/59 H169412	16-36-557/59 H169414	16-36-532/59 H169415	16-36-632/59 H169416	
1	Ventileinsatz Valve insert	1		1.4404/HNBR	16-36-482/29 H171583	16-36-507/29 H171582	16-36-557/29 H171584	16-36-532/29 H171585	16-36-632/29 H171586	
1	Ventileinsatz Valve insert	1		1.4404/FPM	16-36-482/69 H171576	16-36-507/69 H171575	16-36-557/69 H171577	16-36-532/69 H171578	16-36-632/69 H171579	
<p>Pos. 22, 24, 25, 26, 27, 28, 29, 37, 39 nur im kompletten Dichtungssatz erhältlich Item 22, 24, 25, 26, 27, 28, 29, 37, 39 available as complete seal kits only</p>										
1	Dichtungssatz Seal kit	1		FPM	58-34-660/00 H170207				58-34-663/00 H170210	
1	Dichtungssatz Seal kit	1		EPDM	58-34-660/01 H170212				58-34-663/01 H170215	
1	Dichtungssatz Seal kit	1		HNBR	58-34-660/06 H171750				58-34-663/06 H171751	
1	Anbauteile für den Umbau der Ventile für die obere Schafftspülung Mounting kit for reconstructionof valves for upper shaft flushing	1								34-12-299/99 H201675

Ersatzteilliste: spare parts list

Doppelsitzventil DE3 DN40 - 150 ; 1.5 - 6"
Double seat valve DE3 DN40 - 150 ; 1.5 - 6"

pos. item	Menge Quantity	Beschreibung description	Material	DN125	5"		6"		Datei				
					WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	11/09	21.06.16	08.08.16	21.09.16	
1	1	Spritzanschluss CIP connection	PP	09-40-117/93 H178450					Datum: Name: Geprüft:	Peters	Trytko	Trytko	C.Keil
	1	Gehäuse Housing	1.4404	16-66-676/47 H174085	16-66-726/47 H200818	16-66-776/47 H315922			Datum: Name: Geprüft:				
2	1	Gehäuse Housing	1.4404	16-67-676/47 H174086	16-67-726/47 H200819	16-67-776/47 H315923			Datum: Name: Geprüft:				
	1	Gehäuse Housing	1.4404	16-68-676/47 H174087	16-68-726/47 H200820	16-68-776/47 H315924			Datum: Name: Geprüft:				
	1	Gehäuse Housing	1.4404	16-69-676/47 H173779	16-69-726/47 H200821	16-69-776/47 H315925			Datum: Name: Geprüft:				
3	1	Schaft unten Lower valve shaft	1.4404	16-21-677/42 H174068			16-21-727/42 H315990		Datum: Name: Geprüft:				
4	1	Zugstange Guide rod	1.4404	16-24-698/42 H174139			16-24-748/42 H315992		Datum: Name: Geprüft:				
5	1	Schaft oben Upper valve shaft	1.4404	16-21-676/42 H174059			16-21-726/42 H315976		Datum: Name: Geprüft:				
6	2	Verschlußstopfen Plug	PVC	08-74-030/93 H200514			08-74-030/93 H200514		Datum: Name: Geprüft:				
7	4	Skt. Schraube Hex. Screw	A2-70	65-01-085/15 M8x28 H78778			65-01-136/13 M10x30 H78814		Datum: Name: Geprüft:				
8	1	Federzylinder Spring actuator	1.4301	16-30-772/12 H174092			16-30-774/12 H316010		Datum: Name: Geprüft:				
9	1	Sprengring Retainer ring	1.4310	08-39-083/13 H14883			08-39-083/13 H14883		Datum: Name: Geprüft:				
10	1	Hauptzylinder Main actuator	Vestamid	16-30-243/93 H178474			16-30-246/93 H173902		Datum: Name: Geprüft:				
11	1	Anschlagschraube Stop sleeve	Vestamid	16-28-704/93 H168553			16-28-704/93 H168553		Datum: Name: Geprüft:				
12	1	Sicherungsmutter Stop nut	1.4301	65-50-137/15 H147640			65-50-137/15 H147640		Datum: Name: Geprüft:				
13	1	Sicherungsscheibe Lock washer	1.4301	67-03-001/15 H147639			67-03-001/15 H147639		Datum: Name: Geprüft:				



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Ersatzteilliste: spare parts list

Doppelsitzventil DE3 DN40 - 150 ; 1.5 - 6"
Double seat valve DE3 DN40 - 150 ; 1.5 - 6"

Datum:	11/09	21.06.16	08.08.16	21.09.16
Name:	Peters	Trytko	Trytko	C.Keil
Geprüft:				



Datum:				
Name:				
Geprüft:				

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RN 01.053.71			

pos. item	Menge quantity	Beschreibung description	Material	DN125		5"		6"	
				WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.
14	4	Skt. Schraube Hex. Screw DIN EN 24017 DIN EN 24014	A2-70	65-01-100/15 M8x90 H172966					
15	1	Signalring Signal ring	1.4310	16-02-022/17 H174144					
15.1		Signalring Signal ring	1.4310						
16	1	Kolben-Dichtung Piston seal	NBR	58-01-762/83 H76870					
17	1	Kolben Piston	POM	16-29-127/93 H174140					
18	2	Quadring Quadring Q4216-N7004	NBR	58-01-236/83 H148385					
19	1	Kolbenstange Piston shaft	1.4301	16-29-132/12 H174141					
20	1	Deckel Hzyl. Cover for main actuator	POM	16-24-128/93 H174143					
21	1	Distanzhülse Spacer bush	1.4301						
22	1	Quadring Quadring Q4230-N7502	EPDM	58-01-240/83 H174545					
23	1	Schafthlager Shaft bearing	PPS GF40	16-28-369/12 H174079					
24	2	Schafthdichtung Shaft seal	PTFE	58-33-140/23 H174056					
	2	Tellerdichtung Seat seal	EPDM FDA-konform	58-33-693/93 H77611					
25	2	Tellerdichtung Seat seal	HNBR FDA-konform	58-33-693/33 H170178					
	2	Tellerdichtung Seat seal	FPM FDA-konform	58-33-693/73 H77610					
26	2	Stützring Support ring	PTFE	58-01-048/23 H76309					

Ersatzteilliste: spare parts list

Doppelsitzventil DE3 DN40 - 150 ; 1.5 - 6"
Double seat valve DE3 DN40 - 150 ; 1.5 - 6"

Datum:	11/09	21.06.16	08.08.16	21.09.16
Name:	Peters	Trytko	Trytko	C.Keil
Geprüft:				



Datum:				
Name:				
Geprüft:				

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pos. item	Menge Quantity	Beschreibung description	Material	DN125		5"		6"	
				WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.
27	1	Quadrang Quadrang	NBR	58-01-049/93 H76310					
	3	Sitzdichtung Seat seal	EPDM	58-33-135/93 H173940					
28	3	Sitzdichtung Seat seal	HNBR	58-33-135/33 H179939					
	3	Sitzdichtung Seat seal	FPM	58-33-135/73					
29	1	O-Ring O-ring	EPDM	58-06-040/63 H169477					
30	1	O-Ring O-ring	EPDM	58-06-555/63 H77074					
31	1	Sicherungsmutter Self-locking nut	1.4301	65-50-087/15 H118903					
32	1	Verschlußstopfen Plug	Kunststoff schwarz	08-60-007/93 H176010					
33	1	G-Verschraubung Straigh union	1.4571	16-38-200/42 H329696					
34	1	W-Verschraubung Angular union		08-60-750/93 H208825					
35	2	Initiatorhalterung Mounting block	PA6.6 schwarz	15-33-918/93 H154913					
36	1	Verschlußkappe Cap	PVC						
37	1	O-Ring O-ring	FPM	58-06-589/73 H176512					
38	4	Buchse Bushing	1.4301	08-01-127/12 H174186					
39	1	Führungsband PTFE driving band	PTFE	08-39-189/93 H174200					
40	1	CU41-M-Direct Connect CU41-M-Direct Connect	PA6.6 GF30 schwarz						

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Ersatzteilliste: spare parts list

Doppelsitzventil DE3 DN40 - 150 ; 1.5 - 6"
Double seat valve DE3 DN40 - 150 ; 1.5 - 6"

Datum:	11/08	21.06.16	08.08.16	21.09.16
Name:	Peters	Trytko	Trytko	C.Keil
Geprüft:				



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RN 01.053.71			

pos.	item	Menge	Beschreibung	Material	DN125	5"	6"	WS-Nr.	WS-Nr.	WS-Nr.	WS-Nr.
		quantity	description	material	WS-Nr.	ref.-no.	WS-Nr.	ref.-no.	WS-Nr.	ref.-no.	WS-Nr.
		1	CU41-M-AS-I-extended	PA6.6 GF30				08-45-112/93			
40			CU41-M-AS-I-extended	schwarz				H320469			
		1	CU41-M-AS-I-standard	PA6.6 GF30				08-45-252/93			
			CU41-M-AS-I-standard	schwarz				H324675			
41		1	CU41-M-Adapter	PA6.6 GF30				08-48-602/93			
			CU41-M-adapter	schwarz				H320476			
42		1	Luftschlauch	PA 12W				08-75-020/53			
			Air hose					H16516			
		1	Ventileinsatz	1.4404/EPDM	16-36-682/59			16-36-607/59			
			Valve insert	H174083	H316006			H316006			
		1	Ventileinsatz	1.4404/HNBR	16-36-682/29			16-36-607/29			
			Valve insert	H204848							
		1	Ventileinsatz	1.4404/FPM	16-36-682/69			16-36-607/69			
			Valve insert								
<p>Pos. 22, 24, 25, 26, 27, 28, 29, 37, 39 nur im kompletten Dichtungssatz erhältlich Item 22, 24, 25, 26, 27, 28, 29, 37, 39 available as complete seal kits only</p>											
		1	Dichtungssatz	FPM	58-34-691/00			58-34-695/00			
			Seal kit								
		1	Dichtungssatz	EPDM	58-34-691/01			58-34-695/01			
			Seal kit	H179212				H316227			
		1	Dichtungssatz	HNBR	58-34-691/06			58-34-695/06			
			Seal kit	H179211							
			Anbauteile für den Umbau der Ventile für die obere Schafspülung		34-18-299/99			34-18-299/99			
			Mounting kit for reconstruction of valves for upper shaft flushing		H312958			H312958			

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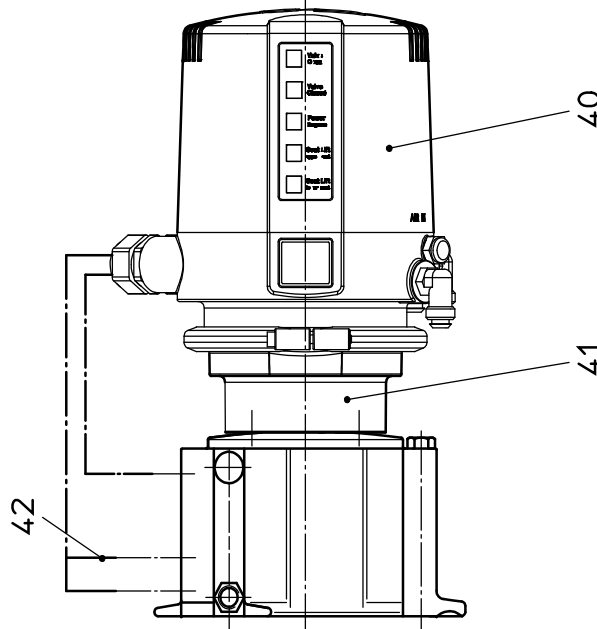
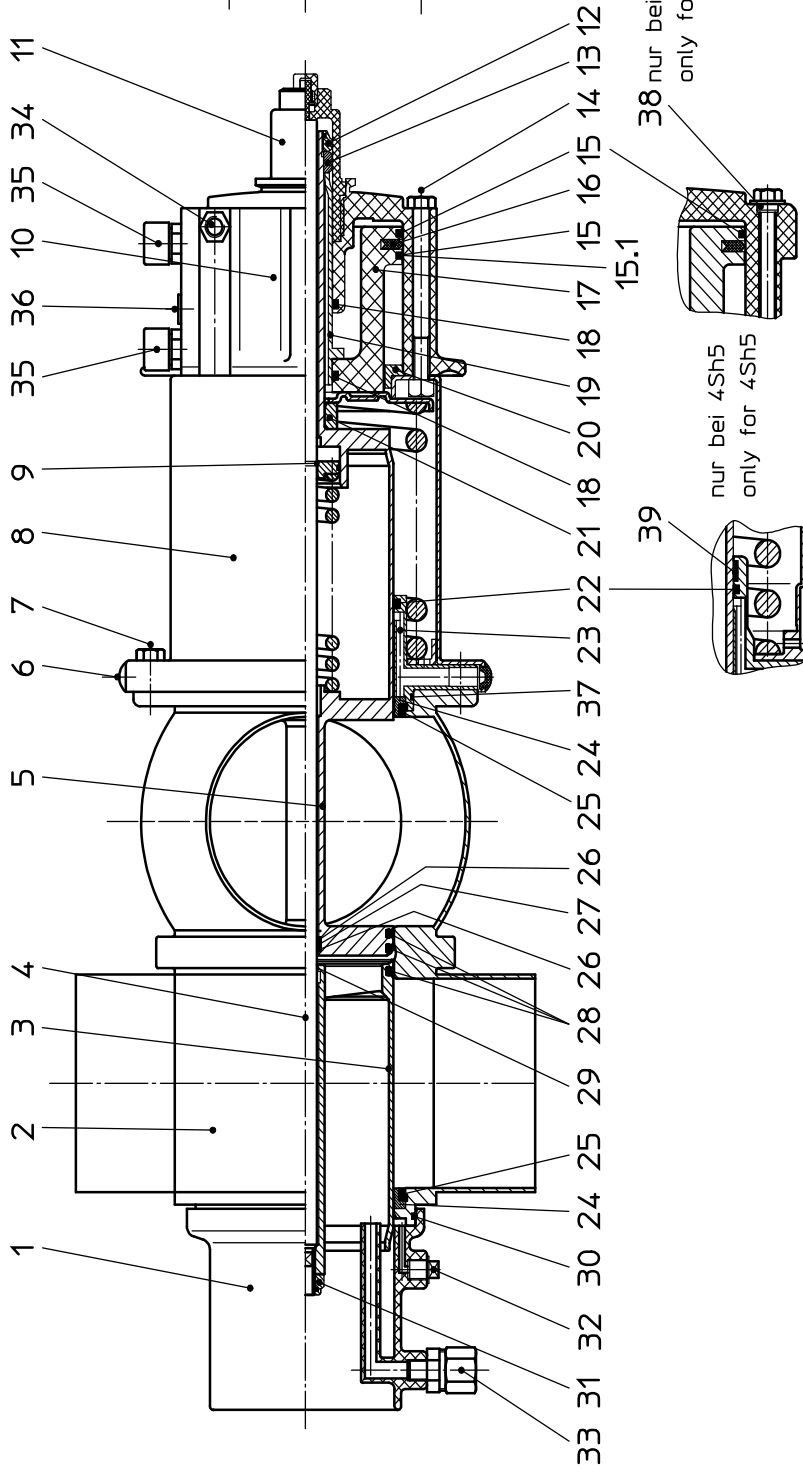
Ersatzteilliste: spare parts list

Doppelsitzventil DE3 1,5 - 4 Sh5 Double seat valve DE3 1,5 - 4 Sh5

Datum: 09/10
Name: Trytko
Geprüft: Trytko

Datum: 21.06.16
Name: Trytko
Geprüft: Trytko

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Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstößt verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraf 18 UWG, Paragraf 106 UrhG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmustereintragung, vorbehalten. SPX FLOW, Germany

Ersatzteilliste: spare parts list

Doppelsitzventil DE3 1,5 - 4 Sh5
Double seat valve DE3 1,5 - 4 Sh5

Datum:	09/10	21.06.16
Name:	Trytko	Trytko
Geprüft:		
Datum:		
Name:		
Geprüft:		
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pos.	Menge	Beschreibung	Material	1,5Sh5	2Sh5	2,5Sh5	3Sh5	4Sh5	WS-Nr.	WS-Nr.	WS-Nr.	ref.-no.	ref.-no.	ref.-no.
1	1	Spritz Anschluss CIP connection	PP		09-40-114/93 H168321		09-40-115/93 H168322		09-40-117/93 H178450					
1	1	Gehäuse Housing	1.4404	16-66-406/47 H179147	16-66-456/47 H179146	16-66-506/47 H179148	16-66-556/47 H179149	16-66-656/47 H178776						
1	1	Gehäuse Housing	1.4404	16-67-406/47 H179142	16-67-456/47 H176739	16-67-506/47 H179143	16-67-556/47 H179144	16-67-656/47 H178777						
1	1	Gehäuse Housing	1.4404	16-68-406/47	16-68-456/47	16-68-506/47	16-68-556/47	16-68-656/47 H178778						
1	1	Gehäuse Housing	1.4404	16-69-406/47	16-69-456/47	16-69-506/47	16-69-556/47	16-69-656/47 H178779						
3	1	Schaft unten Lower valve shaft	1.4404		16-21-502/42 H169048	16-21-029/42 H179137	16-21-033/42 H179140	16-21-038/42 H178752						
4	1	Zugstange Guide rod	1.4404	16-24-024/42 H179119	16-24-025/42 H176740	16-24-026/42 H179120	16-24-027/42 H179121	16-24-037/42 H178760						
5	1	Schaft oben Upper valve shaft	1.4404	16-21-021/42 H179125	16-21-025/42 H176742	16-21-028/42 H179126	16-21-032/42 H179127	16-21-037/42 H178758						
6	2	Blindstopfen Blind plug	PVC			08-74-030/93 H200514								
7	4	Skt. Schraube Hex. Screw	A2-70		65-01-089/15 M8x25	H120284		65-01-085/15 M8x28						
8	1	Federzylinder Spring actuator	1.4301		16-30-250/12 H168223		16-30-251/12 H168222	16-30-772/12 H174092						
9	1	Sprengring Retainer ring	1.4310			08-39-083/13 H14883								
10	1	Hauptzylinder Main actuator	Vestamid		16-30-244/93 H168555		16-30-245/93 H168554	16-30-243/93 H178474						
11	1	Anschlagschraube Stop sleeve	Vestamid		16-28-704/93 H168553									
12	1	Sicherungsmutter Stop nut	1.4301		65-50-137/15 H147640									
13	1	Sicherungsscheibe Lock washer	1.4301		67-03-001/15 H147639									



Ersatzteilliste: spare parts list

Doppelsitzventil DE3 1,5 - 4 Sh5
Double seat valve DE3 1,5 - 4 Sh5

Datum:	09/10	21.06.16
Name:	Trytko	Trytko
Geprüft:		
Datum:		
Name:		
Geprüft:		
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RN 01.053.71-4		

	
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pos. item	Menge Quantity	Beschreibung description	Material	2,5Sh5				WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.
				1,5Sh5 WS-Nr. ref.-no.	2Sh5 WS-Nr. ref.-no.	3Sh5 WS-Nr. ref.-no.	4Sh5 WS-Nr. ref.-no.			
14	4	Skt. Schraube Hex. Screw DIN EN 24017	A2-70	65-01-104/15 M8x85 H172965	65-01-100/15 M8x90 H172966					
15		Signalring Signal ring	1.4310	16-02-020/17 2x H169419	16-02-021/17 1xH169418	16-02-022/17 1xH174144				
15.1		Signalring Signal ring	1.4310		16-02-016/57 1xH204085					
16	1	Kolben-Dichtung Piston seal	NBR	58-01-760/83 H76868	58-01-761/83 H76869	58-01-762/83 H76870				
17	1	Kolben Piston	POM	16-29-124/93 H169390	16-29-125/93 H168348	16-29-127/93 H174140				
18	2	Quadring Quadring	NBR	58-01-236/83 H148385						
19	1	Kolbenstange Piston shaft	1.4301	16-29-130/12 H169391	16-29-131/12 H168332	16-29-132/12 H174141				
20	1	Deckel Hzyl. Cover for main actuator	POM	16-24-126/93 H170525	16-24-124/93 H169389	16-24-125/93 H168346	16-24-128/93 H174143			
21	1	Distanzhülse Spacer bush	1.4301	16-28-230/12 H168541						
22	1	Quadring Quadring	EPDM	58-01-329/63 H150898	58-01-238/63 H148387	58-01-240/63 H174545				
23	1	Schaftlager Shaft bearing	PPS GF40	16-28-212/93 H168233	16-28-213/93 H168151	16-28-369/12 H174079				
24	2	Schaftdichtung Shaft seal	PTFE	58-33-016/23 H149620	58-33-017/23 H150708	58-33-140/23 H174056				
	2	Tellerdichtung Seat seal	EPDM	58-33-493/93 H77515	58-33-643/93 H77586	58-33-693/93 H77611				
25	2	Tellerdichtung Seat seal	HNBR	58-33-493/33 H166678	58-33-643/33 H166682	58-33-693/33 H170178				
	2	Tellerdichtung Seat seal	FPM	58-33-493/73 H77514	58-33-643/73 H77585	58-33-693/73 H77610				
26	2	Stützring Support ring	PTFE	58-01-048/23 H76309						

Ersatzteilliste: spare parts list

Doppelsitzventil DE3 1,5 - 4 Sh5 Double seat valve DE3 1,5 - 4 Sh5

pos. item	Menge Quantity	Beschreibung description	Material	1,5Sh5				2,5Sh5				3Sh5				4Sh5			
				WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	
27	1	Quadring Quadring	NBR	58-01-049/93 H76310															
28	3	Sitzdichtung Seat seal	EPDM FDA-konform	58-33-132/93 H168192				58-33-133/93 H168153				58-33-135/93 H173940							
	3	Sitzdichtung Seat seal	HNBR FDA-konform	58-33-132/33 H171561				58-33-133/33 H171565				58-33-135/33 H173939							
	3	Sitzdichtung Seat seal	FPM FDA-konform	58-33-132/73 H171559				58-33-133/73 H171563				58-33-135/73 H171563							
29	1	O-Ring O-ring	EPDM	58-06-040/63 H169477															
30	1	O-Ring O-ring	EPDM	58-06-295/63 H77039				58-06-490/63 H77061				58-06-555/63 H77074							
31	1	Sicherungsmutter Self-locking nut	1.4301	65-50-087/15 H118903															
32	1	Entlüftungstopfen Venting plug	PE	08-60-005/93 H16218				08-60-007/93 H176010											
33	1	G-Verschraubung Straigh union	PVDF-schwarz 1.4571	08-63-003/13 H16388				16-38-200/42 H329696											
34	1	W-Verschraubung Angular union		08-60-750/93 H208825															
35	2	Initiatorhalterung Mounting block	PA6.6 schwarz	15-33-918/93 H154913															
36	1	Verschlußkappe Cap	PVC	08-05-066/93 H154816															
37	1	O-Ring O-ring	FPM	58-06-332/73 H171616				58-06-503/73 H171288				58-06-589/73 H176512							
38	4	Buchse Bushing	1.4301									08-01-127/12 H174186							
39	1	Führungsband PTFE driving band	PTFE									08-39-189/93 H174200							
40	1	CU41-M-Direct Connect CU41-M-Direct Connect	PA6.6 GF30 schwarz					08-45-102/93 H320462											



Blatt 4 von 5

RN 01.053.71-4

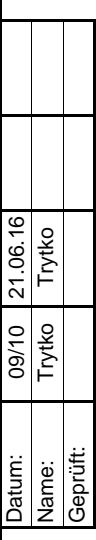
Ersatzteilliste: spare parts list

Doppelsitzventil DE3 1,5 - 4 Sh5 Double seat valve DE3 1,5 - 4 Sh5

Datum:	09/10	21.06.16
Name:	Trytko	Trytko
Geprüft:		

Datum:			
Name:			
Geprüft:			

Blatt	5	von	5
RN 01.053.71-4			



pos. item	Menge Quantity	Beschreibung description	Material	1,5Sh5 WS-Nr. ref.-no.	2Sh5 WS-Nr. ref.-no.	2,5Sh5 WS-Nr. ref.-no.	3Sh5 WS-Nr. ref.-no.	4Sh5 WS-Nr. ref.-no.
40	1	CU41-M-AS-I-extended	PA6.6 GF30 schwarz			08-45-112/93 H320469		
	1	CU41-M-AS-I-standard	PA6.6 GF30 schwarz			08-45-252/93 H324675		
	1	CU4-M-Adapter	PA6.6 GF30 schwarz			08-48-602/93 H320476		
	1	Luftschlauch Air hose	PA 12W			08-75-020/53 H16516		

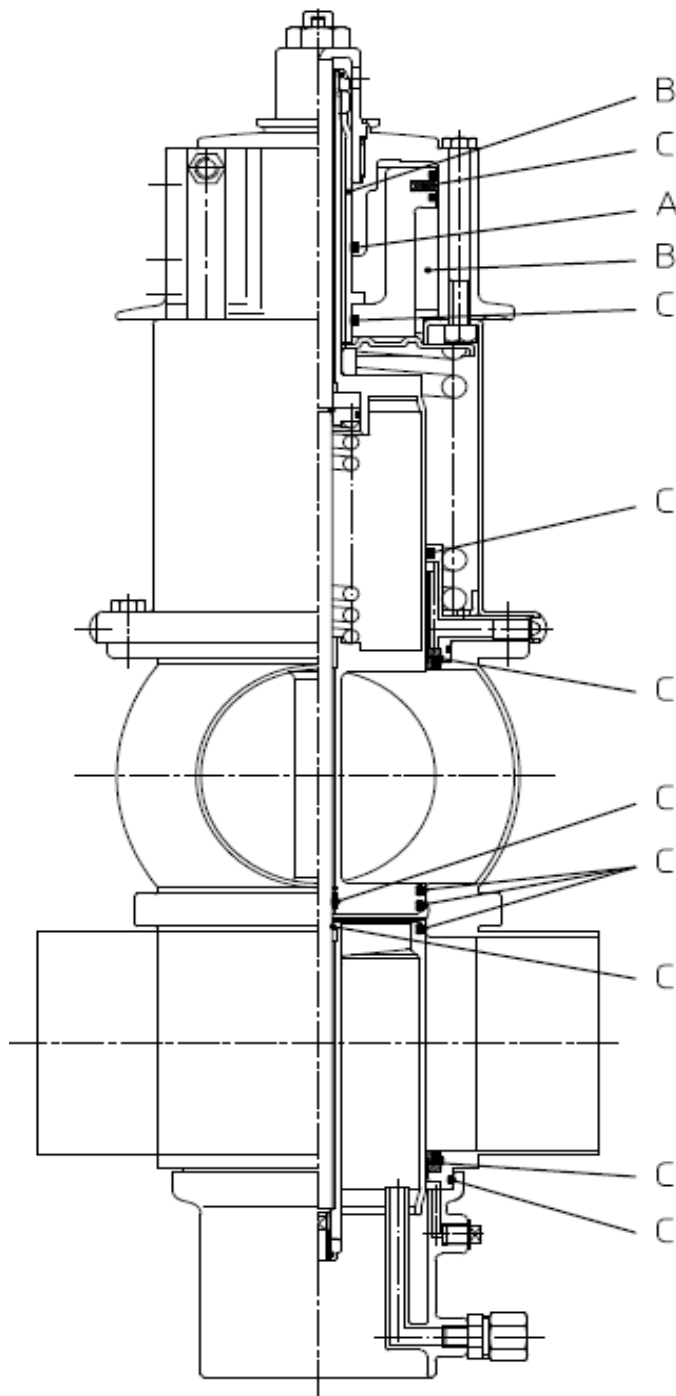
1	Ventileinsatz Valve insert	1.4404/EPDM	16-36-043/59	16-36-045/59 H176743	16-36-048/59	16-36-038/59 H319623	16-36-039/59 H178751	
1	Ventileinsatz Valve insert	1.4404/HNBR	16-36-043/29	16-36-045/29	16-36-048/29	16-36-038/29	16-36-039/29	
1	Ventileinsatz Valve insert	1.4404/FPM	16-36-043/69	16-36-045/69	16-36-048/69	16-36-038/69	16-36-039/69	

**Pos. 22, 24, 25, 26, 27, 28, 29, 37, 39 nur im kompletten Dichtungssatz erhältlich
Item 22, 24, 25, 26, 27, 28, 29, 37, 39 available as complete seal kits only**

1	Dichtungssatz Seal kit	FPM	58-34-660/00 H170207	58-34-660/01 H170212	58-34-663/00 H170210	58-34-663/01 H179215	58-34-691/00	
1	Dichtungssatz Seal kit	EPDM	58-34-660/06 H171750			58-34-663/06 H171751	58-34-691/01 H179212	
1	Dichtungssatz Seal kit	HNBR					58-34-691/06 H179211	

1	Anbauteile für den Umbau der Ventile für die Schaftspülung Mounting kit for reconstruction of valves for shaft flushing		34-12-299/99 H201675				34-18-299/99 H312958	
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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 and Viton
Klüber Paraliq GTE 703
0,75 kg can ref.-No.: 70-01-019/93
60 g tube ref.-No.: 70-01-018/93.

CAUTION!

Avoid grease residues in product area.

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

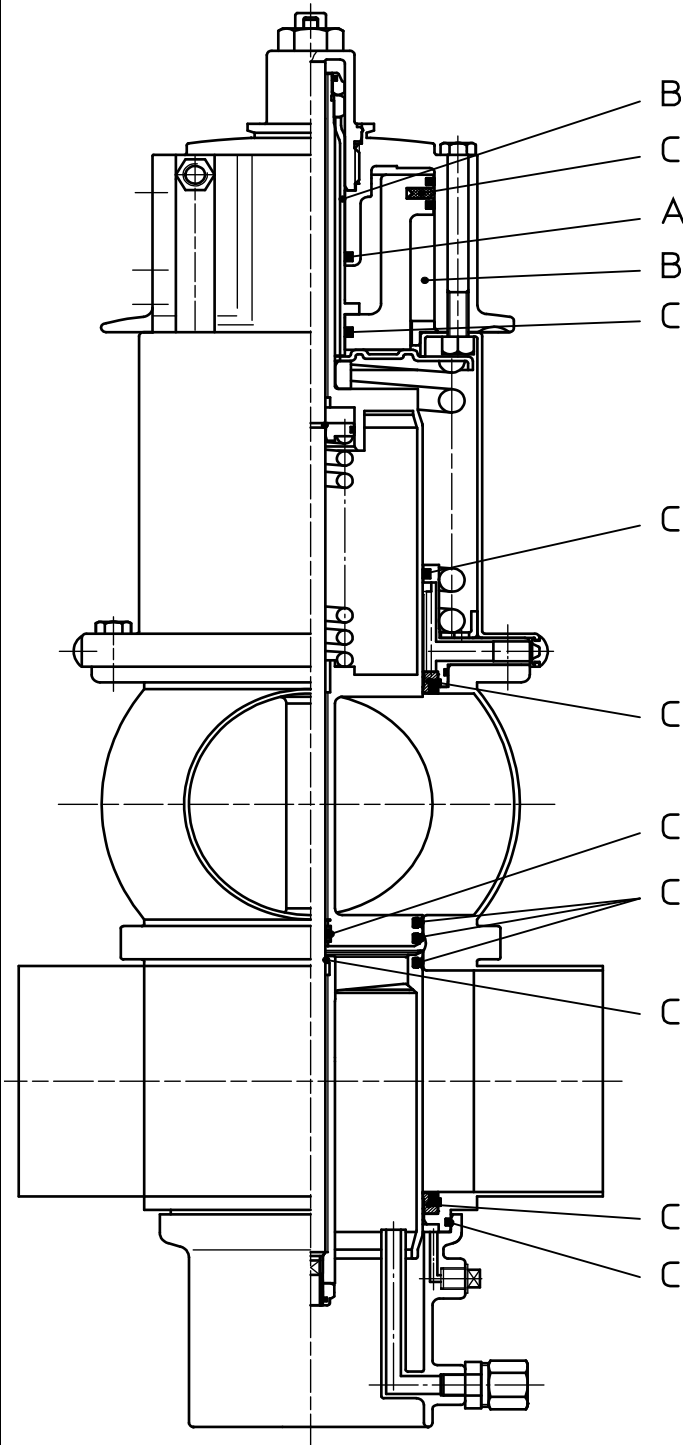
Datum:	11/08																		
Name:	Peters																		
Geprüft:																			



Ersatzteilliste: spare parts list																		
DE3 Lubrication Chart																		

SPX FLOW Germany			
Blatt	1	von	1
RN GB 260.068-1			

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

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:	11/08																		
Name:	Peters																		
Geprüft:																			



Ersatzteilliste: spare parts list

SPX FLOW
Germany

DE3 Schmierplan

Blatt 1 von 1

RN 260.068-1

APV DELTA DE3

DOUBLE SEAT VALVE

SPXFLOW

SPX FLOW

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SPX FLOW reserves the right to incorporate the latest design and material changes without notice or obligation.

Design features, materials of construction and dimensional data, as described in this manual, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region. For more information visit www.spxflow.com.

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Scan for DE3 Valve
Maintenance Video

