Installation and Setting-Up Instructions

Contents :

DOCUMENTS
Technical Specifications : G340
Installation and Setting-Up Instructions : G340AV

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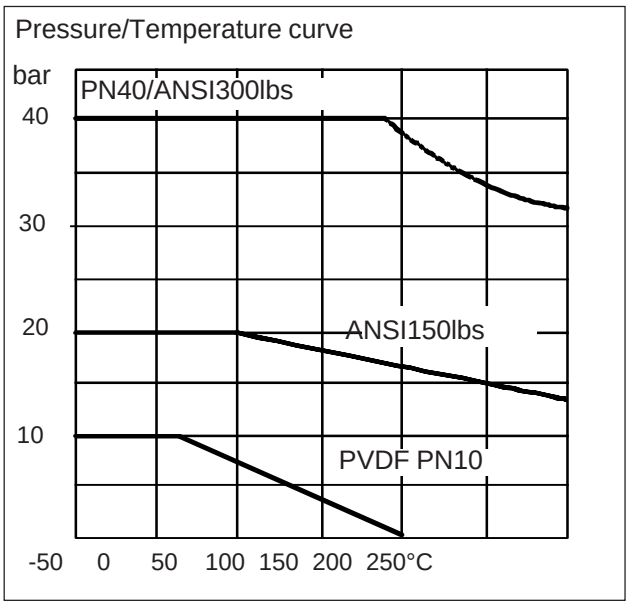
1. TECHNICAL DATA

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

TECHNICAL SPECIFICATIONS

Transmitter connection
G1 female, seat accepts SATRON VG-transmitters.

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



Surface temperature

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

Materials
Wetted parts: AISI316L, Duplex, Hastelloy C276, Titanium, for **F** type also PVDF. Seals PTFE or PTFE with carbon and graphite filling.

Weight
PASVE GC 4.3 kg, PASVE GP 4.2 kg,
PASVE GF 8.4 kg, Actuator 5.5 kg

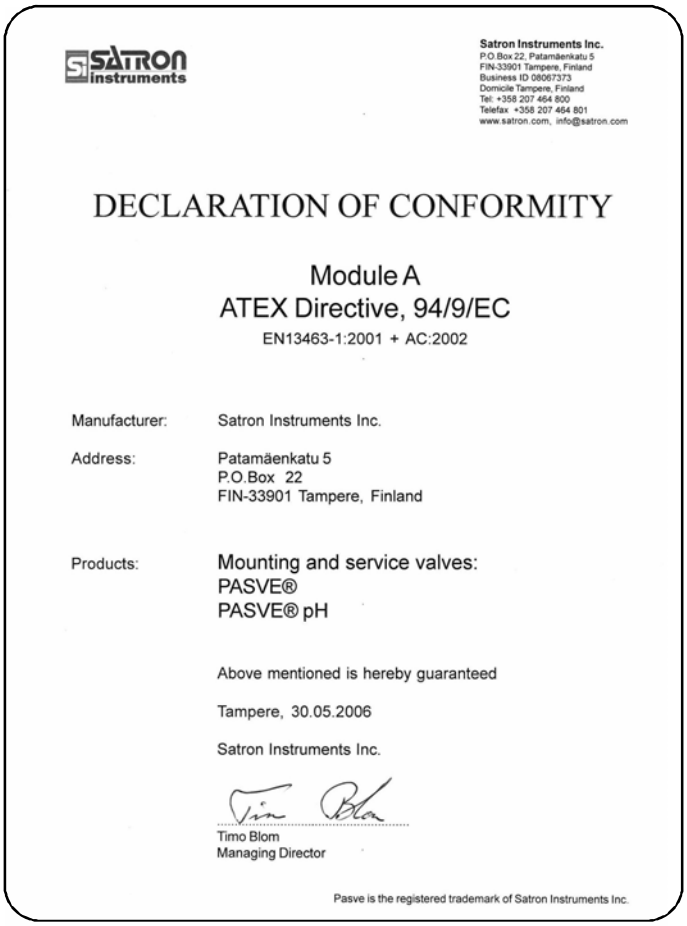
European Directive Information

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



SATRON instruments

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DECLARATION OF CONFORMITY

Module A
ATEX Directive, 94/9/EC
EN13463-1:2001 + AC:2002

Manufacturer: Satron Instruments Inc.

Address: Patamäenkatu 5
P.O.Box 22
FIN-33901 Tampere, Finland

Products: Mounting and service valves:
PASVE®
PASVE® pH

Above mentioned is hereby guaranteed

Tampere, 30.05.2006

Satron Instruments Inc.

Timo Blom
Managing Director

Pasve is the registered trademark of Satron Instruments Inc.

2. CONSTRUCTION AND OPERATION

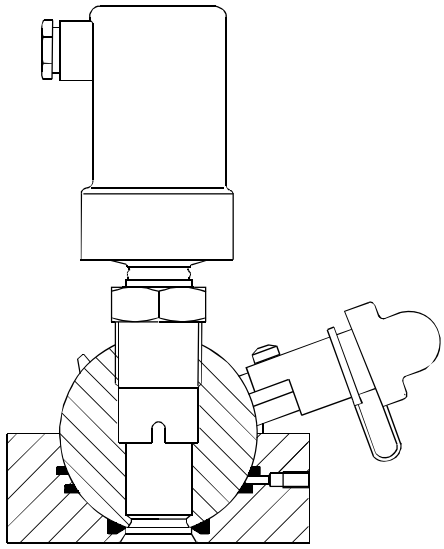


Figure 2-1 Measuring position

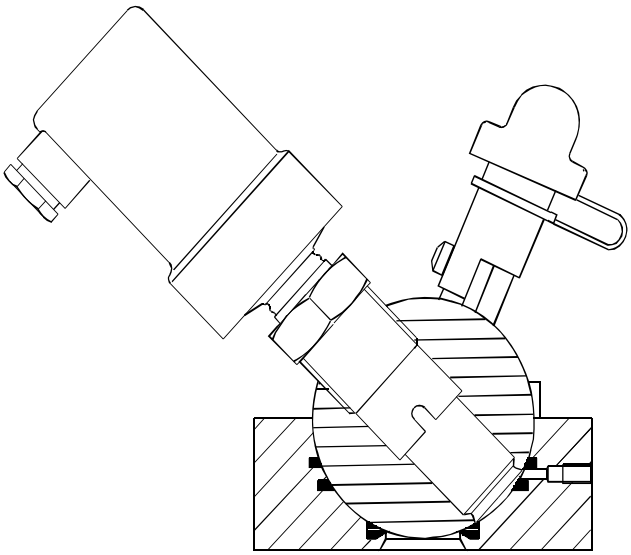


Figure 2-2 Replacement and zero setting

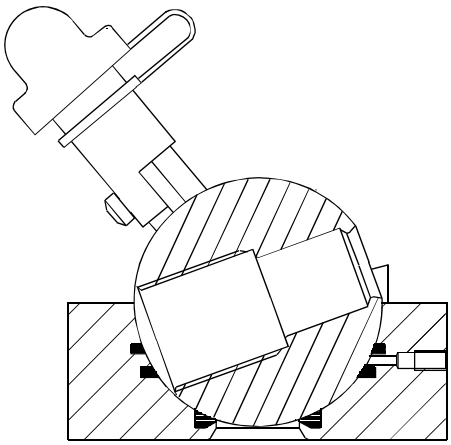
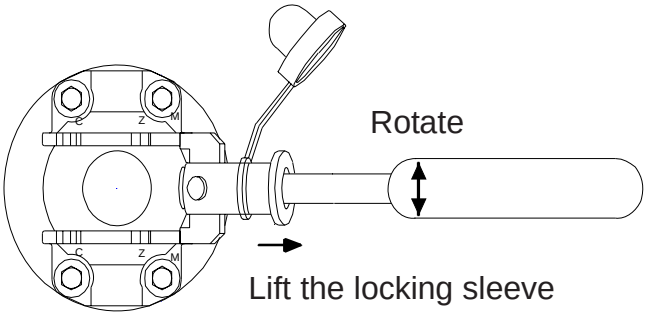
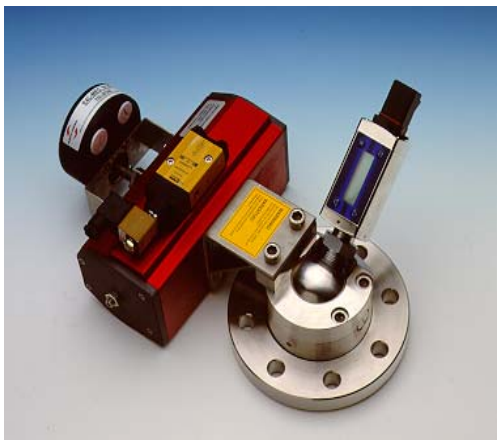


Figure 2-3 Service and Cleaning position, only manually operated valve.



Rotate the handle (right-hand thread) to release the locking.
Lift the locking sleeve to change to operation position.

Figure 2- 4 Manual valve operation



Spring return, double action, and electric actuator are available. Automatic operation provides many added benefits.

Figure 2- 5 Pasve with pneumatic actuator

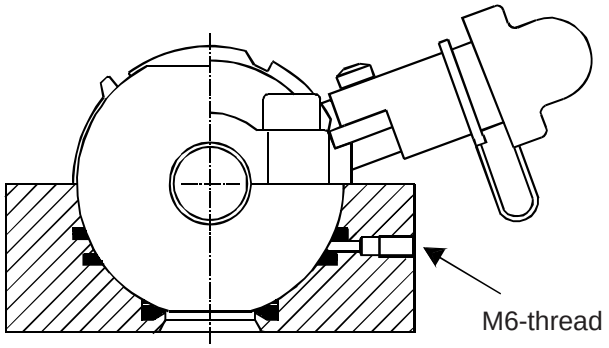
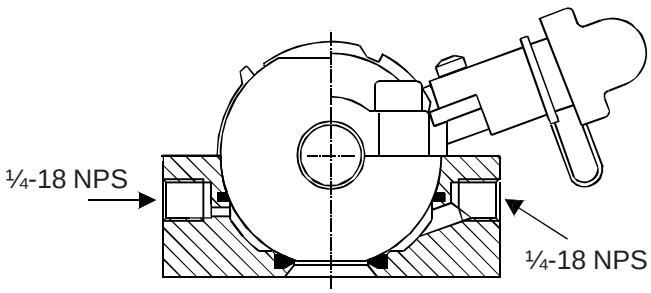


Figure 2- 6 Body G, with 3 seals



The transmitter's diaphragm is possible to flush in this body model.

Figure 2- 7 Body N, with 2 seals

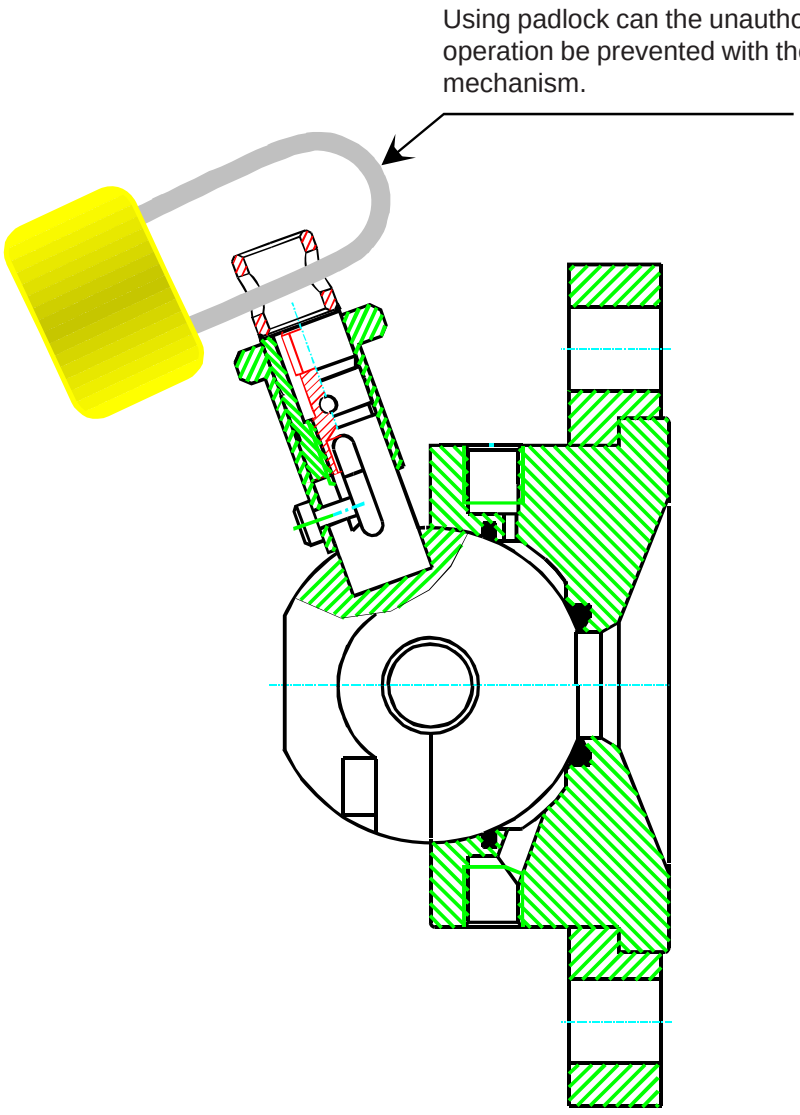
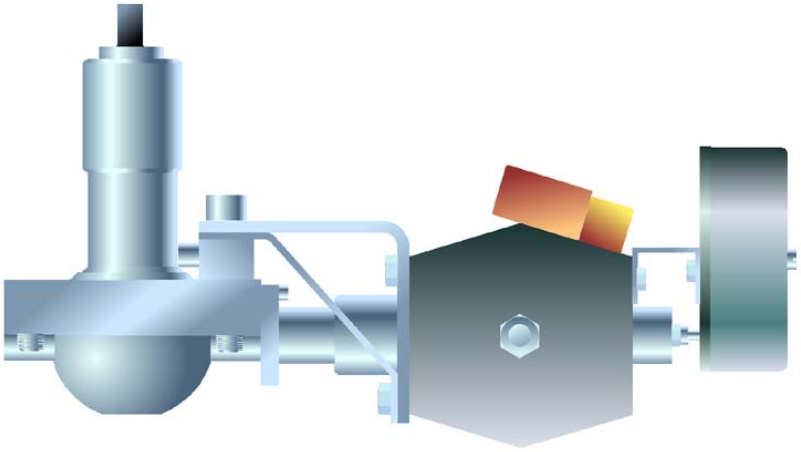
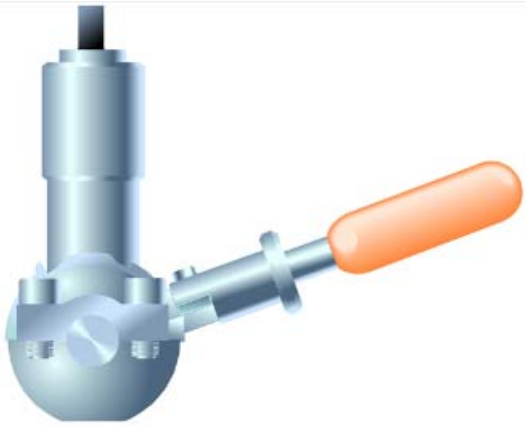


Figure 2- 8 Manually operated valve with security operation



Automatic operated valve with actuator



Manually operated valve

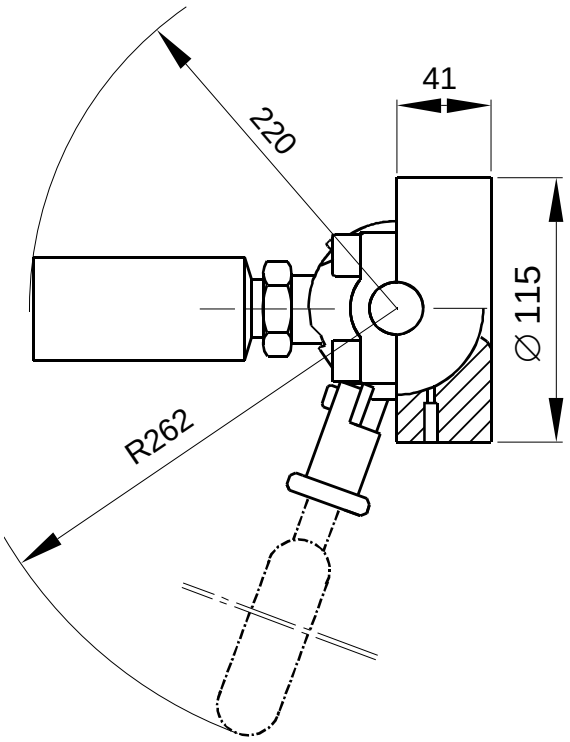
C-body

P-body

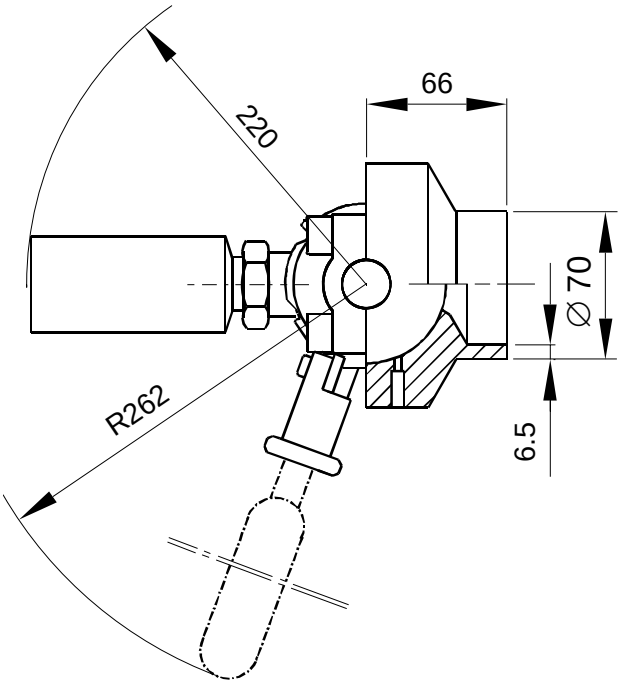
F-body

Flange standards :
- DIN
- ANSI
- JIS

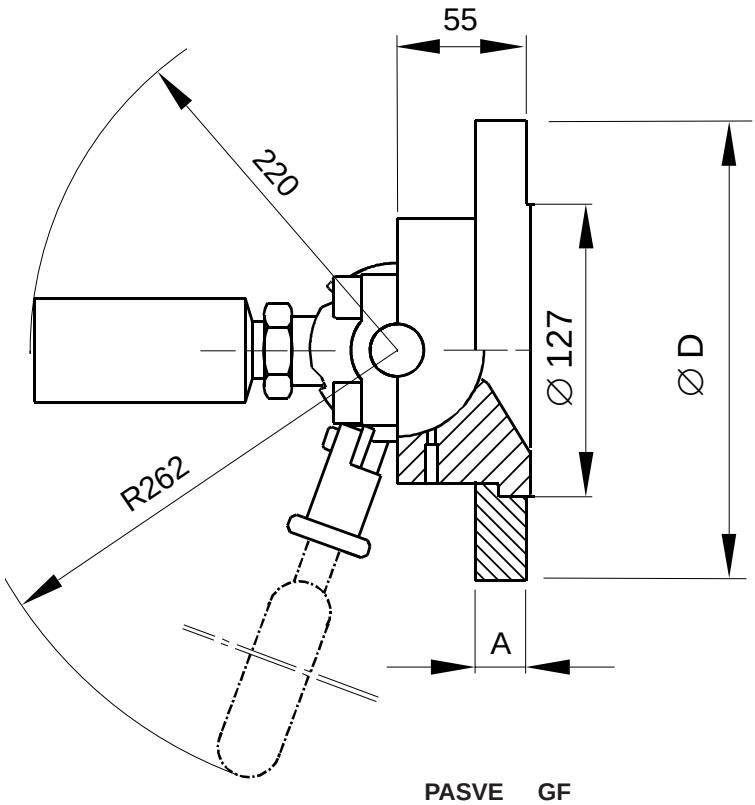
Figure 2-9 **Process connection types for Pasve**



PASVE GC
NC
(Welded on container or pipe)



PASVE GP
NP
(Shape the body to be suitable to be the pipe, welded)



PASVE GF
NF
(Flange type)

PASVE GF (NF)

FLANGE Code	Type	ØD	Ød	A
A	ANSI 3" 150 lb	191	152.4	22
B	ANSI 3" 300 lb	210	168.3	27
C	DN100 PN40	220	180	26
D	DN80 PN40	200	160	22
E	JIS 10K 80	185	150	20
F	JIS 40K 80	210	170	30

Figure 2- 10 **Dimensions (in mm)**

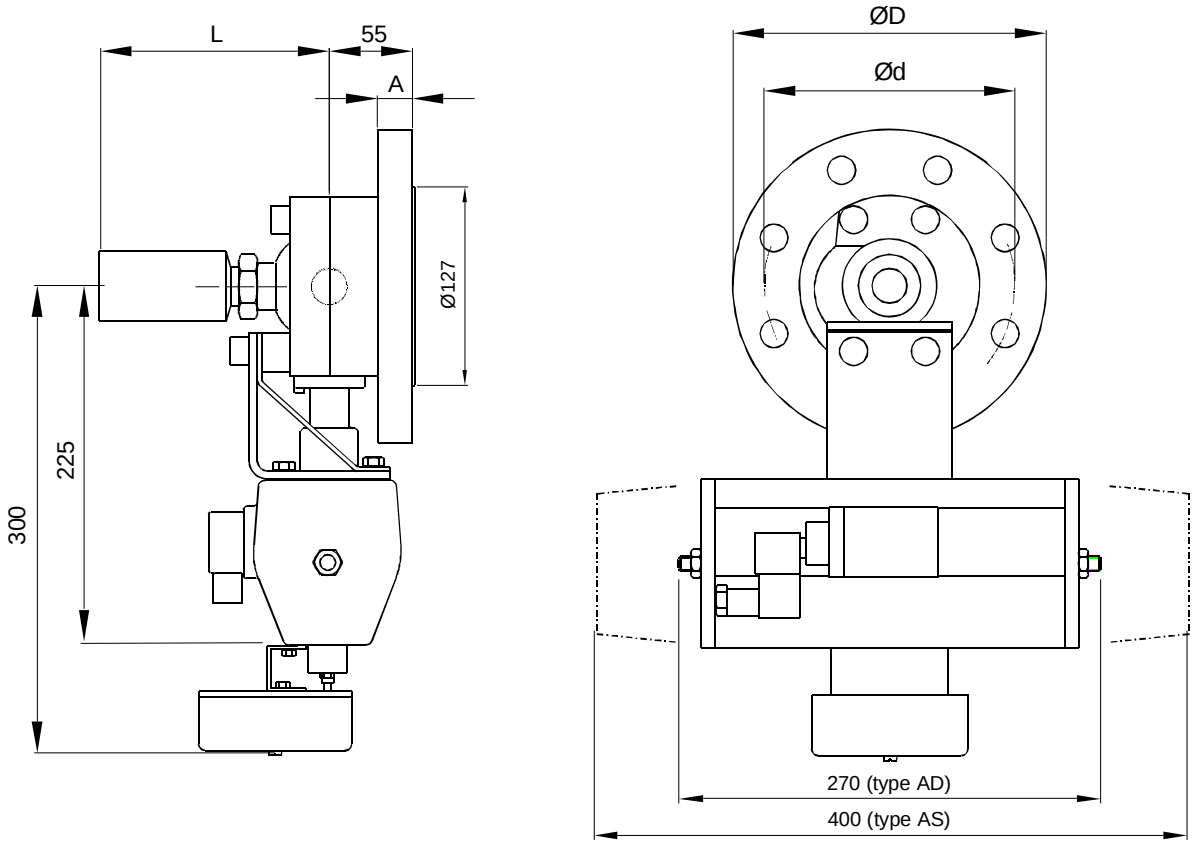


Figure 2- 11 **Dimensions, Pasve with pneumatic actuator**

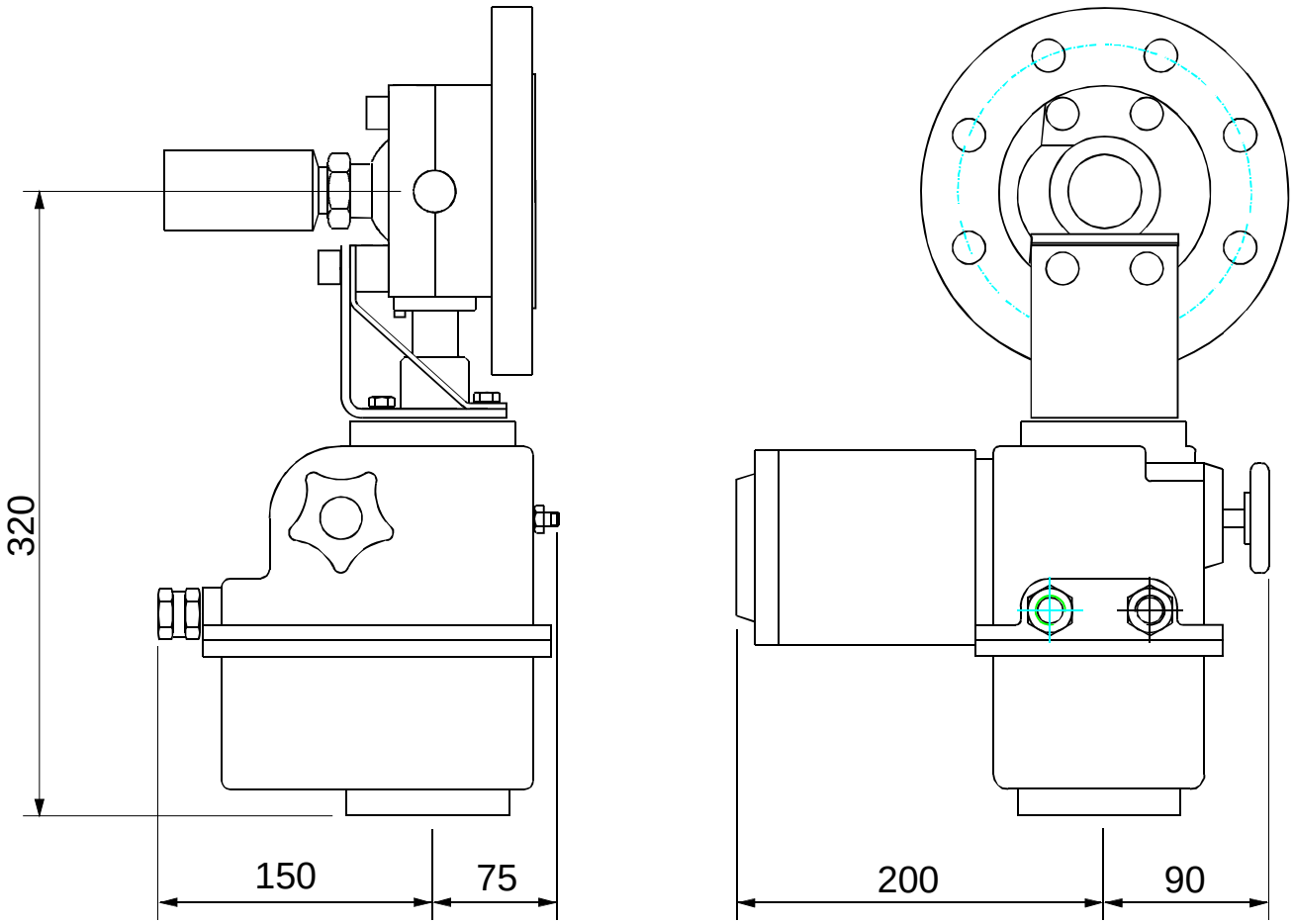


Figure 2- 12 **Dimensions, Pasve with electric actuator**

3. Installation
2.1 Mechanical installation

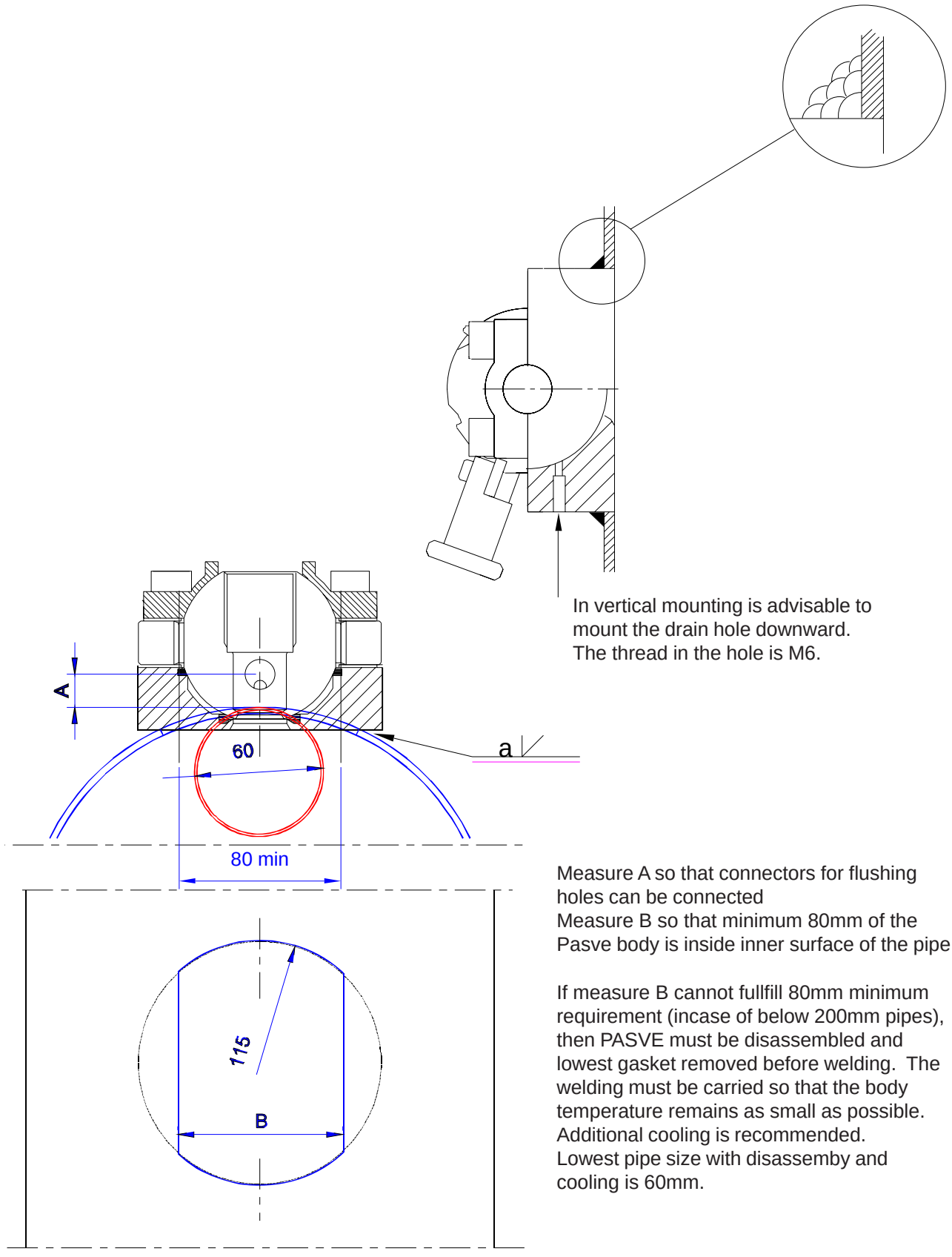


Figure 3-1 **Installation in container or vertical pipe**

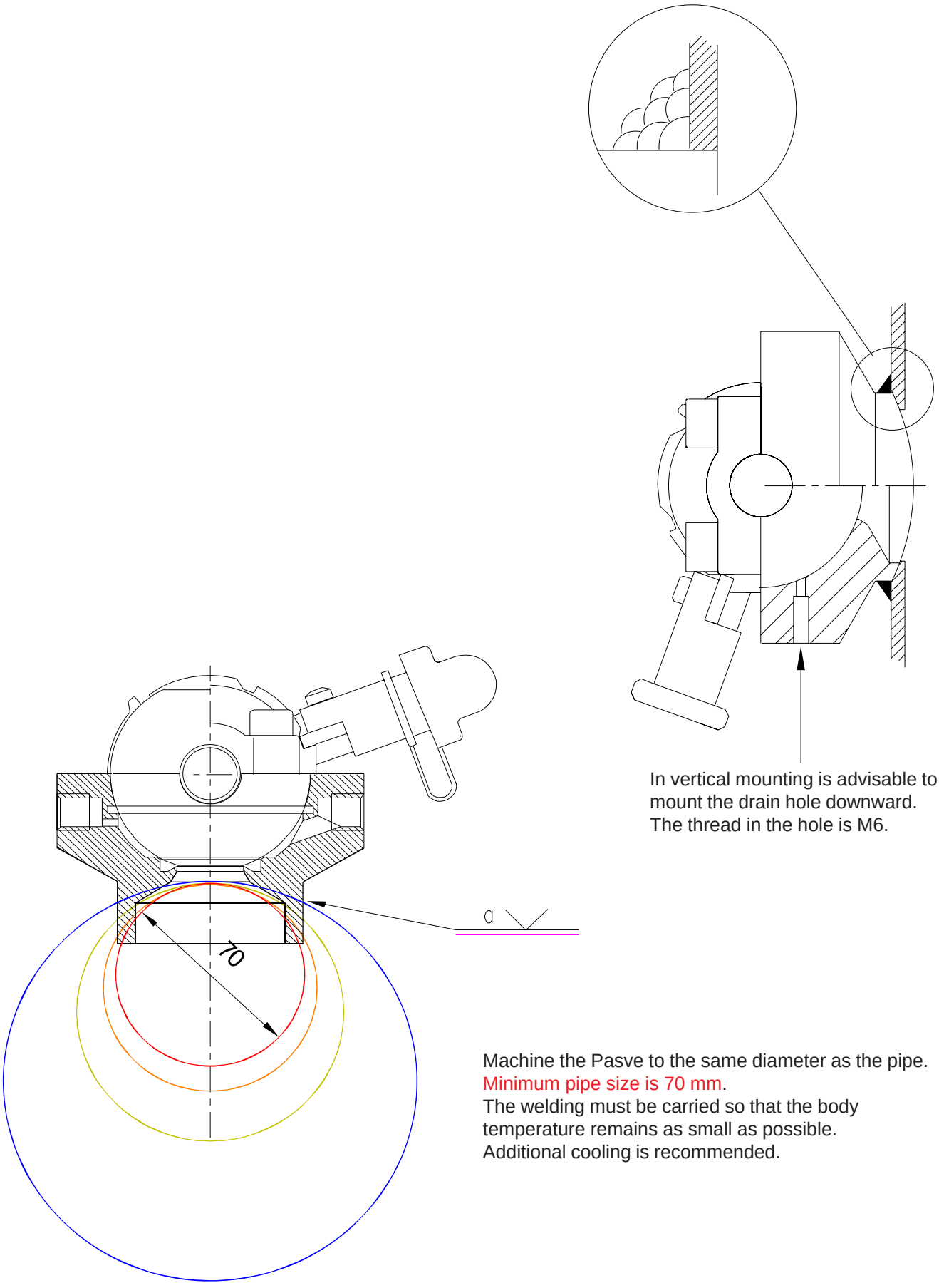


Figure 3-3 **Install body P in the pipe**

Figure 3-4 **Installation of Pasve body C in horizontal pipe**

Figure 3-5 **Welding of Pasve body C in horizontal pipe**

3.2 FLUSHING INSTALLATION

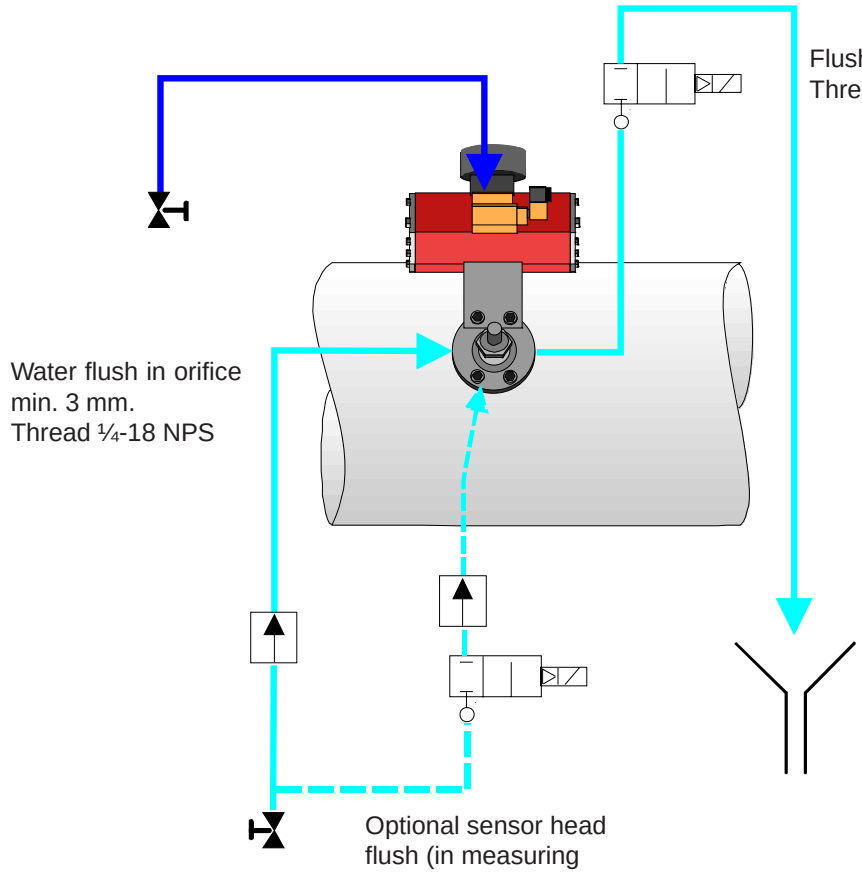
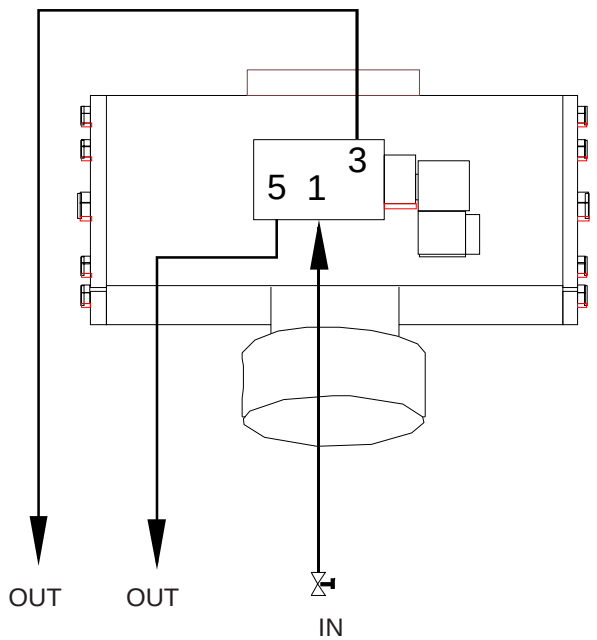


Figure 3-6 Flushing connection

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

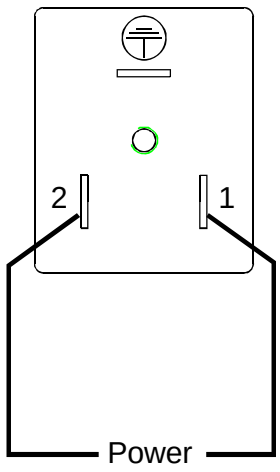


Figure 3-8 Solenoid valve connection

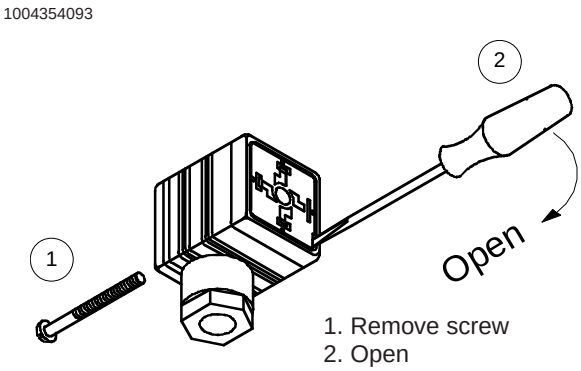


Figure 3-9 Removing the PLUG junction box

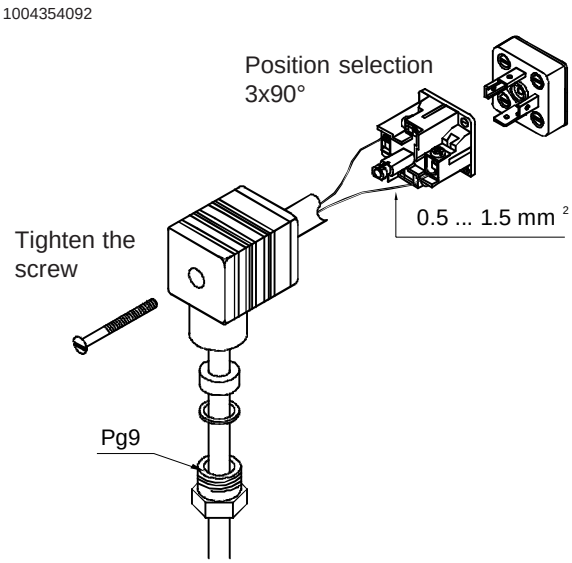


Figure 3-10 Adjusting the junction box position

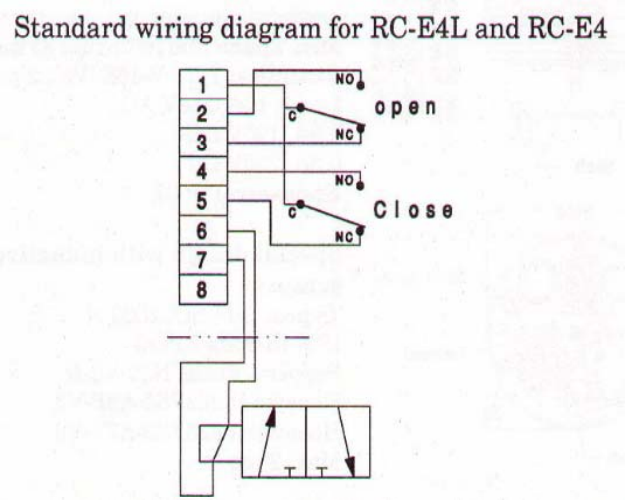


Figure 3-11 Standard position switches

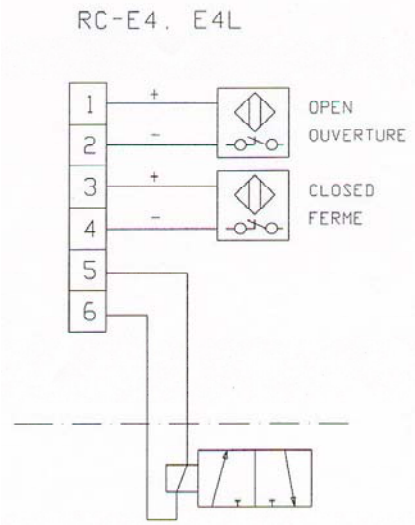


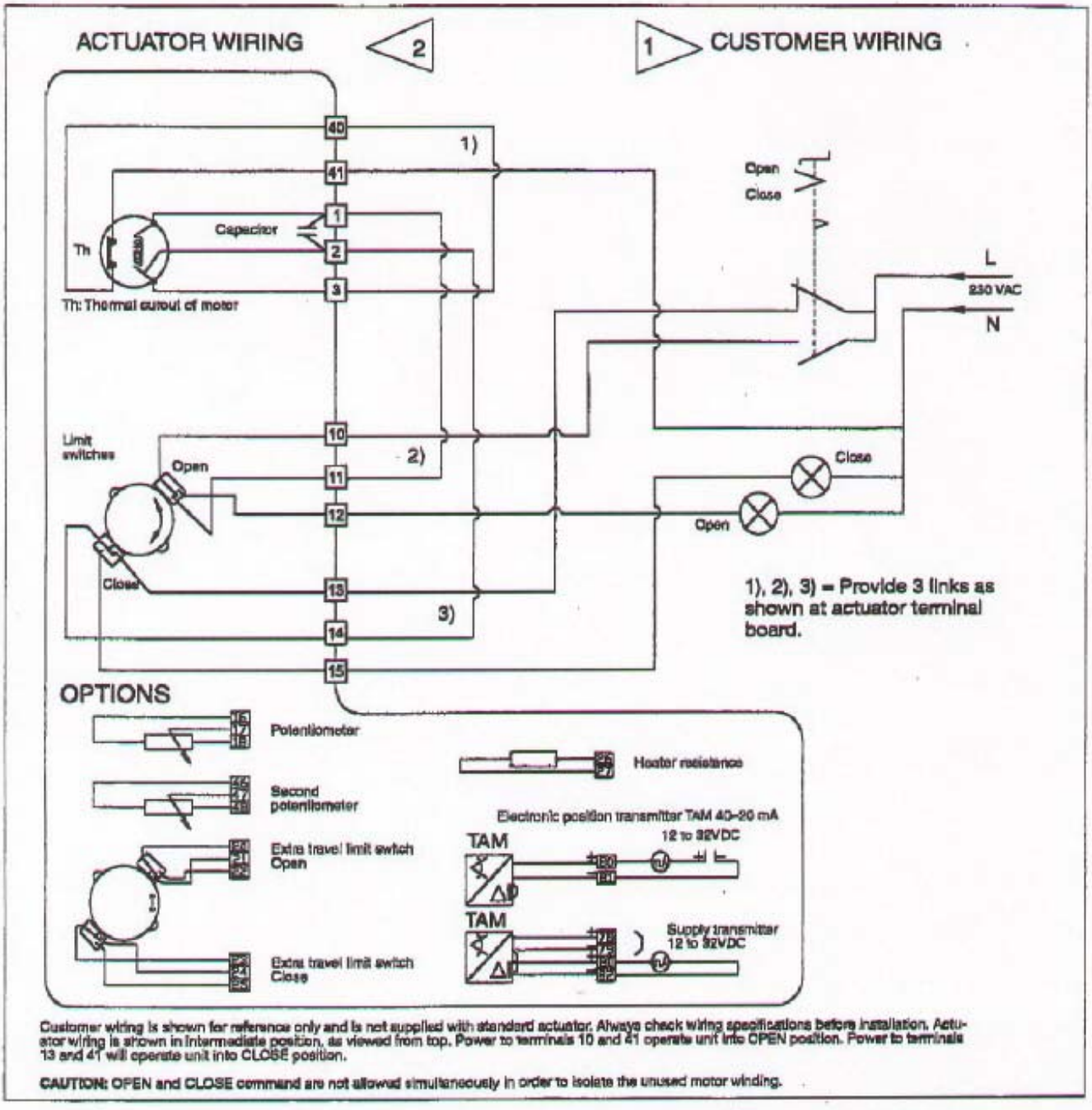
Figure 3-12 Inductive position switches, NS5002, NJ2-V3-N

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

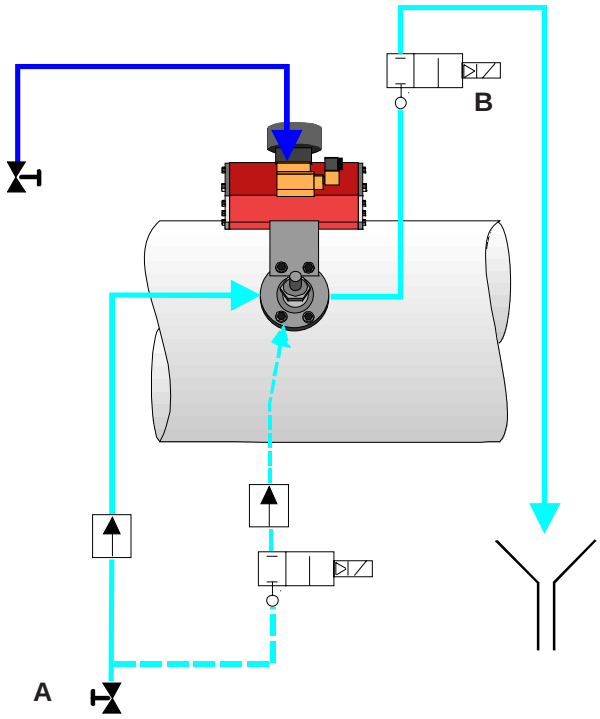


Customer wiring is shown for reference only and is not supplied with standard actuator. Always check wiring specifications before installation. Actuator wiring is shown in intermediate position, as viewed from top. Power to terminals 10 and 41 operate unit into OPEN position. Power to terminals 13 and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

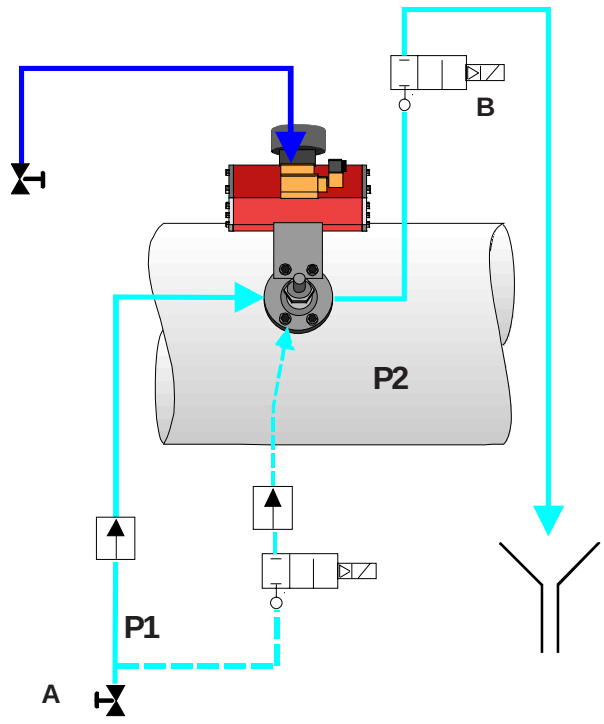
4 SETTING-UP



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.

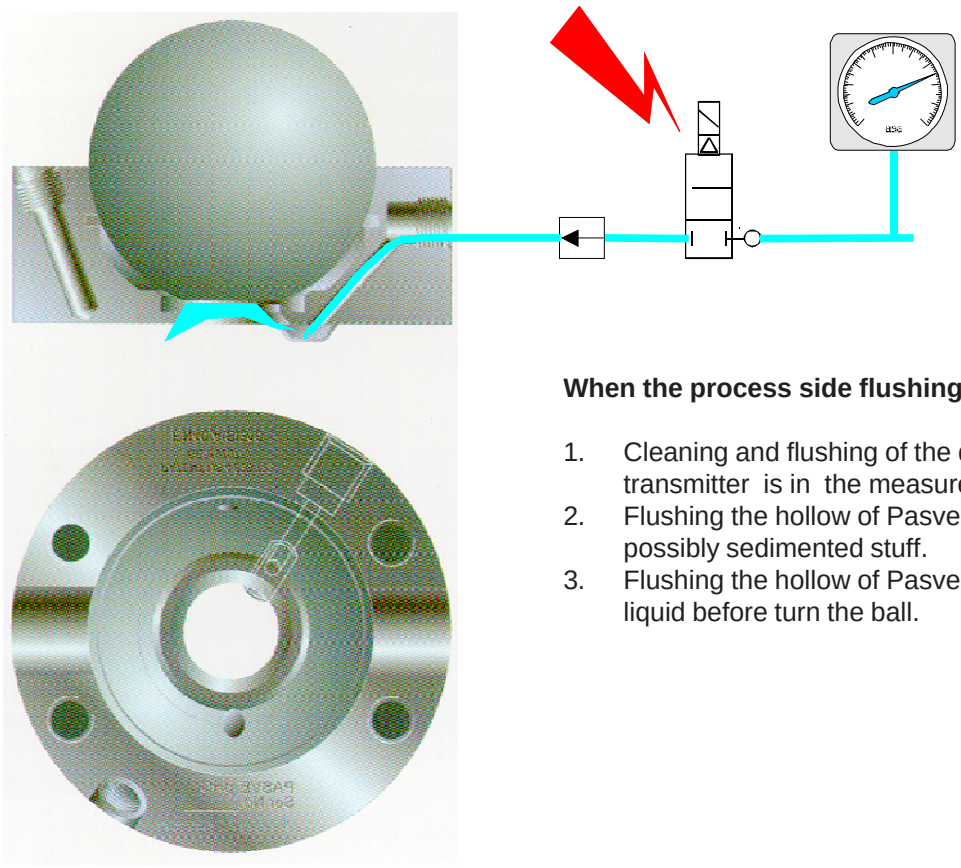
Figure 4-1 Setting-up Pasve with flushing



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, P1 > P2)
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.

Part list and spares for PASVE® mounting & service valve

Part no.	Part name	Part code
1	Body GC	T551049
	GP	T551050
	GF	T551051
1	Body NC	T550997
	NP	T550998
	NF	T550991
2	Sealing ring 1	See spares
3	Sealing ring 3	"
5	Bearing strip	"
6	Bearing sleeve	T547529
7	Retaining screw M4x10	53321405
8	Limit stop	T550994
9	Switch	T553106
11	Hex screw M8x20 A4	54220820
12	Brace	T552946
13	Brace	T552947
14	Position indicator stand. micro-switch	82920022
	Position indicator Namur-switch	82920028
	- mounting spares	82920019
15	Solenoid valve Lucifer 341N 01	82920031
	- Coil 2110 220V 50Hz (2W) or	
	- (Coil 488980 3D 230V50Hz (2W)	82920033
	- Coil 488980 6J 110V60Hz (2W)	82920034
	- Coil 488980 C2 24VDC (2.5W)	82920035
	EExmeIIT5-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 28V DC 0.4W EEx ia IIC T6	82920043
16	Actuator bracket	T552945
18	Allen screw M12x70 A4	54428247

Part no.	Part name	Part code
21	Spacer	T551008
24	Allen screw M12x30 A4	54428138
25	Bearing ring	T550992
26	Sealing ring 2	See spares
27	Pt100 sensor	89551065
28	Threaded sleeve	T551029
29	O-ring 6 x 2 FPM (Viton®)	80010620
31	Actuator RC240 DA	82920020
	Actuator RC240 SR	82920021
32	Lock screw	T547526
33	Spring	T547525
34	Pull-out sleeve	T550975
35	Protecting plug	T547518
36	Retaining screw M4x6 A4 DIN915	532822403
37	Pull-out screw	T550974
42	Bracket	T552431
44	Locking piece	T553053
45	Lever arm	T547539
50	Blind plug 1/4-NPT	T522910
77	Bearing lug	T550987
78	Bearing lug	T550986
79	Valve ball manual	T547521
80	Valve ball actuator type AISI316L	T551010

SPARES

V534159 Service set Parts Nos. 2, 3, 5 and 26 Seal material PTFE with filler	V551344 Service set Parts Nos. 2, 3, 5 and 26 Seal material: pure PTFE

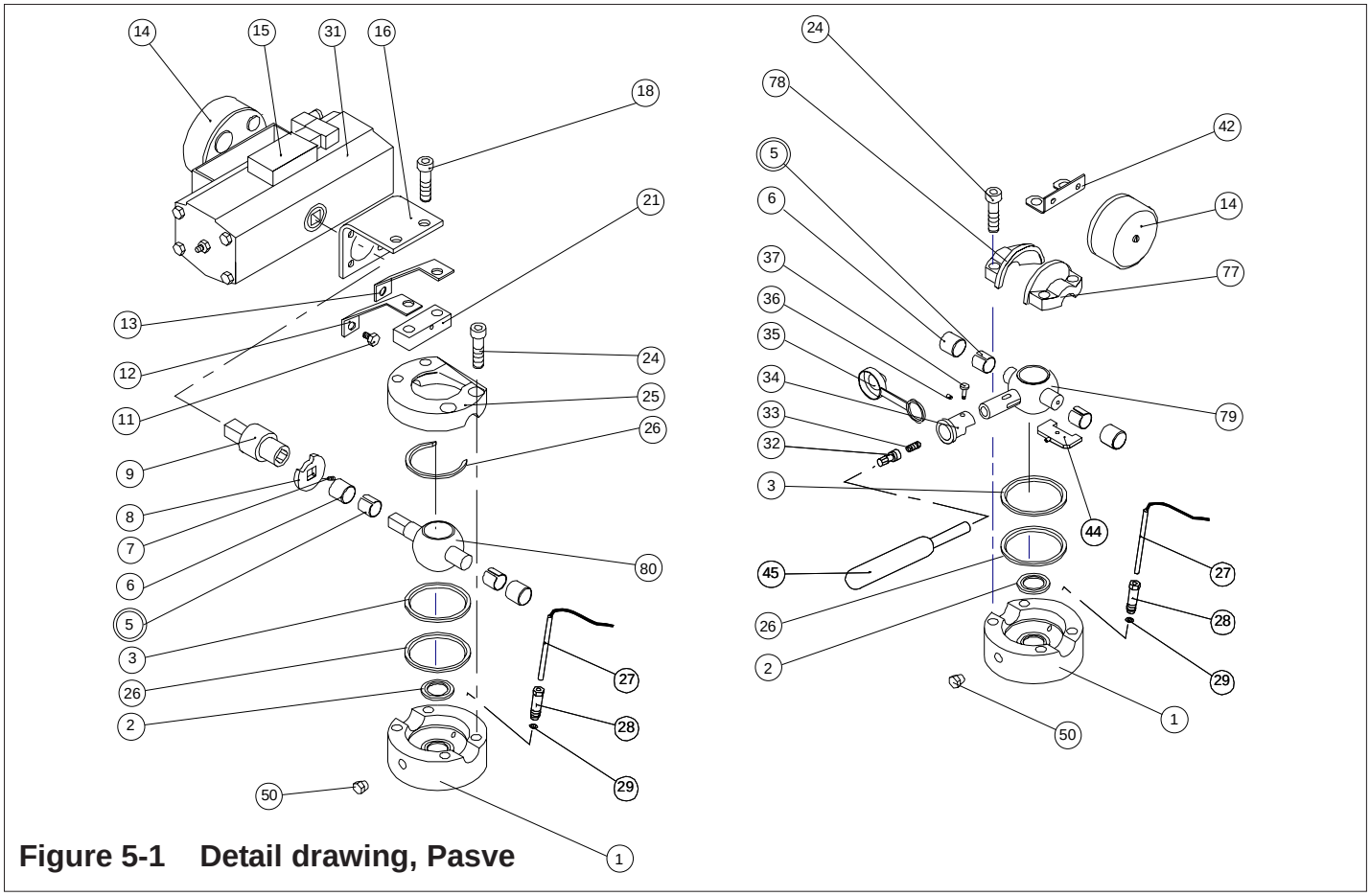
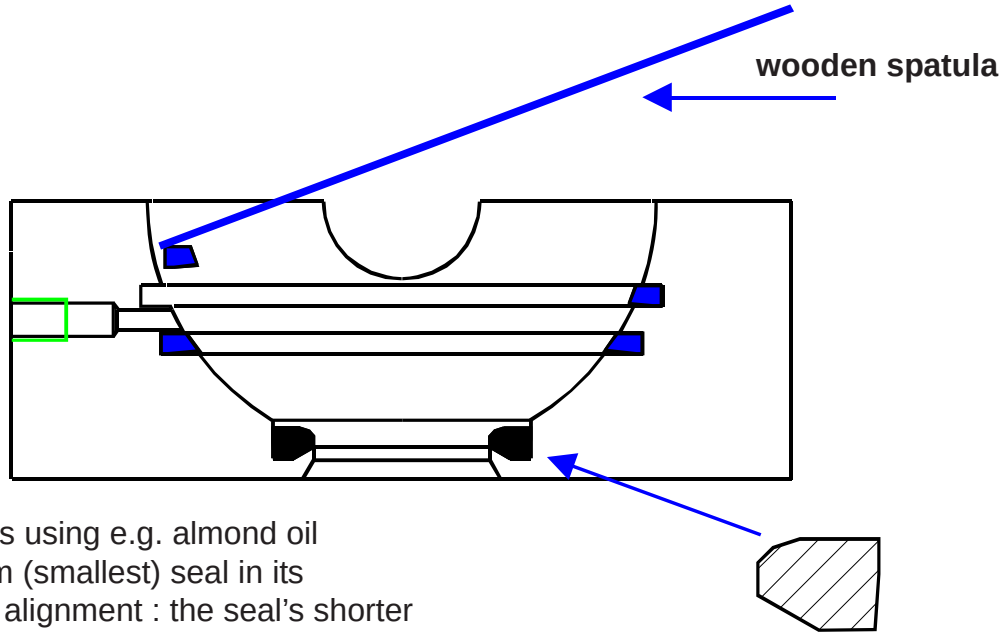
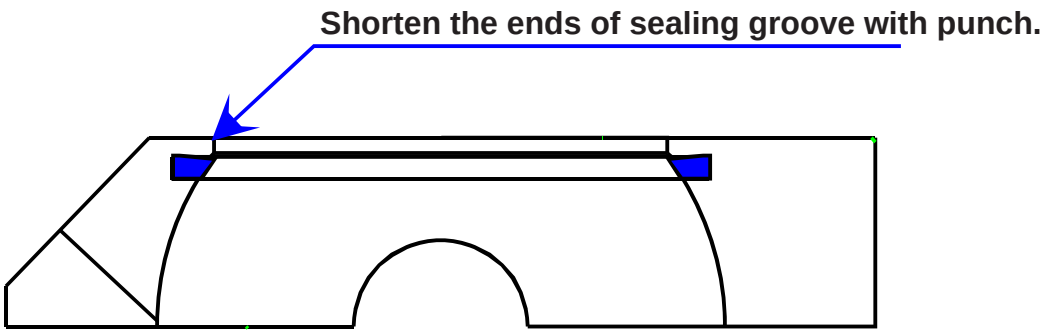


Figure 5-1 Detail drawing, Pasve



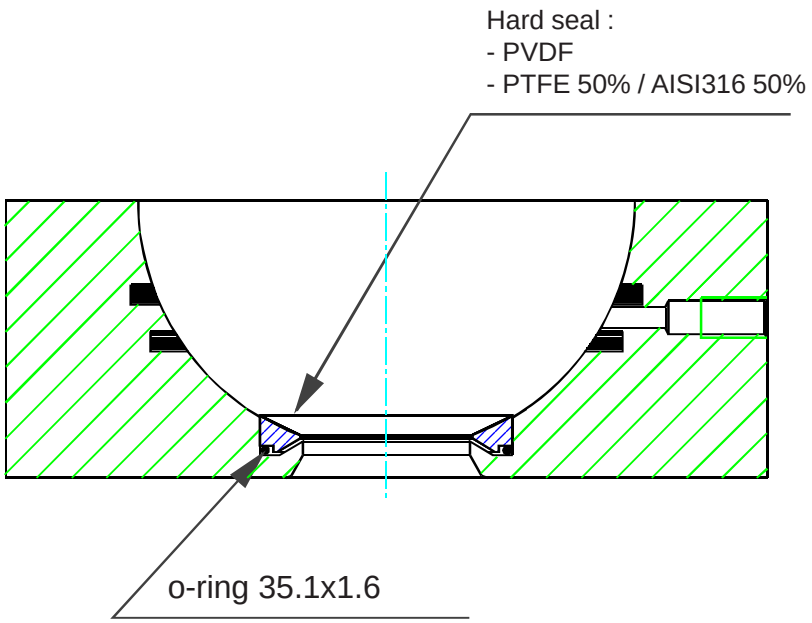
1. Grease the seals using e.g. almond oil
2. Place the bottom (smallest) seal in its groove. Correct alignment : the seal's shorter chamfer against the ball.
3. Press the seal with a finger as deep as possible in to the groove. Then press the seal carefully home with a piece of wood. Since the final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

Figure 5-2 Seals installation



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.

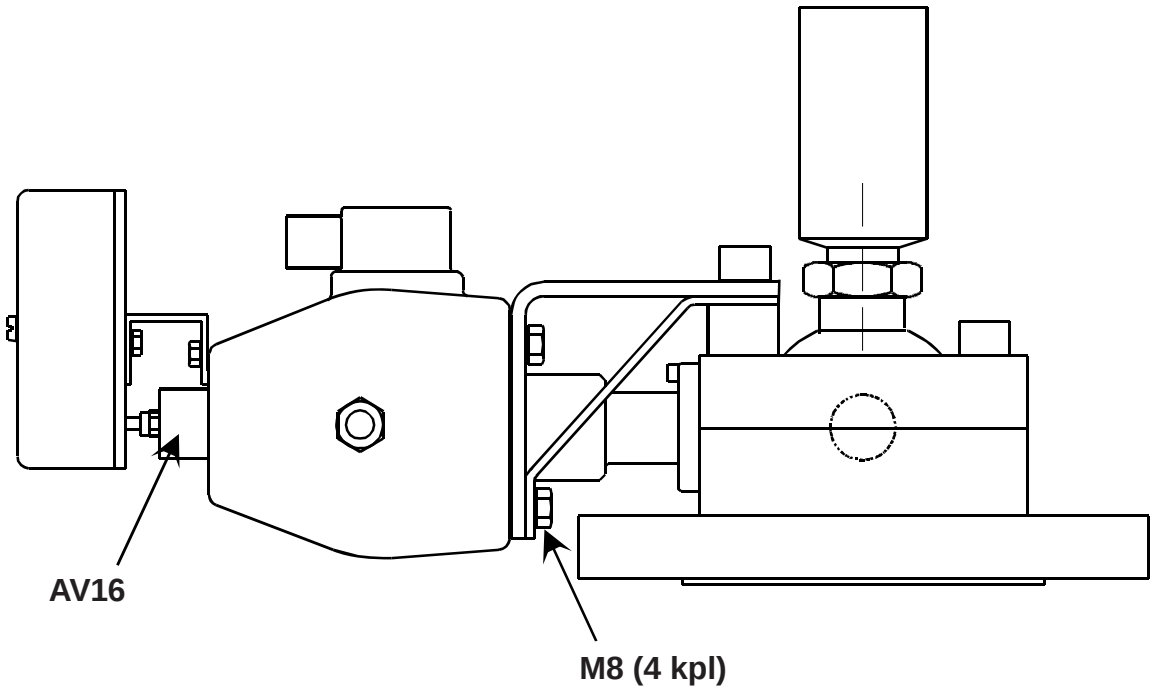
Figure 5-3 Back-up seal installation



1. Set o-ring Ø35.1x1.6 to the groove in the body bottom.
2. Set hard seal on the 0-ring in the body bottom. Be sure that 0-ring is placed properly into the space of the seal collar and body groove.
3. Install the ball.

Hard seal will be used e.g. with the cutting ball or together with diamond-/ ceramic-coated ball.
Order code for PVDF-seal set : **KIT553262**
Order code for PTFE 50% / AISI316 50% -seal set : **KIT551350**

Figure 5-4 Hard 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 5-5 Changing the actuator

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