



# **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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SV1 - A DN 25 - 100	-	RN 01.037 - 14
SV1 - A Tube 1T - 4T	-	RN 01.037.552 - 3
SV1 - M DN 25 - 100	-	RN 01.037.5 - 9
SV1 - M Tube 1T - 4T	-	RN 01.037.550
Actuator	_	RN 01 073
Actual	-	





# 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



- 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.

# APV



#### 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.



# 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 transfered 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 valve disc housing flange DN 25 - 100 Tube 1T - 4T yoke, actuator coupling bearings SV seal	PA6.6 1.4571 1.4301/1.4404 1.4404 1.4301 1.4308 polyamide 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									
2т									
2,5T									
3т									
4T									

-	Smooth valve	passage without diversion of the line flow.
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- The opening diameter has the same size as the inner line diameter.

-	max. line pressure	: 10 bar
-	max. operating temperature	: 140 <sup>0</sup> C EPDM, HNBR : 135 <sup>0</sup> C Silicone
-	short-term steam load	: 150 <sup>0</sup> C EPDM : 140 <sup>0</sup> C HNBR : 135 <sup>0</sup> C Silicone
-	vacuum tightness	: 2 mbar
-	opening angle of butterfly valves min. control pressure max. control pressure	: 90 <sup>0</sup> : 6 bar : 10 bar
-	pneumatic air connection	: 6 x 1
	(use dry and clean pneumatic air, or	nly)

# 9. Dimensions





	dimensions in mm										
	Α	В	С	~ D							
	SV1-M										
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											
	Α	~ D										
	SV1-A											
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<br/>separate connection in the continuing pipeline.



#### Danger!

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









- 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:		1			Datum	Name		
Scheibenventil SV1_E7 DN 25_100 1+2S	Besteht au	us <u>2</u> Blatt	Blatt <u>1</u>	Gezeichnet	11.10.90	Trytko	- D-5	V Rosista GmbH i9425 Unna
				Normgepr.	12.10.90			
Butterfly valve SV1-A DN 25-100 1+2S	Datum 10/90 Name Trytko	) 2/98 8/98 D Trytko Trytko					RN 01.03	7-14
Es stehen verschiedene Dichtungswerkstoffe zur Verfügung. Bitte WS-Nr. ergänzen The following seal materials are available (fill in last two digits of refno.) *Dichtungswerkstoff: material seals: /13-Silikon/Silicone /73-Viton /93-EPDM ** Werkstoff metallisch/ material metallic /13-1.4301 poliert/polished /17-1.4301 matt-gl./satin finish /47-1.4404 matt-gl./satin finish		9	10 10 10 10 10 10 10 10 10 10		     		73	

Ers	satzi	teilliste: spare part	s list:							Datum Name		ABV Basista Cablu
So	the	ibenventil SV	1-FZ DI	N 25-	100 1+2S		Blatt <u>2</u>		Gezeichnet Gebrüft	11.10.90  Trytk   12.10.90  Schu		D-59425 Unna Germany
Ri	itto	rfly valve SV	 1_Λ ΓΝ	1 25_1	100 1+25				Normgepr.			-
DU		inty vulve Sv	I-A DI		100 1+23	Datum 1 Name T	0/90 2/98 8	3/98				37-14
	e t				25	(0			N aa		105	45.0
<sup>D</sup> os.	ant	Benen	nung		25	40	50	65 -	80	100	125	150 N/S_N-
tem	ΨŪ	descri	ption		refno.	refno.	refno.	refno.	refno.	refno.	refno.	refno.
1	1	Blindstopfen Plua			08-74-010/93	=	=	=				
2	2	Lagerbuchse Bearing			08-01-150/93	=	=	=	=	08-01-151/93		
З	1	Dichtuñg SV Seal SV		*	58-33-278/	58-33-378/	58-33-428/	58-33-478/	58-33-528/	58-33-628/		
4	2	Gehäuse-Hälfte Housing half		**	09-93-277/	09-93-377/	09-93-427/	09-93-477/	09-93-527/	09-93-627/		
5	1	Klappe Disc			08-55-276/43	08-55-376/43	08-55-426/43	08-55-476/63	08-55-526/63	08-55-626/63		
6		Skt. Mutter Hex. nut	DIN 934	M8	4x 65-50-060/15	4× =	4× =	4× =	6× =	6× =		
7	2	Skt. Schraube Hex. screw	DIN 933	M8x35	65-01-095/15	=	=	=	=	=		
8		Skt. Schraube Hex. screw	DIN 933	M8x28	2x 65-01-085/15	2× =	2× =	2× =	4× =	4× =		
9	1	Laterne Yoke			15-40-030/17	15-40-816/17	=	15-40-025/17	=	=		
10	2	Skt. Schraube Hex. screw	DIN 933	M8×12	65-01-080/15	=	=	=	=	=		
11	1	Zeiger Position indicator			08-29-021/93	=	=	=	=	=		
12	1	Kupplungsstück Coupling			08-52-050/17	=	=	=	=	=		
	1	Drehantrieb F/L Actuator spring/aii	Ē		15-31-055/17	=	=	=	=	=		
13	1	Drehantrieb L/L Actuator double/ai	ir		15-31-065/17	=	=	=	=	=		
14	4	Scheibe Washer	DIN 125	A8,4	67-01-022/15	=	=	=	=	=		

Ersatzteilliste: spare parts list:									Datum	Name		
Scheiberwertil SV/1 E7 1 /	Tuba 1.29	Best	eht aus	2	Blatt	Blatt .	1	Gezeichnet	22.9.92	Trytko	-	APV Rosista GmbH D-59425 Unna
SCHEIDENVEITIN SVI-FZ I-4	IUDE I+ZS							Normaeor.		I WB		Germany
Butterfly valve SV1-A 1-4	Tube 1+2S	Datum	9/92	2/98	8/98							01037552-3
		Name	Trytko	Trylko	Trytko							
Es stehen verschiedene Dichtungswerkstoffe zur Verfügung. Bitte WS-Nr. ergänzen The following seal materials are available (fill in last two digits of refno.) *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			6	14			)		13	RN: 01.0	73	

Er	satzi	eilliste: spare par	ts list:				L			Datum Name		
Sc	- boi	honvontil SV/	1 🗆 7 1	/ Tu	1,2S		Blatt <u>2</u>		Gezeichnet	22.9.92 Trytk	<u> </u>	APV Rosista GmbH D-59425 Unna
JU	1161			-4 10	IDE I+ZS				Normaeor	WB		Germany
Βι	itte	rfly valve SV	/1-A 1-	-4 Tul	be 1+2S	Datum 9 Name T	0/92 2/98 8 rytko Trytko Tr	3/98			RN 01.0	37.552-3
	e It y				1T		, 2T	, <sub>257</sub> D	N <sub>эт</sub>	· /T ·	1	
Pos	ant	Bener	าทนทฐ							4 I	1.15 N-	
tem	μ Μ	descr	ription		refno.	refno.	refno.	refno.	refno.	refno.	refno.	refno.
1	1	Blindstopfen Plug			08-74-010/93	=	=	=				
2	2	Lagerbuchse Bearing			08-01-150/93	=	=	=	=	08-01-151/93		
З	1	Dichtuñg SV Seal SV		*	58-33-325/	58-33-425/	58-33-475/	58-33-525/	58-33-503/	58-33-675/		
4	2	Gehäuse-Hälfte Housing half		**	09-94-319/	09-94-419/	09-94-469/	09-94-519/	09-94-552/	09-94-669/		
5	1	Klappe Disc			08-55-318/43	08-55-418/43	08-55-468/43	08-55-518/43	08-55-527/63	08-55-668/63		
6		Skt. Mutter Hex. nut	DIN 934	M8	4x 65-50-060/15	4 × =	4× =	4× =	6× =	6× =		
7	2	Skt. Schraube Hex. screw	DIN 933	M8x35	65-01-095/15	=	=	=	=	=		
8		Skt. Schraube Hex. screw	DIN 933	M8×28	2x 65-01-085/15	2× =	2× =	2× =	4× =	4x =		
9	1	Laterne Yoke			15-40-030/17	15-40-816/17	=	15-40-025/17	=	=		
10	2	Skt. Schraube Hex. screw	DIN 933	M8×12	65-01-080/15	=	=	=	=	=		
11	1	Zeiger Position indicator			08-29-021/93	=	=	=	=	=		
12	1	Kupplungsstück Couplina			08-52-050/17	=	=	=	=	=		
	1	Drehantrieb F/L Actuator sprina/a	іг		15-31-055/17	=	=	=	=	=		
13	1	Drehantrieb L/L Actuator double/c	ціг		15-31-065/17	=	=	=	=	=		
14	4	Scheibe Washer	DIN 125	A8,4	67-01-022/15	=	=	=	=	=		

Ersatzteilliste: spare parts list:		-			Datum	Name	ABV Basista (mbil
Scheibenventil SV1-H DN 25-100 1+2S	Besteht au	us <u>2</u> Blatt	Blatt <u>1</u>	Gezeichnet Z	<u>2.10.92   1</u>   W	rytko VB	D-59425 Unna Germany
Butterfly valve SV1-bandle DN 25-100 1	.25			Normgepr.			
	Name Trytka	2 1/98 8/98 D Trytko Trytko				RN	01.037.5-9
Es stehen verschiedene				10	0		
Dichtungswerkstoffe zur Verfügung.				10	,9		
Bitte WS-Nr. erganzen							
The following seal materials							
are available (fill in last							
two digits of refno.)			<u> </u>			_ 8	
-			]   _				
*Dichtungswerkstoff: material seals:							
/13-Silikon/Silicone				┲╼╪╼┶╴╴┘		7	
/73-Viton			י 				
/93-EPDM						,	
						6	
**Werkstoff metallisch/ material metallic							
/13-1.4301 poliert/polished						5	
/43-1.4404 poliert/polished							
/23-1.4401 poliert/polished						4	
/17-1.4301 matt-gl./satin finish						~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
/47-1.4404 matt-gl./satin finish						ک ک	
						2	
						1	

Er	satz	teilliste: spare par	ts list:				·			Datum Name		
Sr	hei	henventil SV	1-H DN	25-10	0 1+25		Blatt <u>2</u>		Gezeichnet	2.10.92   Irytki		APV Rosista GmbH D-59425 Unna
						26			Normaeor.	WD		definiting
ВU	tter	fly valve Sv	'I-hand	le DN	25-100 1+	-ZS Datum 1 Name T	0/92 2/98 8 rytko Trytko T	3/98 rytko			RN 01.0	)37.5- <b>9</b>
⊃ns	ntit y	Веле	חחחח		25	40	50	65	)N 80	100	125	150
tem	Mer quai	desci	ription		WS-Nr. refno.	WS-Nr. refno.	WS-Nr. refno.	WS-Nr. refno.	WS-Nr. refno.	WS-Nr. refno.	WS-Nr. refno.	WS-Nr. refno.
1	1	Blindstopfen Plug			08-74-010/93	=	=	=				
2	2	Lagerbuchse Bearing			08-01-150/93	=	=	=	=	08-01-151/93		
З	1	Dichtuñg SV Seat SV		*	58-33-278/	58-33-378/	58-33-428/	58-33-478/	58-33-528/	58-33-628/		
4	2	Gehäuse-Hälfte <u>Housing half</u>		**	09-93-277/	09-93-377/	09-93-427/	09-93-477/	09-93-527/	09-93-627/		
5	1	Klappe <u>Disc</u>			08-55-276/43	08-55-376/43	08-55-426/43	08-55-476/63	08-55-526/63	08-55-626/63		
6		Skt. Mutter <u>Hex. nut</u>	DIN 934	M8	4x 65-50-060/15	4× =	4× =	4× =	6× =	6× =		
7		Skt. Schraube <u>Hex. screw</u>	DIN 933	M8x28	4x 65-01-085/15	4× =	4× =	4× =	6× =	6× =		
8	1	Handbetatigung Handle			08-41-064/93	08-41-065/93	=	=	=	=		
9	1	Skt. Schraube Hex. screw	DIN 931	M5x28	65-01-037/15	=	=	=	=	=		
10	1	Sicherungsscheibi Safety washer	e	M5	67-01-010/93	=	=	=	=	=		

Ersatzteilliste: spare parts list: Scheibenventil SV1-H 1-4 Tube 1+2S	Besteht au	s <u>2</u> Bla	tt Blatt	_1_	Gezeichnet Geprüft	Datum 1.10.92	Name Trytko WB		<b>APV Rosista GmbH</b> D-59425 Unna Germany
Butterfly valve SV1-handle 1-4 Tube 1+2S	Datum 10/92 Name Trytko	2/98 8/ Trytko Tryt	98 Iko					RN 01.0	37.550
Es stehen verschiedene Dichtungswerkstoffe zur Verfügung. Bitte WS-Nr. ergänzen The following seal materials are available (fill in last two digits of refno.) *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						9		8 7 6 5 4	
/47-1.4404 matt-gl./satin finish								2 1	

Ers	satz	teilliste: spare par	ts list:							Datum Name	2	
S	- 6	viboovootil SV	/1 Ц 1		1,25		Blatt <u>2</u>		Gezeichnet	1.10.92 Trytk	<u>&lt;0</u>	APV Rosista GmbH D-59425 Unna
			1-11 1-	-4 IUL	JE I+ZJ				Geprüft	WB WB		Germany
Вι	Jţţ€	erfly valve S'	V1-hand	dle 1-	-4 Tube 1	+2S Datum 1	0/92 2/98 8	3/98			RN 01.0	37.550
os.	p E	l Benei	חחנוחמ		1T	1,5T	2T	2.5T	T 3T	4T		
tem	חם רם	descr	ription		WŞ-Nr.	WŞ-Nr.	WŞ-Nr.	WŞ-Nr.	WŞ-Nr.	WŞ-Nr.	WŞ-Nr.	WŞ-Nr.
		Blindstonfen	· · · · · · ·			101110.	101110.	101110.		10.	10.	10110.
1	1	Plug			08-74-010/93	=	=	=				
2	2	Lagerbuchse Bearing			08-01-150/93	=	=	=	=	08-01-151/93		
З	1	Dichtung SV Seal SV		*	58-33-325/	58-33-425/	58-33-475/	58-33-525/	58-33-503/	58-33-675/		
4	2	Gehäuse-Hälfte Housing half		**	09-94-319/	09-94-419/	09-94-469/	09-94-519/	09-94-552/	09-94-669/		
5	1	Klappe Disc			08-55-318/43	08-55-418/43	08-55-468/43	08-55-518/43	08-55-527/63	08-55-668/63		
6		Skt. Mutter Hex. nut	DIN 934	M8	4x 65-50-060/15	4× =	4× =	4× =	6× =	6× =		
7		Skt. Schraube Hex. screw	DIN 933	M8×28	4x 65-01-085/15	4× =	4× =	4× =	6× =	6× =		
8	1	Handbetätigung Handle			08-41-064/93	08-41-065/93	=	=	=	=		
9	1	Skt. Schraube Hex. screw	DIN 931	M5x28	65-01-037/15	=	=	=	=	=		
10	1	Sicherungsscheibe Safety washer	e	M5	67-01-010/93	=	=	=	=	=		



									-		
Ers	satz	teilliste: spare parts list:			2			Datum	Name		ADV Declate Orbij
Dr	- oh	antrieh K-80 K-125 K-180			Blatt <u>2</u>		Gezeichnet	4.3.98	Irytko		APV HOSISTA GIMDH D-59425 Unna Germany
							Normaepr.				demiciny
А	ctu	ator K-80, K-125, K-180 s	pring/air	Datum 3	3/98					RN 01.	073
	>	4			rytkoj j						
os.	nge	Benennung	K-80	K-125	K-180						
tem	дис аМе	description	WS-Nr. refno.	WS-Nr. refno.	WS-Nr. refno.	WS-Nr. refno.	WS-Nr. refno.	WS-1 refr	Nг. 10.	WS-Nr. refno.	WS-Nr. refno.
	1	Drehantrieb-komplett * Actuator-complete	15-31-055/	15-31-057/	15-31-923/						
1	1	Drehantrieb-geschweißt * Actuator-welded	15-31-054/	15-31-056/	15-31-922/						
2	1	Spindel komplett mit Lager Shaft complete with bearing	15-24-021/13	15-24-031/13	15-24-033/13						
2.1	1	Spindel Shaft	15-24-020/13	15-24-030/13	15-24-032/13						
З	1	Verschraubung EWS 6×1 G1/8	08-62-002/93	=	=						
4	1	0-Ring 0-ring	32.2-3 58-06-130/83	49,5-3 58-06-222/73	49,5-3 =						
5	1	Lager für Drehantrieb Begring for actuator	15-28-002/34	15-28-009/63	=						
6	1	Stellring Adjust ring	67-08-007/13	67-08-008/13	=						
7	1	Zyl. Kerbstift DIN 1473	5×26 67-15-035/13	8×45 67-15-036/13	8×45 =						





# Ventilstellungsmelder (VSM) position indicator



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

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

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, Schließerfunktion	PNP positive switching, closing function
Nennschaltabstand 5 mm	Nominal operating distance 5 mm
Einbau ,, nichtbündig "	Installation nonflush