
Butterfly valve

DELTA SV 1

Operating Manual

Rev.2

BA SV1 0000002
Ident-No.: 170 726

APV Rosista GmbH
Zechenstrasse 49
D-59425 Unna
Tel. : (02303) 1 08 - 0
Fax. : (02303) 1 08 - 210



A Siebe Group Company

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1. General Terms

This operating manual has to be read carefully and observed by the competent operating and maintenance personnel.

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

Descriptions and data given herein are subject to technical changes.

2. Safety Instructions



DANGER!

- The line system must be depressurized before any maintenance of the valve.
- With butterfly valve design with actuator, do not reach into the open valve or into the yoke! Risk of bruising at movable parts of the valve.
- Valve in disassembled state: Risk of injury by suddenly operating valve!
- Observe the following assembly instructions to ensure safe maintenance of the valve.
- The welded housing of the actuator is under spring load, do not open it by force.

3. Mode of Operation

Due to the use of high-quality stainless steel and seal materials coming up to the corresponding requirements, the butterfly valve range DELTA SV1 is applied in the food and beverage industries as well as in the chemical and pharmaceutical industries.

The function of the butterfly valve is to shut off line sections.

The butterfly valves can also be used in vacuum systems.

- Valves of the series DELTA SV1 can either be operated manually or remote controlled via a pneumatic actuator.
- The valve opens and closes by turning of the valve disc by 90°.
- Cleaning of the valve inner space during cleaning of the pipeline.

4. Installation

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 are welded directly into the pipeline.

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



Attention: Observe welding instructions.

4.1 Welding Instructions

- Welding may only be carried out by certified welders (EN 287-1). (seam quality EN 25817 „B“).
- 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 should be aimed at!
- Before welding, all 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 nonobservance of these welding instructions is not subject to our guarantee.

5. Auxiliary Equipment

- **Valve position indication:**

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 types.

Operating distance: 5 mm / diameter: 11 mm.

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

Control units with microswitches or proximity switches and solenoid valve for the pneumatic control of the valve installed on top of the actuator (in connection with a pneumatic actuator for feedback units) can be used.

5. Auxiliary Equipment

- A manual actuation with adjusting device to fix the disc at a required opening angle can also be installed.
 - Connections: threaded and cone port according to DIN 11887 threaded port RJT or ISS.
-

6. Maintenance

- The maintenance intervals depend on the application of the valve and should be determined by the operator carrying out regular checks of the valve.
- The inner parts of the actuator are free of maintenance.
- Dismantling and installation of seals according to assembly instructions.
- Assembly of the valve and change of the valve design **NC** or **NO** according to assembly instructions.
- Installation of actuator according to assembly instructions.
- All seals must be slightly greased before their installation.
- **Attention!** Use food-grade special grease being suited for the respective seal material, only.

Recommendation:

APV-food-grade grease for **EPDM, Viton, HNBR and NBR**

(0,75 kg /can - ref. No. 000 70-01-019/93)

(60 g /tube - ref. No. 000 70-01-018/93)

or

APV-food-grade grease for **Silicone**

(0,6 kg /can - ref. No. 000 70-01-017/93)

(60 g /tube - ref. No. 000 70-01-016/93)

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

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

7. Materials

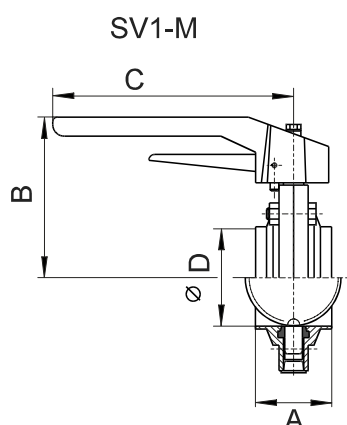
- handle	PA6.6
- valve disc	1.4571
- housing flange	
DN 25 - 100	1.4301/1.4404
Tube 1T - 4T	1.4404
- yoke, actuator	1.4301
- coupling	1.4308
- bearings	polyamide
- SV seal	standard: EPDM
	options: HNBR, Silicone, Viton

8. Technical Data

kvs values in m ³ /h for butterfly valves DELTA SV1	
DN	
25	40
40	86
50	160
65	250
80	440
100	630
Tube	
1T	
1,5T	
2T	
2,5T	
3T	
4T	

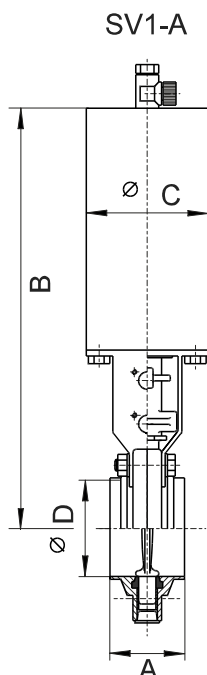
- Smooth valve passage without diversion of the line flow.
 - The opening diameter has the same size as the inner line diameter.
 - max. line pressure : **10 bar**
 - max. operating temperature : **140° C EPDM, HNBR**
: **135° C Silicone**
 - short-term steam load : **150° C EPDM**
: **140° C HNBR**
: **135° C Silicone**
 - vacuum tightness : **2 mbar**
 - opening angle of butterfly valves : **90°**
min. control pressure : **6 bar**
max. control pressure : **10 bar**
 - pneumatic air connection : **6 x 1**
- (use dry and clean pneumatic air, only)**

9. Dimensions



	dimensions in mm			
	A SV1-M	B	C	D
DN				
25	52	87	125	26
40	52	96	165	38
50	52	102	165	50
65	52,4	110	165	66
80	52,4	117	165	81
100	52,4	127	165	100
Tube				
1T	52	85	125	22,2
1,5T	52	94	165	34,8
2T	52	100	165	47,5
2,5T	52,4	107	165	60,2
3T	52,4	113	165	72,9
4T	52,4	125	165	97,4

9. Dimensions



	dimensions in mm			
	A SV1-A	B	C	D
DN				
25	52	271	85	26
40	52	280	85	38
50	52	286	85	50
65	52,4	294	85	66
80	52,4	302	85	81
100	52,4	312	85	100
Tube				
1T	52	269	85	22,2
1,5T	52	278	85	34,8
2T	52	284	85	47,5
2,5T	52,4	291	85	60,2
3T	52,4	298	85	72,9
4T	52,4	310	85	97,4

10. Assembly Instructions

Dismantling from the line system

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



Danger!

- Shut off line pressure and discharge pipeline if possible.
- Disconnect pneumatic air line from actuator.
- Release clamp connection at support of proximity switches.
Pull off proximity switch.
- Release additional separate connection in the pipeline.

10. Assembly Instructions

The item numbers refer to the spare parts list drawings.

10.1 Dismantling of the actuating device

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

Attention! If valve position indicators are installed, see to the position of the operating cams (see 10.5 and 10.6).

10.2 Dismantling of the inner parts

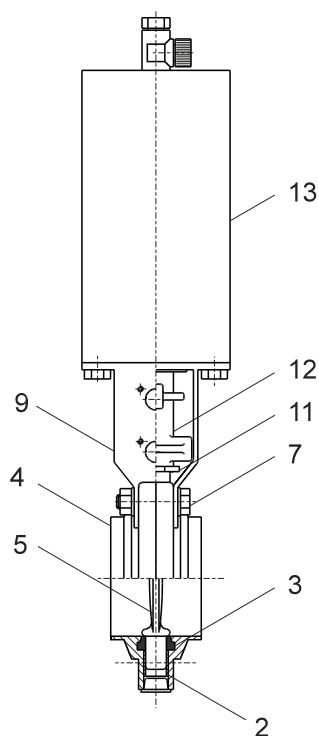
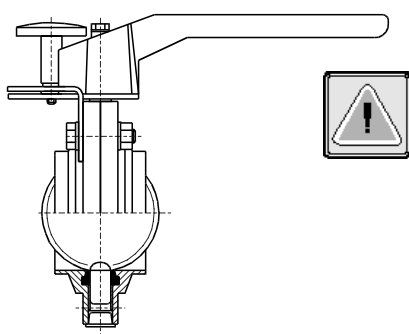
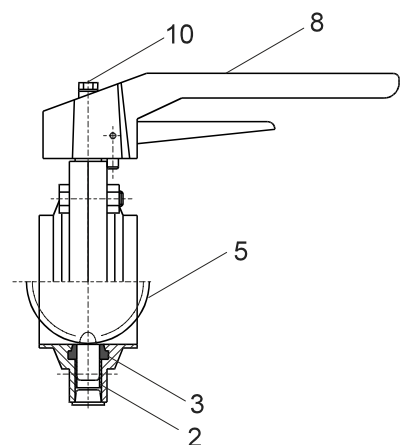
Dismantling is only possible via an additional separate connection in the pipeline.

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

- Remove all fastening screws around the housing halves (4) and extend the housing halves.

10.3 Exchange of seals

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



10. Assembly Instructions

10.4 Installation of the inner parts

- Place bearings **(2)** on the spindle of the disc.
- Insert the disc **(5)** in open position with seal ring **(3)** and bearings **(2)** into one housing half **(4)**.
- Adjust housing halves **(4)**, fasten with screws **(6)** alternately crosswise.

Attention! Tightening the screws **(6)**, the valve disc **(5)** must not be within the seal **(3)**.

10.5 Placing of the actuating device

- Observe the steps mentioned in 10.1 in reverse order.
- With manual butterfly valves, the disc **(5)** and the handle **(8)** are in a line.
- Attach the position indicator **(11)** in the direction of the valve disc onto the square of the actuating spindle of the disc **(5)**.
- Observe the design of the valve for the installation of the coupling **(12)** at actuated butterfly valves and manual butterfly valves with feedbacks:

NC = normally closed

Valve disc **(5)** is closed, place coupling **(12)**.

The upper operating cam must be adjusted to the upper yoke boring.

NO = normally open

Valve disc **(5)** is open, place coupling **(12)**.

The lower operating cam must be adjusted to the lower yoke boring.

- Place actuator **(13)** with yoke and fasten them with the screws **(7)**.

10.6 Installation of feedback units

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

11. Spare Parts Lists

(see annex)

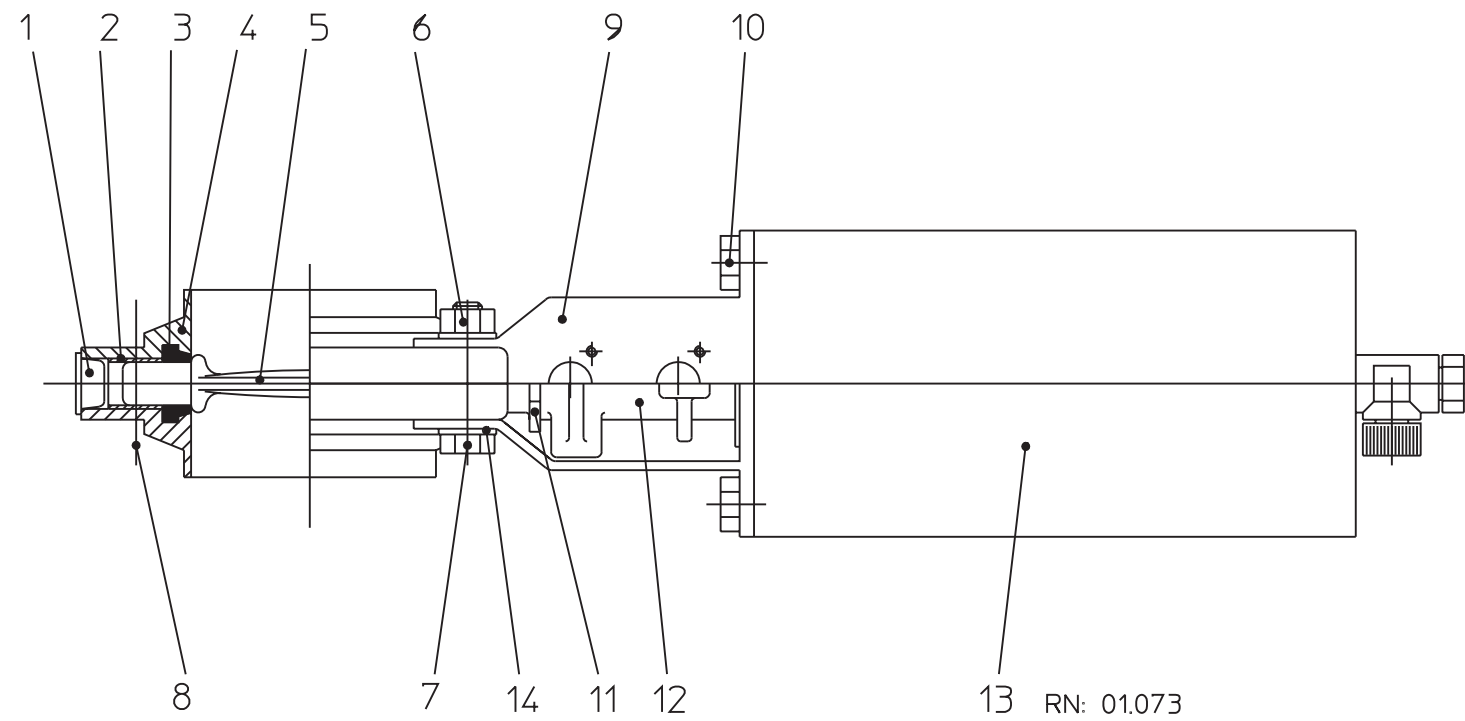
Ersatzteilliste: spare parts list:
Scheibenventil SV1-FZ DN 25-100 1+2S
Butterfly valve SV1-A DN 25-100 1+2S

Besteht aus <u>2</u> Blatt Blatt <u>1</u>							Datum	Name	APV Rosista GmbH D-59425 Unna Germany
						Gezeichnet	11.10.90	Trytko	
						Geprüft	12.10.90	Schulz	
						Normgepr.			
Datum	10/90	2/98	8/98						RN 01.037-14
Name	Trytko	Trytko	Trytko						

Es stehen verschiedene
Dichtungswerkstoffe zur Verfügung.
Bitte WS-Nr. ergänzen

The following seal materials
are available (fill in last
two digits of ref.-no.)

- *Dichtungswerkstoff:
material seals:
.../13-Silikon/Silicone
.../73-Viton
.../93-EPDM
- **Werkstoff metallisch/
material metallic
.../13-1.4301 poliert/polished
.../43-1.4404 poliert/polished
.../17-1.4301 matt-gl./satin finish
.../47-1.4404 matt-gl./satin finish



Ersatzteilliste: spare parts list:

Scheibenventil SV1-FZ 1-4 Tube 1+2S

Butterfly valve SV1-A 1-4 Tube 1+2S

Besteht aus 2 Blatt Blatt 1

Datum	9/92	2/98	8/98		
Name	Trytko	Trytko	Trytko		

	Datum	Name
Gezeichnet	22.9.92	Trytko
Geprüft		WB
Normgepr.		

APV Rosista GmbH
D-59425 Uнна
Germany

RN 01.037.552-3

Es stehen verschiedene
Dichtungswerkstoffe zur Verfügung.
Bitte WS-Nr. ergänzen

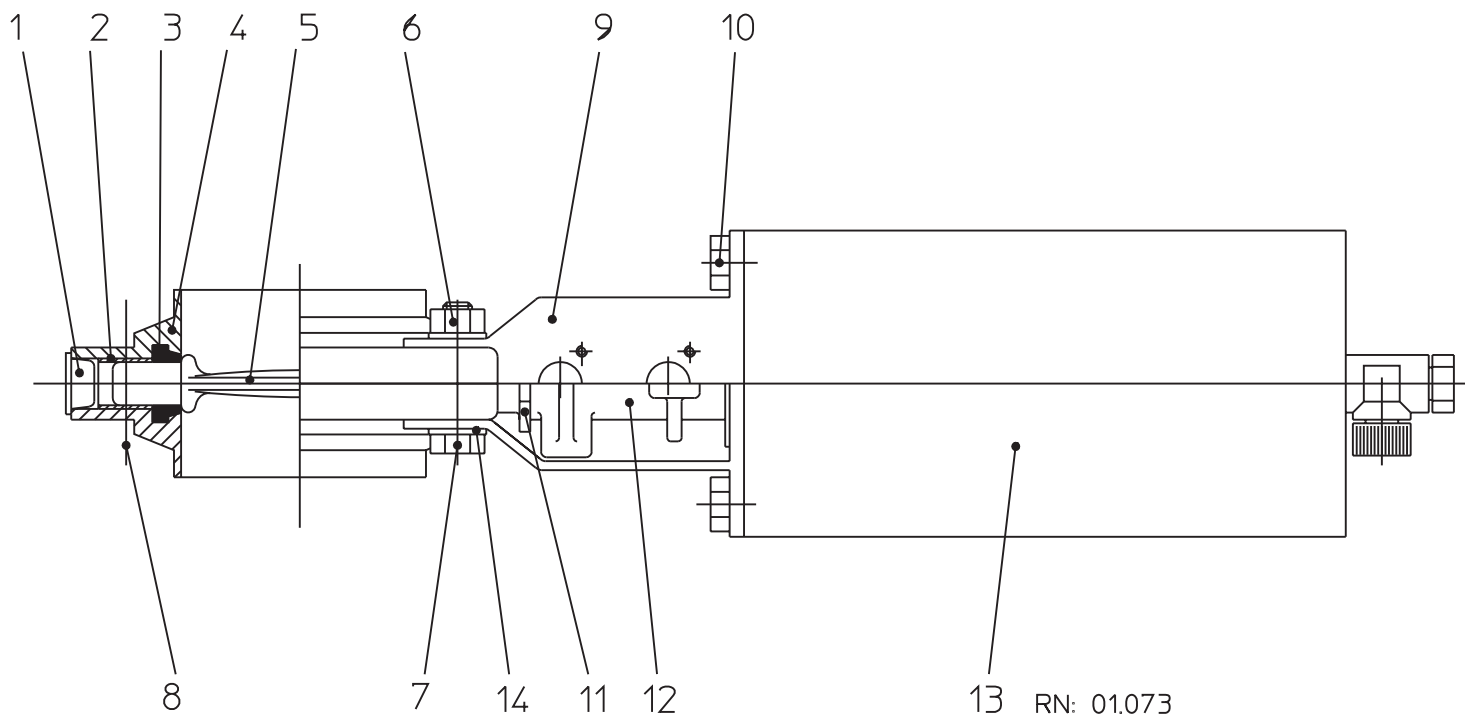
The following seal materials
are available (fill in last
two digits of ref.-no.)

*Dichtungswerkstoff:
material seals:

- ../13-Silikon/Silicone
- ../73-Viton
- ../93-EPDM

**Werkstoff metallisch/
material metallic

- ../13-1.4301 poliert/polished
- ../43-1.4404 poliert/polished
- ../17-1.4301 matt-gl./satin finish
- ../47-1.4404 matt-gl./satin finish



13 RN: 01.073

Ersatzteilliste: spare parts list:

Scheibenventil SV1-H DN 25-100 1+2S
Butterfly valve SV1-handle DN 25-100 1+2S

Besteht aus <u>2</u> Blatt Blatt <u>1</u>							Datum	Name	APV Rosista GmbH D-59425 Unna Germany
						Gezeichnet	2.10.92	Trytko	
						Geprüft		WB	
						Normgepr.			
Datum	10/92	1/98	8/98						RN 01.037.5-9
Name	Trytko	Trytko	Trytko						

Es stehen verschiedene
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Bitte WS-Nr. ergänzen

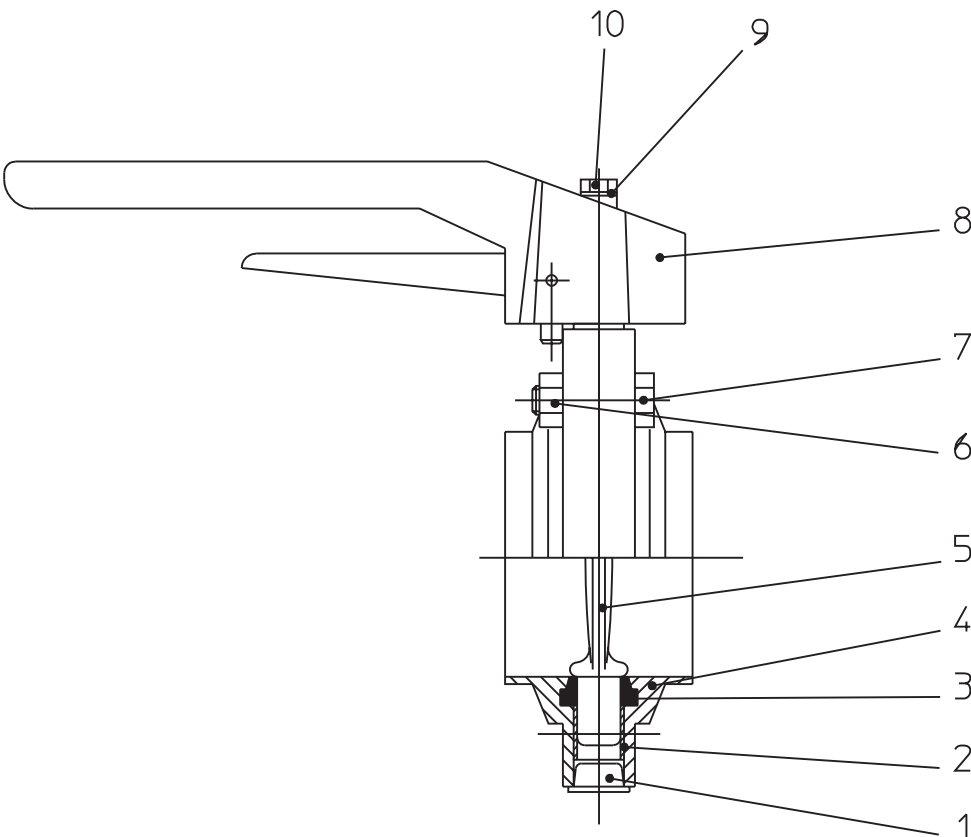
The following seal materials
are available (fill in last
two digits of ref.-no.)

*Dichtungswerkstoff: material seals:

- ../13-Silikon/Silicone
- ../73-Viton
- ../93-EPDM

**Werkstoff metallisch/ material metallic

- ../13-1.4301 poliert/polished
- ../43-1.4404 poliert/polished
- ../23-1.4401 poliert/polished
- ../17-1.4301 matt-gl./satin finish
- ../47-1.4404 matt-gl./satin finish



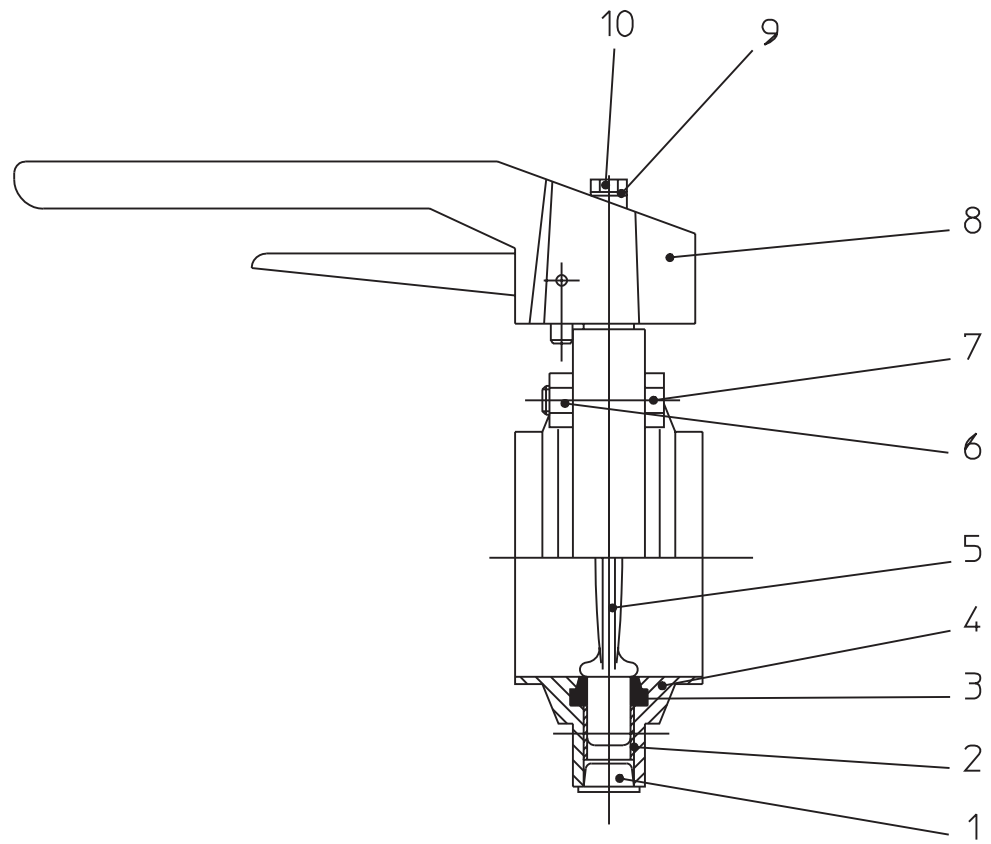
Ersatzteilliste: spare parts list:
Scheibenventil SV1-H 1-4 Tube 1+2S
Butterfly valve SV1-handle 1-4 Tube 1+2S

Besteht aus <u>2</u> Blatt Blatt <u>1</u>						Datum	Name	APV Rosista GmbH D-59425 Unna Germany
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					Geprüft		WB	
					Normgepr.			
Datum	10/92	2/98	8/98					RN 01.037.550
Name	Trytko	Trytko	Trytko					

Es stehen verschiedene
Dichtungswerkstoffe zur Verfügung.
Bitte WS-Nr. ergänzen

The following seal materials
are available (fill in last
two digits of ref.-no.)

- *Dichtungswerkstoff: material seals:
- ../13-Silikon/Silicone
 - ../73-Viton
 - ../93-EPDM
- **Werkstoff metallisch/ material metallic
- ../13-1.4301 poliert/polished
 - ../43-1.4404 poliert/polished
 - ../23-1.4401 poliert/polished
 - ../17-1.4301 matt-gl./satin finish
 - ../47-1.4404 matt-gl./satin finish



Ersatzteilliste: spare parts list:

Scheibenventil SV1-H	1-4	Tube	1+2S
Butterfly valve SV1-handle	1-4	Tube	1+2S

Butterfly valve SV1-handle 1-4 Tube 1+2S

Datum	10/92	2/98	8/98						
Name	Trytko	Trytko	Trytko						

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RN 01.037.550

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Ersatzteilliste: spare parts list:

Drehantrieb K-80, K-125, K-180 F/L

Actuator K-80, K-125, K-180 spring/air

Besteht aus 2 Blatt Blatt 1

	Datum	Name
Gezeichnet	4.3.98	Trytko
Geprüft		
Normgepr.		

APV Roseta GmbH
D-59425 Urmia
Germany

Datum	3/98								
Name	Trytko								

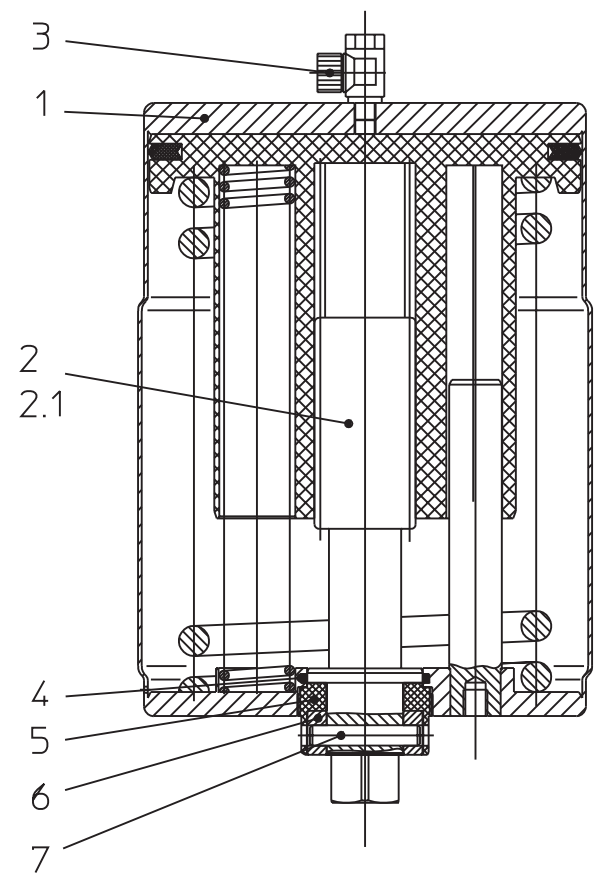
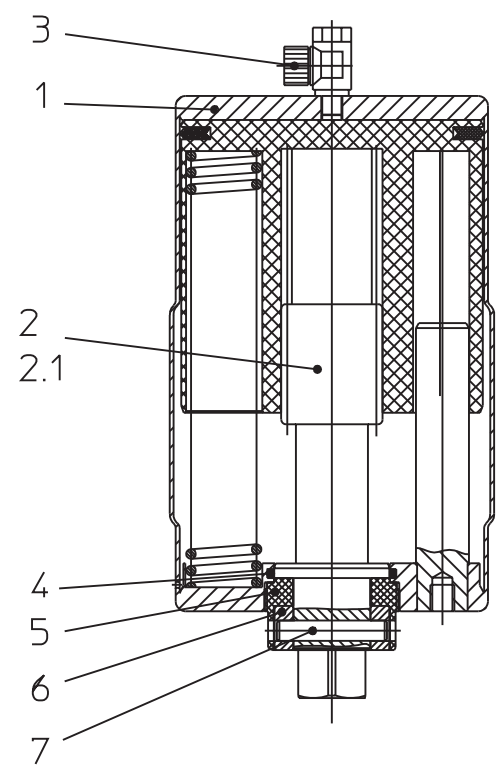
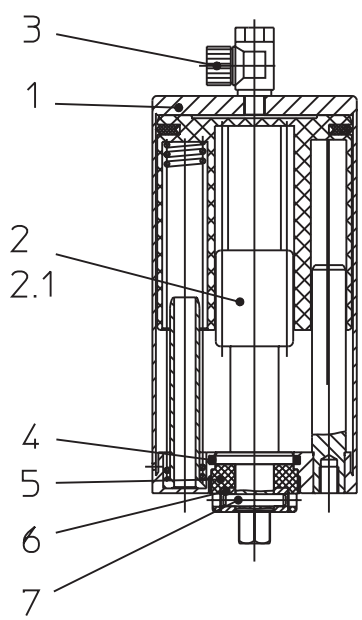
RN 01.073

Es stehen verschiedene
Werkstoffe zur Verfügung.
Bitte WS-Nr. ergänzen

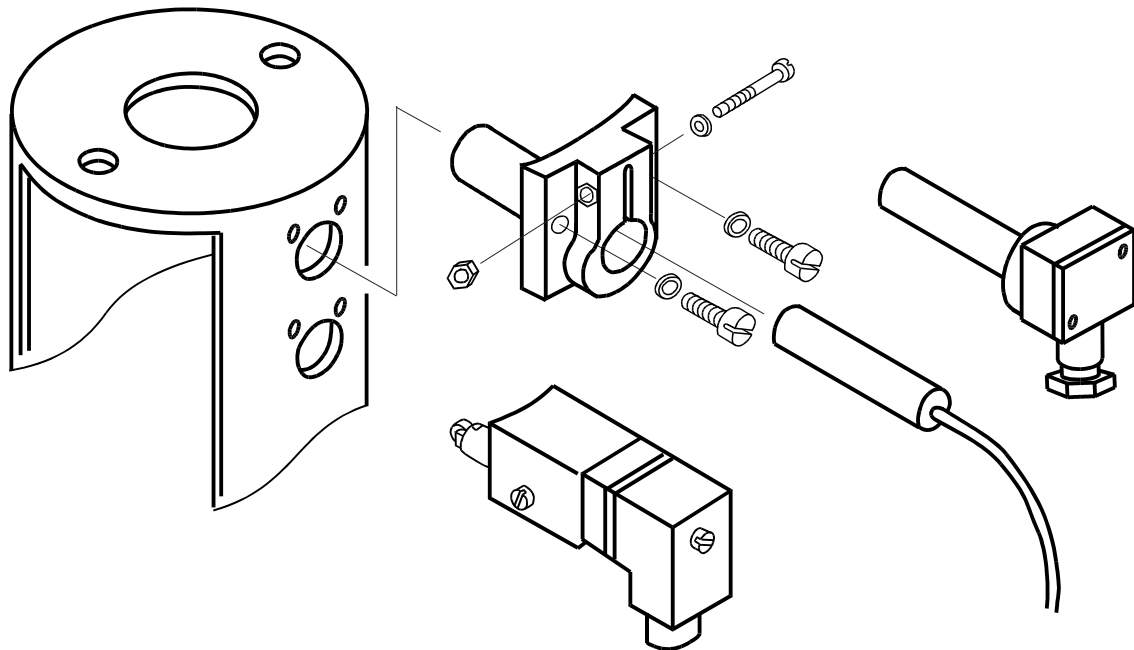
The following materials
are available (fill in last
two digits of ref.-no.)

*Werkstoff metallisch/
material metallic

../13-1.4301 poliert/polished
../17-1.4301 matt-gl./satin finish



Ventilstellungsmelder (VSM) position indicator



Beschreibung	Description	WS. - Nr. ref. - no.
Rückmeldung komplett IHP (s.Abb.) Initiator mit Leuchtdiode und 5m Kabel	proximity switch complete IHP with LED and 5m cable	15-33-023/33
Rückmeldung komplett IHPK Initiator mit Kabelanschlussraum und LED	proximity switch complete IHPK with cable connection housing and LED	15-33-140/33
Mikroschalter	Micro switch complete	15-33-026/93

Einzelteile	single	
Initiator mit Leuchtdiode und 5m Kabel (ohne Halterung)	IHP with LED and 5m cable (without support)	08-60-011/93
Initiator mit Kabelanschlussraum und LED (ohne Halterung)	IHPK with cable connection housing and LED (without support)	08-60-145/ 93
Halterung für Rückmeldungen IHP und IHPK	Support for proximity switches IHP and IHPK	15-33-914/83

Technische Daten : Dreidraht - Initiator	Technical Data : Proximity switch with three - core cable	
Betriebsspannung 10 - 30 V DC	Operating voltage 10 - 30 V DC	
pnp plusschaltend, Schließfunktion	PNP positive switching, closing function	
Nennschaltabstand 5 mm	Nominal operating distance 5 mm	
Einbau „ nichtbündig “	Installation nonflush	