

APV DELTA SV1

BUTTERFLY VALVE

FORM NO.: H170726 REVISION: UK-8

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



Scan for SV1/SVS1F 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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	(see attachment)	
	SV1 - FZ CU DN 25 - 100, 1"-4"	- RN 01.037 - 14
	SV1 - H DN 25 - 100, 1"-4"	- RN 01.037.5 - 9
	Handle SV-HL valve position indication	- RN 01.037.0
	DN25 - 100, 1" - 4"	
	Turning actuator K-80, K-125, K-180 F/L	- RN 01.073
	Turning actuator spring/air for feedback unit	- RN 01.076

1. General Terms

This instruction manual has to be read carefully and observed by the responsible operating and service personnel.

We do 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

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.

DANGER!



- The technical safety symbol draws your attention to important directions for operating safety. You will find it wherever the activities described are bearing health hazards or risks for persons or material assets.



- Do not reach into the open valve or into the yoke!
Risk of bruising at movable parts of the valve.



- In dismantled state there is the risk of injury by sudden valve operation.

- Regular maintenance including replacement of seals and bearing bushes must be scheduled for the valve in order to prevent leakages and discharge of liquids.



- Before any maintenance of the valve, the line system must be depressurized and discharged if possible.



- Electric and pneumatic connections must be separated.

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

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 representative 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 butterfly 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:
ATEX (Directive 2014/34/EU)

4. Mode of Operation

4.1. General Terms

Use of high-quality stainless steel and seal materials to the specified requirements, the butterfly valve range DELTA SV1 is applicable in the food and beverage industries as well as in the chemical and pharmaceutical industries.

Valves of the series DELTA SV1 can either be operated manually or remote controlled via a pneumatic actuator. Manual operation and pneumatic actuator including add-on pieces are interchangeable.

In the standard design "NC", the pneumatic turning actuator opens the valve with compressed air.
Reset by spring force into the limit position closed.

Extension of operating time of actuated valves by pneumatic air throttle or adjusting screw in the control unit to optimize the flow behaviour and to reduce the risk of pressure hammers in installations if necessary.

The butterfly valve can also be used in vacuum systems.

The valve opens and closes by turning the disc by 90°.

Smooth valve passage without diversion of line flow.

The opening diameter complies with the size of the inner line diameter.

5. Auxiliary Equipment

- 5.1. Valve position indication - valve with pneumatic actuator**
Proximity switches to signal the limit position of the valve disc can be installed in the yoke area if required.

We recommend to use our APV standard proximity switches.
Type: three-wire proximity switch (ref.-No. 08-60-011/93; H16223)
Operating distance: 4mm / diameter: 11mm / length: 30 mm.

Feedback complete with support and proximity switch
(ref.-No. 15-33-023/93; H327725) for a limit position.

Using a valve position indicator other than APV, we cannot accept any liability for faulty function.

- 5.2. Valve position indication - valve with manual operation**
Specific manual actuations with feedback feature are available:
- a) Feedback of the disc position **closed**
(simple variant).
 - b) Feedback of both disc positions
open and **closed** is possible.

- 5.3. Manual operation with adjusting device**
As a special design, a handle is available which provides for the fixation of intermediate positions beside the two limit positions.

5. Auxiliary Equipment

Fig. 5.4.



5.4. Control unit (CU, fig. 5.4.)

Units with feedback switch and magnet valve for the pneumatic control of the valve for assembly on the actuator are also available in fieldbus technology.

The assembly of a control unit on a pneumatic actuator is possible.

The following different designs are available:

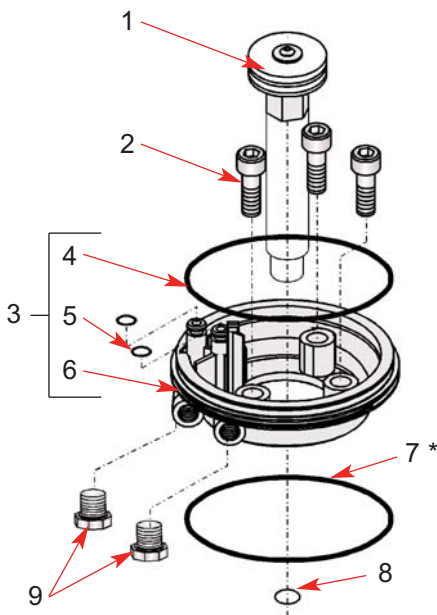
Direct Connect	CU41-T-Direct Connect 08 - 45 - 101/93; H320461
AS-i extended 62 slaves	CU41-T-AS-i extended 08 - 45 - 111/93; H320468
DeviceNet	CU31 DeviceNet 16 - 31 - 240/93; H209422
Profibus	CU31 Profibus 08 - 45 - 001/93; H315495

5.5. Adapter for control unit (fig 5.5.)

CU31 Profibus, CU31 DeviceNet

The following adapters are required to install the control unit on the SV1 valve.

Fig. 5.5.



Spare parts for CU2 adapter

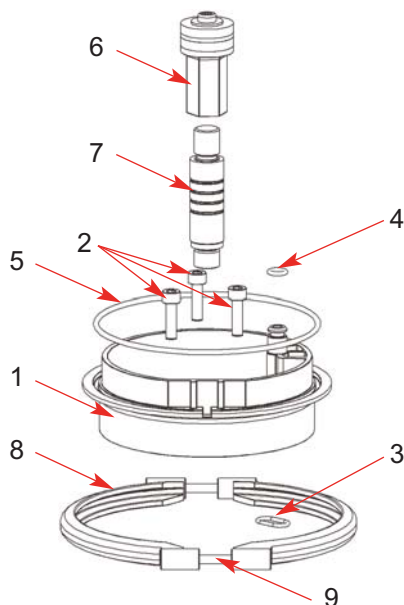
Item	Pcs.	Designation	reference No. ID - No.
-	-	CU2 adapter K080 SVS1F, DKR	000 08-48-416/93 H209431
1	1	CU operating cam cpl. SVS/DKR	000 08-60-779/93 H208853
2	3	cyl. screw ISO1207-M5x18-A2-7	000 08-60-760/15 H208835
3	1	adapter set	000 08-60-333/93 H310442
- 4	1	o-ring 88,62-1,78 NBR	000 58-06-387/83 H208639
- 5	2	o-ring 5,28-1,78 NBR	000 58-06-044/83 H208640
- 6	1	CU adapter for SVS,DKR	000 08-60-728/93 H208803
7*	1	o-ring 90-2 NBR * scope of supply actuator	000 58-06-426/83 H143352
8	1	o-ring 13,0-2,0 NBR 70	000 58-06-049/83 H208642
9	2	blind plug G1/8"	000 08-60-740/93 H208815

5. Auxiliary Equipment

5.5.1. Adapter for control unit (fig. 5.5.1.) CU41-T-Direct Connect, CU41-T-AS-i extended

The following adapters are required to install the control unit on the SV1 valve:

Fig. 5.5.1.



Spare parts for CU4 T-adapter			
Item	Pcs.	Designation	reference No. ID - No.
-	-	CU4 T-adapter cpl.	000 08-48-601/93 H 320475
1	1	CU4 T-adapter	000 08-46-571/93 H319875
2	3	cyl. screw ISO1207-M5x16-A2-7	000 65-05-054/13 H79000
3	1	o-ring 11,11-1,78 NBR 70shore A	000 58-06-034/83 H321897
4	1	o-ring 6-2 NBR	000 58-06-059/83 H320505
5	1	o-ring 101,27-2,62	000 58-06-493/83 H148389
6	1	CU4-operating cam complete	000 08-60-900/93 H320479
7	1	CU4 SVS, DKR operating rod	000 08-60-905/93 H320480
8	2	CU4 clamp halves complete	000 08-46-569/93 H319873
9	2	cyl. screw ISO 4762 M4x40 inner hexagon	000 65-05-040/13 H320360

5.6. Turning actuator for control unit

- For the assembly of a control unit on the butterfly valve a special turning actuator is required. The standard turning actuator must be replaced.

Turning actuator for control unit	
DN 25 - 100 / K080 F/L Inch 1" - 4" / K080 F/L	ref.-No.: 000 - 15 - 37 - 070/17 H123937

6. Cleaning

6.1. Cleaning recommendation

The valve passage is cleaned by the cleaning liquids during cleaning of the connected pipelines.

Depending on the degree and constituents of soiling, the cleaning liquids, times and processes must be scheduled for the individual application.

The compatibility of the individually selected cleaning processes and liquids with the respectively used seals must be verified.

7. Installation / Connections

In normal installation position, the actuator is positioned vertically to the top. Depending on the respective application, optional installation positions can, however, also be realized.

SV1 valves with weld ends are welded direct into the product line.

Separate dismantling by a flange connection, etc. in the continuing pipeline must be provided.

Attention: Observe welding instructions 7.2.

7.1. Connections:

Beside the housings with weld ends the following connections are alternatively available:

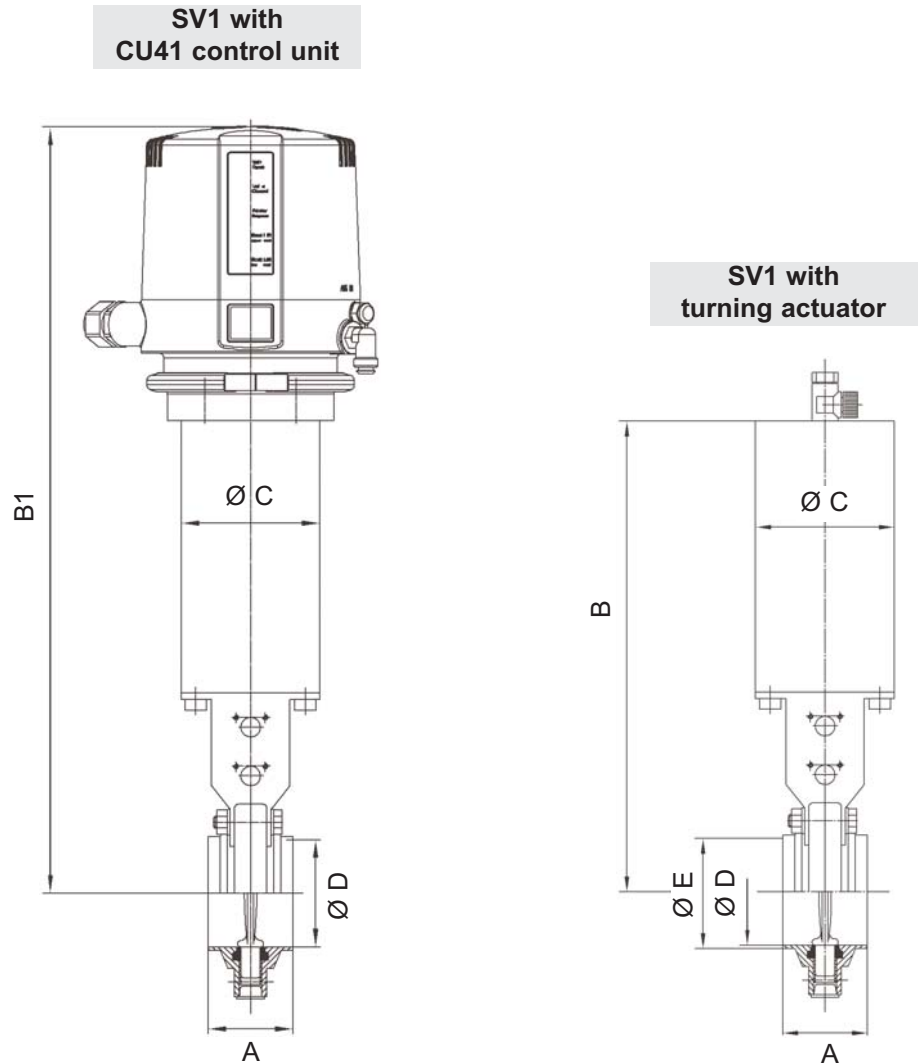
- threaded and cone port to DIN 11851,
- threaded port RJT, ISS/IDF, SMS.
- clamp connection to 32676 (DN 25 - 100)
- clamp connection to ISO 2852 (Inch 1" - 4")

7. Installation / Connections

7.2. Welding Instructions

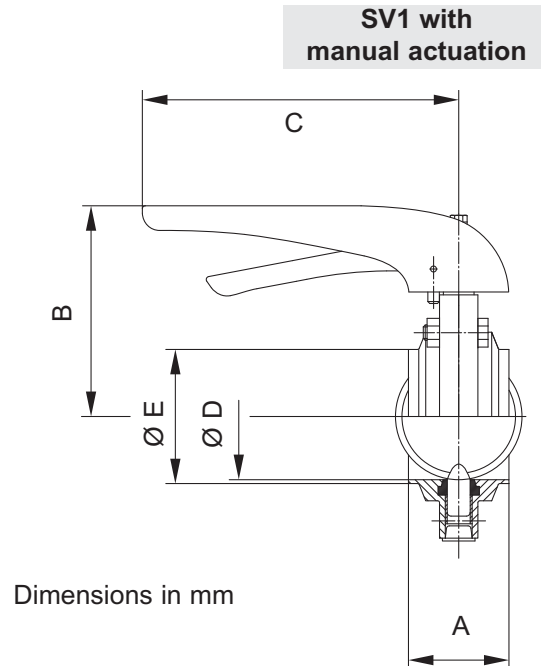
- Welding may only be carried out by certified welders (DIN EN ISO 9606-1). (seam quality DIN EN ISO 5817)
- The welding of the housing halves must be effected in such a way that deformation strain cannot be transferred to the housing halves.
- TIG orbital welding is the most appropriate method.
- Before welding, all heat sensitive parts (e.g. seal, bearing, disc) of the valve must be removed.
- After welding of the housing halves and after work at the pipelines, the corresponding parts of the installation or pipelines must be cleaned from welding residues and soiling.
If these cleaning instructions are not observed, welding residues and dirt particles can settle in the valve and cause damage or be carried over to other parts of the installation.
- Any damage resulting from the non-observance of these welding instructions is not subject to our guarantee.

8. Dimensions / Weights



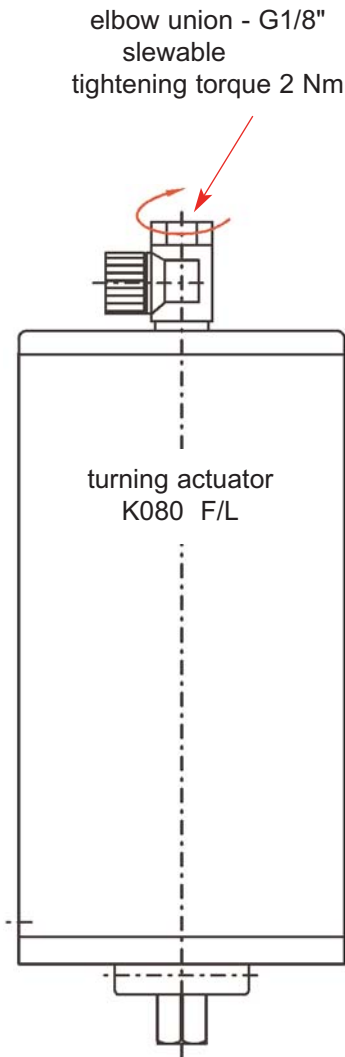
Dimensions in mm							Weights in kg	
DN	A	B	B1	Ø C	Ø D	Ø E	butterfly valve with turning actuator	butterfly valve with turning actuator and control unit
25	52	271,5	451,5	85	26	29	4,0	5,0
40	52	280	460	85	38	41	4,2	5,2
50	52	285	465	85	50	53	4,5	5,5
65	52,4	293,5	473,5	85	66	70	4,8	5,8
80	52,4	301	481	85	81	85	5,5	6,5
100	52,4	311	491	85	100	104	6,1	7,1
Inch								
1"	52	271,5	451,5	85	22,6	25	4,0	5,0
1,5"	52	280	460	85	34,8	38	4,2	5,2
2"	52	285	465	85	47,8	51	4,5	5,5
2,5"	52,4	293,5	473,5	85	60,3	63,5	4,8	5,8
3"	52,4	297	477	85	72,9	76,1	5,5	6,5
4"	52,4	311	491	85	97,6	101,6	6,1	7,1

8. Dimensions / Weights



DN	A	B	C	Ø D	Ø E	Weights in kg
25	52	88	165	26	29	1,5
40	52	96,5	165	38	41	1,6
50	52	101,5	165	50	53	1,8
65	52,4	110	165	66	70	2,0
80	52,4	117,5	165	81	85	2,2
100	52,4	127,5	165	100	104	2,6
Inch						
1"	52	88	165	22,6	25	1,5
1,5"	52	96,5	165	34,8	38	1,6
2"	52	101,5	165	47,8	51	1,8
2,5"	52,4	110	165	60,3	63,3	2,0
3"	52,4	113,5	165	72,9	76,1	2,2
4"	52,4	127,5	165	97,6	101,6	2,6

9. Technical Data



9.1. General data

- max. line pressure : **10bar**
- max. operating temperature : **135° C EPDM, HNBR**
* VMQ, * FPM
- short-term load : **140° C EPDM, HNBR**
* VMQ, * FPM
* (no steam)
- vacuum tightness : **2mbar**
- opening angle of butterfly valve : **90°**
min. air pressure for actuator : **6bar**
max. air pressure for actuator : **10bar**
- air connection (for hose) : **6x1**
elbow union - G1/8"
slewable : **tightening torque 2Nm**

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.

9.3. kvs - values in m ³ /h		
DN	Inch	
25	1"	40
40	1,5"	89
50	2"	160
65	2,5"	250
80	3"	440
100	4"	630

9. Technical Data

9.4. Opening and closing times

The actuating times depend on the length of the air line between the magnet valve to the air control and the actuator.

For air lines with a length of up to 1 m, the opening time for butterfly valves DN 25/1" to DN 100/4" at 6 bar control air pressure amounts to about 1 second. The closing time, after air shut-off, depends on the nominal dimension and amounts to 2 to 3 seconds.

If the valves are subject to strong friction, e.g. through dry seals, the actuating times extend accordingly.

9.4.1. Opening and closing times for butterfly valves

The opening and closing times of valves equipped with a control unit can be adjusted.

		opening time in sec. control air pres. 6bar	closing time in sec.
DN	Inch	hose length 1 m	
25	1"	1 sec.	1,5 sec.
40	1,5"	1 sec.	1,5 sec.
50	2"	1 sec.	1,5 sec.
65	2,5"	1 sec.	2,5 sec.
80	3"	1 sec.	3,0 sec.
100	4"	1,2 sec.	3,5 sec.

All time data are approximate values taken from sample measurements.

9.5. Torque Md [Nm] for butterfly valves

DN	Inch	Md [Nm]
25	1"	10
40	1,5"	12
50	2"	16
65	2,5"	20
80	3"	22
100	4"	24

9.6. Control air consumption at 6 bar control pressure

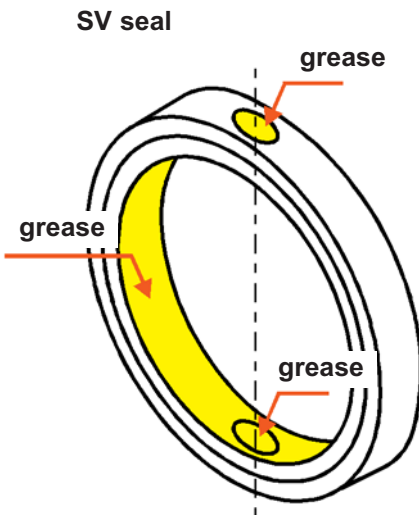
turning actuator K080 (spring/air)
per stroke 1,8 (NL)

10. Materials

- Valve disc	1.4571/1.4404 (DIN EN 10088)
- Housing flange DN 25 - 100	1.4301/1.4404 (DIN EN 10088)
1" - 4"	1.4404 (DIN EN 10088)
- SV seal standard:	EPDM
option:	HNBR, VMQ, FPM
- bearing bush	polyamide PA 12
- handle	polyamide PA 6.6
Actuator	
- yoke, actuator	1.4301
- coupling	1.4308
- indicator	PE - hard
- piston	polyacetal POM
- spindle bearing	polyamide PA 12
- air connection	polyamide PA 6.6

11. Maintenance

Scan for SV1/SVS1F Valve
Maintenance Video



- The **maintenance intervals** depend on the application of the valve and should be determined by the operator carrying out **regular checks** of the valve.
- There are a few wear parts on SV1 butterfly valves, principally the SV seal and bearings.
- It is recommended that spare seals and bearings are kept by the user.
Complete seal kits for the valve service are available (see spare parts lists).
- If damaged seals are replaced, generally all seals and bearings should be changed.
- Dismantling and installation of seals according to service instructions.
- All seals must be slightly greased before their installation.
Grease SV seal according to illustration
- especially **in** the cross bores.
- Assembly of valve and change of valve design **NC** or **NO** by installation of the turning actuator according to Service Instructions.
- The inner parts of the actuator are maintenance free.

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

Recommendation:

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

or

APV assembly grease for **VMQ**
 (0,6 kg /can - ref. No. 000 70-01-017/93; H147380)
 (60 g /tube - ref. No. 000 70-01-016/93; H147379)

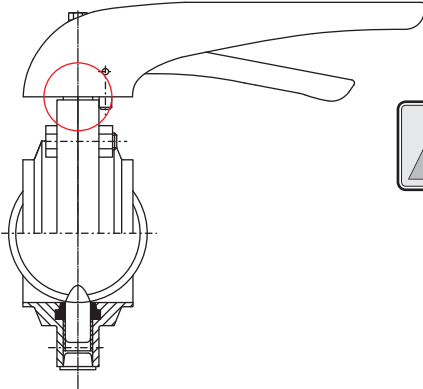
!!! **Do not** use grease containing **mineral oil** for **EPDM** seals !!!

!!! **Do not** use **Silicone-based** grease for **VMQ** seals !!!

Less suited grease types can influence the function and life time.

12. Service Instructions

12.1. Dismantling from the line system



Attention! The valve can only be dismantled via an additional separate connection in the continuing pipeline.

Danger!

1. Shut off connecting lines, let down line pressure and drain pipeline if possible.
2. Disconnect electric and pneumatic connections.
3. Release clamp connection at support of proximity switches. Pull off proximity switch.
4. Release additional separate connection in the pipeline.

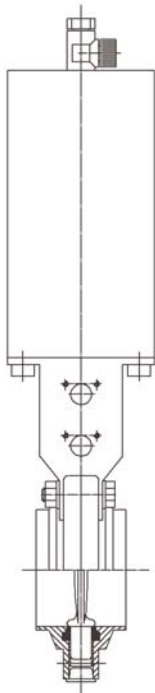
12.2. Dismantling of the actuating device

The item numbers refer to the spare parts drawings.

- **Manual actuation with limit switch:**
Screw off fastening screw (10) at the handle (8) and lift off handle.
- **Manual actuation with adjusting device:**
Screw off fastening screw at handle. Release both fastening screws of the scale sheet, lift off handle with indicator and scale.
- **Pneumatic actuator:**
Remove the two fastening screws (7) at the yoke (9), lift off actuator (13) to the top. Lift off coupling (12) and position indicator (11).

Attention! If valve position indicators are installed, see to the position of the operating cam (see 12.6. and 12.7.).

- **Actuator with control unit:**
Dismantling of actuator from yoke as described in chapter **Actuator**. The control unit needs not be removed from the actuator.



12.3. Dismantling of the inner parts

Dismantling is only possible via an additional separate connection in the pipeline.

Seal ring (3), bearings (2), valve disc (5)

- Remove all fastening screws around the housing halves (4) and part the housing halves.
- Remove the inner parts.

12. Service Instructions

12.4. Replacement of seals

1. Turn the disc (5) in the seal ring (3) into open position.
2. Remove bearings (2).
3. By a slight pressing, the seal ring (3) is deformed in its longitudinal axis, and, thus, can be pulled off via the short bearing spindle.
4. Pull the seal ring (3) off the actuating spindle.
5. Clean the valve disc (5).
6. Grease the holes of the new seal ring (3) according to chapter 9 and insert the long actuating spindle of the valve disc (5).
7. Turn the disc (5) in the seal ring (3) into open position.
8. By slight pressure the seal ring (3) is deformed in its longitudinal axis, and, thus, can be pushed on via the short bearing spindle.

fig. 1

projecting ring
on the
disc bolt

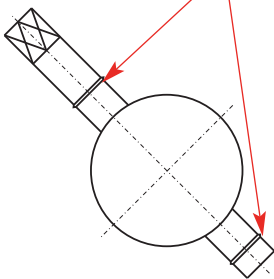


fig. 2

bearing bush

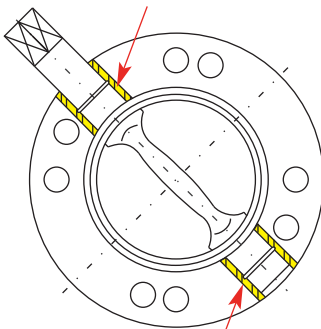
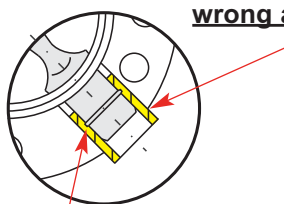


fig. 3

wrong assembly



12.5. Installation of seals and bearings

The current design of the valve disc has a projected ring on the disc bolt (fig. 1).
The new valve disc can also be installed in old housings.

1. Place bearings (2) on the spindle of the disc.
The bearing bushes must be flush with the housing flange (fig. 2).
2. Insert the disc (5) in open position with seal ring (3) and bearings (2) into one housing half (4).
3. Assemble the housing halves (4) with the screws (6) alternately crosswise.
During the assembly of the housing halves, the projecting ring presses into the plastic surface of the bearing bush and secures the bearing bush against longitudinal movement.

Attention! Tightening of the screws (6), the valve disc (5) must be in **open** position.
Damage of valve disc seal during assembly in **closed** position is possible.

Bearings must not project the housing flange (fig. 3).

12. Service Instructions

12.6. Installation of the actuating device

1. Observe the steps mentioned in **12.2.** in reverse order.
2. With manual butterfly valves, the disc **(5)** and the handle **(8)** are in a line.
3. Attach the position indicator **(11)** to align with the valve disc onto the square of the actuating spindle of the disc **(5)**.
4. Observe the design of the valve for the installation of the coupling **(12)** on butterfly valves with feedback
 - **NC** = normally closed
Valve disc **(5)** is closed, place coupling **(12)**.
The upper operating cam must be adjusted to the **upper** yoke bore.
 - **NO** = normally open
Valve disc **(5)** is open, place coupling **(12)**.
The lower operating cam must be adjusted to the **lower** yoke bore.
5. Place actuator **(13)** with yoke and fasten them with the screws **(7)**.

12.7. Installation of feedback units (proximity switches)

- Valve position indication **OPEN**:
Installation of the feedback unit in the **lower** yoke bore.
- Valve position indication **CLOSED**:
Installation of the feedback unit in the **upper** yoke bore.
- Insert proximity switch support into the yoke bore and fasten it.
Introduce the proximity switch into the support until it stops and fix it by the clamp connection.

13. Spare Parts Lists

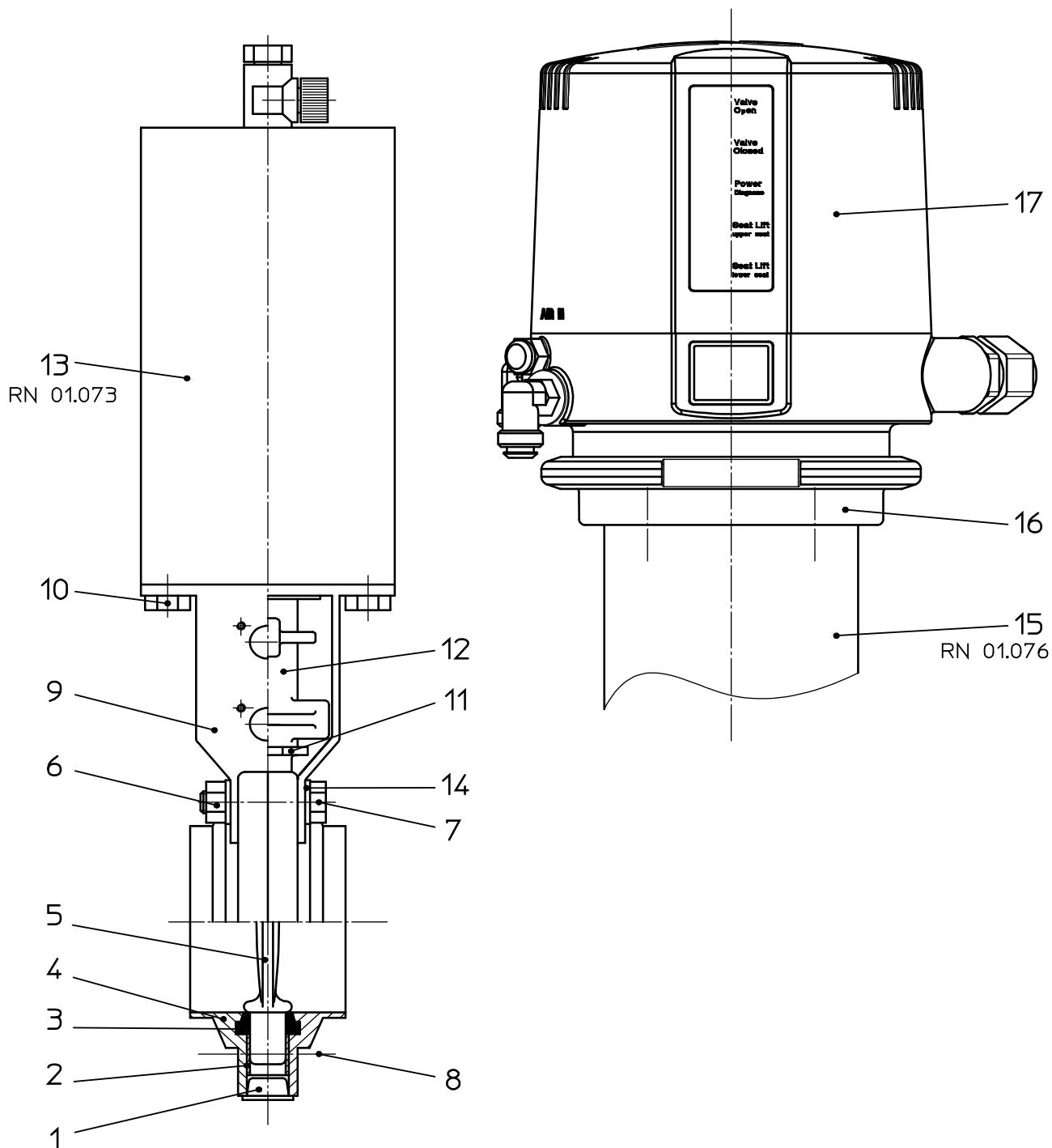
The reference numbers of the spare parts for the different valve designs and sizes are included in the attached spare parts drawings with corresponding lists.

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

- number of parts required
- reference number
- designation.

subject to change

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Datum:	30.01.14	30.10.14	06.07.16								
Name:	Trytko	Trytko	Trytko								
Geprüft:											

Ersatzteilliste: spare parts list

Scheibenventil SV1-FZ-CU
Butterfly valve SV1-A-CU
DN25-100 1-4 inch 1+2S



SPX FLOW
Germany

Blatt 1 von 5

RN01.037-14

Ersatzteilliste: spare parts list

Scheibenventil SV1-FZ-CU
Butterfly valve SV1-A-CU
DN25-100 1-4 inch 1+2S

Datum:	30.01.14	30.10.14	06.07.16
Name:	Trytko	Trytko	Trytko
Geprüft:			
Datum:			
Name:			
Geprüft:			
Blatt 2 von 5		RN01.037-14	

pos.	Menge	Beschreibung	Material	DN25	1"	DN40	1,5"	DN50	2"
item	quantity	description		WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.
1	1	Verschlussstopfen Lock plug	Kunststoff			08-74-010/93 H16503			
2	2	Lagerbuchse Bearing	PA12 30%GF			08-01-150/93 H13832			
3	1	Dichtung SV Seal SV	EPDM FDA-konform	58-33-278/93 H77435	58-33-325/93 H77451	58-33-378/93 H77459	58-33-425/93 H77477	58-33-428/93 H77484	58-33-475/93 H77502
	1	Dichtung SV Seal SV	FPM FDA-konform	58-33-278/73 H77433	58-33-325/73 H77450	58-33-378/73 H77457	58-33-425/73 H77475	58-33-428/73 H77482	58-33-475/73 H77500
4	1	Dichtung SV Seal SV	HNBR FDA-konform	58-33-278/33 H168744	58-33-325/33 H168263	58-33-378/33 H168745	58-33-425/33 H168930	58-33-428/33 H16826	58-33-475/33 H168234
	1	Dichtung SV Seal SV	VMQ FDA-konform	58-33-278/13 H77432	58-33-325/13 H77449	58-33-378/13 H77456	58-33-425/13 H77474	58-33-428/13 H77481	58-33-475/13 H77499
5	2	Gehäusehälfte Housing half	1.4404 matt/satin fin.	09-93-277/42 H22883	09-94-319/42 H23562	09-93-377/42 H22928	09-94-419/42 H23588	09-93-427/42 H22980	09-94-469/42 H23611
	2	Gehäusehälfte Housing half	1.4301 matt/satin fin.	09-93-277/12 H22879	09-94-319/12 H23562	09-93-377/12 H22924	09-94-419/12 H23588	09-93-427/12 H22976	09-94-469/12 H23611
6	1	Klappe Disc	1.4404	08-55-276/43 H16037	08-55-318/43 H114442	08-55-376/43 H16047	08-55-418/43 H114440	08-55-426/43 H16059	08-55-468/43 H114977
	2	Skt. Mutter Hex. Nut	1.4301	DIN EN 24032-A2		65-50-060/15 4xM8 H79281			
7	2	Skt. Schraube Hex. Screw	1.4301	DIN EN 24017-A2-70		65-01-095/15 M8x35 H78791			
	2	Skt. Schraube Hex. Screw	1.4301	DIN EN 24017-A2-70		67-01-085/15 M8x28 H78778			
8	1	Laterne Yoke	1.4301	15-40-030/17 H173105		15-40-816/17 H170929			
	2	Skt. Schraube Hex. Screw	1.4301	DIN EN 24017-A2-70		65-01-080/15 M8x12 H78770			
9	1	Zeiger Position indicator	PE-HART			08-29-021/93 H14634			
	1	Kupplungsstück Coupling	1.4308			08-52-050/13 H15865			



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Ersatzteilliste: spare parts list

Scheibenventil SV1-FZ-CU
Butterfly valve SV1-A-CU
DN25-100 1-4 inch 1+2S

Datum:	30.01.14	30.10.14	06.07.16
Name:	Trytko	Trytko	Trytko
Geprüft:			
Datum:			
Name:			
Geprüft:			



Blatt	3	von	5
RN01.037-14			

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.	WS-Nr. ref.-no.
13	1	Drehantrieb F/L in Einzelverpackung / Actuator spring/air with individual packaging	1.4301			15-31-055/17 H315054			
	1	Drehantrieb L/L in Einzelverpackung / Actuator double/air with individual packaging	1.4301			15-31-065/17 H333445			
14	4	Scheibe DIN 125 A=8,4	1.4301			67-01-022/15 H79594			
15	1	Drehantrieb F/L für RME in Einzelverpackung / Actuator s/a for control-unit with individual packaging	1.4301			15-37-070/17 H315055			
	1	CU4-T-Adapter	PA6.6 GF30 schwarz			08-48-601/93 H320475			
17	1	Control-Unit CU	PA6.6 GF30 schwarz			siehe Betriebsanleitung CU see manual CU			
Pos. 3, 4, 5 nur im kompletten Dichtungssatz erhältlich Item 3, 4, 5 available as complete seal kits only									
	1	Dichtungssatz Seal kit	FPM	58-34-565/00 H206225	58-34-571/00 H206249	58-34-566/00 H206229	58-34-572/00 H206253	58-34-567/00 H206233	58-34-573/00 H206257
	1	Dichtungssatz Seal kit	EPDM	58-34-565/01 H206226	58-34-571/01 H206250	58-34-566/01 H206230	58-34-572/01 H206254	58-34-567/01 H206234	58-34-573/01 H206258
	1	Dichtungssatz Seal kit	VMQ	58-34-565/02 H206227	58-34-571/02 H206251	58-34-566/02 H206231	58-34-572/02 H206255	58-34-567/02 H206235	58-34-573/02 H206259
	1	Dichtungssatz Seal kit	HNBR	58-34-565/06 H206228	58-34-571/06 H206252	58-34-566/06 H206232	58-34-572/06 H206256	58-34-567/06 H206236	58-34-573/06 H206260

Ersatzteilliste: spare parts list

Scheibenventil SV1-FZ-CU
Butterfly valve SV1-A-CU
DN25-100 1-4 inch 1+2S

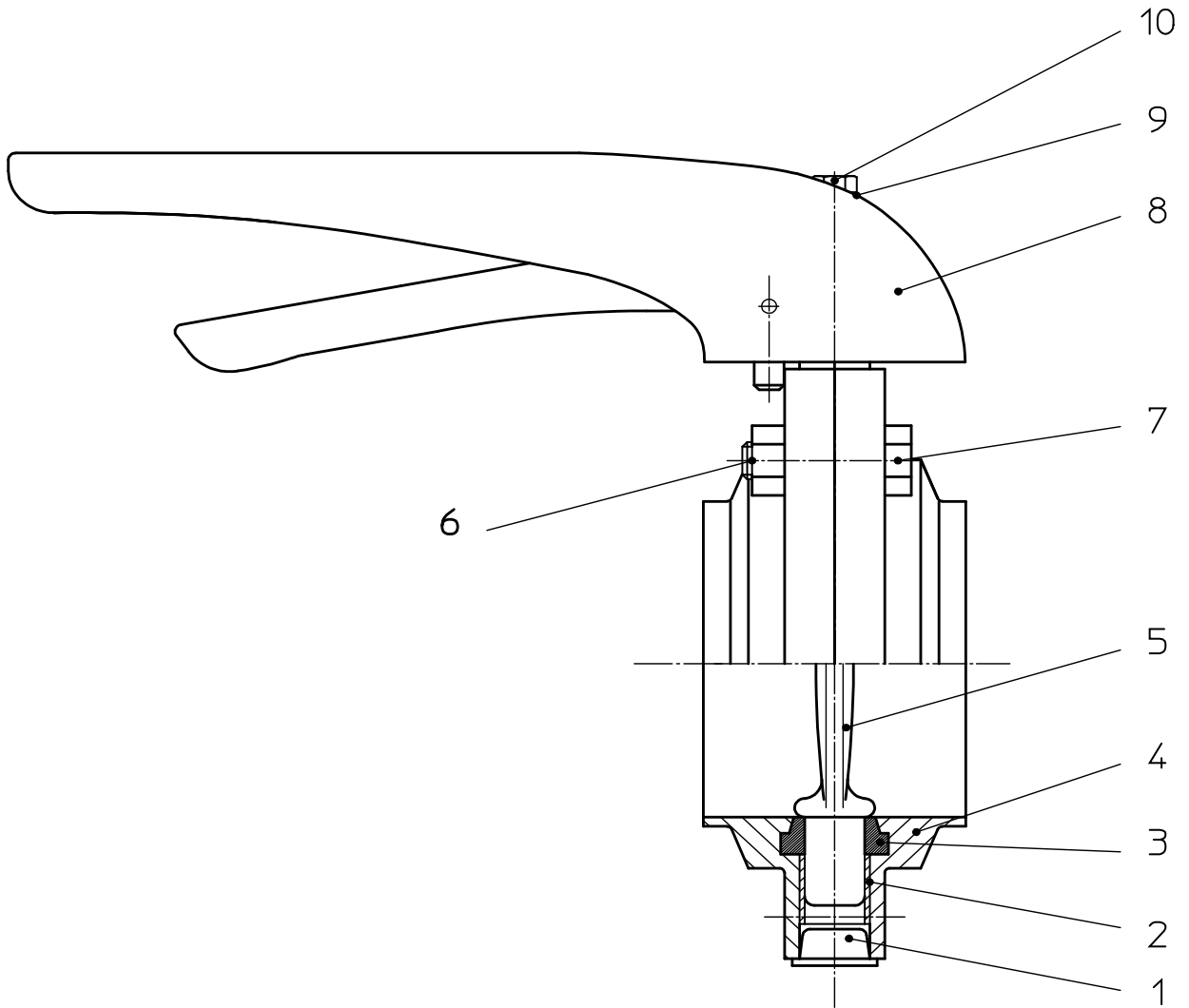
Datum:	30.01.14	30.10.14	06.07.16
Name:	Trytko	Trytko	Trytko
Geprüft:			
Datum:			
Name:			
Geprüft:			



Blatt	4	von	5
RN01.037-14			

pos.	Menge	Beschreibung	Material	DN65	2.5"	3"	DN80	DN100	4"
item	quantity	description		WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.
1	1	Verschlussstopfen Lock plug	Kunststoff	08-74-010/93 H16503					
2	2	Lagerbuchse Bearing	PA12 30%GF	08-01-150/93 H13832					
3	1	Dichtung SV	EPDM	58-33-478/93 H77509	58-33-503/93 H77528	58-33-528/93 H77539	58-33-628/93 H77579	58-33-675/93 H77601	
	1	Dichtung SV	FPM	58-33-478/73 H77507	58-33-503/73 H77526	58-33-528/73 H77537	58-33-624/73 H77577	58-33-675/73 H77599	
4	1	Dichtung SV	HNBR	58-33-478/33 H168827	58-33-503/33 H169236	58-33-528/33 H168832	58-33-628/33 H166721	58-33-675/33 H166722	
	1	Dichtung SV	VMQ	58-33-478/13 H77506	58-33-503/13 H77525	58-33-528/13 H77536	58-33-627/13 H77576	58-33-675/13 H77598	
5	2	Gehäusehälfte Housing half	1.4404 matt/satin fin.	09-93-477/42 H23039	09-93-552/42 H23123	09-93-527/42 H23092	09-93-627/42 H23154	09-94-669/42 H23684	
	2	Gehäusehälfte Housing half	1.4301 matt/satin fin.	09-93-477/12 H23035	09-93-552/12 H16090	09-93-527/12 H23088	09-93-627/12 H23150	09-94-669/12 H23684	
6	1	Klappe Disc	1.4404	08-55-476/43 H16071	08-55-527/43 H16090	08-55-526/43 H16082	08-55-626/43 H16102	08-55-668/43 H114979	
	1	Disc	1.4404	65-50-060/15 4xM8 H79281	65-50-060/15 H16090	65-50-060/15 H16082	65-50-060/15 H16102	65-50-060/15 H114979	
7	2	Skt. Mutter Hex. Nut	1.4301	65-50-060/15 4xM8 H79281	65-01-095/15 M8x35 H78791	65-01-095/15 M8x35 H78791	65-01-095/15 M8x35 H78791	65-01-095/15 M8x35 H78791	
	2	Skt. Schraube Hex. Screw	1.4301	67-01-085/15 2xM8x28 H78778	67-01-085/15 2xM8x28 H78778	67-01-085/15 4xM8x28 H78778	67-01-085/15 4xM8x28 H78778	67-01-085/15 4xM8x28 H78778	
8	1	Laterne Yoke	1.4301			15-40-025/17 H173103			
	2	Skt. Schraube Hex. Screw	1.4301			65-01-080/15 M8x12 H78770			
9	1	Zeiger Position indicator	PE-HART			08-29-021/93 H14634			
	1	Kupplungsstück Coupling	1.4308			08-52-050/13 H15865			

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Datum:	31.01.14	06.07.16									
Name:	Trytko	Trytko									
Geprüft:											

Ersatzteilliste: spare parts list

Scheibenventil SV1 - Handbetätigung
Butterfly valve SV1- handle
DN25-100 ; 1-4 inch 1+2S



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Blatt 1 von 5

RN01.037.5-9

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Ersatzteilliste: spare parts list

Scheibenventil SV1-Handbetätigung
Butterfly valve SV1-handle
DN25-100 ; 1-4 inch 1+2S


		Datum: 31.01.14 06.07.16				Blatt 2 von 5		
		Name: Trytko Trytko				RN01.037.5-9		
		Geprüft:						
		Datum:						
		Name:						
		Geprüft:						
pos.	Menge	Beschreibung	Material	DN25	1"	1,5"	DN50	2"
item	quantity	description	material	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.
1	1	Verschlussstopfen Lock plug	Kunststoff					
2	2	Lagerbuchse Bearing	PA12 30%GF					
3	1	Dichtung SV Seal SV	EPDM FDA-konform	58-33-278/93 H77435	58-33-325/93 H77451	58-33-425/93 H77477	58-33-428/93 H77484	58-33-475/93 H77502
	1	Dichtung SV Seal SV	FPM FDA-konform	58-33-278/73 H77433	58-33-325/73 H77450	58-33-425/73 H77475	58-33-428/73 H77482	58-33-475/73 H77500
4	1	Dichtung SV Seal SV	HNBR FDA-konform	58-33-278/33 H168744	58-33-325/33 H168263	58-33-425/33 H168930	58-33-428/33 H168826	58-33-475/33 H168234
	1	Dichtung SV Seal SV	VMQ FDA-konform	58-33-278/13 H77432	58-33-325/13 H77449	58-33-425/13 H77474	58-33-428/13 H77481	58-33-475/13 H77499
5	1	Gehäusehälfte Housing half	1.4404 matt/satin fin.	09-93-277/42 H22883	09-94-319/42 H23562	09-93-377/42 H22928	09-93-427/42 H22980	09-94-469/42 H23611
	1	Gehäusehälfte Housing half	1.4301 matt/satin fin.	09-93-277/12 H22879	09-94-319/12 H23562	09-93-377/12 H22924	09-93-427/12 H22976	09-94-469/12 H23611
6	1	Klappe Disc	1.4404	08-55-276/43 H16037	08-55-318/43 H114442	08-55-376/43 H16047	08-55-426/43 H16059	08-55-468/43 H114977
	1	Skt. Mutter Hex. Nut	1.4301			65-50-060/15 4xM8 H79281		
7	1	Skt. Schraube Hex. Screw	1.4301			67-01-085/15 4xM8x28 H78778		
	1	Handbetätigung Handle	PA6.6 30% GF			08-41-065/93 H15059		
9	1	Skt. Schraube Hex. Screw	1.4301			65-01-037/15 M5x28 H78740		
	1	Sicherungsscheibe M5 Safety disk M5	1.4301			67-01-010/93 H79581		



Ersatzteilliste: spare parts list

Scheibenventil SV1-Handbetätigung
Butterfly valve SV1-handle
DN25-100 ; 1-4 inch 1+2S

Datum:	31.01.14	06.07.16
Name:	Trytko	Trytko
Geprüft:		
Datum:		
Name:		
Geprüft:		
Blatt 4 von 5		
RN01.037.5-9		

	
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pos. item	Menge quantity	Beschreibung description	Material	DN65	2.5"	3"	DN80	DN100	4"
1	1	Verschlussstopfen Lock plug	Kunststoff	08-74-010/93 H16503					
2	2	Lagerbuchse Bearing	PA12 30%GF	08-01-150/93 H13832					
3	1	Dichtung SV Seal SV	EPDM FDA-konform	58-33-478/93 H77509	58-33-503/93 H77528	58-33-528/93 H77539	58-33-628/93 H77579	58-33-675/93 H77601	
	1	Dichtung SV Seal SV	FPM FDA-konform	58-33-478/73 H77507	58-33-525/73 H77530	58-33-528/73 H77537	58-33-624/73 H77577	58-33-675/73 H77599	
4	1	Dichtung SV Seal SV	HNBR FDA-konform	58-33-478/33 H168827	58-33-525/33 H169235	58-33-528/33 H168832	58-33-628/33 H166721	58-33-675/33 H166722	
	1	Dichtung SV Seal SV	VMQ FDA-konform	58-33-478/13 H77506	58-33-525/13 H77529	58-33-528/13 H77536	58-33-628/13 H77576	58-33-675/13 H77598	
5	1	Gehäusehälfte I Housing half I	1.4404 matt/satin fin.	09-93-477/42 H23039	09-93-552/42 H23123	09-93-527/42 H23092	09-93-627/42 H23154	09-94-669/42 H23684	
	1	Gehäusehälfte I Housing half I	1.4301 matt/satin fin.	09-93-477/12 H23035	09-93-552/12 H23123	09-93-527/12 H23088	09-93-627/12 H23150	09-94-669/12 H23684	
6	1	Klappe Disc	1.4404	08-55-476/43 H16071	08-55-527/43 H16090	08-55-526/43 H16082	08-55-626/43 H16102	08-55-668/43 H114979	
	1	Skt. Mutter Hex. Nut	1.4301	65-50-060/15 4xM8 H79281	65-50-060/15 4xM8 H79281	65-50-060/15 6xM8 H79281	65-50-060/15 6xM8 H79281	65-50-060/15 6xM8 H79281	
7	1	Skt. Schraube Hex. Screw	1.4301	65-01-085/15 4xM8x28 H78778	65-01-085/15 4xM8x28 H78778	65-01-085/15 6xM8x28 H78778	65-01-085/15 6xM8x28 H78778	65-01-085/15 6xM8x28 H78778	
	1	Handbetätigung Handle	PA6.6 30% GF	08-41-065/93 H15059	08-41-065/93 H15059	08-41-065/93 H15059	08-41-065/93 H15059	08-41-065/93 H15059	
9	1	Skt. Schraube Hex. Screw	1.4301	65-01-037/15 M5x28 H78740	65-01-037/15 M5x28 H78740	65-01-037/15 M5x28 H78740	65-01-037/15 M5x28 H78740	65-01-037/15 M5x28 H78740	
	1	Sicherungsscheibe M5 Safety disk M5	1.4301	67-01-010/93 H79581	67-01-010/93 H79581	67-01-010/93 H79581	67-01-010/93 H79581	67-01-010/93 H79581	

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Ersatzteilliste: spare parts list

Handbetätigung SV-HL für Ventilstellungsmeldung Handle for butterfly valves SV-man. yoke for valve position indication DN25-100; 1-4 Zoll / inch

Datum: 13.02.14

Name: Trytko

Geprüft:

Blatt 1 von 2

RN01.037.0

Datum:

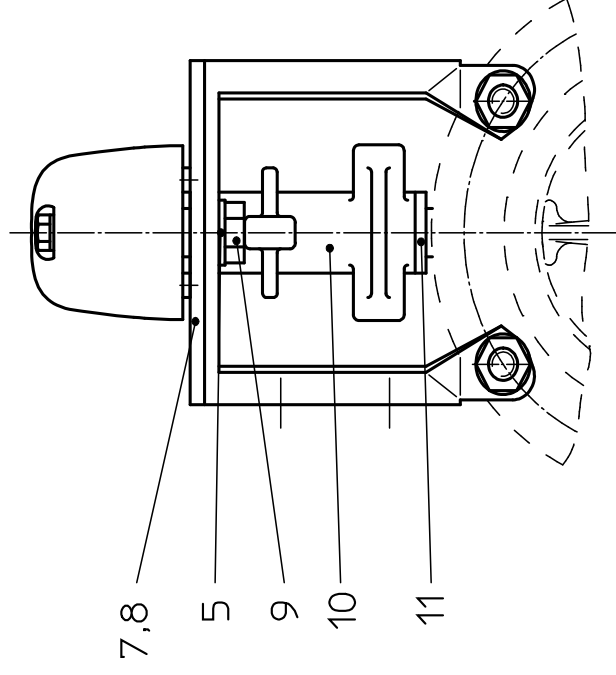
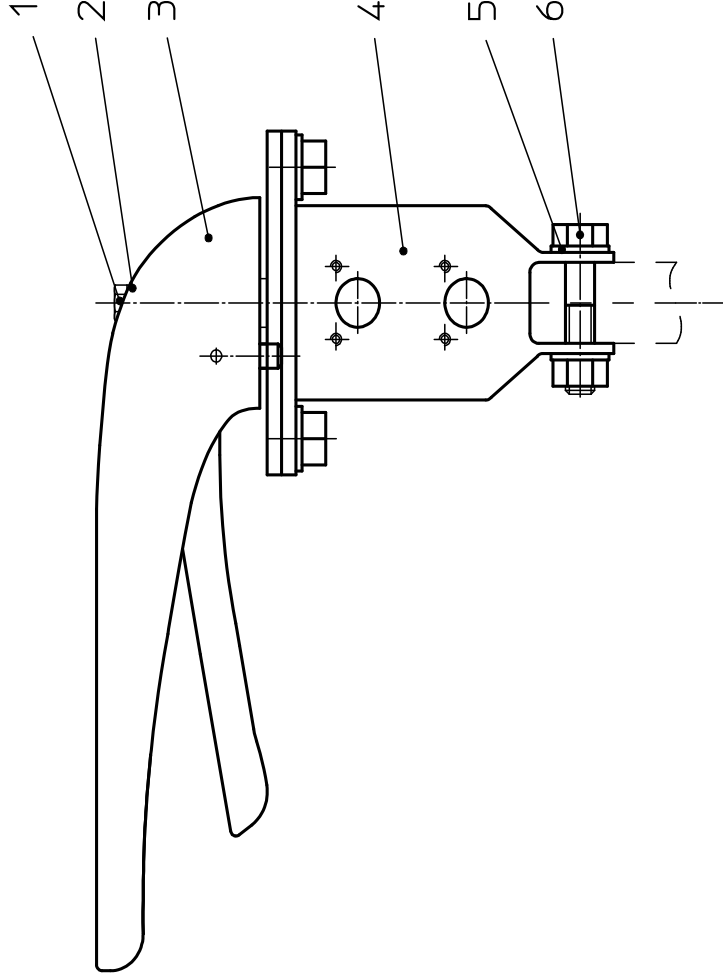
Name:

Geprüft:

Datum:

Name:

Geprüft:



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Ersatzteilliste: spare parts list

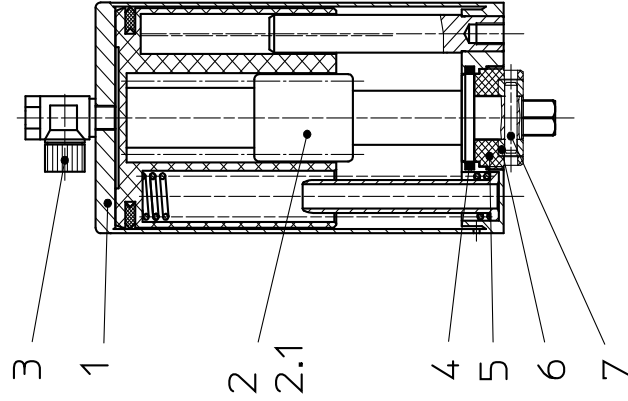
Drehantrieb K080, K125, K180 F/L
Actuator K080, K125, K180 spring/air

Datum:	22.11.12	12.03.14
Name:	Trytko	Trytko
Geprüft:	Goebel	

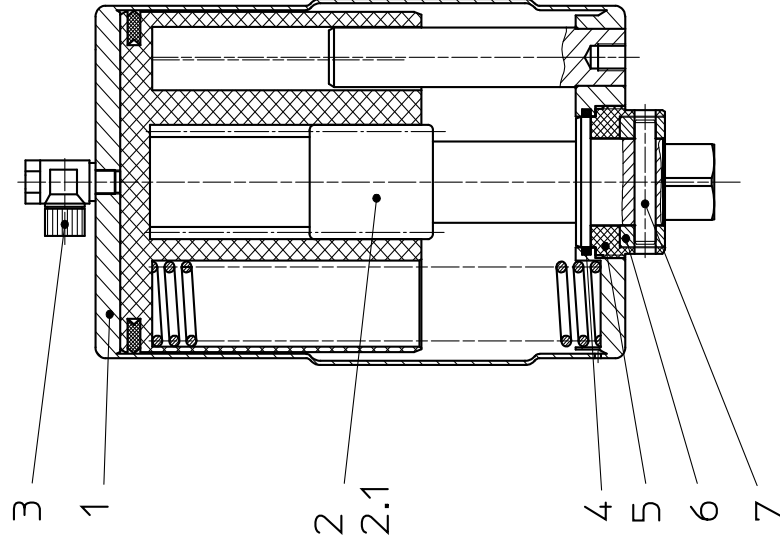


Blatt	1	von	2
RN 01.073			

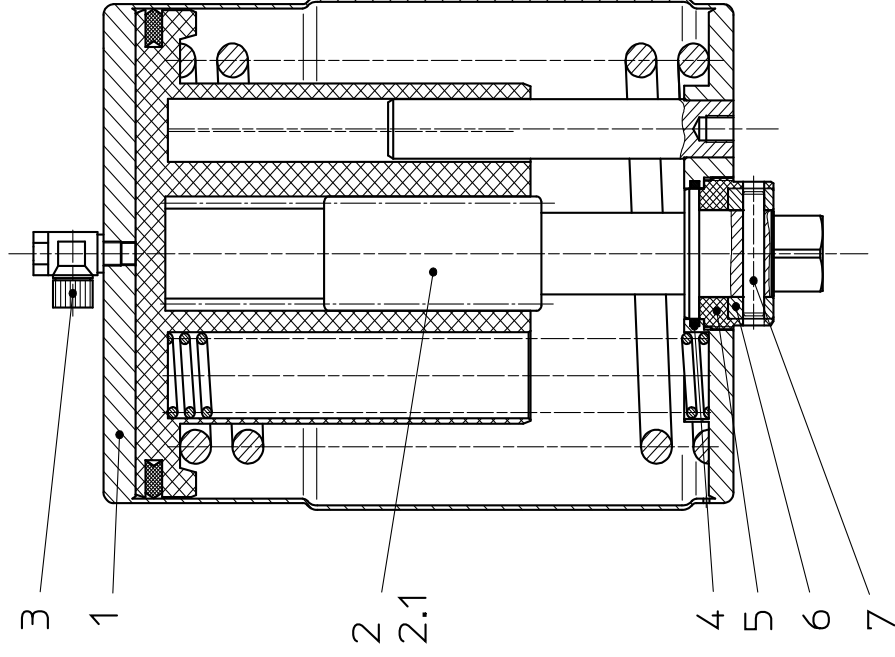
DRAT K080



DRAT K125



DRAT K180



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Ersatzteilliste: spare parts list

Drehantrieb K080, K125, K180 F/L Actuator K080, K125, K180 spring/air

pos. item	Menge quantity	Beschreibung description	Material	K080			K125			K180			Date:		12.03.14		Blatt 2	von 2	RN 01.073
				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.	Name: Trytko	Name: Goebel	Name: Trytko	Name: Goebel					
1	1	Drehantrieb komplett Actuator complete	1.4301 matt-glänzend	15-31-055/17 H105500	15-31-057/17 H105502	15-31-923/17 H32589													
1	1	Drehantrieb komplett Actuator complete	1.4301 poliert	15-31-055/13 H135919	15-31-057/13 H131940	15-31-923/13 H32588													
1	1	Drehantrieb Schweißteil Actuator welded	1.4301	15-31-054/17 H105499	15-31-056/17 H105501	15-31-922/17 H32587													
2	1	Spindel komplett mit Lager Shaft complete with bearing	1.4301	15-24-021/13 H31494	15-24-031/13 H31502	15-24-033/13 H31504													
2.1	1	Spindel Shaft	1.4301	15-24-020/13 H31493	15-24-030/13 H31501	15-24-032/13 H31503													
3	1	Winkelverschraubung G1/8" schwenkbar Elbow union G1/8" slewable	Polyamid/ Glas	08-63-221/93 H16371															
4	1	O-Ring	NBR	58-06-130/83 32,2x3 H76965															
	1	O-Ring	FPM			58-06-222/73 49,5x3 H77000													
5	1	Lager für Drehantrieb Bearing for actuator	POM	15-28-002/34 H31673															
	1	Lager für Drehantrieb Bearing for actuator	PA12		15-28-009/63 H31684														
6	1	Stelling Adjust ring	1.4301	67-08-007/13 H79757	67-08-008/13 H79758														
7	1	Zyl. Kerbstift Cyl. pin	1.4305	67-15-035/13 5x26 H79916	67-15-036/13 8x45 H79917														



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Ersatzteilliste: spare parts list

Drehantrieb K080, K125, K180 F/L für Rückmeldeeinheit
Actuator K080, K125, K180 spring/air for control unit

Datum: 28.03.13 08.05.14

Name: Trytko Trytko

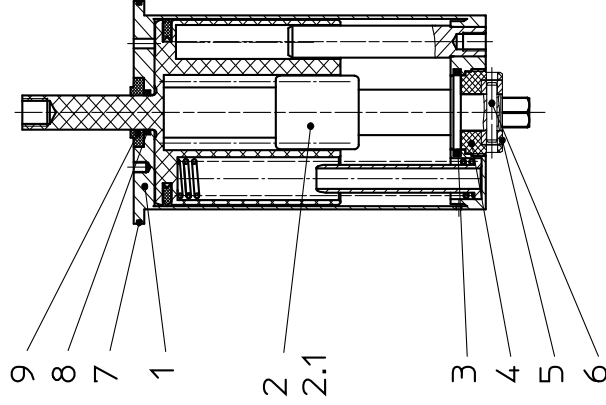
Geprüft:

Blatt 1 von 2

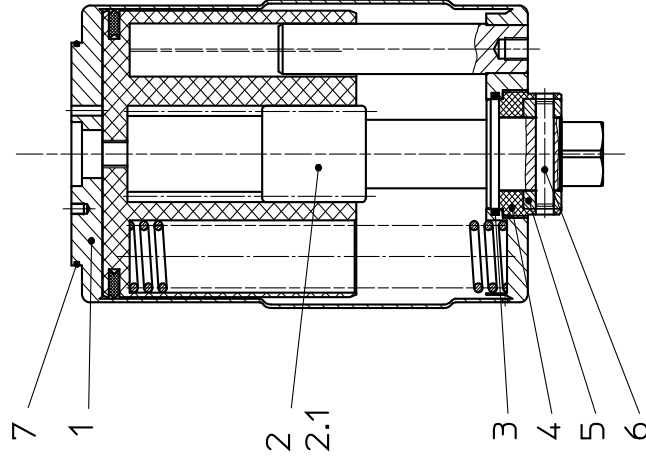
RN 01.076



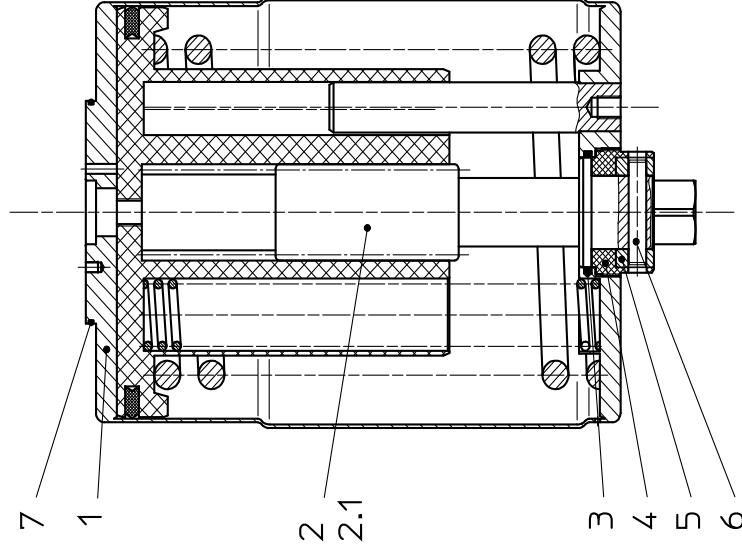
DRAT K080-RM



DRAT K125-RM



DRAT K180-RM



APV DELTA SV1

BUTTERFLY 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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Maintenance Video

