APV®
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Operating Manual

DELTA AP

Aseptic Process Valve

Read and understand this manual prior to operating or servicing this product.

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Declaration of Conformity for Valves and Valve Manifolds

APV Rosista GmbH, Zechenstr. 49, D-59425 Unna-Königsborn
as manufacturer with sole responsibility declares that the

double seat valves of the series D2, SD4, SDT4, SDM4, SWcip4, DSV, DA3, DE3, DEU3, DET3, DKR2, DKRT2, DKRH2
in the nominal diameters DN 25 - 150, 1" – 6" and 1 Sh5 - 6 Sh5

butterfly valves of the series SV1 and SVS 1 F
in the nominal diameters DN 25 - 100, DN 125 - 250 and 1" – 4"

ball cocks of the series KH, KHV
in the nominal diameters DN 15 - 100

single seat, diaphragm and spring loaded valves of the series S2, SW4, SWmini4, SWT4, M3, MF3, M4, MF4, MP4, MS4, AP1, APT1, CPV, RG4, RGM4, RGE4, RGEM4, PR2, PR3, PR4, SI2, UF3, VRA,VRAH
in the nominal diameters DN 10 - 150, 1/2" – 4" and 1 Sh5 - 6 Sh5

and the valve manifolds installed thereof

meet the requirements of the Directives 89/392/EEC (amendment 93/44/EEC), replaced by 98/37/EC and GSG - 9.GSGV.

For official inspections, APV Rosista GmbH presents a technical documentation according to appendix V 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 remaining risks as well as an operating manual with safety instructions.

The conformity of the valves and valve manifolds is guaranteed.

D-59425 Unna-Königsborn, June 04, 2008
APV Rosista GmbH

ppa. Baumbach

Manager Research and Development

Table of Contents

1. General Terms

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

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

Descriptions and data given herein are subject to technical changes.

2. Safety Instructions

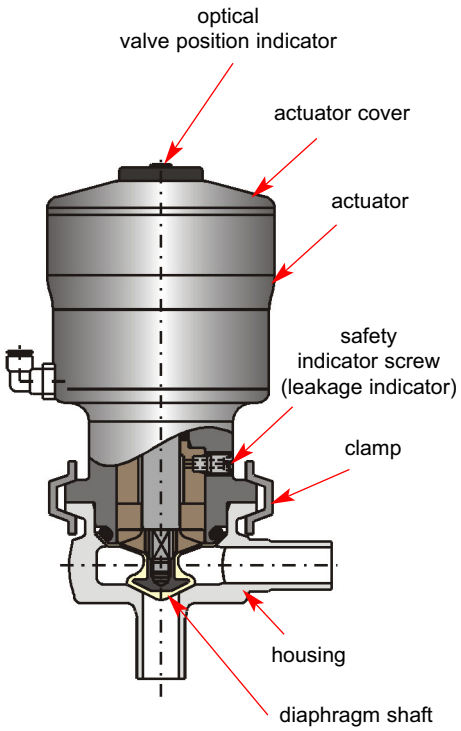
DANGER!

- 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.
- Electric and pneumatic connections must be separated.
- Before any maintenance of the valve, the line and cleaning system must be **depressurized** and discharged if possible.
- Observe Service Instructions to ensure safe maintenance of the valve.
- Connections which are not used must be sealed by a plug.
- The safe discharge of the corresponding cleaning liquids must be ensured!
- **Do not reach into the open valve.**
- The actuator is under spring tension, do not open it by force.

- **Attention!**
  With valve design NC (normally closed): before releasing the clamp, the valve insert must be relieved by controlling the actuator with air.
- The valve must only be assembled, disassembled and reassembled by persons who have been trained in APV valves or by APV service team members. If necessary, contact your local APV representative.

3. Mode of Operation

3.1 General terms



Due to its construction and mode of operation as well as the use of high-quality stainless steel and the corresponding seal materials, the aseptic process valve DELTA AP1 can be used in the food and beverage as well as in the pharmaceutical and chemical industries.

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

The diaphragm valves offer optimum protection of the product in hygienic and aseptic applications.
Product safety is provided by the hermetic separation of the product chamber from the environment (atmosphere) by a flexible diaphragm shaft.

- Different variants are available:
  type: AP1 – NC
  (NC = normally closed ; air-to-raise, spring-to-lower)
  type: AP1 – NO
  (NO = normally open; air-to-lower, spring-to-raise)
  type: AP1 – AA (AA = air / air actuator)
  type: AP1 – M (M = manual operation)

- Operation by pneumatic stroke actuator with air connection, reset by spring force.

- The cleaning of the inner area of the valve is undertaken during CIP cleaning of the line system.

- Leakages at the diaphragm are indicated via the safety indicator screw at the leakage drain.

- Maintainable actuator.

- Optical valve position indicator on the actuator cover.

- The pneumatic actuator can be equipped with an electric position switch (proximity switch) to indicate the current valve position.

- The valve diaphragm shaft consists of TFM material.

- Different housing variants (see spare parts drawings) are available.

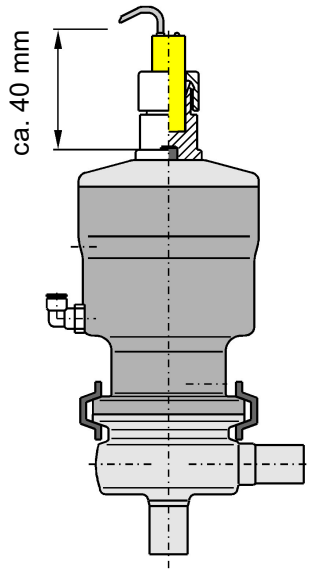
- **Connections:**
  Beside the housings with weld ends according to DIN 11850 and ISO 1127 the following connections are alternatively available:
- clamp connection according to DIN 32676
- clamp connection according to ISO 2852

4. Auxiliary Equipment

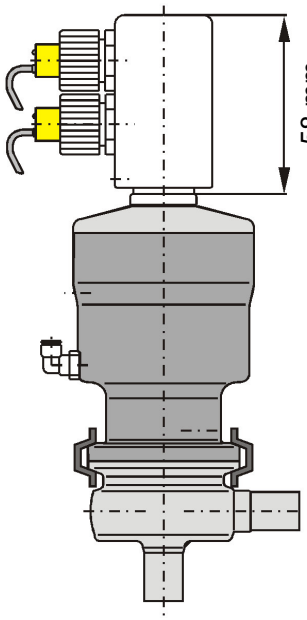
4.1 Valve position indication / proximity switch

- The pneumatic actuator equipped with one or two electric position switches (proximity switches) to indicate the current valve position.

feedback of valve position by one proximity switch (PSH1)



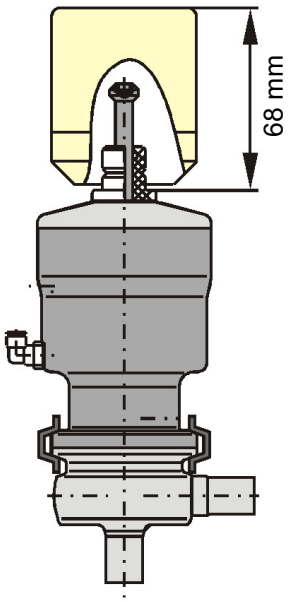
feedback of valve position by two proximity switches (PSH2)



4.2 Valve position indication / micro switch

- The pneumatic actuator can be equipped with an electric position switch (proximity switch) to indicate the current valve position.

feedback of valve position by 2 micro switches



5. Installation

- The installation of the valve must be undertaken in such a manner that fluids can drain off the valve housing and should be provided preferably in vertical position.

- The valve housing can be welded direct into the pipeline (completely dismantable valve insert).

- **Attention:** Observe welding instructions.

5.1 Welding Instructions
Shut-off valve AP/APT

- Before welding of the valve, the valve insert must be dismantled from the housing (see paragraph 10.1.2. - 4.).
  Careful handling to avoid damage to the parts is necessary.

- To weld APT valves in tanks, the corresponding dimensions for the preparation of the tank bore can be drawn from table 1.

- Welding should only be carried out by certified welders (EN 287-1). (seam quality EN 25817 „B“).

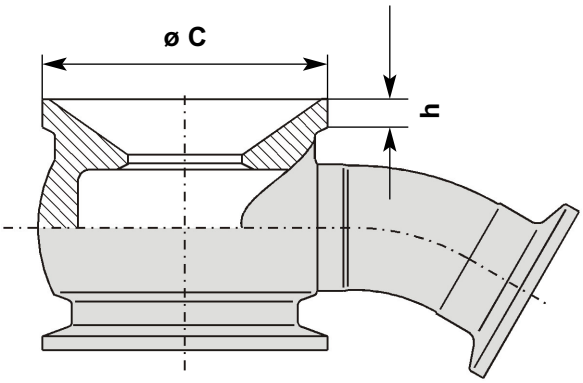
- The welding of the valve housings must be undertaken in such a way that the valve body is not deformed.

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

- TIG orbital welding is best!

- After welding of the valve housings or of the mating flanges 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 damage or destroy the diaphragm shaft.

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

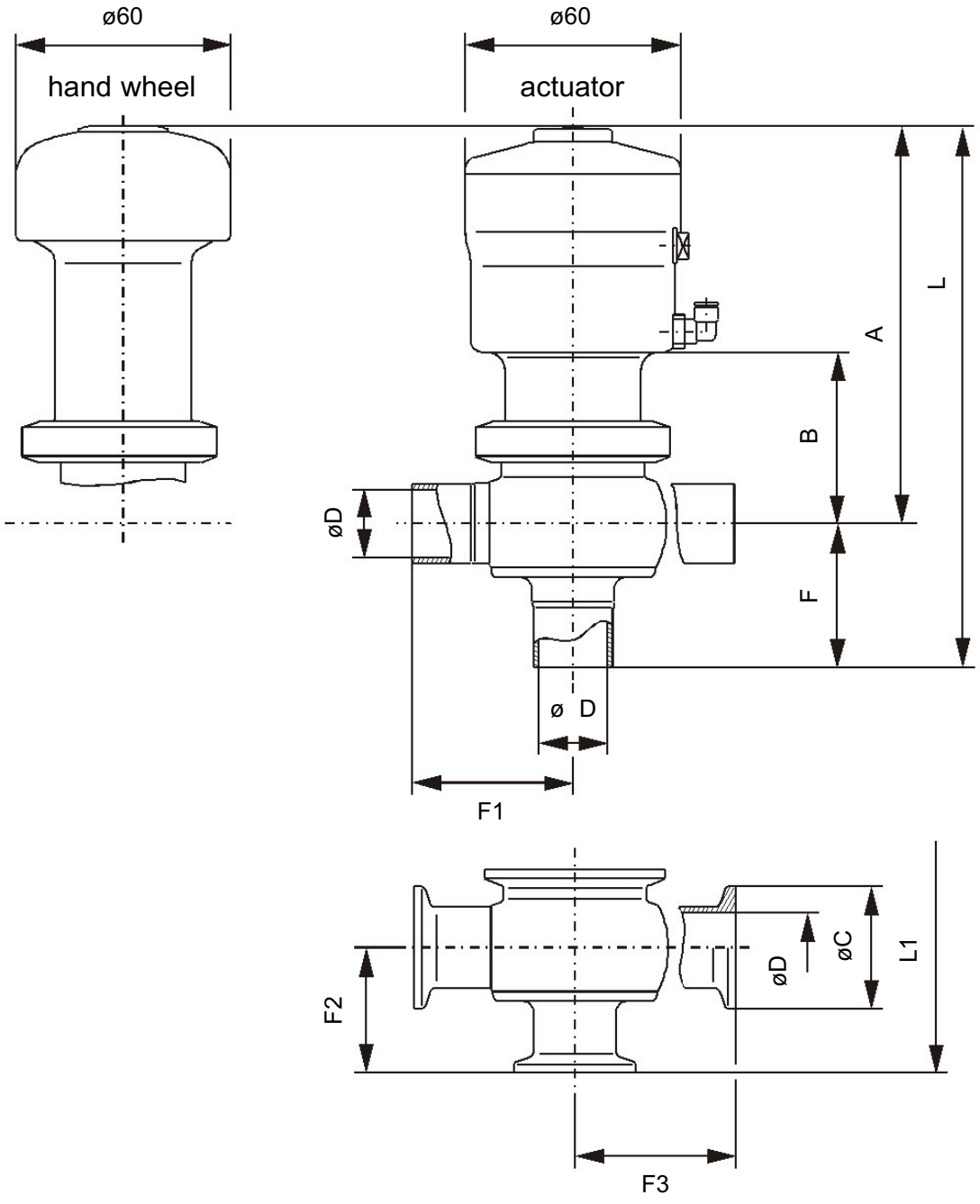


5.2
dimensions in mm for the tank bore

DN	inch	ø C -0,1	h
10	1/2”	46	3
15		46	3
20		46	5

6. Dimensions

6.1 Dimensions AP1

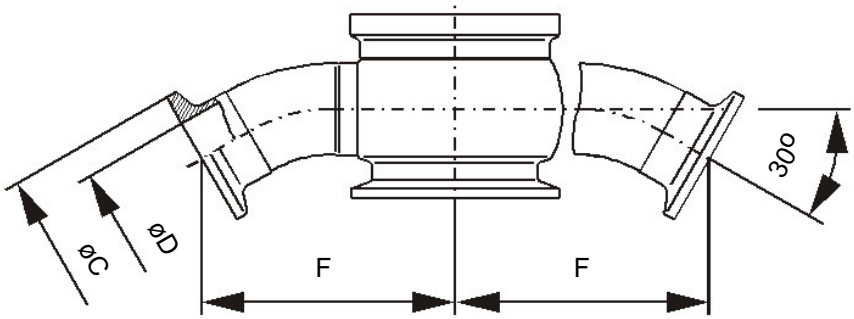


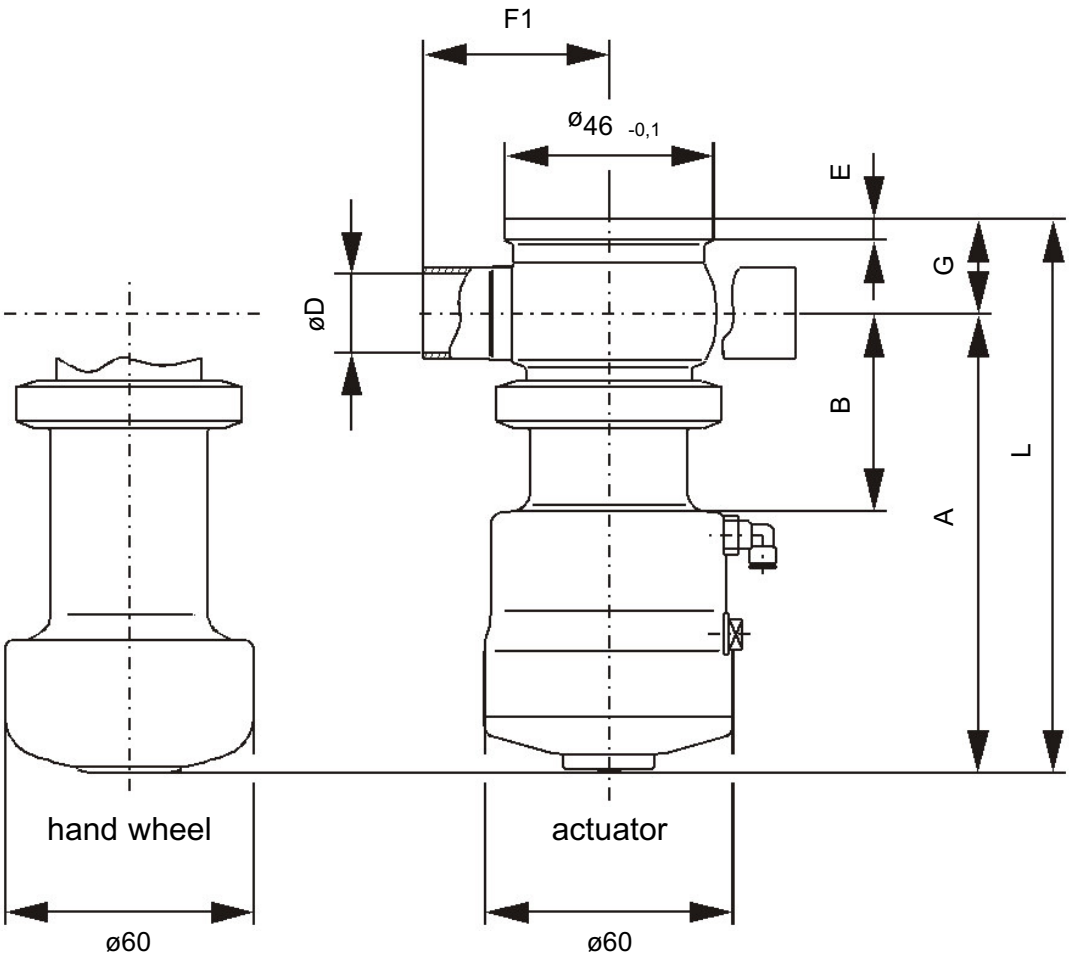
dimensions in mm

DN	øD	F	F1	F2	F3	A	B	øC	L	L1
1/2”	9,5	30	45	19,5	41	105	43	25	135	124,5
10	10	30	45	19,5	41	105	43	25	135	124,5
15	16	35	45	30	45	105	46	34	153	138
20	20	40	45	35	45	105	48	34	155	138

6. Dimensions

6.2 Dimensions APT1





Dimensions in mm

DN	øD	F	F1	A	B	øC	E	G	L
1/2”	9,5	53,5	45	105	43	25	3	17,5	122,5
10	10	53,5	45	105	43	25	3	17,5	122,5
15	16	59	45	108	46	34	3	18,7	123,7
20	20	61	45	110	48	34	5	22,8	132,8

6. Dimensions / Weights

6.3 Weights in kg

AP1-NC = (actuator operated)
AP1-M = (manual operation)

DN / Inch	AP1 - NC metal actuator	AP1 - NC
10 / 1/2”	1,5 kg	0,9 kg
15	1,6 kg	1,0 kg
20	1,65 kg	1,05 kg

DN / Inch	AP1 - M metal actuator	AP1 - M plastic actuator
10 / 1/2”	1,2 kg	0,85 kg
15	1,3 kg	0,95 kg
20	1,35 kg	1,0 kg

7. Technical Data

7.1 General

line pressure **10 bar**
max. operating temperature 135°C
short-term load 150°C

air connection (for hose) 4x1mm standard

max. pneumatic air pressure 10 bar
min. pneumatic air pressure 6 bar

7.2 Spezification of compressed air

compressed air quality: quality class according to DIN/ISO 8573-1

content of solid particles: ***Qualitätsklasse 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 4***
max. dew point temperature + 3°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.)

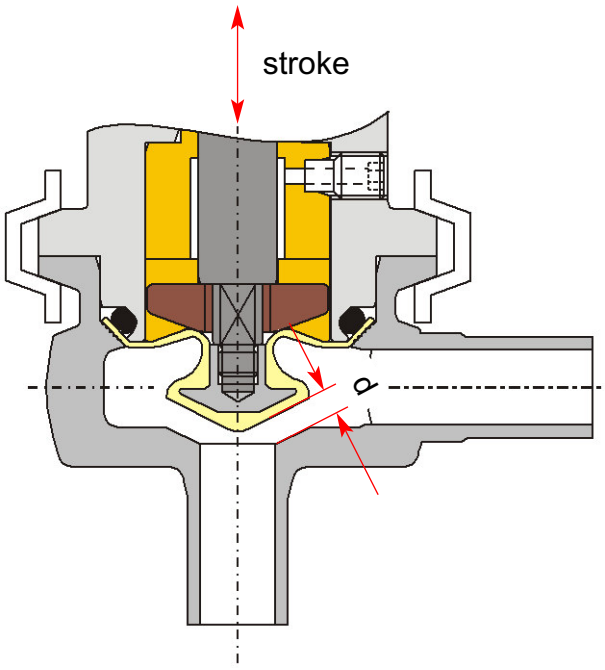
7. Technical Data

7.3	closing times in sec pneumatic pressure 6 bar

DN	hose length 1m	hose length 10m
10, 15, 20	0,1 sec.	0,4 sec.

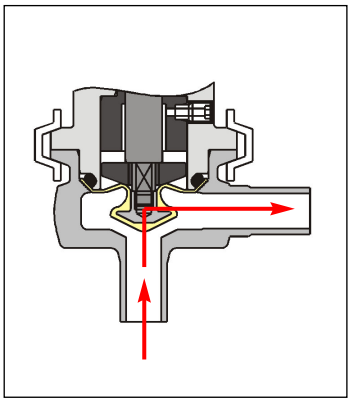
7.4 DN	shut-off valve AP1

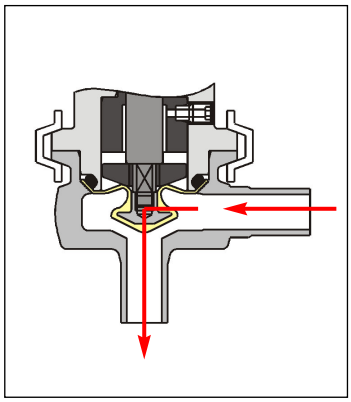
	stroke	closing pressure	opening gap (d)
10	4 mm	10 bar	ø 3,6 mm
15	4 mm	10 bar	ø 3,6 mm
20	4 mm	10 bar	ø 3,6 mm



7. Technical Data

7.5	flow valves kvs in m3/h





DN	Inch		
10	1/2”	1,5 m^3/h	1,5 m^3/h
15			
20		5,5 m^3/h	7,0 m^3/h

8. Materials

Product-wetted parts

- housing : **1.4404 (316L)**
  optional 1.4435

Other patrs

- actuatror, actuator cover **PPS40**
  optional 1.4301 (304L)
- piston rod, clamp **1.4301 (304L)**
- proximity switch holder, plug **PA 12 black**

Seals

- diaphragm shaft **TFM**

9. Maintenance

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

- Tools required:
- 1 x spanner SW 8
- 1 x spanner SW 13
- 1 x wrench SW 12
- 1 x wrench SW 5
- 1 x wrench SW 3

- For the valve service APV supplies complete seal kits (pl. see spare parts lists).
  The appropriate seal grease forms part of this scope of supply.

- The replacement of seals is undertaken according to the Service Instructions.

- The disassembly and assembly of the valve is undertaken according to the Service Instructions.

- **All seals must be provided with a thin layer of grease before their installation!!!**

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

  Recommendation:
  APV-food-grade grease for EPDM, FPM, HNBR and NBR
  (0,75 kg /tin - ref.-No. 000 70-01-019/93)
  (60 g /tube - ref.-No. 000 70-01-018/93)

  Recommendation for screw retention
  Type: Loctite 243 semi-solid
  (5 ml - ref.-No. 00070-01-110/93)
  (50 ml - ref.-No. 00070-01-111/93)

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

10. Service Instructions

10.1. Dismantling from the line system AP1 / APT1

1. Shut off line pressure and discharge lines and tanks if possible.

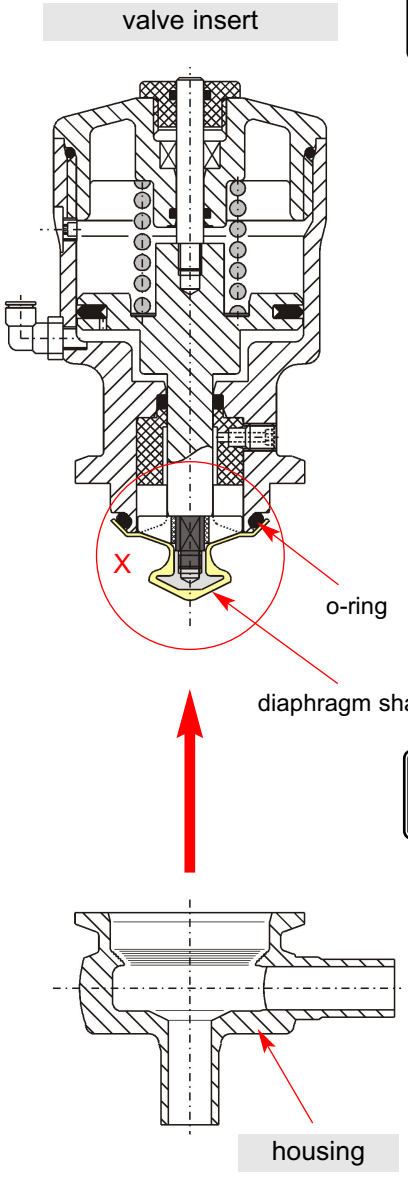
2. **Valve design NC:** **Control actuator with air.**

Do not touch movable parts!
Risk of injury.

Valve cesign NO: **For the disassembly from the line system compressed air is not required.**

3. Remove the clamp and and lift the complete valve insert including actuator out of the housing.

4. **Valve design NC:** **Cut off compressed air.**



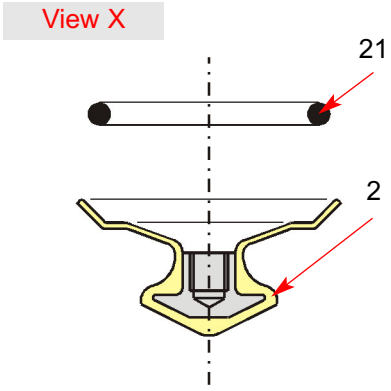
10.2. Dismantling of product-wetted parts

1. Pull the diaphragm shaft **(2)** from the piston rod **(17)** and remove the o-ring **(21)**.

2. **Valve design NO:**
Control the actuator with compressed air.

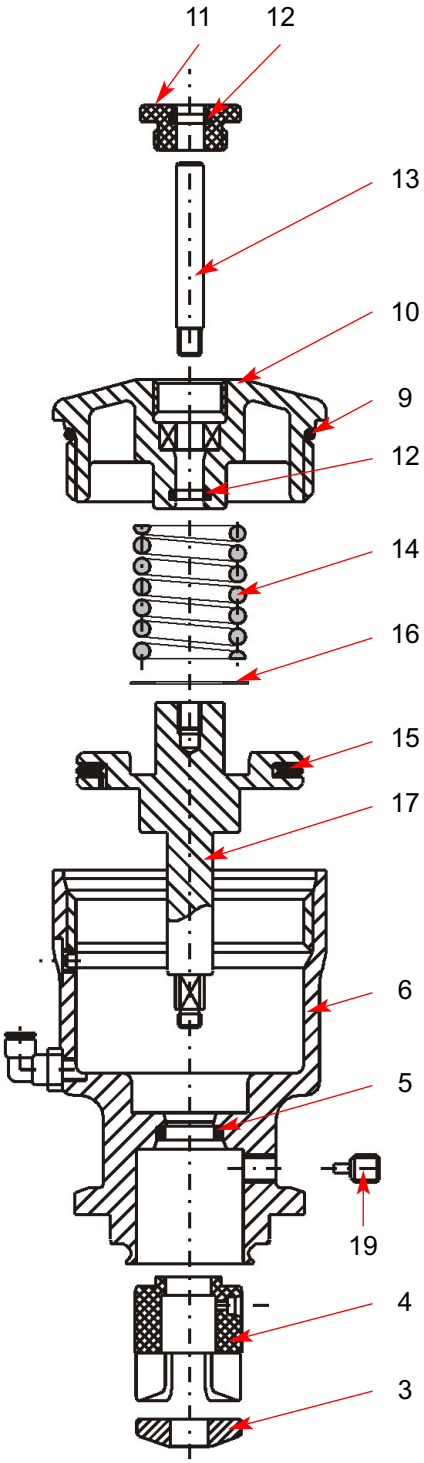
Do not touch movable valve parts!
Risk of injury.

3. Remove the diaphragm shaft and o-ring.
- Cut off compressed air.



10. Service Instructions

10.3. Disassembly and maintenance of actuator unit



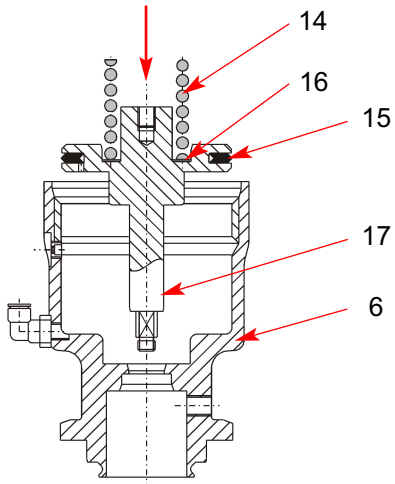
The item numbers refer to the spare parts drawings
AP1, APT1: actuated design **RN 01.064.8**

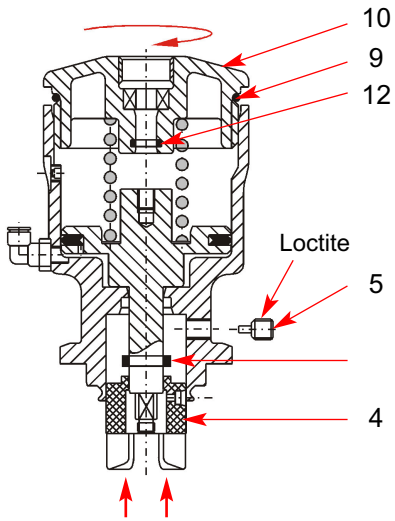
- **Design with valve position indicator:**
  Remove the cover of the valve position indicator **(22)**.
  Turn off the actuating pin **(24)** with the wrench SW4.
  Remove the adaptor plug **(23)** from the actuator cover.

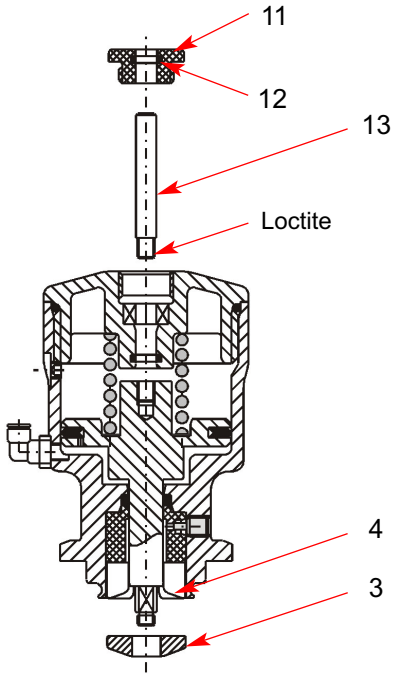
- **Design with proximity switch holder:**
  Remove the proximity switch **(26)**.
  Remove the proximity switch holder **(25)** from the actuator cover **(10)**. Turn off the indicator pin **(13)** with a nipper.
  (**Attention: Do not damage the indicator pin.**)

1. Turn off the thread pin **(11)** and remove the o-ring **(12)**.
2. Turn the actuator cover **(10)** with the wrench SW12 off the actuator. Remove the o-ring **(9)** and the o-ring **(12)**.
3. Pull the pressure spring **(14)**, disc **(16)** and piston rod **(17)** to the top off the actuator. Remove the piston seal **(15)** from the piston.
4. Turn off the safety indicator screw **(19)** with the wrench SW3. Remove the fan **(3)** and diaphragm support **(4)** to the bottom out of the actuator. Remove the quadring **(5)**.
5. All seals can be serviced.

10. Service Instructions







10.4. Assembly of actuator unit

The item numbers refer to the spare parts drawings
AP1, APT1: actuated design **RN 01.064.8**

! **Provide all seals with a thin layer of grease.**

! **Attention only for the piston seal the appropriate pneumatic grease must be used (see paragraph 9).**

1. Insert the piston seal **(15)** in the piston rod **(17)**.
Place the disc **(16)** in the groove of the piston rod.
Insert the piston rod with disc from the top into the actuator **(6)** until it stops. Insert the pressure spring **(14)**.

2. Insert the o-ring **(12)** and o-ring **(9)** in the housing cover.
Turn the housing cover manually in the lower actuator.

3. Slide the quadring **(5)** on the stud of the piston rod.
Slide the diaphragm support **(4)** from the bottom into the actuator.
During this process, the quadring is guided into the groove of the actuator.
Attention: When introducing the diaphragm support in the actuator, observe the bore position for the safety indicator screw **(19)**.

4. Provide the thread of the safety indicator screw **(19)** with Loctite.
Fasten the indicator screw in the thread of the actuator (diaphragm support is fixed by stud of indicator screw).

5. Insert the fan **(3)** in the diaphragm support **(4)**.
Attention: The fan must lock in the diaphragm support.

6. Fasten the actuator cover **(10)** with a wrench SW12.

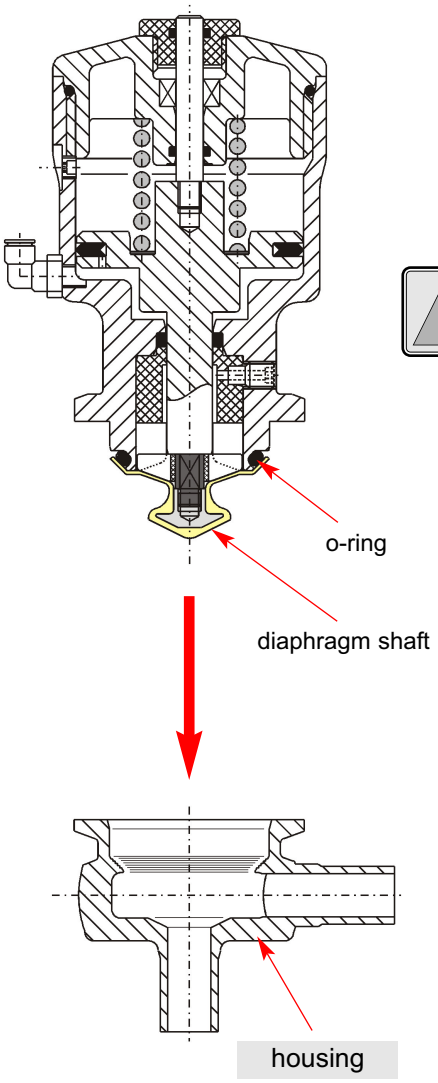
7. Provide the thread of the indictor pin **(13)** with Loctite.
Turn the indicator pin manually through the actuator cover in the piston rod and tighten it with a nipper.
Attention: The indicator pin must not be damaged.

8. Insert the o-ring **(12)** in the thread plug.
Tighten the thread plug.

10. Service Instructions

10.5. Asssembly of product-wetted sealing elements

1. Insert the o-ring **(21)** in the groove of the actuator.
   Fasten the diaphragm shaft **(2)** manually on the thread of the piston rod.



10.6. Assembly of the valve

1. **Valve design NC:** **Control the actuator with compressed air.**

Do not touch movable valve parts!
Risk of injury.

2. **Attention:** **Before placing the valve insert in the housing, clean the inner space of the housing (use appropriate cleaning agent).**

- Place the valve insert in the housing and fasten it with the clamp.

3. **Cut off compressed air.**

Valve design NO: **Compressed air is not required for assembly.**

11. Trouble Shooting

Failure	*Remedy*
Valve does not seal up. Leakage from the safety indicator screw.	**Replace o-ring (21) and diaphragm shaft (2). Check line pressure: Adm. line pressure see paragraph 7.**
Leakage between housing and actuator in the clamp area.	**Replace o-ring (21) and diaphragm shaft (2).**
Actuator does not work, air escapes permanently in the area of the actuator cover or indicator pin.	**Replace piston seal (15), o-ring (9) and o-rings (12).**
Compressed air escapes from the safety indicator screw.	**Replace quadring (5).**
Valve position indication from proximity switch is missing or is imprecise.	**Adjust proximity switch. Plug proximity switch in proximity switch holder until stop.**

! If damaged seals are replaced, generally all seals should be renewed. For valve service actions APV supplies complete seal kits (see spare parts lists.)

12. 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.

Data are subject to change.

BA AP 00000002
ID-No.: H 3 1 7 5 5 1

UK

Translation of original manual

rev. 1

WHERE IDEAS MEET INDUSTRY

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For more information about our worldwide locations, approvals, certifications, and local representatives, please visit www.apv.com.

APV
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DELTA AP

Aseptik-Prozess-Ventil
Ersatzteillisten

D

Aseptic Process Valve
Spare Parts Lists

UK

02/94

Ersatzteilliste: spare parts list:

AP1, APT1-Ventil FS, FH, L/L VSM-Microschalter, Initatorhalter

AP1, APT1-valve NC,NO,air/air PSH-microswitch, prox.switch holder

DN 1/2", 10, 15, 20 -S und / and -Clamp

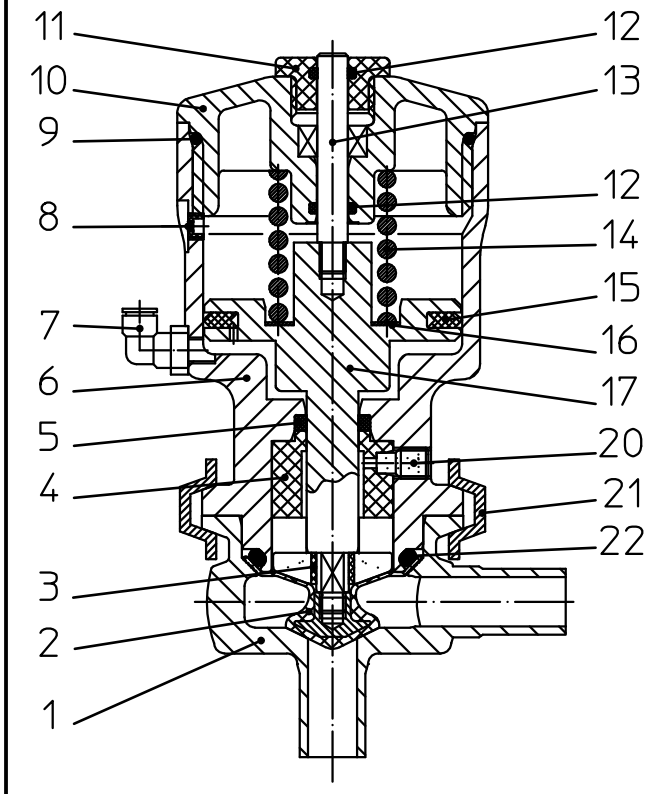
Besteht aus 4 Blatt Blatt 1

	Datum	Name
Gezeichnet	01.12.05	Trytko
Geprüft	17.03.06	Schulz
Normgepr.		

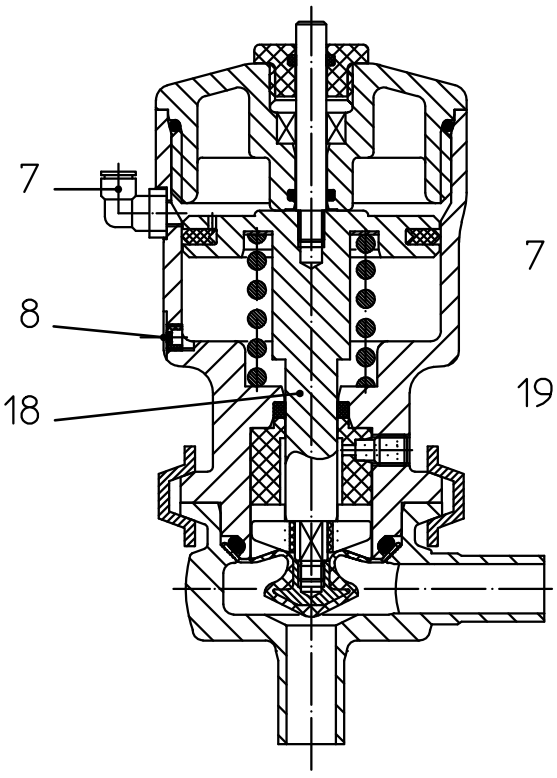
Datum	12/05	09/06	08/07
Name	Trytko	Trytko	Trytko

APV Rosista GmbH
D-59425 Unna
Germany

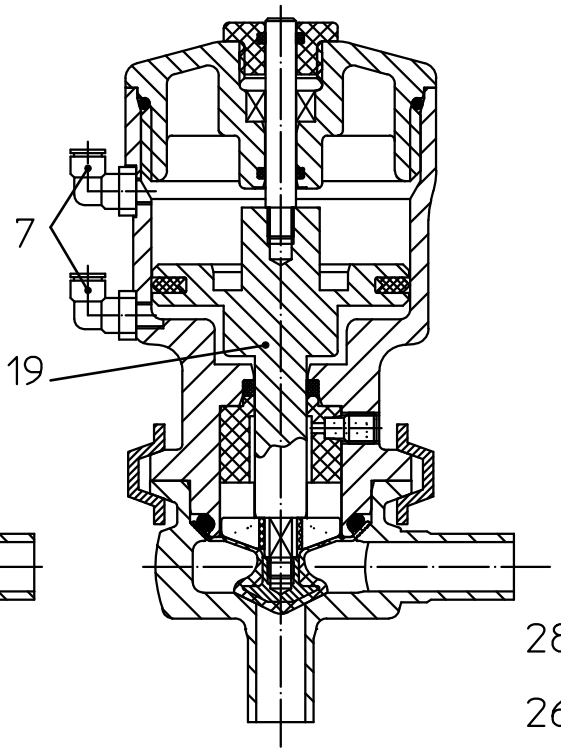
RN 01.064.8



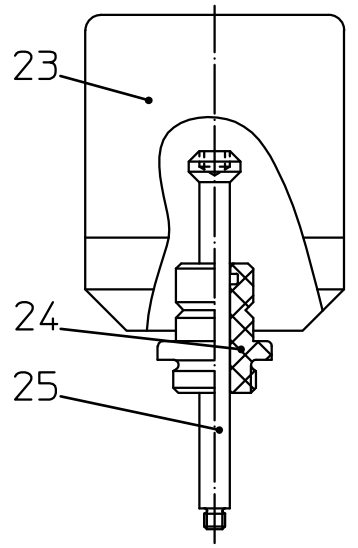
AP1-Ventil FS

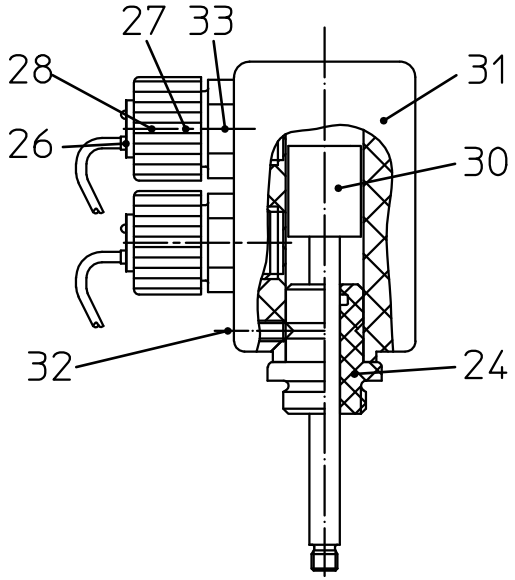


AP1-Ventil FH

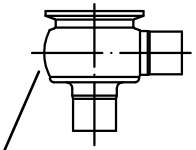


AP1-Ventil L/L

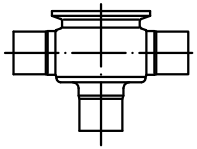




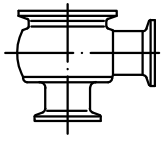
Gehäuse -ausführung housing design



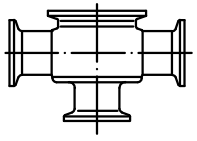
AP11



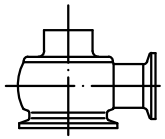
AP12



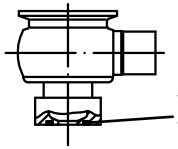
AP11-Clamp



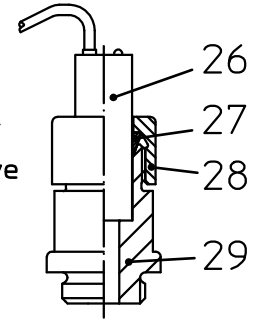
AP12-Clamp

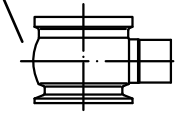


AP11-Clamp pump drain

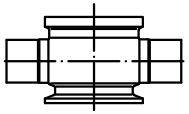


AP11-Powdervalve

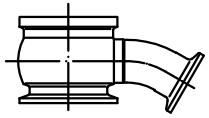




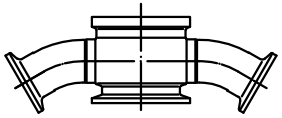
APT11



APT12



APT11-Clamp



APT12-Clamp

02/94

Ersatzteilliste: spare parts list:
AP1, APT1-Ventil FS, FH, L/L VSM-Microschalter, Initiatorhalter
AP1, APT1-valve NC,NO,air/air PSH-microswitch, prox.switch holder
DN 1/2", 10, 15, 20 -S und / and -Clamp

Blatt 2

	Datum	Name
Gezeichnet	01.12.05	Trytko
Geprüft	17.03.06	Schulz
Normgepr.		

Datum	12/05	08/07								
Name	Trytko	Trytko								

APV Rosista GmbH
D-59425 Unna
Germany

RN 01.064.8

Pos. item	Menge quantity	Benennung description	DN 1/2" WS-Nr. ref.-no.	10 WS-Nr. ref.-no.	15 WS-Nr. ref.-no.	20 WS-Nr. ref.-no.	WS-Nr. ref.-no.	pump drain 10 WS-Nr. ref.-no.	powdervalve 10 WS-Nr. ref.-no.	WS-Nr. ref.-no.
		Gehäuseausführung housing design	000 39-..-.../42 1.4404 metallblank / bright metal finish 318 39-..-.../86 1.4435 handpoliert / manually polished							
1	1	Gehäuse AP11 1+2S Housing	39-41-223/	39-41-148/	39-41-198/	39-41-248/				
	1	Gehäuse AP12 1+2+3S Housing	39-42-223/	39-42-148/	39-42-198/	39-42-248/				
	1	Gehäuse APT11 1+2S Housing								
	1	Gehäuse APT12 1+2+3S Housing								
	1	Gehäuse AP11 1+2Clamp Housing	39-41-225/	39-41-150/	39-41-200/	39-41-250/				
	1	Gehäuse AP12 1+2+3Clamp Housing	39-42-225/	39-42-150/	39-42-200/	39-42-250/				
	1	Gehäuse APT11 1+2Clamp Housing	39-43-225/	39-43-150/	39-43-200/	39-43-250/				
	1	Gehäuse APT12 1+2+3Clamp Housing	39-44-225/	39-44-150/	39-44-200/	39-44-250/				
	1	Gehäuse AP11 1S Housing							39-41-900/	
	1	Gehäuse AP11 1Clamp Housing						39-41-149/		
2	1	Membranschaft Diaphragm shaft	39-22-980/22	=	39-22-982/22	39-22-983/22		39-22-986/22	=	
3	1	Stern AP10-20 Star AP10-20	08-48-501/93	=	=	=		=	=	
4	1	Membranunterstützung Membrane support	08-48-500/93	=	=	=		=	=	
5	1	Quadring QRAR ø10,8x2,62 Quadring	58-01-796/73	=	=	=		=	=	
6	1	Steuerkopf unten 1.4301- handpoliert Actuator lower manually polished	15-31-086/13	=	=	=		=	=	
	1	Steuerkopf unten PPS 40 Actuator lower	15-31-086/93	=	=	=		=	=	
7	1	Luftanschlusss M5 Air-Connecting	08-63-102/93	=	=	=		=	=	
8	1	Filternippel für AP10-20 kurz Filter nipple for AP10-20 short	08-74-061/93	=	=	=		=	=	

02/94

Ersatzteilliste: spare parts list:

AP1, APT1-Ventil FS, FH, L/L VSM-Microschalter, Initiatorhalter

AP1, APT1-valve NC,NO,air/air PSH-microswitch, prox.switch holder

DN 1/2", 10, 15, 20 -S und / and -Clamp

Blatt 3

	Datum	Name
Gezeichnet	01.12.05	Trytko
Geprüft	17.03.06	Schulz
Normgepr.		

Datum	12/05	09/06	08/07
Name	Trytko	Trytko	Trytko

APV Rosista GmbH
D-59425 Unna
Germany

RN 01.064.8

Pos. item	Menge quantity	Benennung description	DN 1/2" WS-Nr. ref.-no.	10 WS-Nr. ref.-no.	15 WS-Nr. ref.-no.	20 WS-Nr. ref.-no.	WS-Nr. ref.-no.	pump drain 10 WS-Nr. ref.-no.	powdervalve 10 WS-Nr. ref.-no.	WS-Nr. ref.-no.
9	1	O-Ring O-ring OR ø47,6x2,4	58-06-215/73	=	=	=		=	=	
10	1	Steuerkopfdeckel Actuator cover 1.4301-handpoliert manually polished	08-43-054/13	=	=	=		=	=	
	1	Steuerkopfdeckel Actuator cover PPS 40	08-43-053/93	=	=	=		=	=	
11	1	Gewindestopfen Threaded plug	08-74-045/93	=	=	=		=	=	
12	2	O-Ring O-ring OR ø6x1,8	58-06-026/63	=	=	=		=	=	
13	1	Anzeigestift Indicator pin	08-07-224/12	=	=	=		=	=	
14	1	Druckfeder Pressure feather	60-06-401/13	=	=	=		=	=	
15	1	Kolbendichtung Piston seal PKK1-50	58-01-010/83	=	=	=		=	=	
16	1	Scheibe Disk ø24/16x0,25	08-58-070/12	=	=	=		=	=	
17	1	Kolbenstange FS Piston rod NC	15-23-966/12	=	=	=		=	=	
18	1	Kolbenstange FH Piston rod NO	15-23-967/12	=	=	=		=	=	
19	1	Kolbenstange L/L Piston rod air/air	15-23-968/12	=	=	=		=	=	
20	1	Sicherungs-Anzeigeschraube Safety-indicator screw	08-07-225/12	=	=	=		=	=	
21	1	Gelenkklemme Joint clamp	42-40-282/13	=	=	=		=	=	
22	1	O-Ring O-ring OR ø24,99x3,53	58-06-099/73	=	=	=		=	=	
23	1	VSM-Microschalter 12 VSM-Microswitch 12	08-60-450/93	=	=	=		=	=	
24	1	Adapterstopfen Adapter pin	08-74-044/93	=	=	=		=	=	
25	1	Betätigungsstift Actuating pin	08-07-214/12	=	=	=		=	=	
26	1	Initiator Proximity switch 5m Kabel/cable	08-60-011/93	=	=	=		=	=	
27	1	Initiator Klemmring Proximity switch-clamp	58-25-001/93	=	=	=		=	=	

Ersatzteilliste: spare parts list:

AP1, APT1-Ventil FS, FH, L/L VSM-Microschalter, Initiatorhalter

AP1, APT1-valve NC,NO,air/air PSH-microswitch, prox.switch holder

DN 1/2", 10, 15, 20 -S und / and -Clamp

Blatt 4

	Datum	Name
Gezeichnet	01.12.05	Trytko
Geprüft	17.03.06	Schulz
Normgepr.		

Datum	12/05	09/06	02/07	08/07	08/07				
Name	Trytko	Trytko	Trytko	Trytko	Trytko				

APV Rosista GmbH
D-59425 Unna
Germany

RN 01.064.8

Pos. item	Menge quantity	Benennung description	DN 1/2" WS-Nr. ref.-no.	10 WS-Nr. ref.-no.	15 WS-Nr. ref.-no.	20 WS-Nr. ref.-no.	WS-Nr. ref.-no.	pump drain 10 WS-Nr. ref.-no.	powdervalve 10 WS-Nr. ref.-no.	WS-Nr. ref.-no.
28	1	Überwurfmutter Initiator Nut -proximity switch	07-10-025/93	=	=	=		=	=	
29	1	Initiatorhülse Sleeve for proximity switch	15-33-937/93	=	=	=		=	=	
30	1	Schaltnocke mit Betätigungsstift AP1 Operating cam with actuating pin	08-52-296/14	=	=	=		=	=	
31	2	Initiatorhalterung AP1 Proximity switch holder	15-33-160/93	=	=	=		=	=	
32	1	Gewindestift mit Innenskt. M4x10 Thread pin with inner hexogen	65-15-034/13	=	=	=		=	=	
33	1	Initiatorhülse Proximity switch sleevee	16-33-100/93	=	=	=		=	=	
34	1	O-Ring OR ø15x2,5 O-ring							58-06-052/64	
		Dichtungssatz / seal kit Pos. 2, 5, 9, 12, 15, 22, 34 nur im kompletten Dichtungssatz erhältlich Item. 2, 5, 9, 12, 15, 22, 34 available as complete seal kits only								
	1	Dichtungssatz PTFE Seal kit	58-34-993/03	=	58-34-994/03	58-34-995/03		58-34-098/03	58-34-198/03	
	1	VSM-AP1 Komplett PSH-AP1 complete Pos./item 24, 27, 28, 30, 31, 32, 33	15-33-161/93							
	1	Initiatorhalterung IHP für AP1 Komplett Proximity switch holder IHP for AP1 complete Pos./item 27, 28, 29	15-33-938/93							
	1	VSM-Microschalter 12 für AP1 Komplett PSH-mocro switch 12 for AP1 complete Pos./item 23, 24, 25	08-60-451/93							

Ersatzteilliste: spare parts list:

AP1, APT1-Ventil Handantrieb
AP1, APT1-valve manual handle
DN 1/2", 10, 15, 20 -S und / and -Clamp

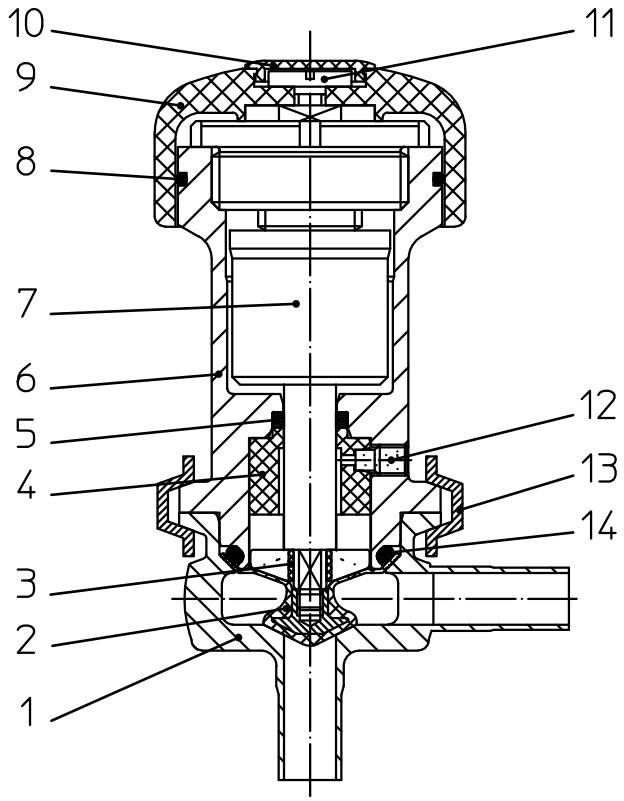
Besteht aus 3 Blatt Blatt 1

	Datum	Name
Gezeichnet	14.12.05	Trytko
Geprüft	17.03.06	Schulz
Normgepr.		

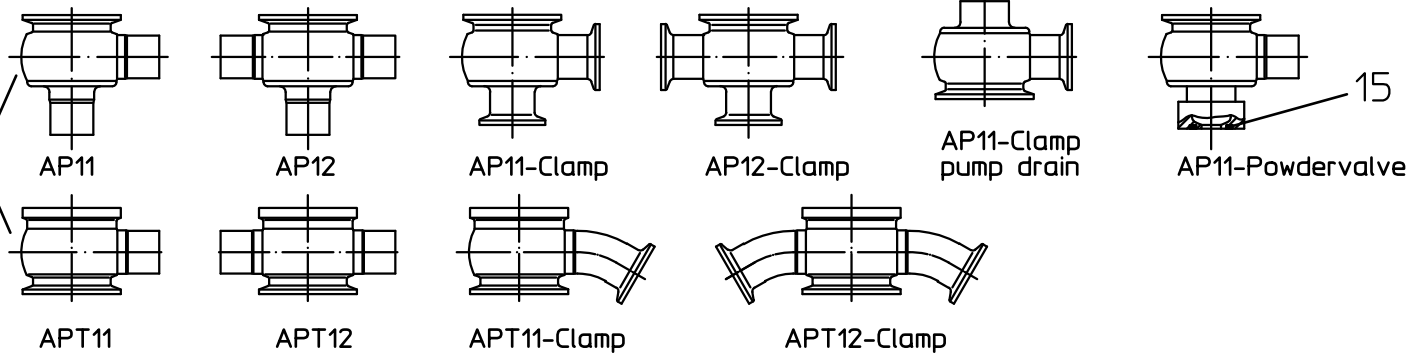
Datum	12/05	08/07								
Name	Trytko	Trytko								

APV Rosista GmbH
D-59425 Unna
Germany

RN 01.064.8-1



Gehäuseausführung
housing design



Ersatzteilliste: spare parts list:

AP1, APT1-Ventil Handantrieb
AP1, APT1-valve manual handle
DN 1/2", 10, 15, 20 -S und / and -Clamp

Blatt 2

	Datum	Name
Gezeichnet	14.12.05	Trytko
Geprüft	17.03.06	Schulz
Normgepr.		

Datum	12/05	08/07	01/08
Name	Trytko	Trytko	Trytko

APV Rosista GmbH
D-59425 Unna
Germany

RN 01.064.8-1

Pos. item	Menge quantity	Benennung description	DN 1/2" WS-Nr. ref.-no.	10 WS-Nr. ref.-no.	15 WS-Nr. ref.-no.	20 WS-Nr. ref.-no.	WS-Nr. ref.-no.	pump drain 10 WS-Nr. ref.-no.	powdervalve 10 WS-Nr. ref.-no.	WS-Nr. ref.-no.
		Gehäuseausführung housing design	000 39-..-.../42 1.4404 metallblank / bright metal finish 318 39-..-.../86 1.4435 handpoliert / manually polished							
1	1	Gehäuse AP11 1+2S Housing	39-41-223/	39-41-148/	39-41-198/	39-41-248/				
	1	Gehäuse AP12 1+2+3S Housing	39-42-223/	39-42-148/	39-42-198/	39-42-248/				
	1	Gehäuse APT11 1+2S Housing								
	1	Gehäuse APT12 1+2+3S Housing								
	1	Gehäuse AP11 1+2Clamp Housing	39-41-225/	39-41-150/	39-41-200/	39-41-250/				
	1	Gehäuse AP12 1+2+3Clamp Housing	39-42-225/	39-42-150/	39-42-200/	39-42-250/				
	1	Gehäuse APT11 1+2Clamp Housing	39-43-225/	39-43-150/	39-43-200/	39-43-250/				
	1	Gehäuse APT12 1+2+3Clamp Housing	39-44-225/	39-44-150/	39-44-200/	39-44-250/				
	1	Gehäuse AP11 1S Housing							39-41-900/	
	1	Gehäuse AP11 1Clamp Housing						39-41-149/		
2	1	Membranschaft Diaphragm shaft	39-22-980/22	=	39-22-982/22	39-22-983/22		39-22-986/22	=	
3	1	Stern AP10-20 Star AP10-20	08-48-501/93	=	=	=		=	=	
4	1	Membranunterstützung Membrane support	08-48-500/93	=	=	=		=	=	
5	1	Quadring QRAR ø10,2x2,62 Quadring	58-01-796/73	=	=	=		=	=	
6	1	Steuerkopf unten 1.4301- handpoliert Actuator lower manually polished	15-31-085/13	=	=	=		=	=	
	1	Steuerkopf unten PPS 40 Actuator lower	15-31-085/93	=	=	=		=	=	
7	1	Kolbenstange Piston rod	15-24-126/92	=	=	=		=	=	
8	1	O-Ring OR ø47,6x2,4 O-ring	58-06-215/73	=	=	=		=	=	

Ersatzteilliste: spare parts list:

AP1, APT1-Ventil Handantrieb
AP1, APT1-valve manual handle
DN 1/2", 10, 15, 20 -S und / and -Clamp

Blatt 3

	Datum	Name
Gezeichnet	14.12.05	Trytko
Geprüft	17.03.06	Schulz
Normgepr.		

Datum	12/05	09/06	02/07	08/07	01/08
Name	Trytko	Trytko	Trytko	Trytko	Trytko

APV Rosista GmbH
D-59425 Unna
Germany

RN 01.064.8-1

Pos. item	Menge quantity	Benennung description	DN 1/2" WS-Nr. ref.-no.	10 WS-Nr. ref.-no.	15 WS-Nr. ref.-no.	20 WS-Nr. ref.-no.	WS-Nr. ref.-no.	pump drain 10 WS-Nr. ref.-no.	powdervalve 10 WS-Nr. ref.-no.	WS-Nr. ref.-no.
9	1	Handrad Hand wheel	08-43-050/93	=	=	=		=	=	
10	1	Abdeckstopfen Plug	08-74-047/93	=	=	=		=	=	
11	1	Flachkopfschraube M5x12 Pan head screw	65-04-327/13	=	=	=		=	=	
12	1	Sicherungs-Anzeigeschraube Safety-indicator screw	08-07-225/12	=	=	=		=	=	
13	1	Gelenkklemme Joint clamp	42-40-282/13	=	=	=		=	=	
14	1	O-Ring OR ø24,99x3,53 O-ring	58-06-099/73	=	=	=		=	=	
15	1	O-Ring OR ø15x2,5 O-ring							58-06-052/64	
		Dichtungssatz / seal kit Pos. 2, 5, 8, 14, 15 nur im kompletten Dichtungssatz erhältlich Item. 2, 5, 8, 14, 15 available as complete seal kits only								
	1	Dichtungssatz PTFE Seal kit	58-34-997/03	=	58-34-998/03	58-34-999/03		58-34-099/03	58-34-199/03	