Installation and Setting-Up Instructions
Spare Parts List

Contents :

DOCUMENTS
Technical Specifications : G360
Installation and Setting-Up Instructions : G360AV

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1. TECHNICAL DATA

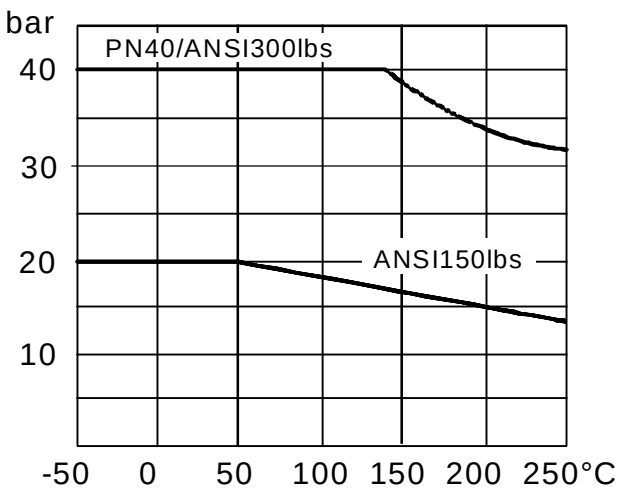
PASVE® BA is a ball-type mounting & service valve for SATRON VL and VDtL type pressure and differential pressure transmitters and SATRON HPS hydraulic pressure seals.
PASVE® BA makes it simple to disconnect the transmitter from the process for maintenance and cleaning, without stopping the process or draining the tank.
PASVE® BA is available in a manually operated type or equipped with a pneumatic actuator.

TECHNICAL SPECIFICATIONS

Transmitter connection
M45x2 female, seat accepts SATRON VL and VDtL type pressure and differential pressure transmitters and SATRON HPS hydraulic pressure seals.

Max. operating pressure/temperature
Pressure 40 bar, temperature 250 °C, (see the appended table).
Min. operating temp. -50 °C.

Pressure / Temperature curve



Surface temperature

Ambient temperature °C	Temperature class
70	T6
85	T5
120	T4

Materials
Wetted parts: AISI316L (EN 1.4404), AISI904L (EN 1.4539), Duplex (EN 1.4462), Hastelloy® C276 (EN 2.4819), 254 SMO®, Titanium.
Seals: PTFE or PTFE with carbon and graphite filling or PTFE 50%+AISI316 50% mixture.

Weight
PASVE BA C 4,3 kg, **PASVE BA P** 4,2 kg,

European Directive Information

ATEX directive (94/9/EC)
Satron Instruments Inc. complies with the ATEX directive.

European Pressure Equipment Directive (PED) (97/23/EC)
- Sound Engineering Practice

European Certification :

Ex II 3 GD

EC DECLARATION OF CONFORMITY

SATRON instruments

Type of Equipment
Mechanical Actuators and Valves

Brand Names
Pistor, Parve

Type Designation
Pistor 75/150, Pistor 75/300, Pistor 75/300 Special, Parve, ParvepH

Manufacturer
Satron Instruments Inc., Lumpeenkatu 1, 33900 Tampere, Finland
Tel. +358 207 464 800, Fax. +358 207 464 801

We hereby declare that the equipment specified above is in conformity with the provisions of:

Machines Directive (98/37/EC) incl. latest amendment:
Conformity assessment procedure followed:
Module A

Conformity is verified by the manufacturer.
Conformity is maintained by the use of good engineering praxis. Production control follows the ISO9001:2000 regulations and includes required electrical safety routine tests.

Pressure Equipment Directive (97/23/EC)
Conformity Assessment procedure followed:
Category 1 : Module A

Conformity is verified by the manufacturer

Atmosphere Explosive Directive (94/9/EC) incl. latest amendments with the application of the harmonized standards:
EN 13463-1:2001+ AC:2002
Conformity assessment procedure followed:
Category 3 : Module A

Conformity is verified by the manufacturer.

Tampere 2009-05-20

Timo Blom, Managing Director

2. CONSTRUCTION AND OPERATION

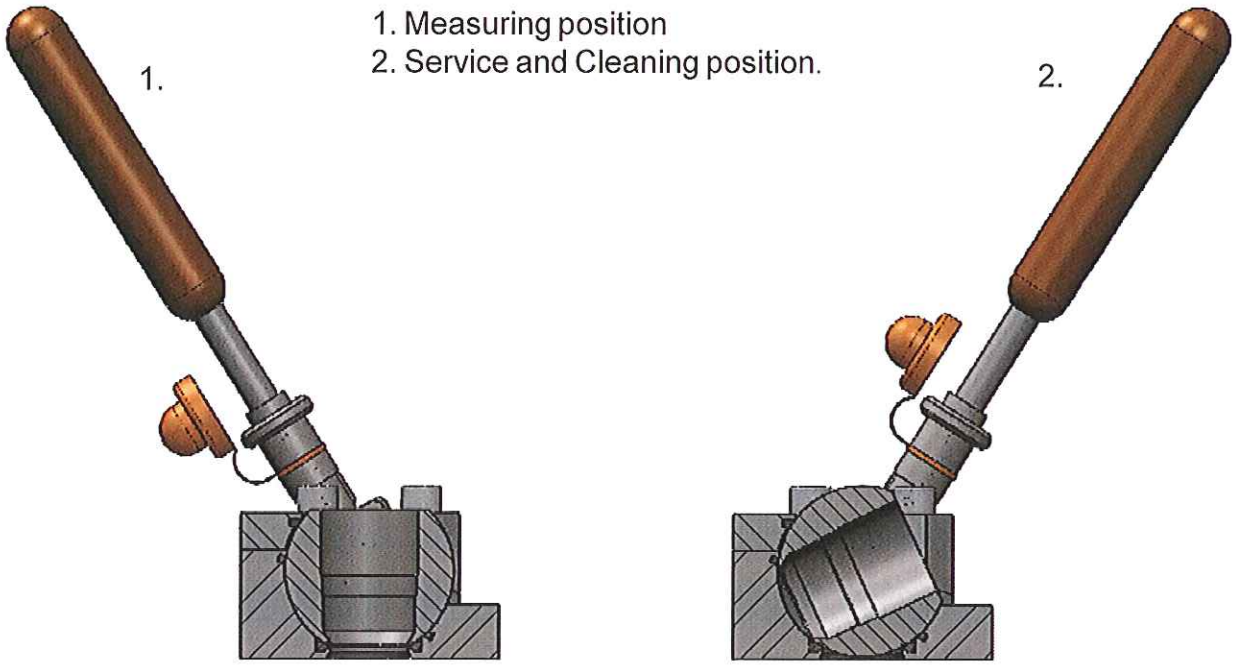


Figure 2- 1 Operating positions

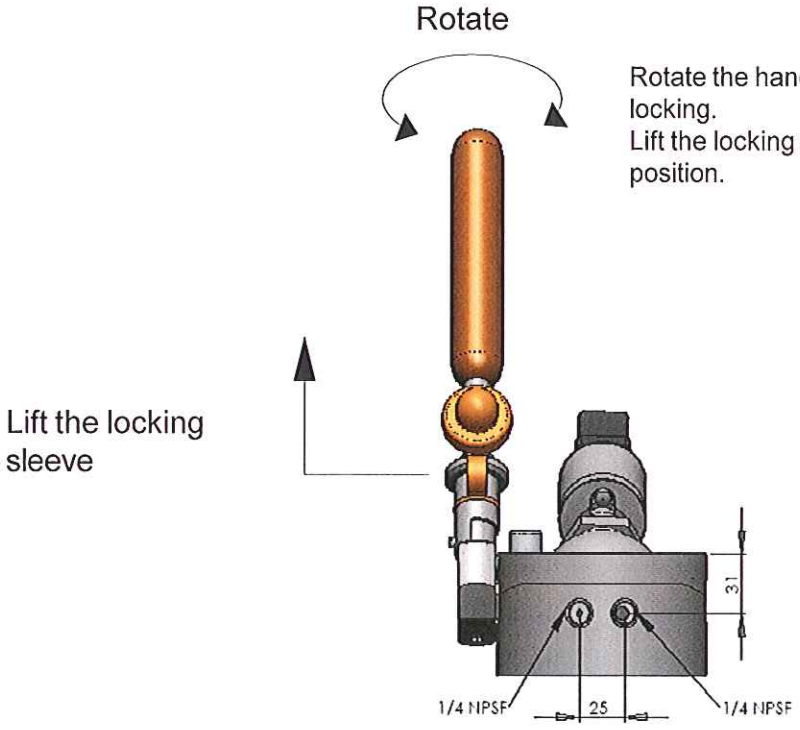
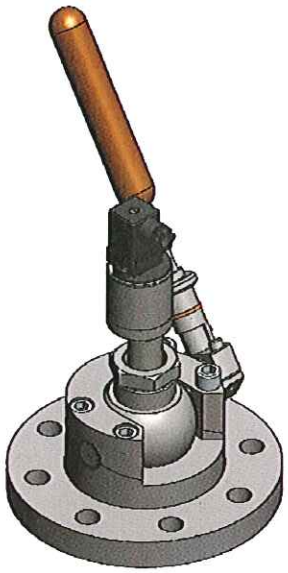
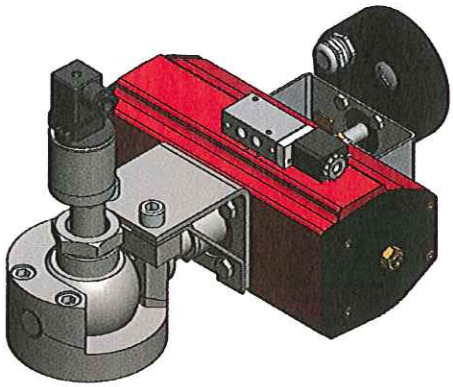


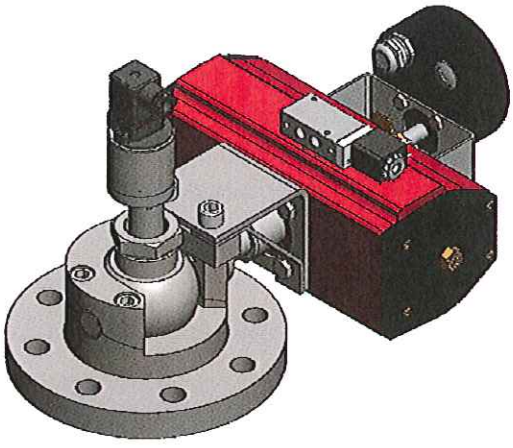
Figure 2- 2 Manual valve operation



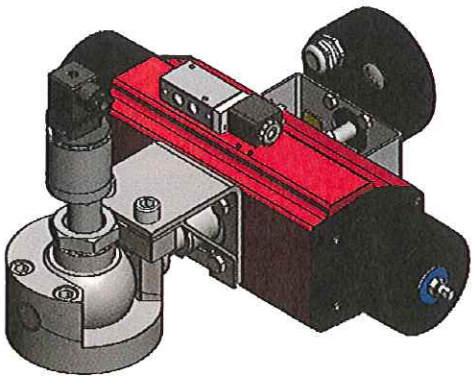
PASVE BA F
- Flange type
- Manually operated (MD)



PASVE BA C
- Welded on container
- Double-action actuator (AD)



PASVE BA F
- Flange type
- Double-action actuator (AD)

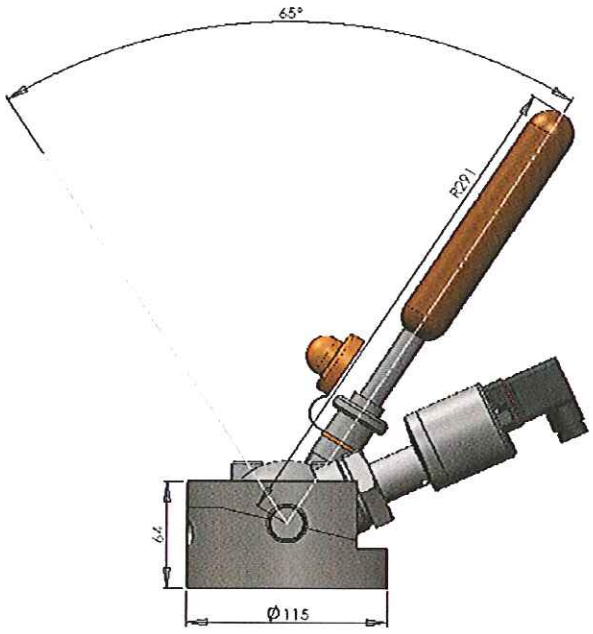


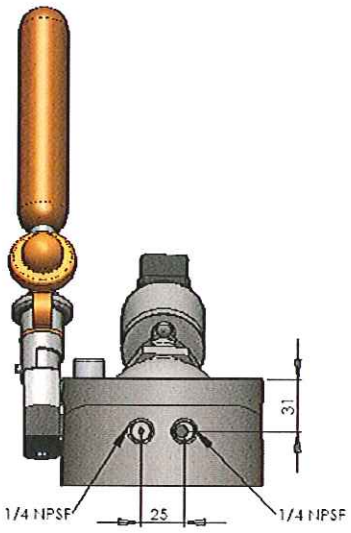
PASVE BA C
- Flange type
- Spring-return actuator (AS)

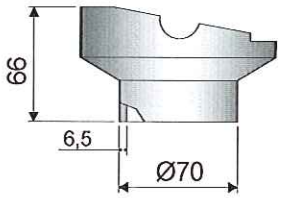
Dimensions (mm)

Manually operated

PASVE BA C
Welded on container



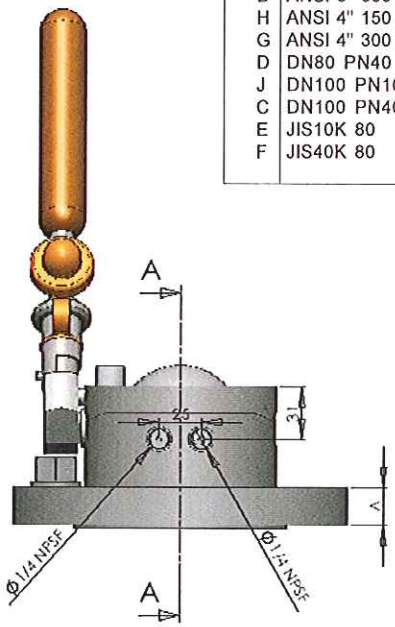


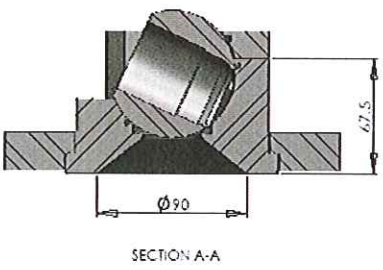


PASVE BA P
Welded on pipe

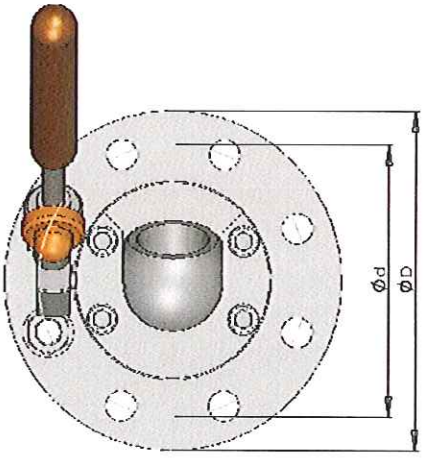
Flange (a) Code	Type	ØD	Ød	A
A	ANSI 3" 150 lbs	191	152.4	22
B	ANSI 3" 300 lbs	210	168.3	27
H	ANSI 4" 150 lbs	229	190.5	26
G	ANSI 4" 300 lbs	254	200	29
D	DN80 PN40	200	160	22
J	DN100 PN10/16	220	180	22
C	DN100 PN40	235	190	26
E	JIS10K 80	185	150	20
F	JIS40K 80	210	170	30

PASVE BA F-(a)
Flange type





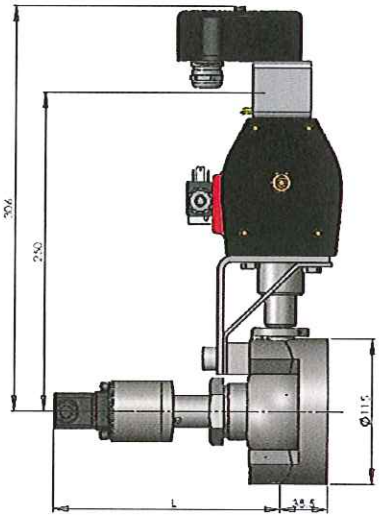
SECTION A-A

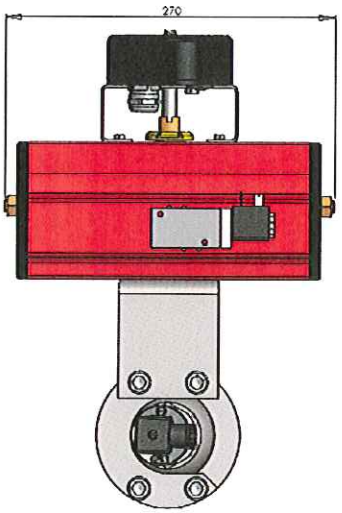


Dimensions (mm)

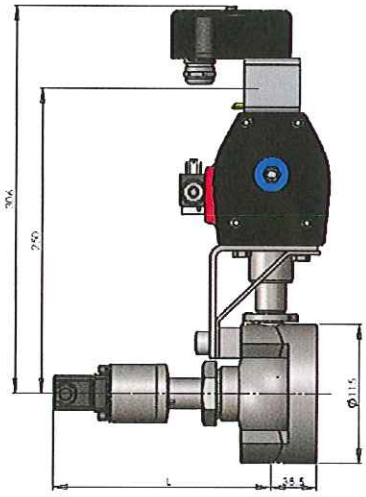
Automatic operated with actuator

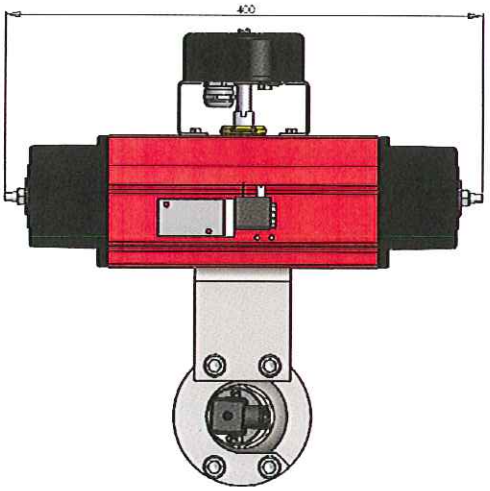
PASVE BA C
- Welded on container
- Double-action actuator (AD)



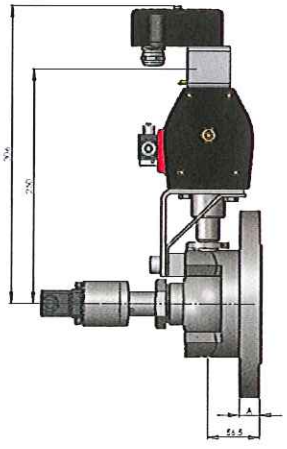


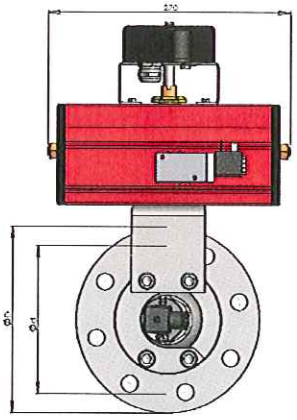
PASVE BA C
- Welded on container
- Spring-return actuator (AS)



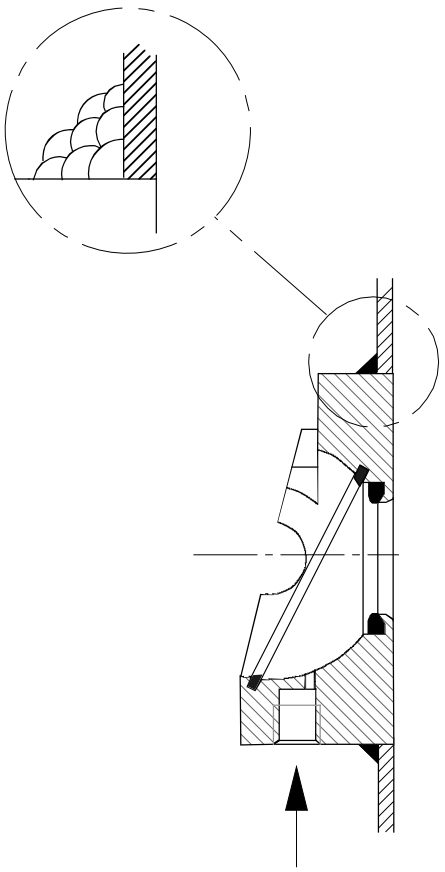


PASVE BA F
- Flange type
- Double-action actuator (AD)

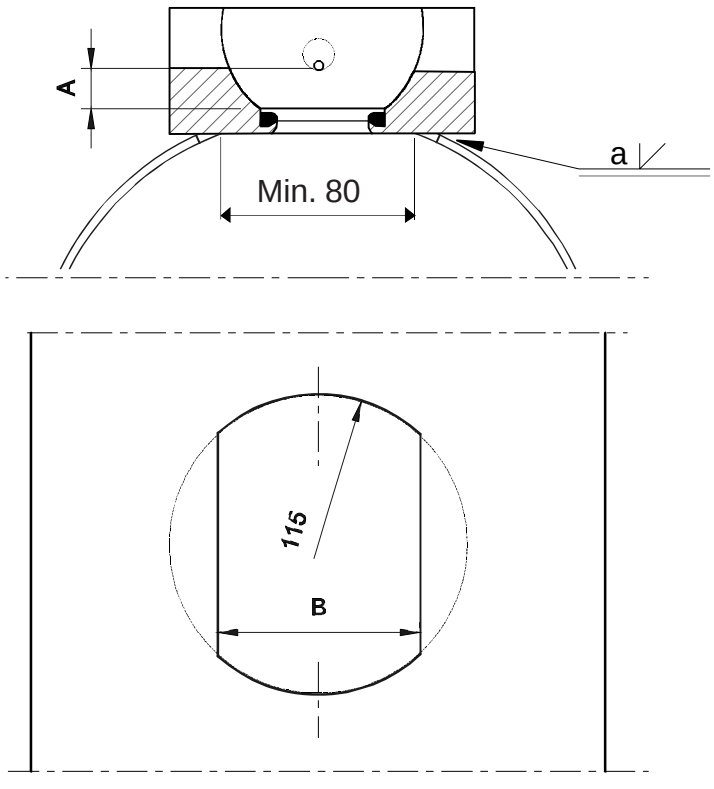




3. Installation
3.1 Mechanical installation



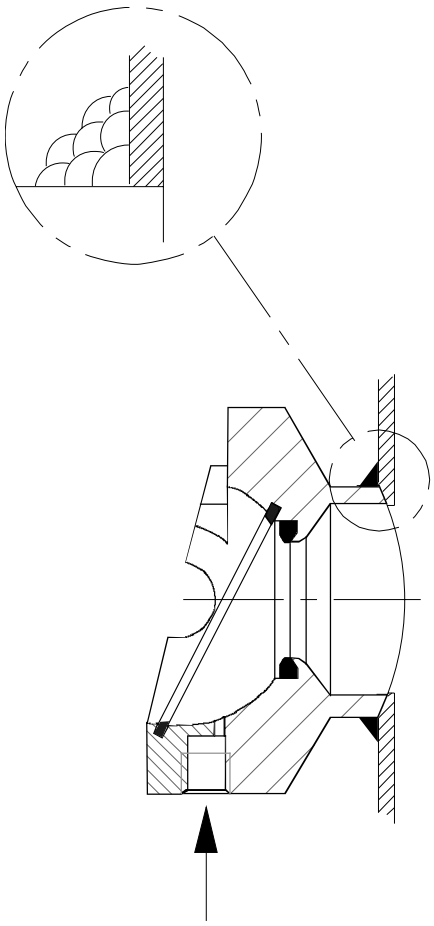
In vertical mounting is advisable to mount the drain hole downward.
The thread in the hole is ¼ - NPSF.



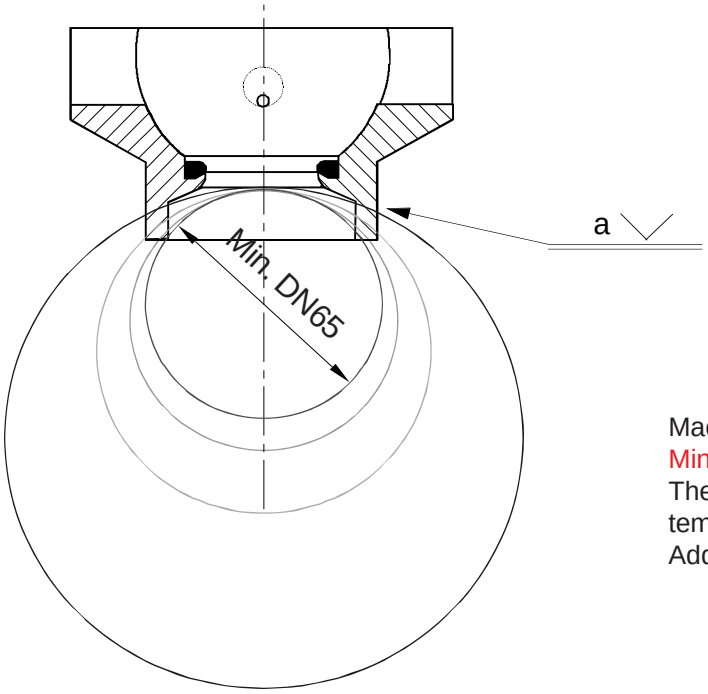
Measure A so that connectors for flushing holes can be connected
Measure B so that minimum 80mm of the Pasve body is inside inner surface of the pipe

If measure B cannot fullfill 80mm minimum requirement (incase of below 200mm pipes), then PASVE must be disassembled and lowest gasket removed before welding. The welding must be carried so that the body temperature remains as small as possible. Additional cooling is recommended.
Lowest pipe size with disassemby and cooling is 60mm.

Figure 3-1 **Installation in container or vertical pipe**



In vertical mounting is advisable to
mount the drain hole downward.
The thread in the hole is ¼ - NPSF.



Machine the Pasve to the same diameter as the pipe.
Minimum pipe size is 70 mm.
The welding must be carried so that the body
temperature remains as small as possible.
Additional cooling is recommended.

Figure 3-3 **Install body P in the pipe**

3.2 FLUSHING INSTALLATION

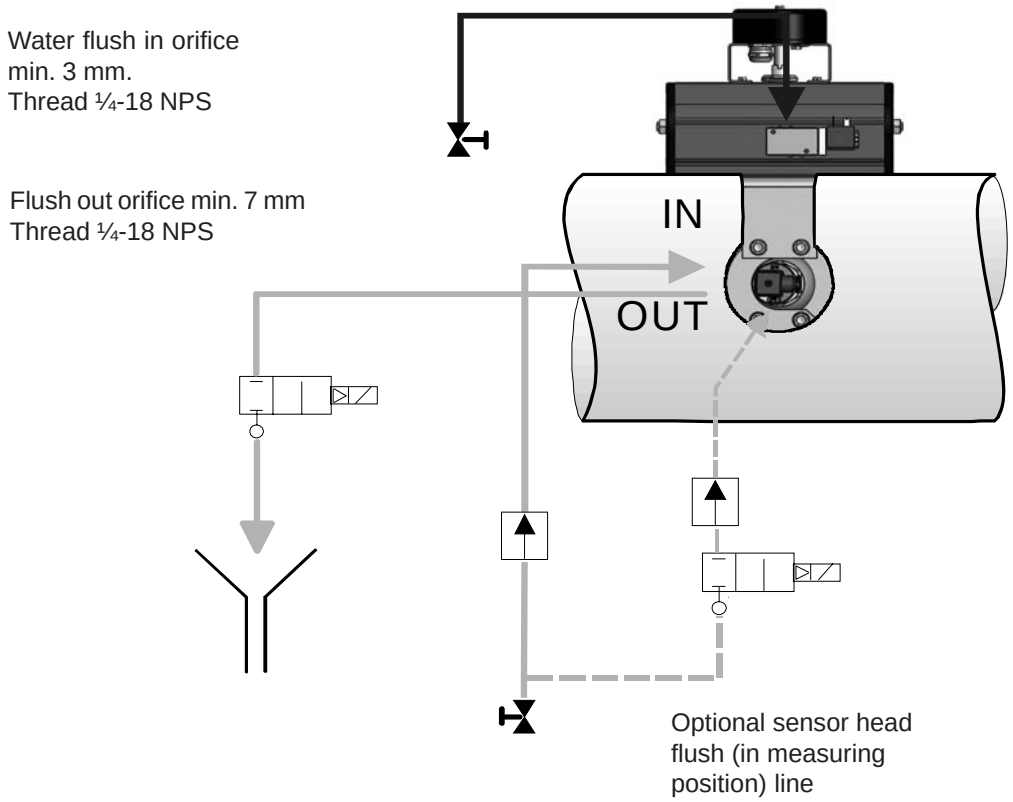
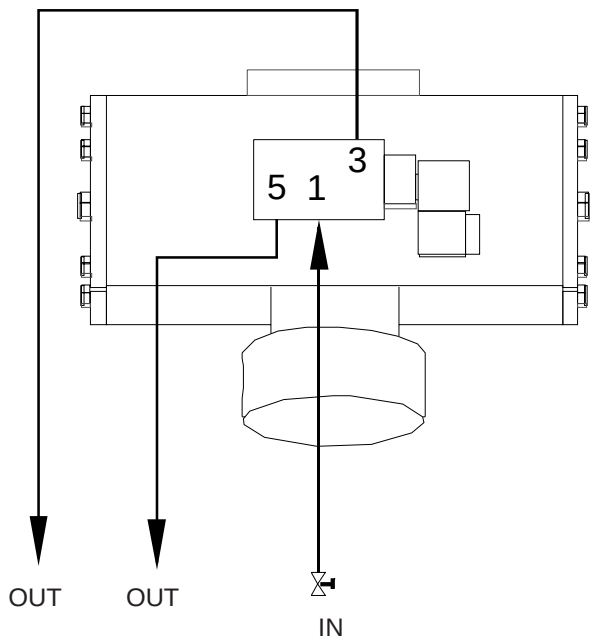


Figure 3-6 Flushing connection

3.3 COMPRESSED AIR INSTALLATION



Port number	Port thread
1	G1/4
3	G1/8
5	G1/8

Figure 3-7 Pressure connection

3.4 ELECTRICAL CONNECTION

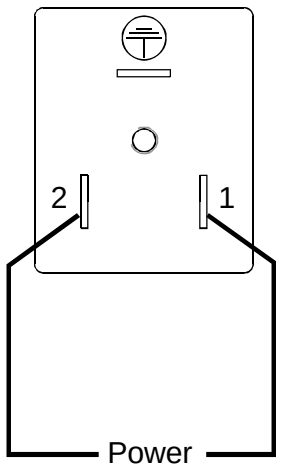


Figure 3-8 Solenoid valve connection

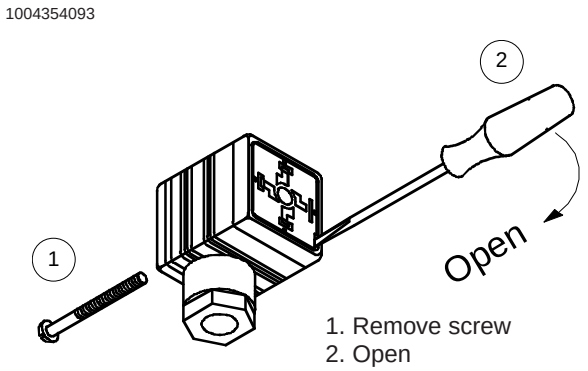


Figure 3-9 Removing the PLUG junction box

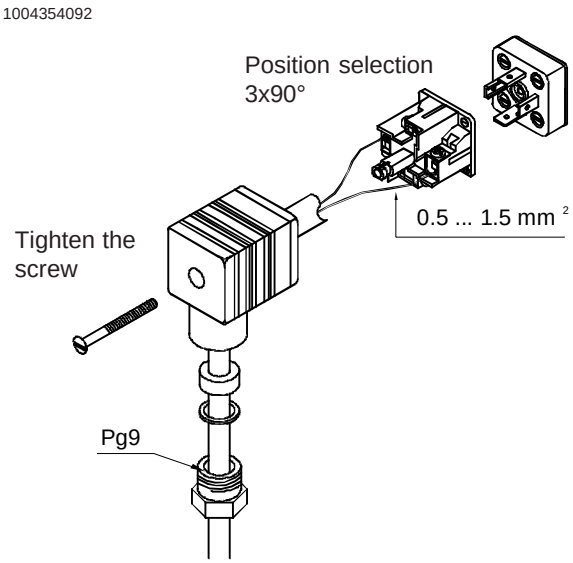


Figure 3-10 Adjusting the junction box position

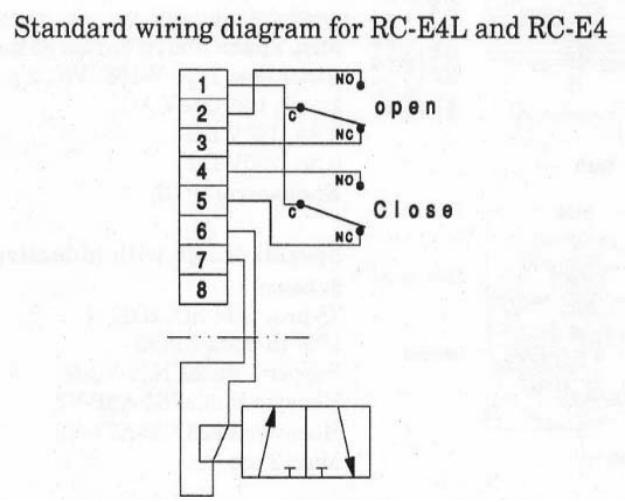


Figure 3-11 Standard position switches

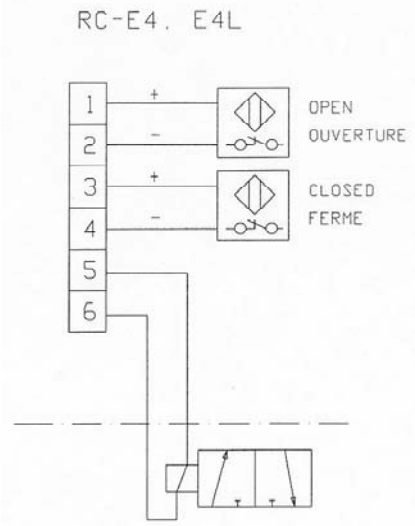


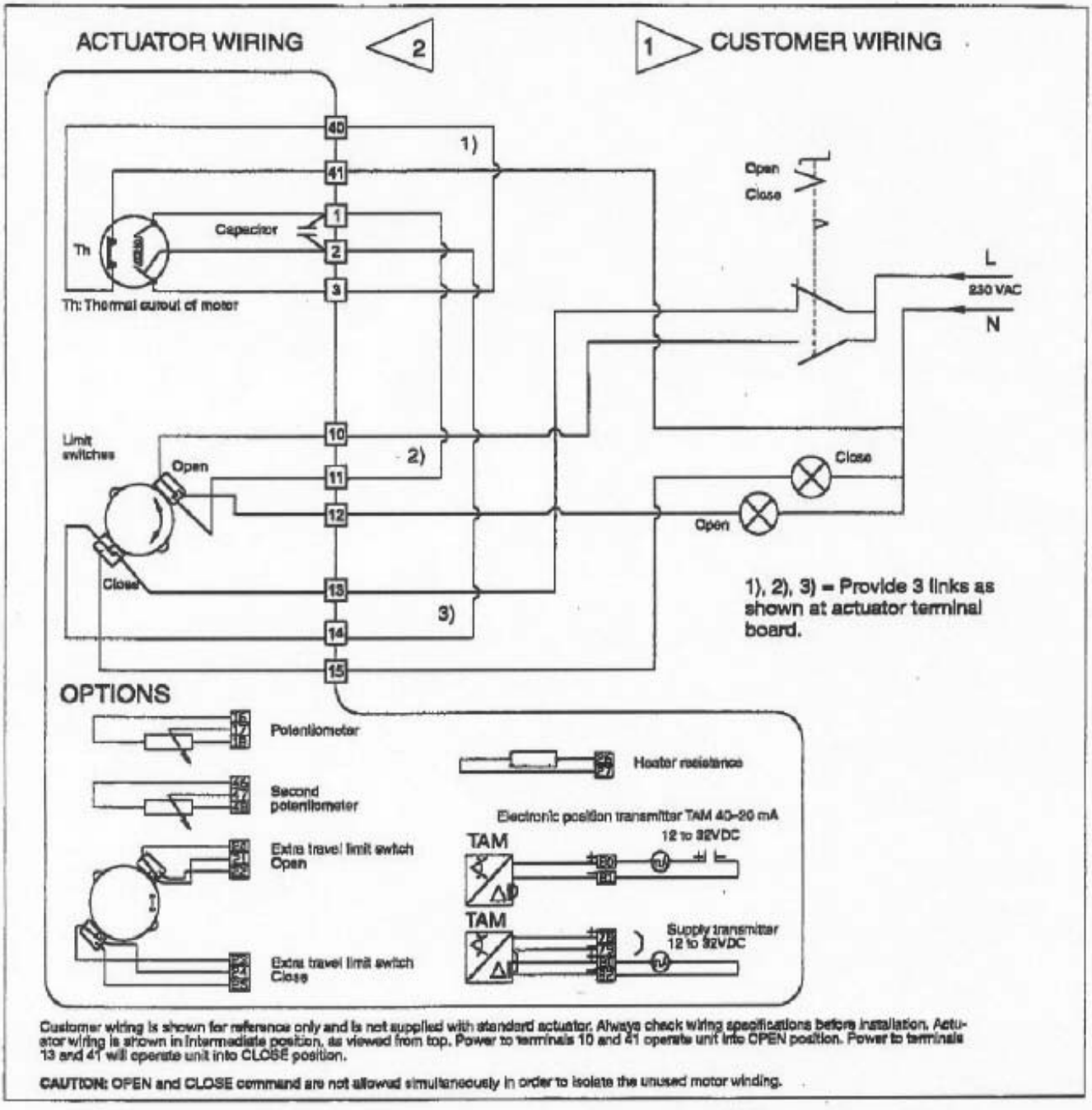
Figure 3-12 Inductive position switches, NS5002, NJ2-V3-N

BERNARD

www.bernard-actuators.com

Type	Torque Nm	Closing time secs/ 90°	Motor single phase	P kW	In A	Is A
OA6	60	6	230 V 50 Hz	0,03	0,6	0,9
OA8	80	6	230 V 50 Hz	0,10	1,2	1,7
OAP6	80	30 or 60	230 V 50 Hz	0,03	0,6	0,9
OA15	150	15 or 25	230 V 50 Hz	0,03	0,6	0,9

WIRING S2242-A

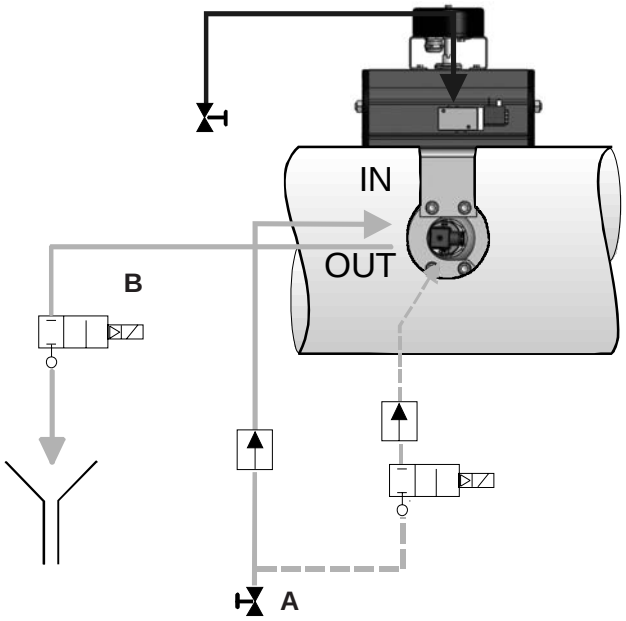


Customer wiring is shown for reference only and is not supplied with standard actuator. Always check wiring specifications before installation. Actuator wiring is shown in intermediate position, as viewed from top. Power to terminals 10 and 41 operate unit into OPEN position. Power to terminals 13 and 41 will operate unit into CLOSE position.

CAUTION: OPEN and CLOSE command are not allowed simultaneously in order to isolate the unused motor winding.

Figure 3-13 Electric actuator connection

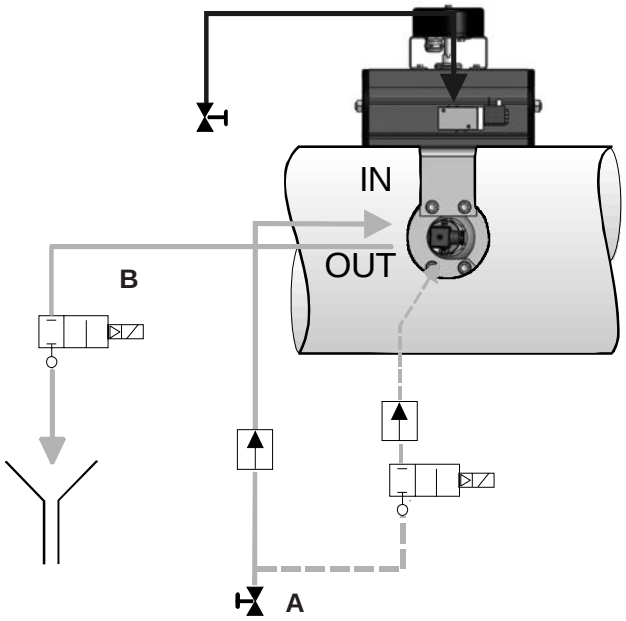
4 SETTING-UP



Transmitter installation to Pasve

- Pasve must be in service/flushing position, manual valve **A** must be closed and solenoid valve **B** open.
- Install the transmitter to Pasve.
- Close solenoid valve **B** and open nanual valve **A**.
- Turn Pasve ball to the measuring position.

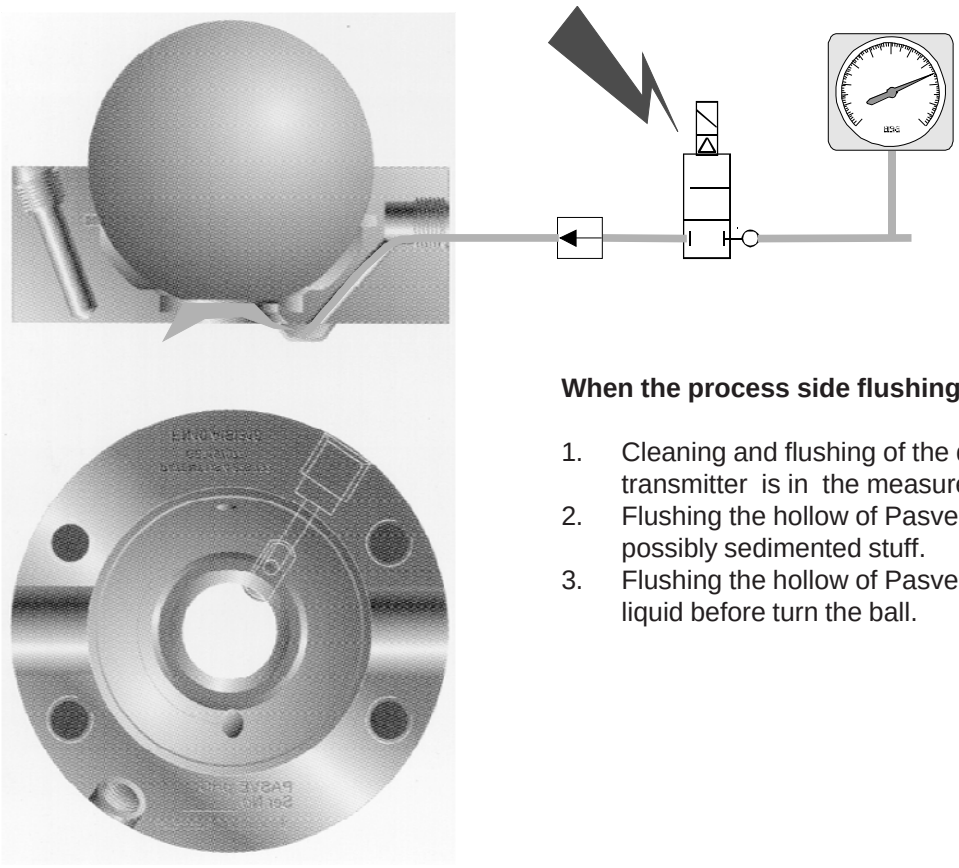
Figure 4-1 Setting-up Pasve with flushing



Flushing the diaphragm of the transmitter in the Pasve

1. Turn PASVE ball to flushing position. (solenoid valve **B** is closed and manual valve **A** open.
2. Open solenoid valve **B** for flushing and the valve **A** must be open.
3. When the diaphragm is clean close the solenoid valve **B**, let the manual valve **A** to be open.
4. Turn PASVE ball to the measuring position.

Figure 4-2 The diaphragm of the transmitter flushing in the Pasve



When the process side flushing is needed?

1. Cleaning and flushing of the diaphragm while the transmitter is in the measurement position.
2. Flushing the hollow of Pasve body for e.g. if there is possibly sedimented stuff.
3. Flushing the hollow of Pasve body for e.g. from dirty liquid before turn the ball.

Figure 4-4 Diaphragm of the transmitter process side flushing

5 MAINTENANCE

Replacing the seals

Required tools

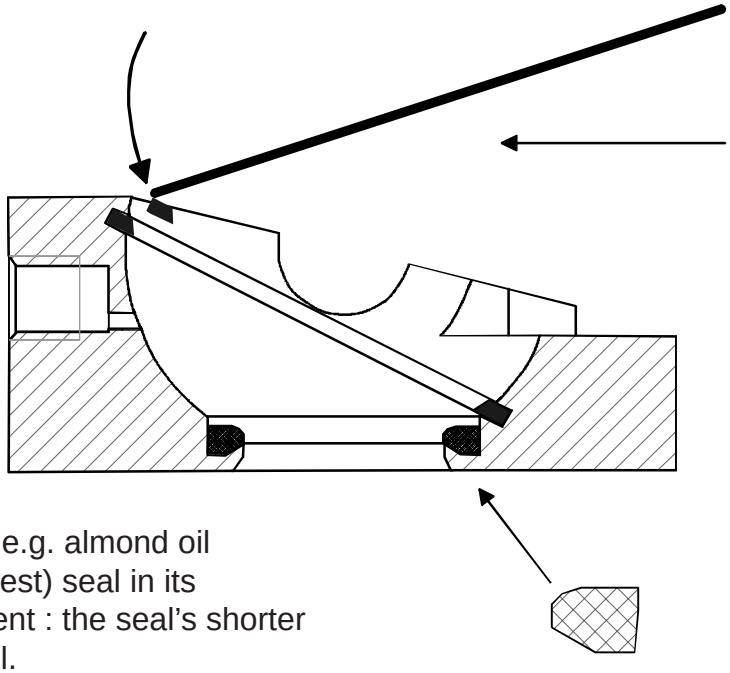
- M12 Allen key
- piece of wood to press seal in groove
- sharp, thin screwdriver to remove old seal
- cleaning paper or cloth to clean the grooves

Procedure

1. If PASVE is connected to process, make sure that the container/pipe is empty and unpressurized and, when necessary, flushed.
2. Remove the sensor and valve ball (four M12 Allen screws). Make sure that the bearing parts do not drop off the shaft. When Pasve is equipped with an actuator then it is very important that the other screws will not be opened, because the actuator settings can otherwise be changed, see figure 5-1 part 18 or 24.
3. Remove old sealing with screwdriver. Be careful not to scratch the metal surfaces. Once removed, the old seals will be damaged and useless.
4. Clean the surface and sealing grooves carefully.
5. Place the bottom (smallest) seal in its groove. Correct alignment: the seal's shorter chamfer against the ball, see figure 5-2.
6. Press the seal with a finger as deep as possible in the groove. Then press the seal carefully home with a piece of wood. Since the final pressing requires the use of force, be sure to exert a uniform pressure on the piece of wood to avoid damaging the seal.
7. Check the seals visually: they should be evenly in their grooves without any visible damage.
8. Press new bearing strips and sleeves to the bottom of the shafts. Re-install the valve ball. Note mounting alignment, see the picture Mounting on the back. Grease the Allen screws and tighten them by turns (60 Nm).
9. Check the ball's movement and tightness. At first the ball will move quite stiffly, and moving the ball will require an additional lever arm and solid mounting (the valve must be firmly mounted either in the process or e.g. on a vice bench).

Other considerations:

The type equipped with actuator has two groove seals,
one of which is installed on the bearing ring to balance the bearing. Cut from the seal away a piece which is as big as the hole in the bearing ring, see figure 5-1 part 26.



1. Grease the seals using e.g. almond oil
2. Place the bottom (smallest) seal in its groove. Correct alignment : the seal's shorter chamfer against the ball.
3. Press the seal with a finger as deep as possible in to the groove. Then press the seal carefully home with a piece of wood. Since the final pressing requires the use of force, be sure to exert a uniform pressure on the piece of wood to avoid damaging the seals.

Figure 5-1 Seals installation

Part no.	Part name	Order code
1	Allen screw M4x6 SFS2219 A4	54426030
2	Lock body	T1015203
3	Pull-out screw	T550974
4	Retaining screw M4x6 DIN915 A4	53282403
5	Locking element 65 deg	T1015208
6	Pasve-spring	85547525
7	Lock screw	T547526
8	Pull-out sleeve	T550975
9	Protecting plug	44547518
10	Lever arm	44547539
Order code for locking piece assembly: (without lever arm, part no. 10)		
Locking piece assembly, 65 deg		T1015020

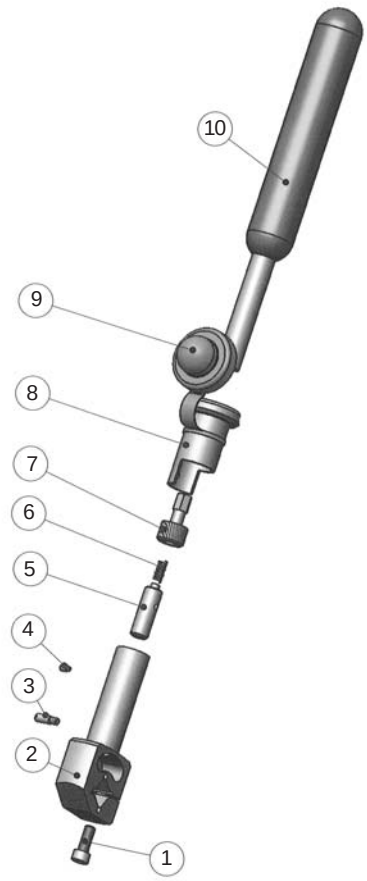


Figure 5-2 Exploder view and part list, locking piece assembly

Part no.	Part name	Order code
1	Body C	T1015201
1	P	T1015212
1	F	T1015211
2	Ball M45, AISI 316L	T1015207
3	Bearing strip	T547516
4	Bearing sleeve	T547529
5	Sealing ring 3 M45	T1015209
6	Sealing ring 1	80547532
7	Cylindrical pin 10x24 ISO6325 A4	57481326
8	Bearing ring M45	T1015202
9	Allen screw M12x40 SFS2219 A4	54428240
10	Allen screw M12x50 SFS2219 A4	54428245
Order code for Pasve mounting valve assembly: (without locking piece assembly and actuator assembly , material AISI316L)		
Pasve BAC200		MBAC200
Pasve BAP200		MBAP200
Pasve BAF0200		MBAF0200

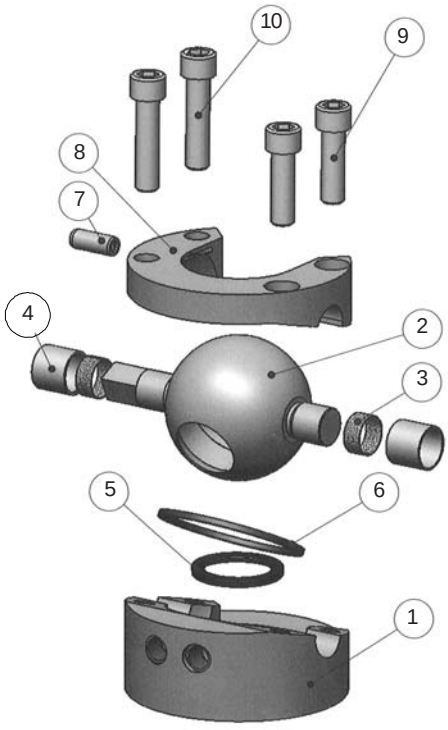


Figure 5-3 Exploder view and part list, Pasve BA mounting valve

Part no.	Part name	Order code
1	Retaining screw M4x6	53322400
2	Liikkeenrajoitin 65 deg	T1015210
3	Switch	T553106
4	Hex screw M8x20 A4	54220820
5	Brace	T552946
6	Brace	T552947
7	Position indicator stand. micro-switch	82920022
	Position indicator Namur-switch	82920028
8	Mounting parts for position indicator	82920019
9	Solenoid valve Lucifer 341N 01	82920031
10	- Coil 2110 220V 50Hz (2W) or	82920033
	- (Coil 488980 3D 230V50Hz (2W))	
	- Coil 488980 6J 110V60Hz (2W)	82920034
	- Coil 488980 C2 24VDC (2.5W)	82920035
	EEx me II T5-coil:	
	- Coil 488980 3D 230V50Hz (2W)	82920037
	- Coil 488980 6J 110V60Hz (2W)	82920038
	- Coil 488980 C2 24VDC (2.5W)	82920040
	Solenoid valve EEx ia IIC T6	82920042
	- Coil 28 V DC 0.4 W EEx ia IIC T6	82920043
11	Actuator bracket	T552945
12	Allen screw M12x70 A4	54428247
13	Spacer	T551008
14	Actuator RC240 DA (double-action)	82920020
	Actuator RC240 SR (spring return)	82920021

Order codes for actuator assembly: (without position indicator, parts no. 7 and 8 and without coil, part no. 10)	
Actuator RC240DA + mounting parts (65 deg)	T1015023DA
Actuator RC240SR + mounting parts (65 deg)	T1015023SR

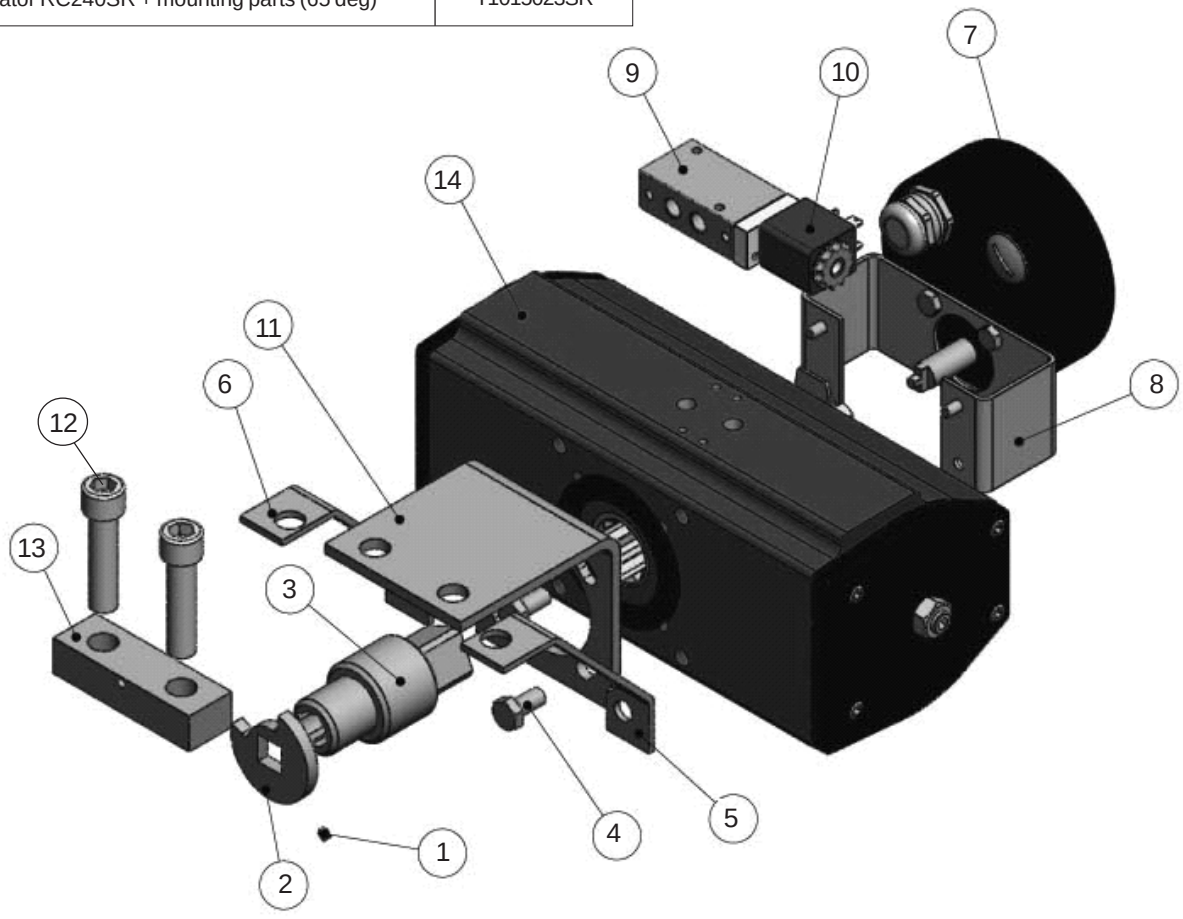
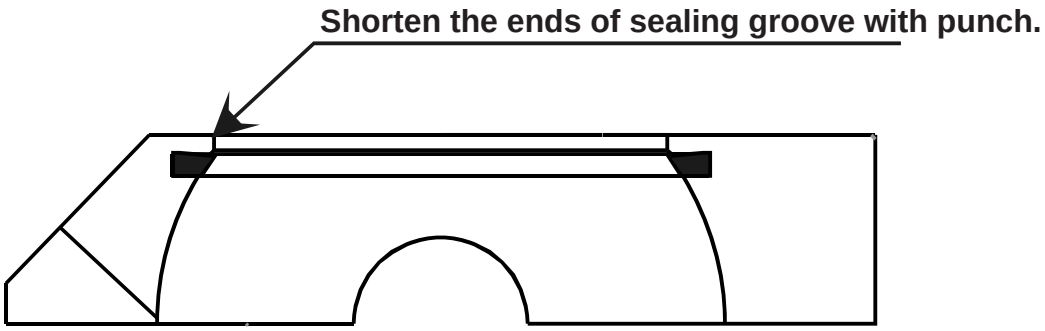
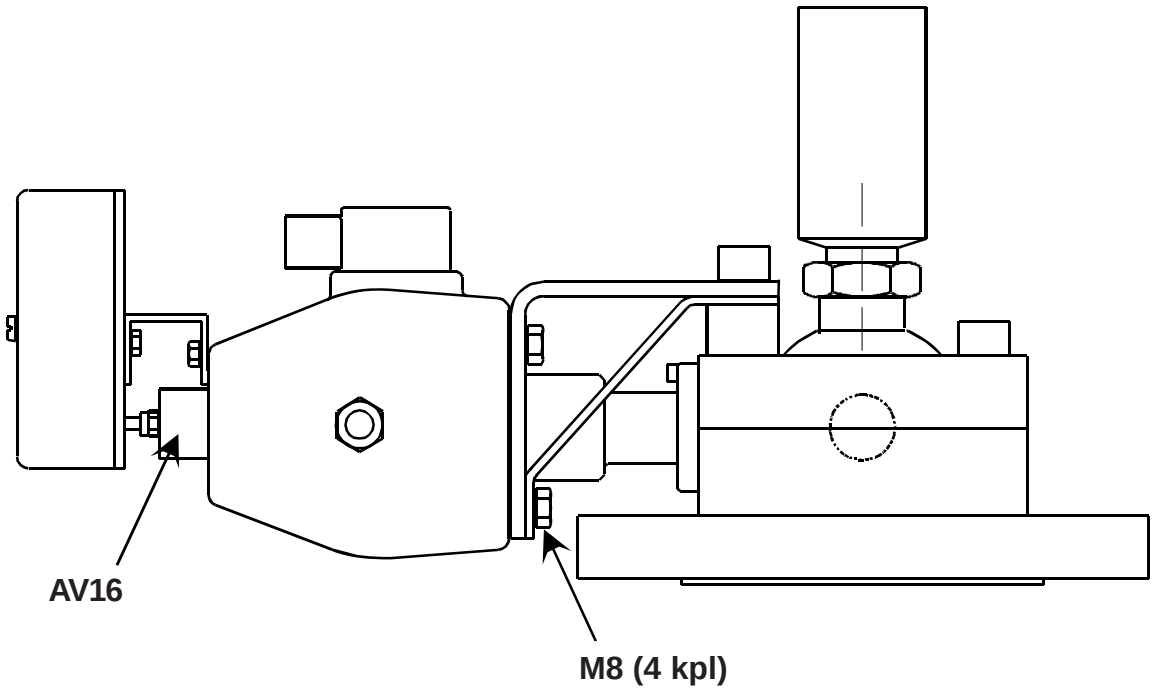


Figure 5-4 Exploder view and part list, actuator assembly



1. Cut from the seal away a piece which is as big as the hole in the bearing ring and set the seal.
2. Shorten the ends of sealing groove with the punch so the seal do not slide from the groove.

Figure 5-5 Back-up seal installation



1. Remove old actuator by opening screws M8 (4 pcs)
2. Fasten new actuator by screws M8.
3. Turn the valve to the measuring position.
4. Loosen screws M8 (4 pcs)
5. Turn the valve to the flushing position.
6. Tighten the screws M8 (4 pcs), torque 60Nm.

Figure 5-6 Changing the actuator

CE

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