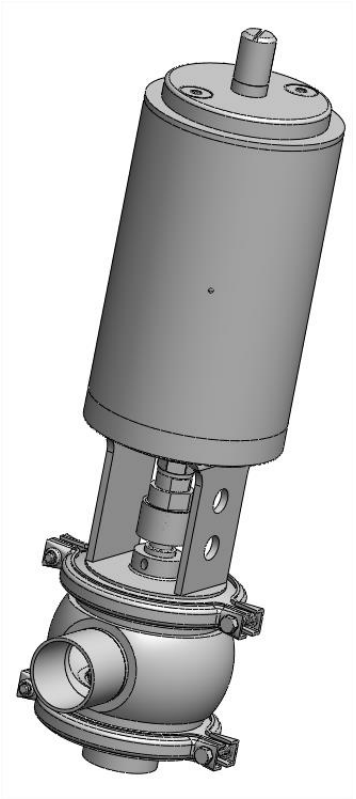
PVE
MAXCLEAN SINGLE SEAT VALVE
FOR SANITARY APPLICATIONS
(PNEUMATIC / MANUALLY OPERATED)



Installation & Service Manual For:

- PVE - SHUT-OFF VALVE
- PVE - DIVERT VALVE
- PVE - PRESSURE RELIEF VALVE (OVERFLOW VALVE)
- PVE - TANK BOTTOM VALVE
- PVE AIR ACTUATOR

EGMO - ISRAEL

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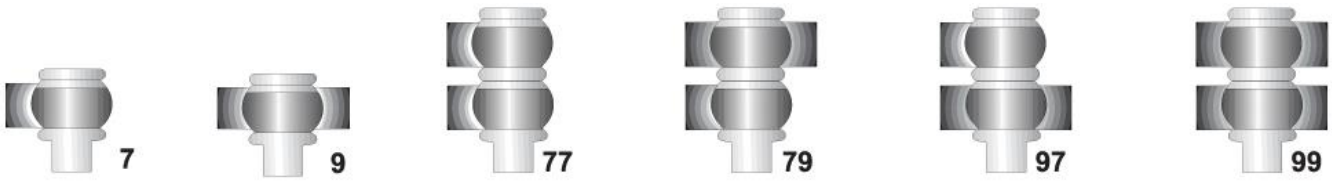
TABLE OF CONTENTS

TABLE OF CONTENTS (CONT.)

PVE PRODUCT RANGE

PVE Valves are available with Manual, Air Activated or Air Actuated with an electronic control head.
Configurations can be shut off, Divert or Tank outlet.
Connections consist of Clamp, Weld, Bevel Seat, and E-Line.
EGMO's PVE Valves are made of 316L stainless steel which meet all 3A requirements and are offered in 1″ through 4″ sizes.
Offered as EPDM Standard with Viton® and Silicone options.

PVE CONFIGURATIONS:



PVE Pneumatically operated - available in 1″ to 4"
PVE Manually operated - available in 1.5" through 3″

OPTIONAL:

- O-rings: EPDM, Silicon, Viton
- Control head for operation with solenoid valve and proximity switch (110 or 24 volt and Asi Bus)
- Steam barrier for sterile and aseptic applications

General Information:

! Safety:

- ! Do not work on the pipe line until it is empty.
- ! **Safety first**. Ensure that all electrical connections have been marked and disconnected.
- ! Pressure is **always** released from both the spring and the air pressure when disassembling the actuator from the valve. Adhere to all necessary safety precautions proceeding with the disassembly.

! Cleaning:

- ! The valve is designed for cleaning in place (CIP).
- ! The EPDM, Silicone or Viton® seals meet the standards for concentrated cleaning detergents and temperature gradients as set out in the **3A** standards **Class 1** or **2**.
- ! Cleaning method:

Step 1 : Always handle lye and acid with great care .
Always use rubber gloves!
Always use protective goggles!
Step 2 : Never touch the valve or the pipelines when sterilizing due to burning danger!
Step 3 : Clean the plug and the seats correctly.
Pay special attention to the warnings!
Lift and lower valve plug momentarily!
Step 4 : Use clean water, free from chlorides.
Step 5 : Avoid excessive concentration of the cleaning agent.
Adjust the cleaning flow to the process.
Always rinse well with clean water after the cleaning.
Step 6 : The cleaning agents must be stored/disposed of in accordance with current rules/directives.

! Routine Inspection:

- ! Under normal working conditions routine inspection should be carried out on the valve parts i.e. seals, all connections, and stem shaft, at least once a year.
- ! Should crystal compounds or liquid with a higher viscosity rating pass through the valve it is recommended to increase the inspection periods.

! Air Pressure:

- ! The air pressure used must not exceed 108.7 PSI (7.5 Bar).
- ! The air pressure must not be less than 72.5 PSI (5 Bar).
- ! Air inlet For PVE sizes 1.0″ to 3.0": ⅛″ BSP.
- ! Air inlet For PVE size 4.0″: ¼″ BSP.

! Materials:

- ! Actuator: stainless steel 304.
- ! Valve: stainless steel 316L.
- ! Gaskets: EPDM, Silicone or Viton®
- ! Surfaces: meet 3A standards.

! Valve Availability:

- ! EGMO PVE valves are available with the options of clamp, weld, E-line, bevel seat and other connections are available upon request.

General Pre-Assembly Information:

- Always drain liquid out of valves before transportation
- During installation leave a minimum space of 4″ above the valve and actuator to ensure easy accessibility during servicing.
- When welding the valve into position allowance must be made for future access to the seals.
- During each assembly and re-assembly it is necessary to apply grease. Only grease approved by the Food and Drug Administration (FDA) may be used.
- Valves to be positioned with the leak detect ports to be located at the bottom when the valves are installed horizontally.

General Maintenance:

- Maintain the valve regularly.
- Seals replacement intervals: 12 months depending on working conditions.
- Maintenance after leakage : Replace seals at the end of the day.

3A PVE Control Head

Linear control head is compatible with most PLC (Programmable Logic Controllers) automated systems with Digital communication or ASI BUS (AS-Interface).

- ✓ Reliable & Cost-Effective
- ✓ Easy maintenance
- ✓ Standard functionality
- ✓ Small-Compact

Operating principle

- ✓ Control head receives signals from a control panel or from a PLC to actuate the valve. It sends a signal to the PLC or to the control panel and indicates the position of the valve.
- ✓ Control head is compatible with any process in food & beverage, biopharmaceutical and petrochemical industries.
- ✓ Control head incorporates indication and command devices to monitor all linear valves.
- ✓ Control head displays valve position connected to Air/Spring actuator:
  Dome LED Green: Actuator operated by spring
  Dome LED Amber: Actuator operated by air
- ✓ Control head displays valve position connected to Air/Air actuator:
  During initial installation the end user may determine the color indication.

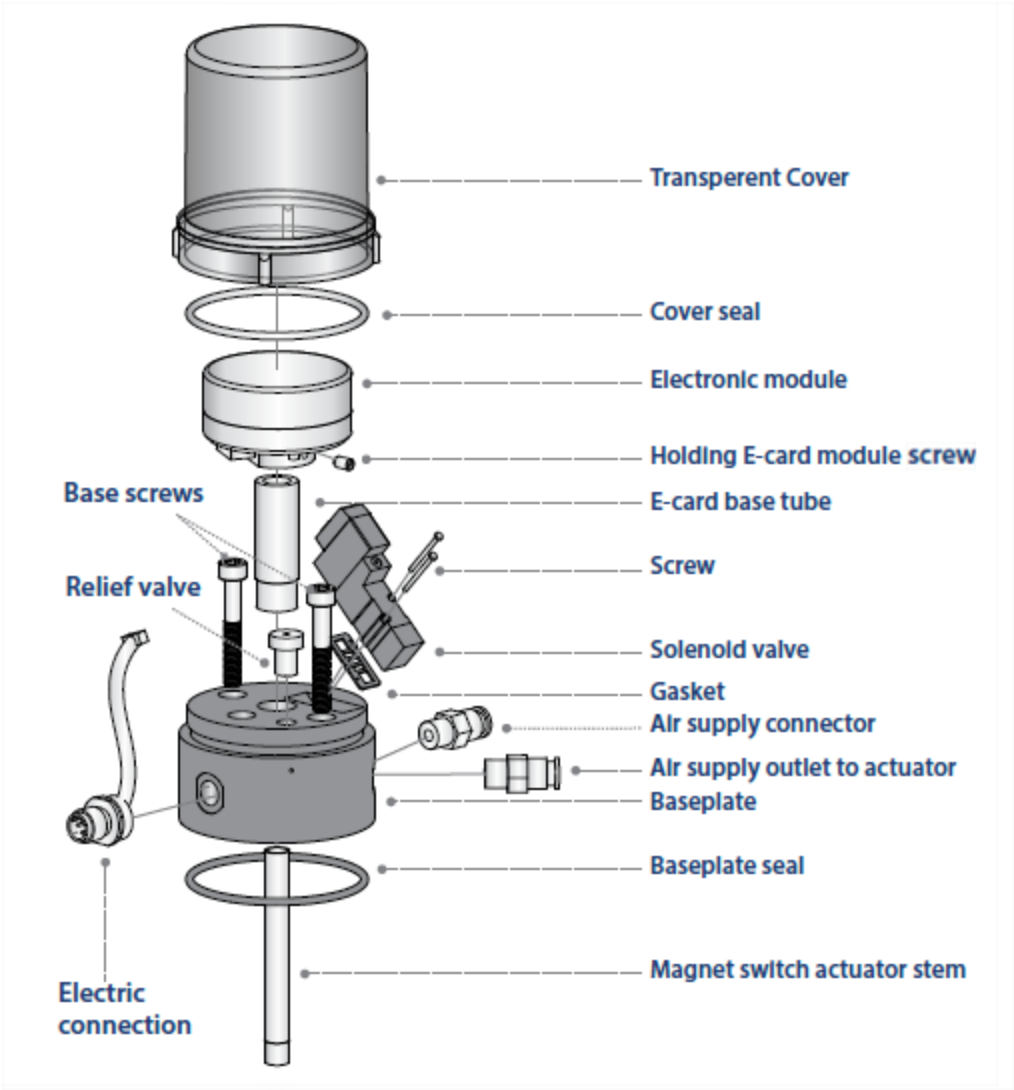
* It is recommended to use the green color to indicate valve closed position.

Technical specifications

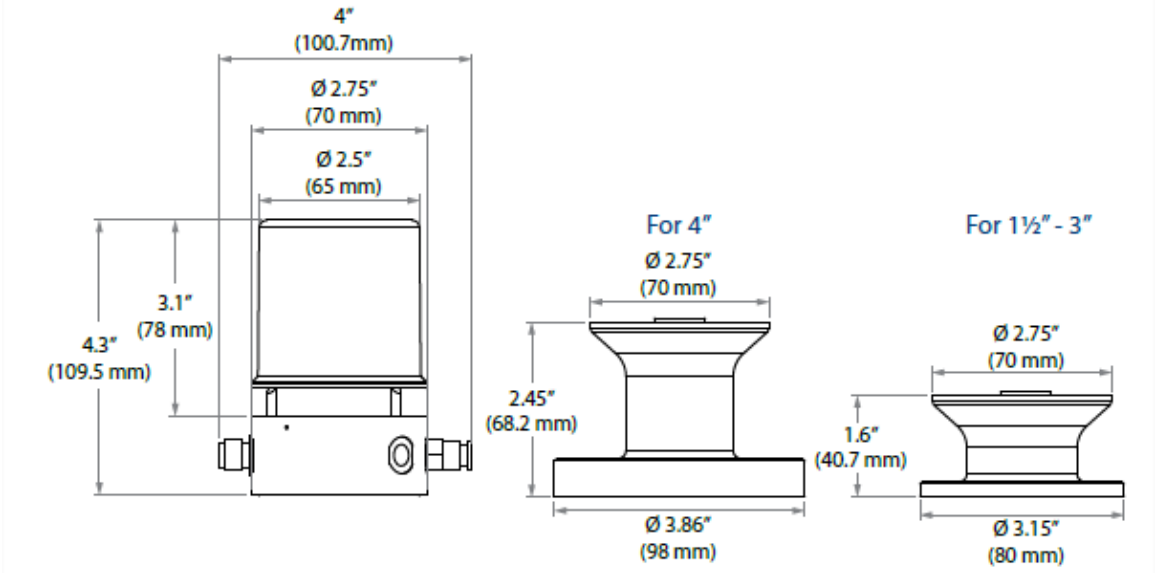
Body Material:	POM
Cover:	Polycarbonate
Sealing:	NBR
Protection class:	IP67
Supply Voltage:	24 [VDC], 110 [VAC], ASIBUS (30 [VDC])
Max. Working temperature	-10ºC (14ºF) to 50ºC (122ºF)
Solenoid Valve type:	3/2way (Air/Spring), 5/2 way (Air/Air)
Electrical multiple connections:	M12X (5-pole) connector
Feedback:	Pos. Open (digital) Pos. Closed (digital)
Power consumption:	2.0 [W]
Weight:	400 [gr] ,0.881 [lbs]
Dimensions:	Diameter: 70 [mm] , 2.75 [inches] height: 120 [mm] , 4.72 [inches]

Control Head - Versions

Part Number	Pneumatic Operation	Power Supply			Notes
	Spring/Air 3/2	24VDC	110VDC	ASIBUS	
618-00932	√	√			
618-00931	√			√	29.5 ~ 31.5 VDC
618-00930	√		√		



PVE Control Head Dimensions



Control Head Types

24VDC

- ✓ Direct I/O 24VDC Valve controller
- ✓ With integrated LED dome (Green-closed / Amber-open)
- ✓ With Auto calibration for position indication
- ✓ Mounting on Valve through mounting kit

Direct I/O controller for linear Valves spring return

Equipped with:

- Baseplate (POM)
- 3/2 way Solenoid
- Transparent screw cover
- With auto calibration for position indication
- With LED DOME
- 5-pole M12x1 connector
- Air connection for 6 mm air hose

110VDC

- ✓ Direct I/O 110CAC Valve controller
- ✓ With integrated LED dome (Green-closed / Amber-open)
- ✓ With Auto calibration for position indication
- ✓ Mounting on Valve through mounting kit

Direct I/O controller for linear Valves spring return

Equipped with:

- Baseplate (POM)
- 3/2 way Solenoid
- Transparent screw cover
- With auto calibration for position indication
- With LED DOME
- 5-pole M12x1 connector
- Air connection for 6 mm air hose

ASI

- ✓ AS-Interface Valve controller
- ✓ With integrated LED dome (Green-closed / Amber-open)
- ✓ With Auto calibration for position indication
- ✓ Mounting on Valve through mounting kit
- ✓ Slave Profile : S-3/A.0.E

AS-Interface controller for linear Valves spring return

Equipped with:

- Baseplate (POM)
- 3/2 way Solenoid
- Transparent screw cover
- with auto calibration for position indication
- 1 AS-Interface electronic module with LED DOME
- 4-pole M12x1 connector
- Air connection for 6 mm air hose

Technical Data	ASI - ASVC 9000-24D 24 VDC / 110 VAC
Material Body Cover sealing	Pom (black) Polycarbonate, (transparent brown) NBR
Supply Voltage	ASI - 31,6 VDC 24 VDC 110 VAC
Electrical connection Multipole connection	ASI - M12x1 (4-pole) connector 24 VDC / 110 VAC - M12x1 (5-pole) connector
ASI Only - AS-Interface specification ASI Only - AS-Interface profile: ASI Only - I/O code: ID code: Id1 code: Id2 code:	3.0 S-3/A.0.E 3 A 0 E
Feedback Pos. open (digital) Pos. Closed (digital)	Yes Yes
Power consumption max.	2 Watt
Stroke range Valve spindel	5.....70 mm
Solenoid valve type Power consumption [Vdc/W] Response time [<ms] Orifice [l/min] Seal-material	3/2-way NC 24Vdc /0.5 Watt 15 98 NBR
Supply pressure	7 Bar max
Control medium Dust concentration Particle density Pressure condensation point Oil concentration	Neutral gases, air DIN ISO 8573-1 Class 3 (<5µm particle size) Class 3 (<5mg/m³) Class 3 (<-20°C) Class 1 (< 0,01 mg/m³)
Air input filter Install an air dryer, after cooler or Drain Catch, etc If excessive carbon powder is seen, install a mist separator on the upstream side of the valve	✓ Install air filters close to valve at their upstream side. A filtration degree of 5 µm or less should be selected ✓ Air that includes excessive drainage may cause malfunction of valves and other pneumatic equipment. To prevent this, install an air dryer, after-cooler or water separator, etc. ✓ If excessive carbon dust is generated by the compressor, it may adhere to the inside of valves and cause malfunction
Pilot air ports	1/8"G / plug-on fitting 6.0
Ambient temperature	-10.....+50°C (no freezing.)
Electrical Protection class	III
Housing protection class	IP 67
Installation	As required, preferably with actuator in upright position
General Interference output EMC Interference resistance EMC Display Power Display Fault Position close Position open	EN 50081-1 EN 50081-2 display Dome Led Green Dome Led Amber
Dimensions BxH	70x100
ASI Only - OPTIONS AS-Interface profile	Client spec.

PVE Control Head Mounting Instructions

1" size valves

PVE 0 NC

Parts List

Control head
x1

M6X40mm
x2

o-ring 2X60
x1

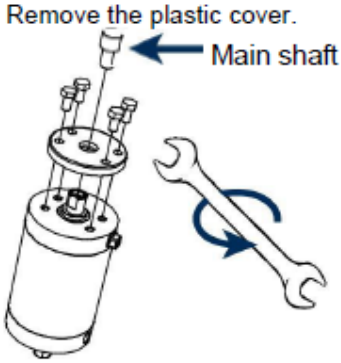
Magnet switch
actuator rod
x1

Swivel 90Deg.Elbow
adapter 6XG1/8BSPP
x1

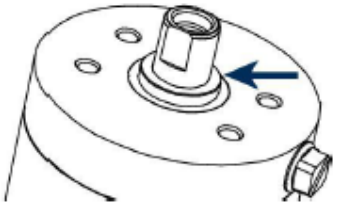
Pressure air line
x1

Swivel 90Deg.Elbow
adapter 6XR1/8BSPT
x1

1. Unscrew main shaft cover (manually) and four M6 screws (with 10 mm wrench) of the actuator's plastic cover (control head side) . Remove the plastic cover.

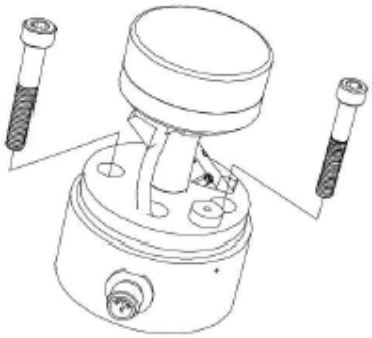


2. Insure that the plastic bushing step is forwarding the control head side.

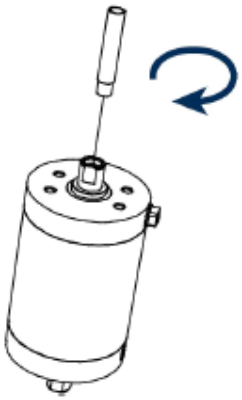


3. Unscrew manually plastic cover of control head.

4. Insert M6 screws in control head holes.



5. Screw down manually the magnet switch actuator stem to the actuator rod.

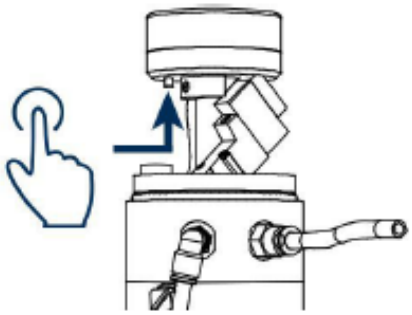


6. Connect the control head to the actuator : Screw down the two M6 screws (with Hex key #5. Closure torque T=2.0[Nm]) through the actuator, ensure O-ring 2x60 is in slot between control head and actuator.
See configuration on section #10.

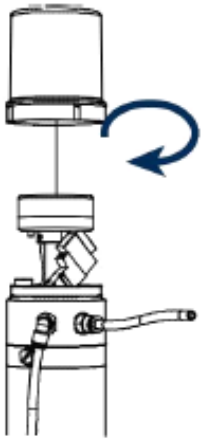
* To secure the screws use thread locker glue according to the application.

7. Connect air connections and electrical connection according to configuration on section #10

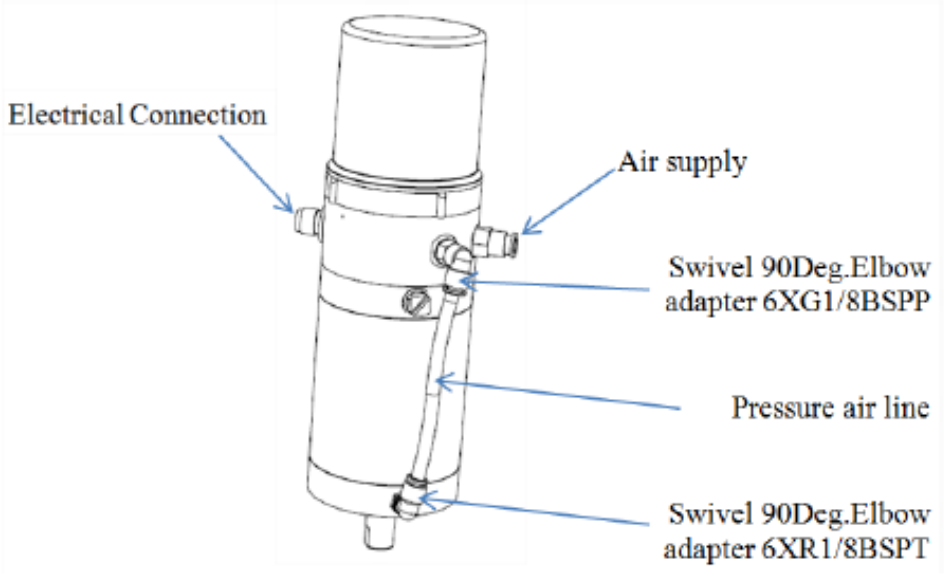
8. Press control head calibration button for 3 second, until the control head will start automatic calibration procedure.



9. Screw down manually the plastic cover of control head.



10. Connecting configuration



1" size valves

PVE 0 NO

Parts List

Control head
x1

M6X40mm
x2

o-ring 2X60
x1

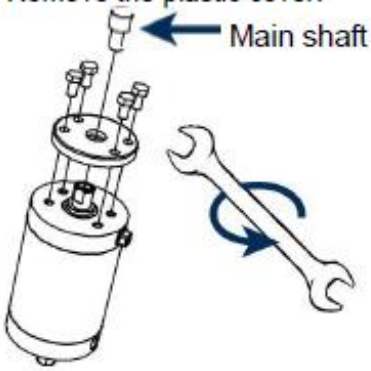
Magnet switch
actuator rod
x1

Swivel 90Deg.Elbow
adapter 6XG1/8BSPP
x1

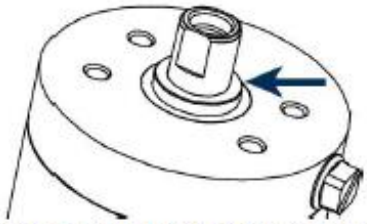
Pressure air line
x1

Swivel 90Deg.Elbow
adapter 6XR1/8BSPT
x1

1. Unscrew main shaft cover (manually) and four M6 screws (with 10 mm wrench) of the actuator's plastic cover (control head side) . Remove the plastic cover.

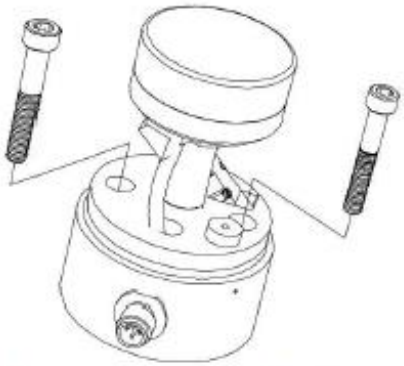


2. Insure that the plastic bushing step is forwarding the control head side.

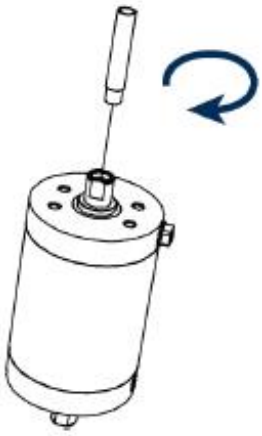


3. Unscrew manually plastic cover of control head.

4. Insert M6 screws in control head holes.



5. Screw down manually the magnet switch actuator stem to the actuator rod.

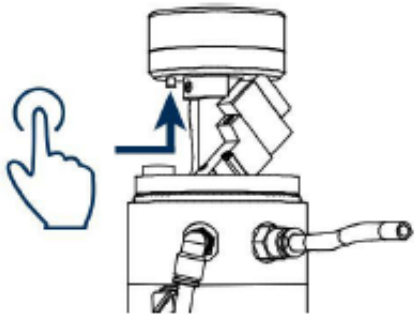


6. Connect the control head to the actuator: Screw down the two M6 screws (with Hex key #5. Closure torque T=2.0[Nm]) through the actuator, ensure O-ring 2x60 is in slot between control head and actuator.
See configuration on section #10.

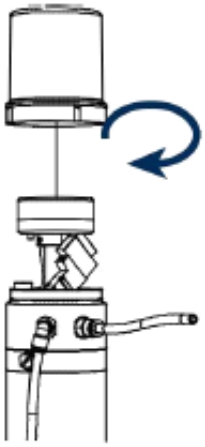
* To secure the screws use thread locker glue according to the application.

7. Connect air connections and electrical connection according to configuration on section #10

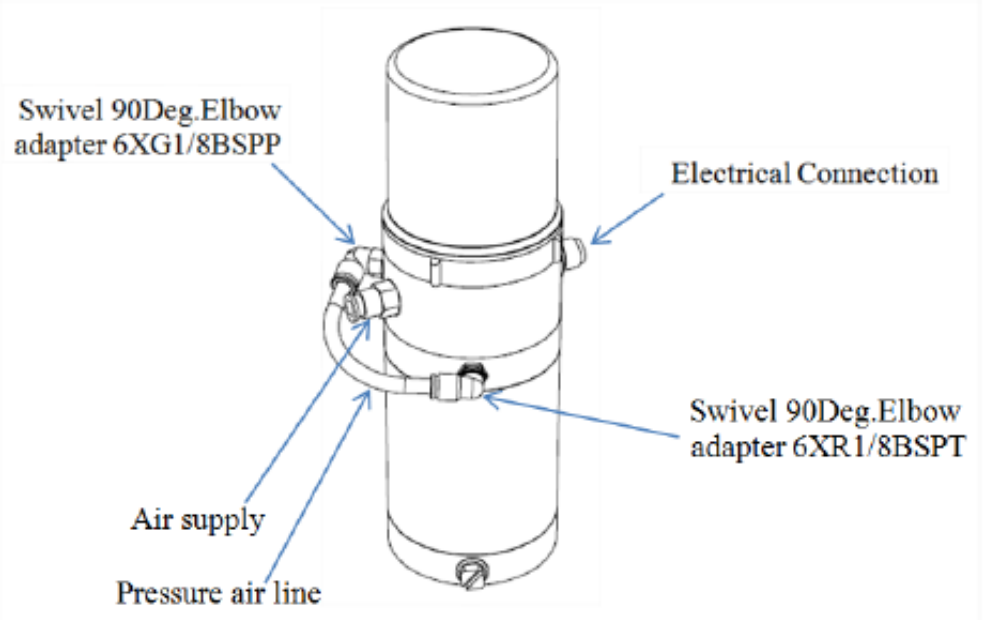
8. Press control head calibration button for 3 second, until the control head will start automatic calibration procedure.



9. Screw down manually the plastic cover of control head.



10. Connecting configuration



1.5"& 2" size valves

PVE 1 NC

Parts List


Control head
x1


M8X12mm
x2


M6X40mm
x2


Adaptor
x1


o-ring 2.5X40
x1


o-ring 2X60
x1

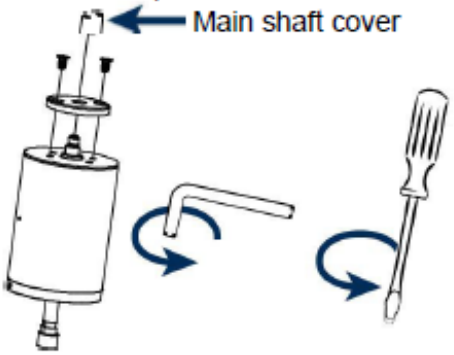

Magnet switch actuator rod
x1


Swivel 90Deg.Elbow adapter 6XR1/8BSPT
x1

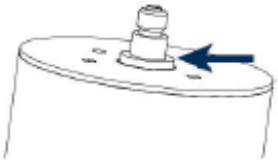

Pressure air line
x1


Swivel 45Deg.Elbow adapter 6XG1/8BSPP
x1

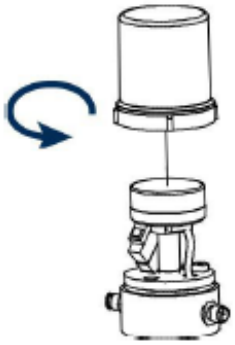
1. Unscrew main shaft cover (with slot screwdriver) and two flat head M8 screws (with Hex key #5) of the actuator's plastic cover (control head side).
   Remove the plastic cover
   Main shaft cover



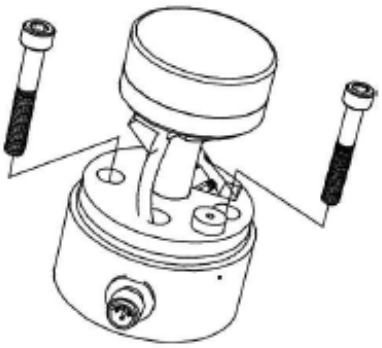
2. Insure that the plastic bushing step is forwarding the control head side.



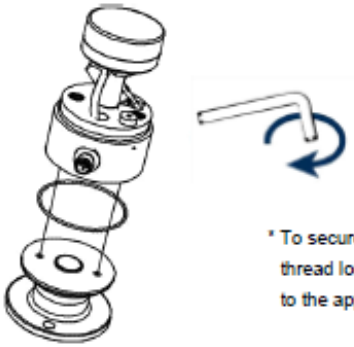
3. Unscrew manually plastic cover of control head.



4. Insert M6 screws in control head holes.



5. Screw down the two M6 screws (with Hex key #5. Closure torque T=2.0[Nm] max.) through the adaptor, ensure O-ring 2x60 is in slot between control head and adaptor.

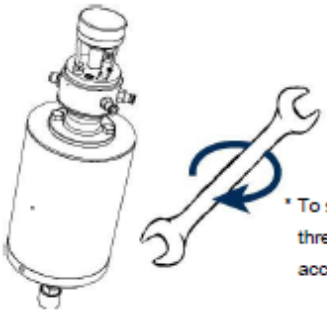


* To secure the screws use thread locker glue according to the application.

6. Screw down manually the magnet switch actuator rod to the actuator rod.

7. Connect control head adaptor to the actuator with two M8 screws.
Ensure O-ring 1.78x34.65 is in slot between adaptor and actuator.
See configuration on section #12.

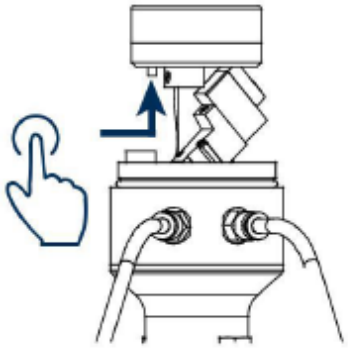
8. Close the M8 screws with 13 mm Wrench Closure torque T=4.5[Nm].



* To secure the screws use thread locker glue according to the application.

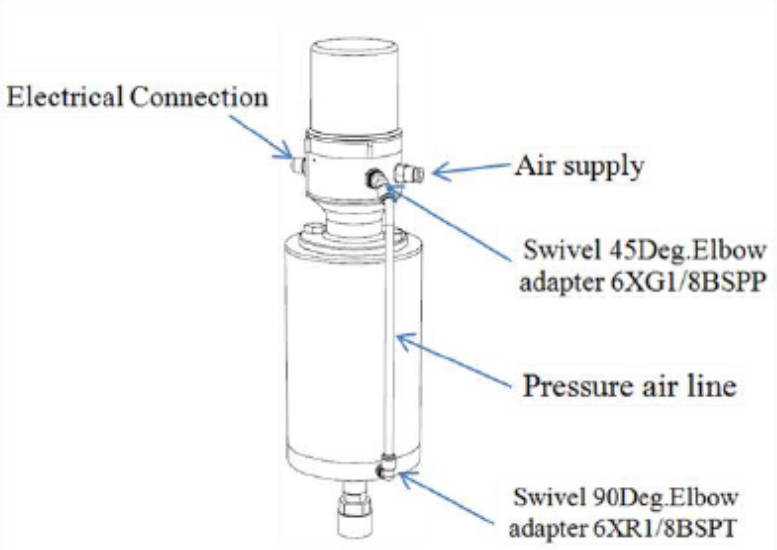
9. Connect air connections and electrical connection according to configuration on section #12.

10. Press control head calibration button for 3 second, until the Control Head will start automatic calibration procedure.



11. Screw down manually the plastic cover of control head.

12. Connecting configuration



1.5"& 2" size valves

PVE 1 NO

Parts List


Control head
x1


M8X12mm
x2


M6X40mm
x2


Adaptor
x1


o-ring 2.5X40
x1


o-ring 2X60
x1

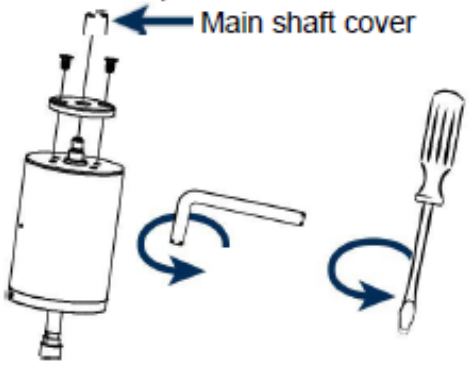

Swivel 90Deg.Elbow adapter 6XG1/8BSPP
x1


Pressure air line
x1

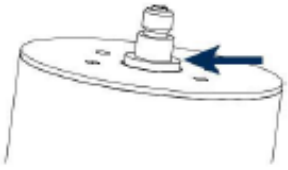

Swivel 90Deg.Elbow adapter 6XR1/8BSPT
x1


Magnet switch actuator rod
x1

1. Unscrew main shaft cover (with slot screwdriver) and two flat head M8 screws (with Hex key #5) of the actuator's plastic cover (control head side).
   Remove the plastic cover

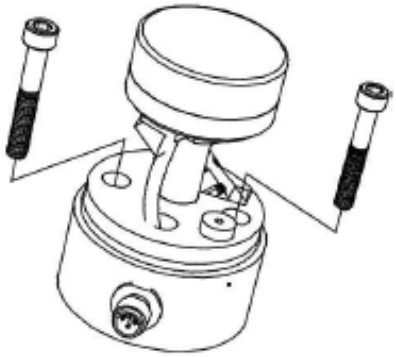


2. Insure that the plastic bushing step is forwarding the control head side.

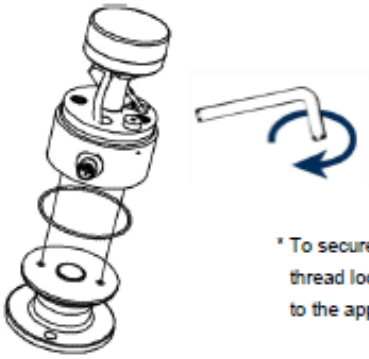


3. Unscrew manually plastic cover of control head.

4. Insert M6 screws in control head holes.



5. Screw down the two M6 screws (with Hex key #5. Closure torque T=2.0[Nm] max.) through the adaptor, ensure O-ring 2x60 is in slot between control head and adaptor.

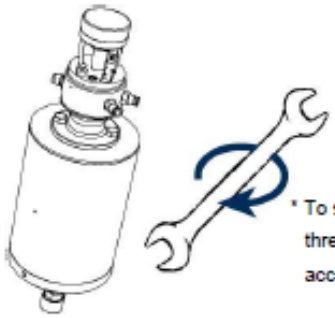


* To secure the screws use thread locker glue according to the application.

6. Screw down manually the magnet switch actuator rod to the actuator rod.

7. Connect control head adaptor to the actuator with two M8 screws.
Ensure O-ring 1.78x34.65 is in slot between adaptor and actuator.
See configuration on section #12.

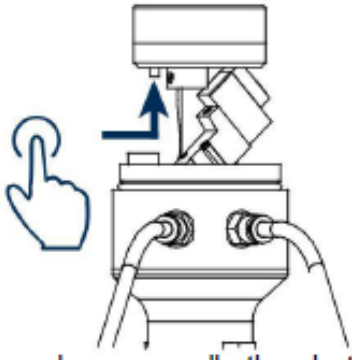
8. Close the M8 screws with 13 mm Wrench Closure torque T=4.5[Nm].



* To secure the screws use thread locker glue according to the application.

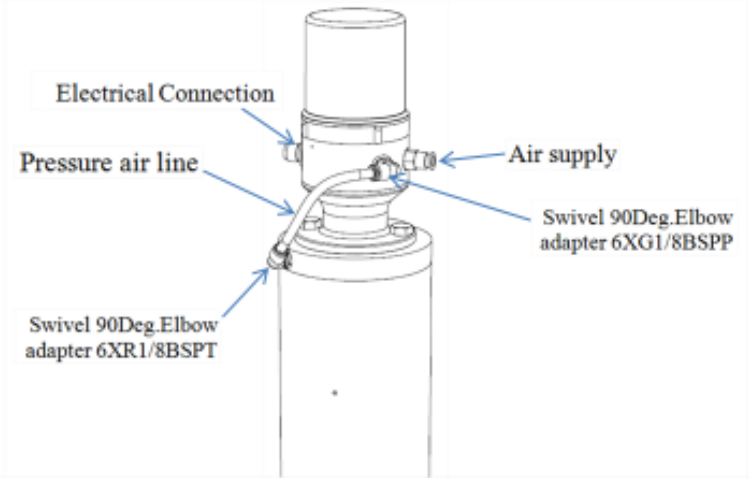
9. Connect air connections and electrical connection according to configuration on section #12.

10. Press control head calibration button for 3 second, until the Control Head will start automatic calibration procedure.



11. Screw down manually the plastic cover of control head.

12. Connecting configuration



2.5"& 3" size valves

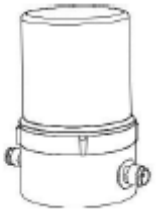
PVE 2 NC

Parts List

Swivel 90Deg.Elbow adapter 6XR1/8BSPT x1

Pressure air line x1

Swivel 45Deg.Elbow adapter 6XG1/8BSPP x1



Control head x1

M8X12mm x2

M6X40mm x2

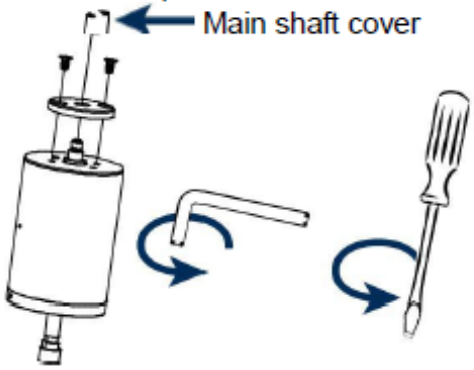
Adaptor x1

o-ring 2.5X40 x1

o-ring 2X60 x1

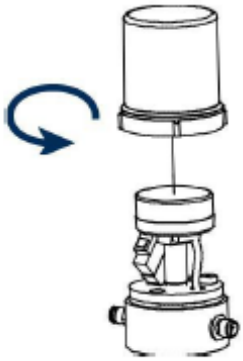
Magnet switch actuator rod x1

1. Unscrew main shaft cover (with slot screwdriver) and two flat head M8 screws (with Hex key #5) of the actuator's plastic cover (control head side). Remove the plastic cover

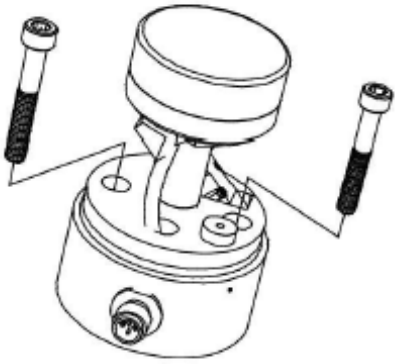


2. Insure that the plastic bushing step is forwarding the control head side.

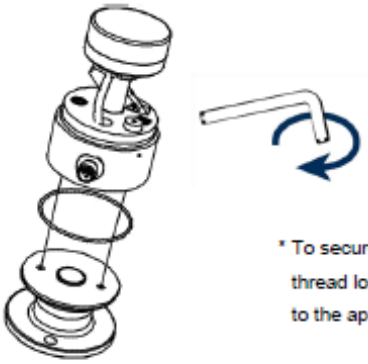
3. Unscrew manually plastic cover of control head.



4. Insert M6 screws in control head holes.



5. Screw down the two M6 screws (with Hex key #5. Closure torque T=2.0[Nm] max.) through the adaptor, ensure O-ring 2x60 is in slot between control head and adaptor.

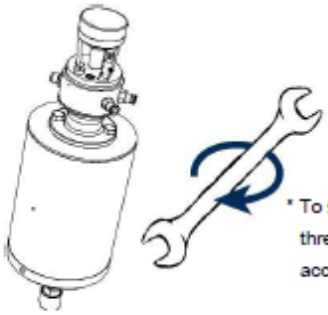


* To secure the screws use thread locker glue according to the application.

6. Screw down manually the magnet switch actuator rod to the actuator rod.

7. Connect control head adaptor to the actuator with two M8 screws.
Ensure O-ring 1.78x34.65 is in slot between adaptor and actuator.
See configuration on section #12.

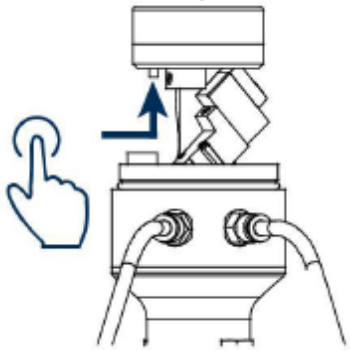
8. Close the M8 screws with 13 mm Wrench Closure torque T=4.5[Nm].



* To secure the screws use thread locker glue according to the application.

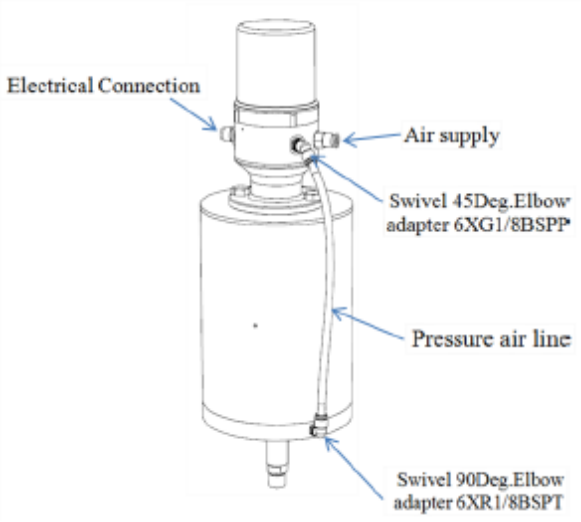
9. Connect air connections and electrical connection according to configuration on section #12.

10. Press control head calibration button for 3 second, until the Control Head will start automatic calibration procedure.



11. Screw down manually the plastic cover of control head.

12. Connecting configuration



2.5"& 3" size valves

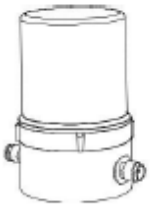
PVE 2 NO

Parts List

Swivel 90Deg.Elbow adapter 6XG1/8BSPP x1

Pressure air line x1

Swivel 90Deg.Elbow adapter 6XR1/8BSPT x1



Control head x1

M8X12mm x2

M6X40mm x2

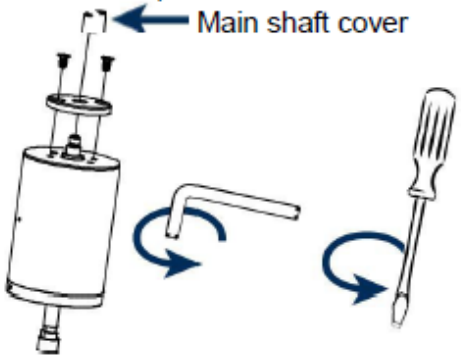
Adaptor x1

o-ring 2.5X40 x1

o-ring 2X60 x1

Magnet switch actuator rod x1

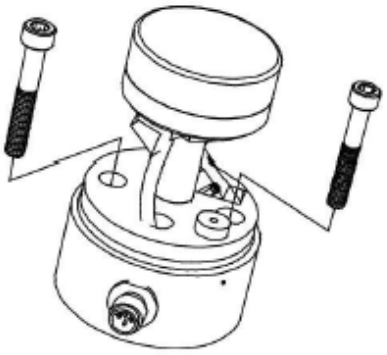
1. Unscrew main shaft cover (with slot screwdriver) and two flat head M8 screws (with Hex key #5) of the actuator's plastic cover (control head side). Remove the plastic cover



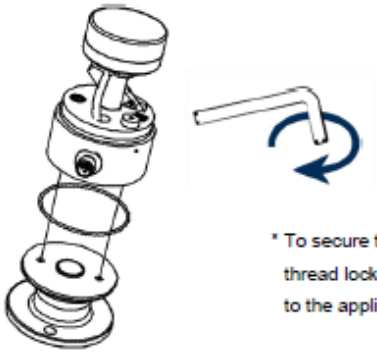
2. Insure that the plastic bushing step is forwarding the control head side.

3. Unscrew manually plastic cover of control head.

4. Insert M6 screws in control head holes.



5. Screw down the two M6 screws (with Hex key #5. Closure torque T=2.0[Nm] max.) through the adaptor, ensure O-ring 2x60 is in slot between control head and adaptor.

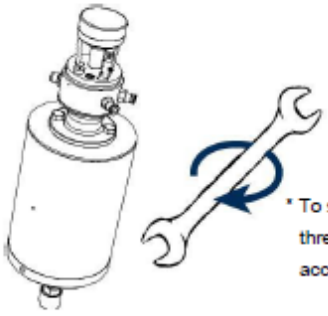


* To secure the screws use thread locker glue according to the application.

6. Screw down manually the magnet switch actuator rod to the actuator rod.

7. Connect control head adaptor to the actuator with two M8 screws.
Ensure O-ring 1.78x34.65 is in slot between adaptor and actuator.
See configuration on section #12.

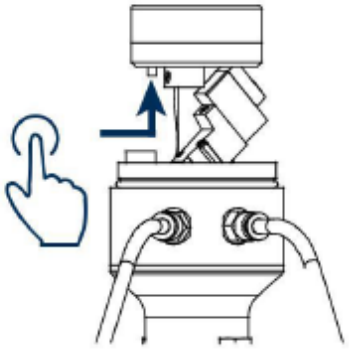
8. Close the M8 screws with 13 mm Wrench Closure torque T=4.5[Nm].



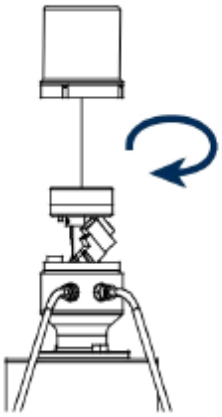
* To secure the screws use thread locker glue according to the application.

9. Connect air connections and electrical connection according to configuration on section #12.

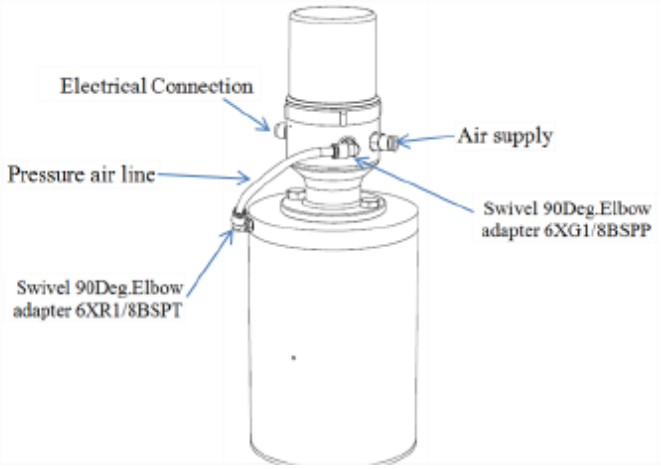
10. Press control head calibration button for 3 second, until the Control Head will start automatic calibration procedure.



11. Screw down manually the plastic cover of control head.



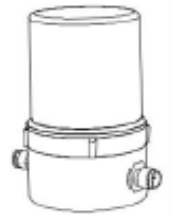
12. Connecting configuration



4" size valves

PVE 3 NC

Parts List


Control head
x1


Pressure air line
x1


M6X40mm
x2


Adaptor
x1


o-ring 2.5X40
x1

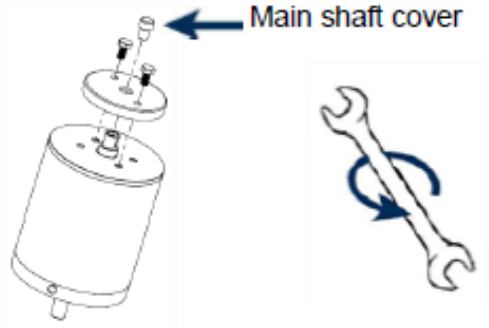

o-ring 2X60
x1


SWIVEL 90 DEG. ELBOW ADAPTER 8XR1/4 BSPT
x1


SWIVEL 45 DEG. ELBOW ADAPTER 8XG1/8 BSPP
x1


Magnet switch actuator rod PVE 3
x1

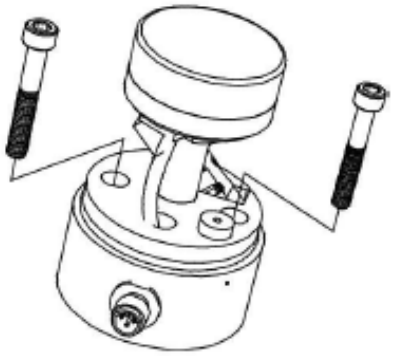
1. Unscrew main shaft cover manually and two M10 screws of the actuator's plastic cover with 17 mm wrench (control head side).
   Remove the plastic cover



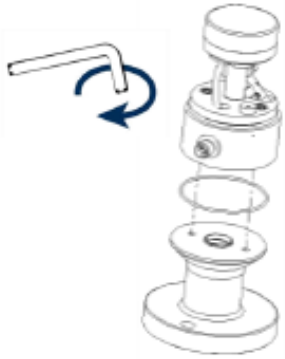
2. Insure that the plastic bushing step is forwarding the control head side.

3. Unscrew manually plastic cover of control head.

4. Insert M6 screws in control head holes.



5. Screw down the two M6 screws (with Hex key #5. Closure torque T=2.0[Nm] max.) through the adaptor, ensure O-ring 2x60 is in slot between control head and adaptor.



* To secure the screws use thread locker glue according to the application.

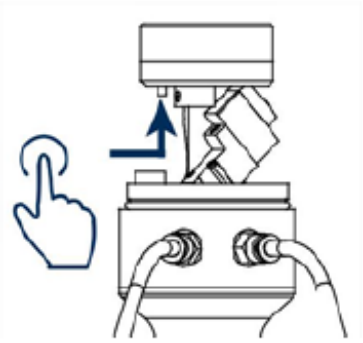
6. Screw down manually the magnet switch actuator rod to the actuator rod.

7. Connect control head adaptor to the actuator with two M10 screws.
   Ensure O-ring 2.5x40 is in slot between adaptor and actuator.
   See configurations on section #12.

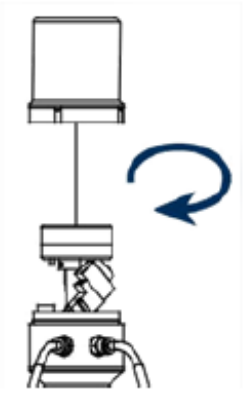
8. Close the M10 screws with 17 mm Wrench Closure torque T=4.5[Nm].

* To secure the screws use thread locker glue according to the application.

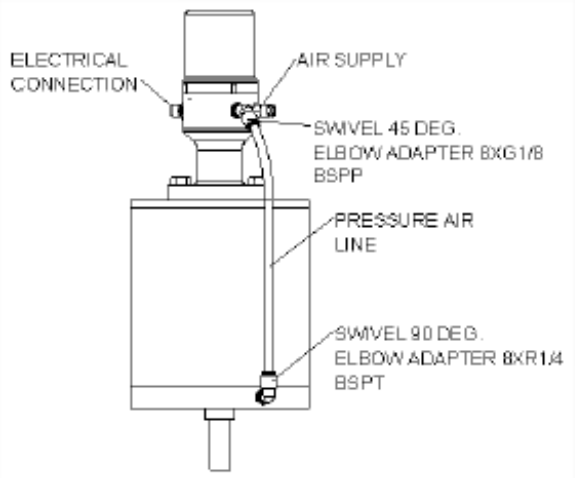
9. Connect air connections and electrical connection according to configuration on section #12.
10. Press control head calibration button for 3 second, until the Control Head will start automatic calibration procedure.



11. Screw down manually the plastic cover of control head.



12. Connecting configuration



PVE 3 NO

Parts List


Control head
x1


Pressure air line
x1


M6X40mm
x2


Adaptor
x1


o-ring 2.5X40
x1

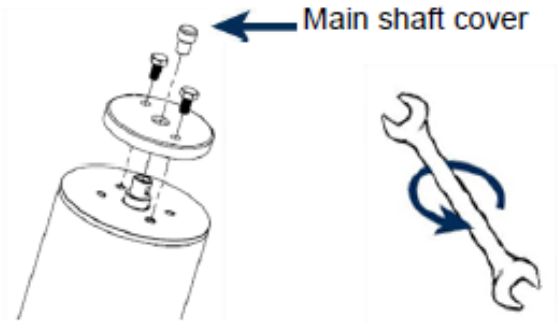

o-ring 2X60
x1


Magnet switch actuator rod PVE 3
x1


SWIVEL 90 DEG. ELBOW ADAPTER 8XR1/4 BSPT
x1


SWIVEL 45 DEG. ELBOW ADAPTER 8XG1/8 BSPP
x1

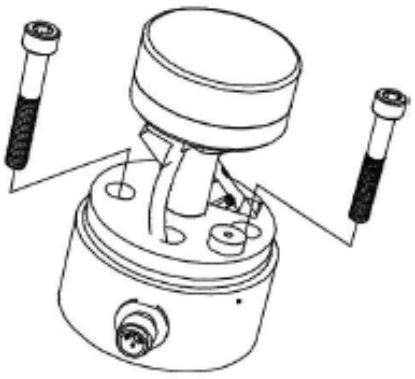
1. Unscrew main shaft cover manually and two M10 screws of the actuator's plastic cover with 17 mm wrench (control head side).
   Remove the plastic cover



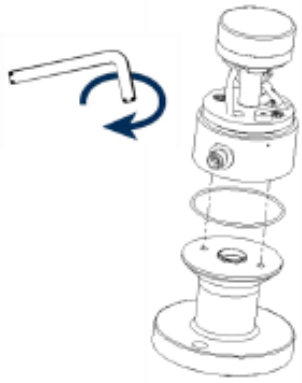
2. Insure that the plastic bushing step is forwarding the control head side.

3. Unscrew manually plastic cover of control head.

4. Insert M6 screws in control head holes.



5. Screw down the two M6 screws (with Hex key #5. Closure torque T=2.0[Nm] max.) through the adaptor, ensure O-ring 2x60 is in slot between control head and adaptor.



* To secure the screws use thread locker glue according to the application.

6. Screw down manually the magnet switch actuator rod to the actuator rod.

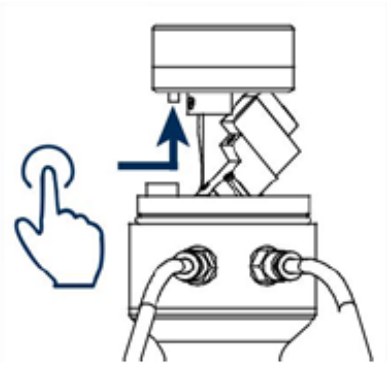
7. Connect control head adaptor to the actuator with two M10 screws.
Ensure O-ring 2.5x40 is in slot between adaptor and actuator.
See configurations on section #12.

8. Close the M10 screws with 17 mm Wrench Closure torque T=4.5[Nm].

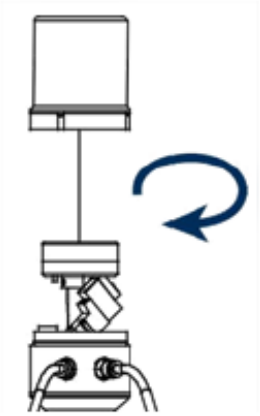
* To secure the screws use thread locker glue according to the application.

9. Connect air connections and electrical connection according to configuration on section #12.

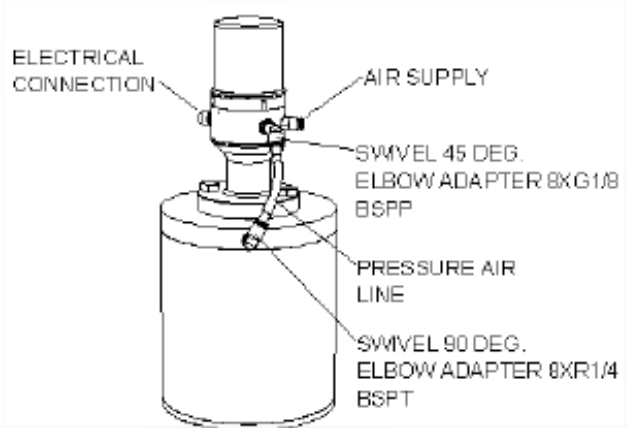
10. Press control head calibration button for 3 second, until the Control Head will start automatic calibration procedure.



11. Screw down manually the plastic cover of control head.

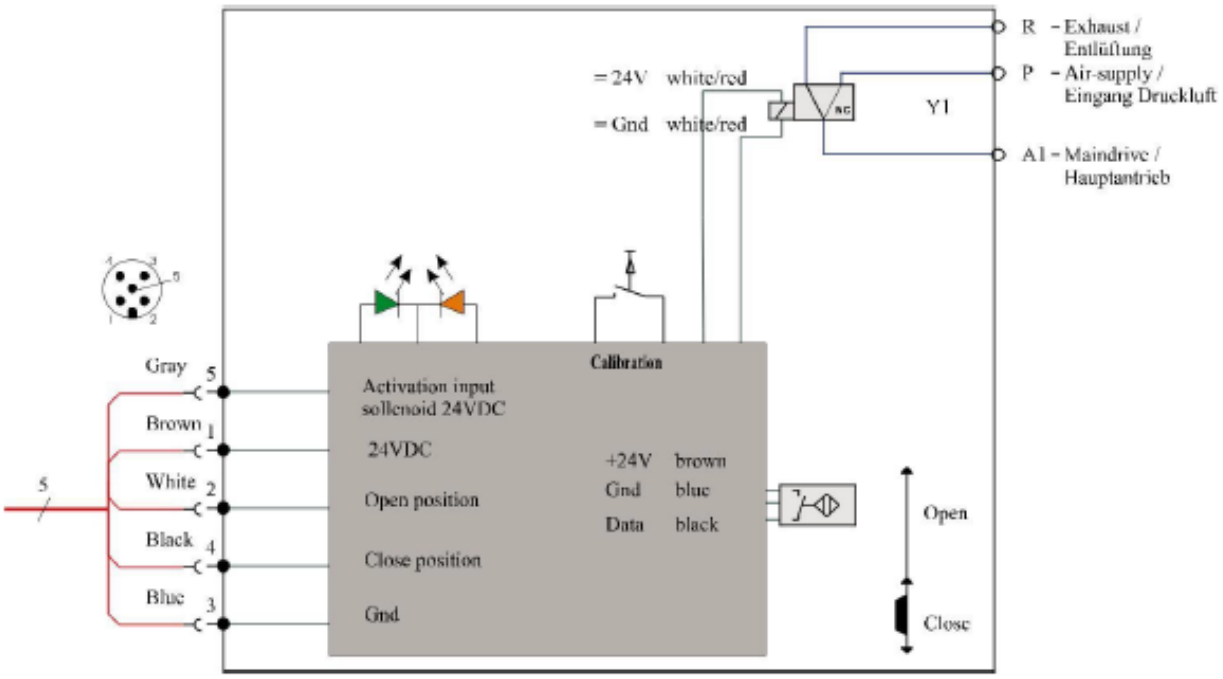


12. Connecting configuration

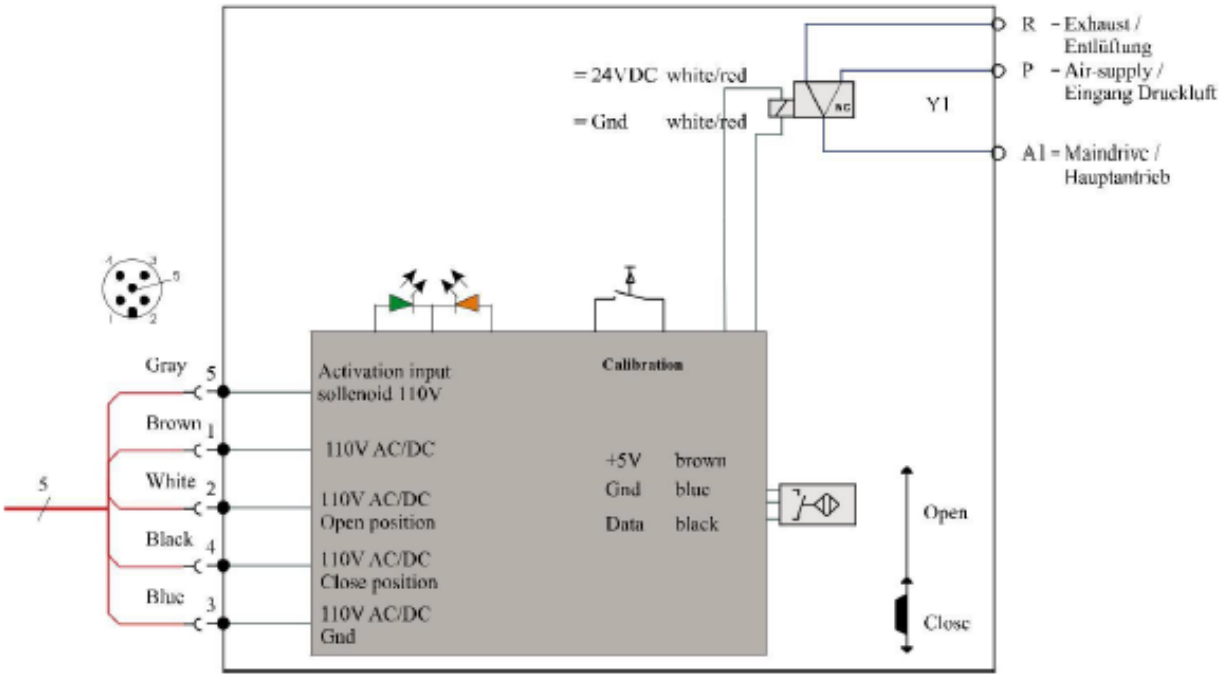


PVE Control head wire diagram

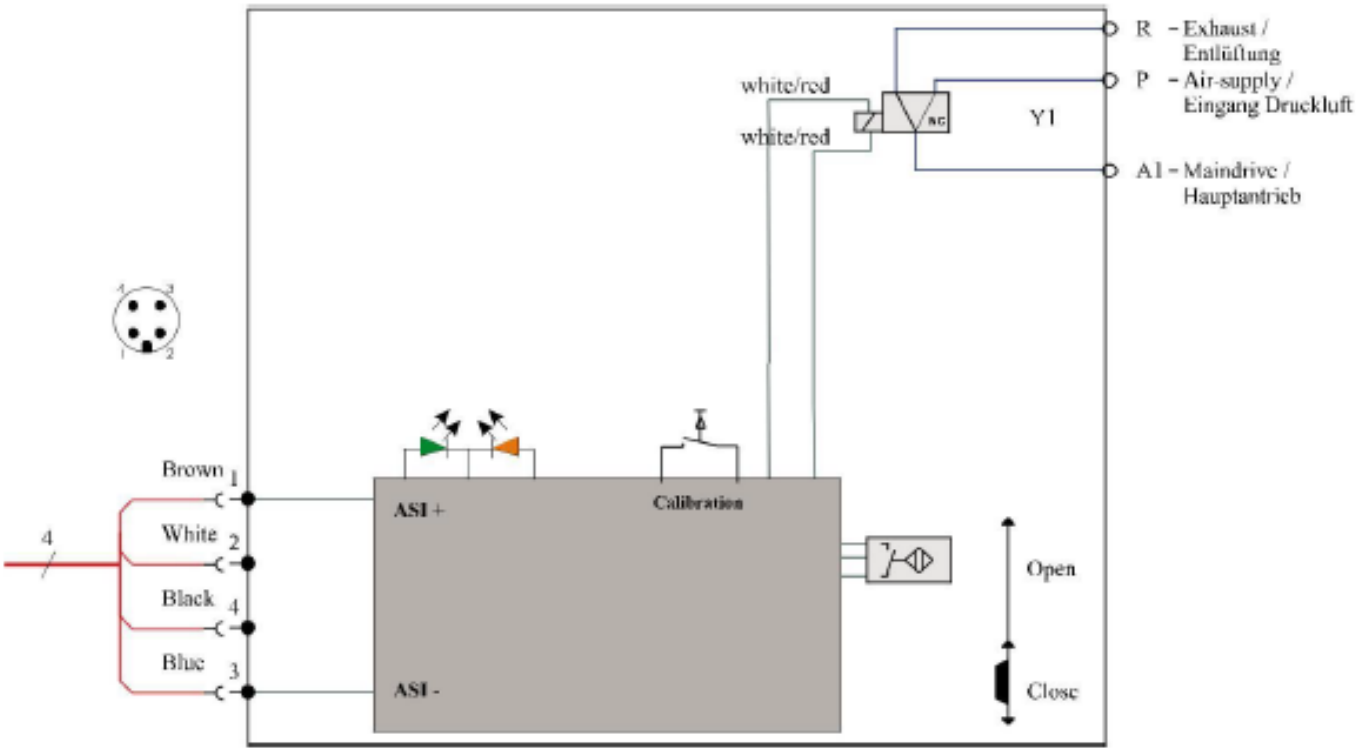
24V connection



110V connection



ASI connection



KIT FOR PVE 0
ITEM 618-00936

DESCRIPTION:
This item includes additional parts for the assembly of PVE 0 control head, relevant for the following configurations:

PVE 0 NC 24V	PVE 0 NO 24V
PVE 0 NC 110V	PVE 0 NO 110V
PVE 0 NC ASI	PVE 0 NO ASI

Parts List:

NO.	ITEM NO.	DESC.	IMAGE	QTY.	PVE 0 NC 24V,110V,ASI	PVE 0 NO 24V,110V,ASI
1	618-00950	O-RING 2x60		1	√	√
2	618-00934	MAGNET SWITCH ACTUATOR ROD FOR PVE 0		1	√	√
3	624-00445	SWIVEL 90 DEG ELBOW 6XG1/8 BSPP		1	√	√
4	624-00422	PRESSURE AIR LINE		1	L=113 mm	L=98 mm ** SEE NOTE
5	624-00446	SWIVEL 90 DEG. ELBOW ADAPTER 6XR1/8 BSPT		1	√	√

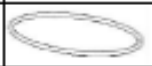
** NOTE: CUT TO LENGTH

KIT FOR PVE 1&2 / ITEM 618-00937

DESCRIPTION: This item includes additional parts for the assembly of PVE 1&2 control head, relevant for the following configurations:

PVE 1 NC 24V	PVE 1 NO 24V	PVE 2 NC 24V	PVE 2 NO 24V
PVE 1 NC 110V	PVE 1 NO 110V	PVE 2 NC 110V	PVE 2 NO 110V
PVE 1 NC ASI	PVE 1 NO ASI	PVE 2 NC ASI	PVE 2 NO ASI

Parts List:

NO.	ITEM NO.	DESC.	IMAGE	QTY.	PVE 1 NC 24V,110V, ASI	PVE 1 NO 24V,110V, ASI	PVE 2 NC 24V,110V, ASI	PVE 2 NO 24V,110V, ASI
1	618-00950	O-RING 2x60		1	√	√	√	√
2	618-00935	MAGNET SWITCH ACTUATOR ROD FOR PVE 1,2		1	√	√	√	√
3	624-00445	SWIVEL 90 DEG ELBOW 6XG1/8 BSPP		1	–	√	–	√
4	624-00422	PRESSURE AIR LINE		1	L=225 mm ** SEE NOTE	L=123 mm ** SEE NOTE	L=240 mm	L=123 mm ** SEE NOTE
5	624-00446	SWIVEL 90 DEG. ELBOW ADAPTER 6XR1/8 BSPT		1	√	√	√	√
6	628-00036	SCREW M8X12 MM DIN 933 HEX.A2		2	√	√	√	√
7	624-00444	SWIVEL 45 DEG. ELBOW ADAPTER 6XG1/8 BSPP		1	√	–	√	–
8	618-00948	ADAPTOR		1	√	√	√	√
9	618-00949	O-RING 2.5x40		1	√	√	√	√

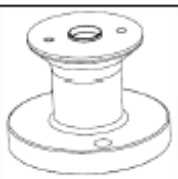
** NOTE: CUT TO LENGTH

KIT FOR PVE 3 / ITEM 618-00957

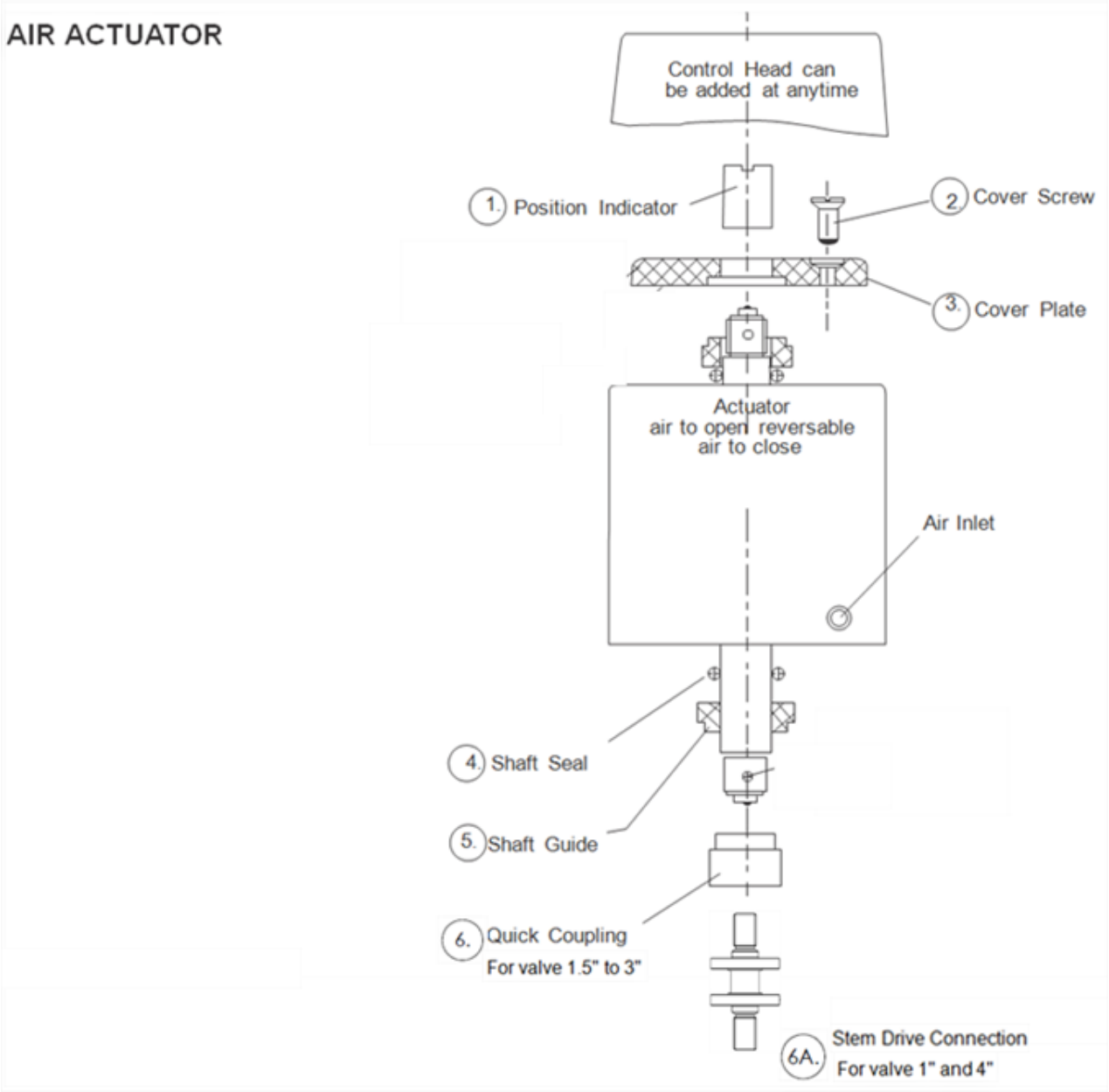
DESCRIPTION: This item includes additional parts for the assembly of PVE 3 control head, relevant for the following configurations:

PVE 3 NC 24V	PVE 3 NO 24V
PVE 3 NC 110V	PVE 3 NO 110V
PVE 3 NC ASI	PVE 3 NO ASI

Parts List:

NO.	ITEM NO.	DESC.	IMAGE	QTY.	PVE 3 NC 24V,110V, ASI	PVE 3 NO 24V,110V, ASI
1	618-00950	O-RING 2x60		1	√	√
2	618-00958	MAGNET SWITCH ACTUATOR ROD FOR PVE 3		1	√	√
3	624-00453	PRESSURE AIR LINE		1	L=280 mm	L=120mm ** SEE NOTE
4	624-00451	SWIVEL 90 DEG. ELBOW ADAPTER 8XR1/4 BSPT		1	√	√
5	624-00449	SWIVEL 45 DEG. ELBOW ADAPTER 8XG1/8 BSPP		1	√	√
6	618-00959	ADAPTOR		1	√	√
7	618-00949	O-RING 2.5x40		1	√	√

** NOTE: CUT TO LENGTH



PVE AIR ACTUATOR - REPLACEMENT PARTS

Item #	Part Number	Description
1.	PVEP-ACT-1	Position Indicator
2.	PVEP-ACT-2	Cover Screw (2 pcs. required)
3.	PVEP-ACT-3	Cover Plate
4.	PVEP-ACT-4	Shaft Seal
5.	PVEP-ACT-5	Shaft Guide
6.	PVEP-ACT-6	Quick Coupling
6A	PVEP-ACT-6A	Stem Drive Connection

Air Actuator:

- The pneumatic actuator is built as a sealed unit and therefore does not need regular servicing.
- Even though it is a sealed unit, allowances have been made for easy access to the shaft seals and the shaft guides.
- There is a shaft seal and a shaft guide on each side of the actuator.

Disassembly of the Shaft Seal and Shaft Guide:

- For PVE sizes 1" and 4" Unscrew the Stem Drive Connection, the cover plate and the position indicator.
- For PVE sizes 1.5" to 3" Unscrew the quick coupling the cover plate and the position indicator.
- Remove the seal and guide by introducing air into the system through the air inlet in a controlled manner i.e. by using an air pressure regulator. This action will increase the pressure and force out the seal and guide.

Re-Assembly of the Shaft Seals and Guide Seals:

- Grease the shaft seal with recommended grease : ANDEROL PQ AA -2 PLUS.
- Press the shaft seal into its position with the aid of the shaft guide.
- Tighten the seal and guide into their place with the aid of the valve yoke (on the one side) or the cover plate (on the other side). Check that the seals are in position before tightening.

Changing the Actuator Function:

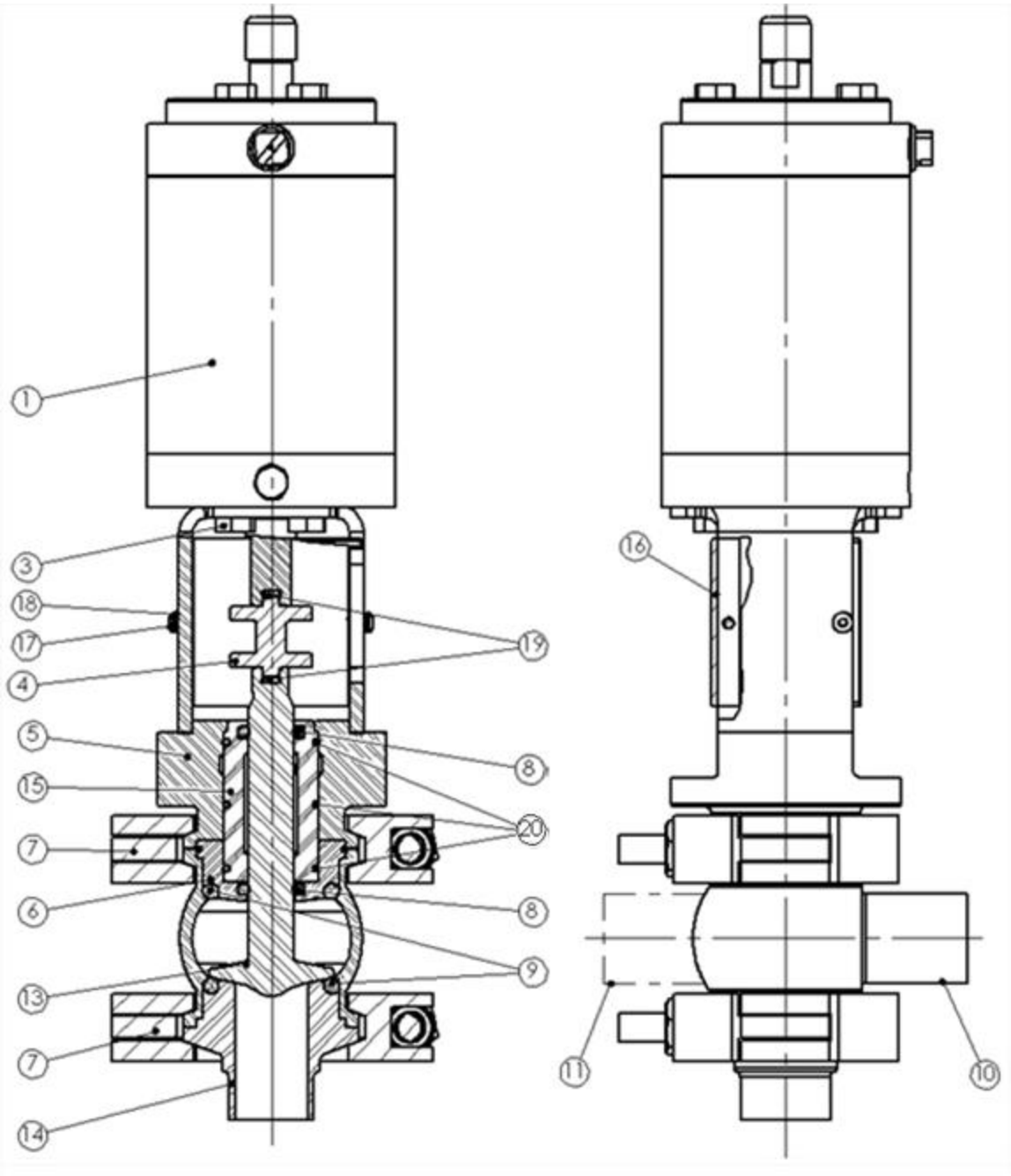
To achieve a change in the actuator function from ***air to close*** to ***air to open*** and vice versa:

- For PVE sizes 1" and 4" disassemble the actuator from the valve by unscrewing the Stem Drive Connection from the stem.
- For PVE sizes 1.5" to 3" disassemble the actuator from the valve by unscrewing the quick coupling from the stem.
- Unscrew the position indicator.
- Remove the actuator cover plate.
- Re-assemble the cover plate, the position indicator and the quick coupling or Stem Drive Connection on the opposite side of the actuator from which they were removed.
- **Note :** For PVE sizes 1.5" to 3" apply thread locker of medium bond strength (e.g. Loctite 243) to quick coupling thread before screwing on the quick coupling.
- **Note :** For PVE sizes 1 " and 4" apply recommended grease ANDEROL PQ AA -2 PLUS on the Stem Drive Connection threads.
- **Note** :During each assembly and re-assembly it is necessary to apply recommended greases to all the seals. .
- **Note :** During each assembly apply recommended grease ANDEROL PQ AA -2 PLUS on all clamp threads.

PVE SHUT OFF VALVE

EGPVE-7-NC(NO)-SIZE

SIZE 1.0"



TYPE OF PART NUMBER FOR THE COMPLETE VALVE	
EPVEP = Bevel	EPVEI = E-line
EGPVE = Clamp	EPVE = Weld

SHUT OFF VALVE

REPLACEMENT PARTS FOR PVE SIZE 1.0"

Item #	Part Number	Description
1.	PVEP-1-NC-(NO)-1.0	Pneumatic Actuator, NO/NC
3.	PVEP-3-1.0	Fastening Bolt,Bonnet to Actuator
4.	PVEP-4-1.0	Stem Drive Position Trigger
5.	PVEP-5-1.0	Bonnet & Yoke
6.	PVEP-6-1.0	Upper ring seal
7.	13MHHM-H 1.5"	Heavy Duty Clamp With Hex.Nut
8.	PVEP-8-1.0 (S)(V)	Stem seal . EPDM, Silicone, or Viton® (2 required for Shut-off and for Divert)
9.	PVEP-9-1.0 (S)(V)	Seat seal . EPDM, Silicone, or Viton® EPDM is Standard. For Viton® add V and Silicone add S to the end of the part number. (2 required for Shut-off / 4 required for Divert)
*10.	PVEP-7-10C-1.0	Tee Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
*11.	PVEP-9-11C-1.0	Cross Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
13.	PVEP-7-13-1.0	Shut-off Valve Stem
*14.	PVEP-14C-1.0	Lower outlet (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
15.	PVEP-8A-1.0	Stem Guide
16.	PVEP-5A-1.0	Bonnet Safety cover
17.	PVEP-5C-1.0	Bonnet safety cover screw
18.	PVEP-5B-1.0	Bonnet safety cover washer
19.	PVEP-4A-1.0	Stem Drive O-ring
20.	PVEP-8B-1.0	Guide seal

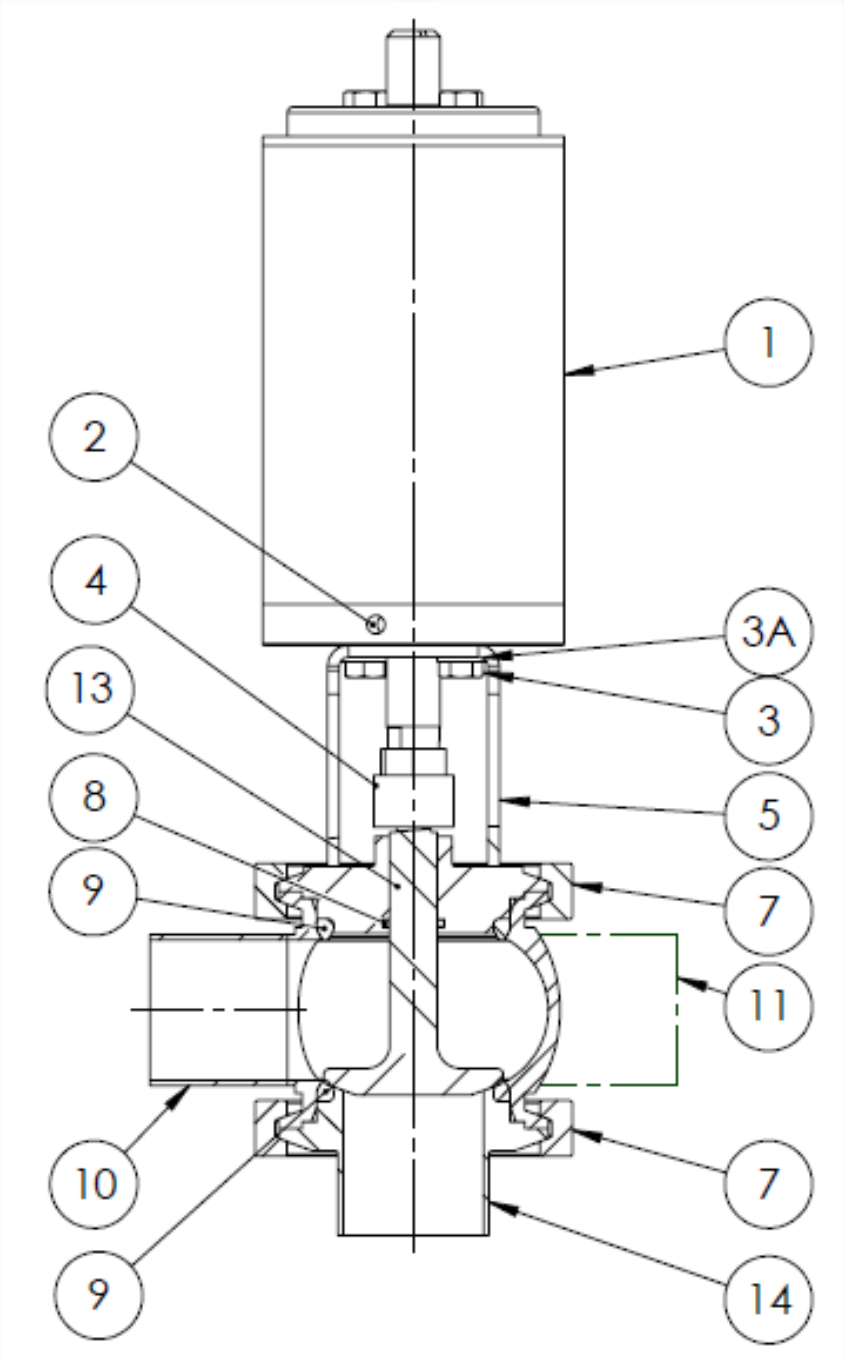
***TYPE OF CONNECTIONS: C = Clamp W = Butt-Weld B = Bevel Seat Thread E = E-Line Female**

Viton® is registered by DuPont Dow Elastomers

PVE SHUT OFF VALVE

EGPVE-7-NC(NO)-SIZE

For PVE sizes 1.5" to 3"



TYPE OF PART NUMBER FOR THE COMPLETE VALVE	
EPVEP = Bevel	EPVEI = E-line
EGPVE = Clamp	EPVE = Weld

SHUT OFF VALVE

REPLACEMENT PARTS For PVE sizes 1.5" to 3"

Item #	Part Number	Description
1.	PVEP-1-NC-(NO)-1.5 & 2.0	Actuator is reversible for normally open or normally closed
	PVEP-1-NC-(NO)-2.5 & 3.0	Actuator is reversible for normally open or normally closed
2.	PVEP-2-ALL	Air Inlet
3.	PVEP-3-ALL	Fastening Bolt 2 required for 1 1/2″ & 2″ Valves
		4 Fastening bolts required for 2 1/2″ & 3″ Valves
3A.	PVEP-3A-ALL	Washer for fastening bolt
4.	PVEP-4-ALL	Quick Disconnect Coupling
5.	PVEP-5-1.5	Bonnet & Yoke for 1 1/2″
	PVEP-5-2.0	Bonnet & Yoke for 2″
	PVEP-5-2.5	Bonnet & Yoke for 2 1/2″
	PVEP-5-3.0	Bonnet & Yoke for 3″
7.	13MHHS Clamp-3" 3pc	Heavy Duty Clamp 3″ 3 Piece clamp (For 1 1/2″ & 2″ Valves)
	13MHHS Clamp-4" 3pc	Heavy Duty Clamp 4″ 3 Piece clamp (For 2 1/2″ & 3″ Valves)
8.	PVEP-8-1.5-2.0 (S)(V)	EPDM, Silicone, or Viton® Stem O-Ring (For 1 1/2″ & 2″ Valves)
	PVEP-8-2.5-3.0 (S)(V)	EPDM, Silicone, or Viton® Stem O-Ring (For 2 1/2″ & 3″ Valves)
9.	PVEP-9-1.5 (S)(V)	EPDM, Silicone, or Viton® Seat Seal for 1 1/2″
	PVEP-9-2.0 (S)(V)	EPDM Silicone, or Viton® Seat Seal for 2″
	PVEP-9-2.5 (S)(V)	EPDM, Silicone, or Viton® Seat Seal for 2 1/2″
	PVEP-9-3.0 (S)(V)	EPDM, Silicone, or Viton® Seat Seal for 3″
		EPDM is Standard. For Viton® add V and Silicone add S to the end of the part number. (2 required for Shut-off / 4 required for Divert)
*10.	PVEP-7-10C-1.5	Tee Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-7-10C-2.0	Tee Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-7-10C-2.5	Tee Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-7-10C-3.0	Tee Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
*11.	PVEP-9-11C-1.5	Cross Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-9-11C-2.0	Cross Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-9-11C-2.5	Cross Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-9-11C-3.0	Cross Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
12.	PVEP-12-1.5	Seal Base Adapter 1 1/2″ (For Divert Valve Only)
	PVEP-12-2.0	Seal Base Adapter 2″ (For Divert Valve Only)
	PVEP-12-2.5	Seal Base Adapter 2 1/2″ (For Divert Valve Only)
	PVEP-12-3.0	Seal Base Adapter 3″ (For Divert Valve Only)
13.	PVEP-7-13-1.5	Stem for 1 1/2″ Shut off
	PVEP-7-13-2.0	Stem for 2″ Shut off
	PVEP-7-13-2.5	Stem for 2 1/2″ Shut off
	PVEP-7-13-3.0	Stem for 3″ Shut off
	PVEP-77-13-1.5	Stem for 1 1/2″ Divert Valve
	PVEP-77-13-2.0	Stem for 2″ Divert Valve
	PVEP-77-13-2.5	Stem for 2 1/2″ Divert Valve
	PVEP-77-13-3.0	Stem for 3″ Divert Valve
*14.	PVEP-14C-1.5	Lower Connection (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-14C-2.0	Lower Connection (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-14C-2.5	Lower Connection (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-14C-3.0	Lower Connection (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)

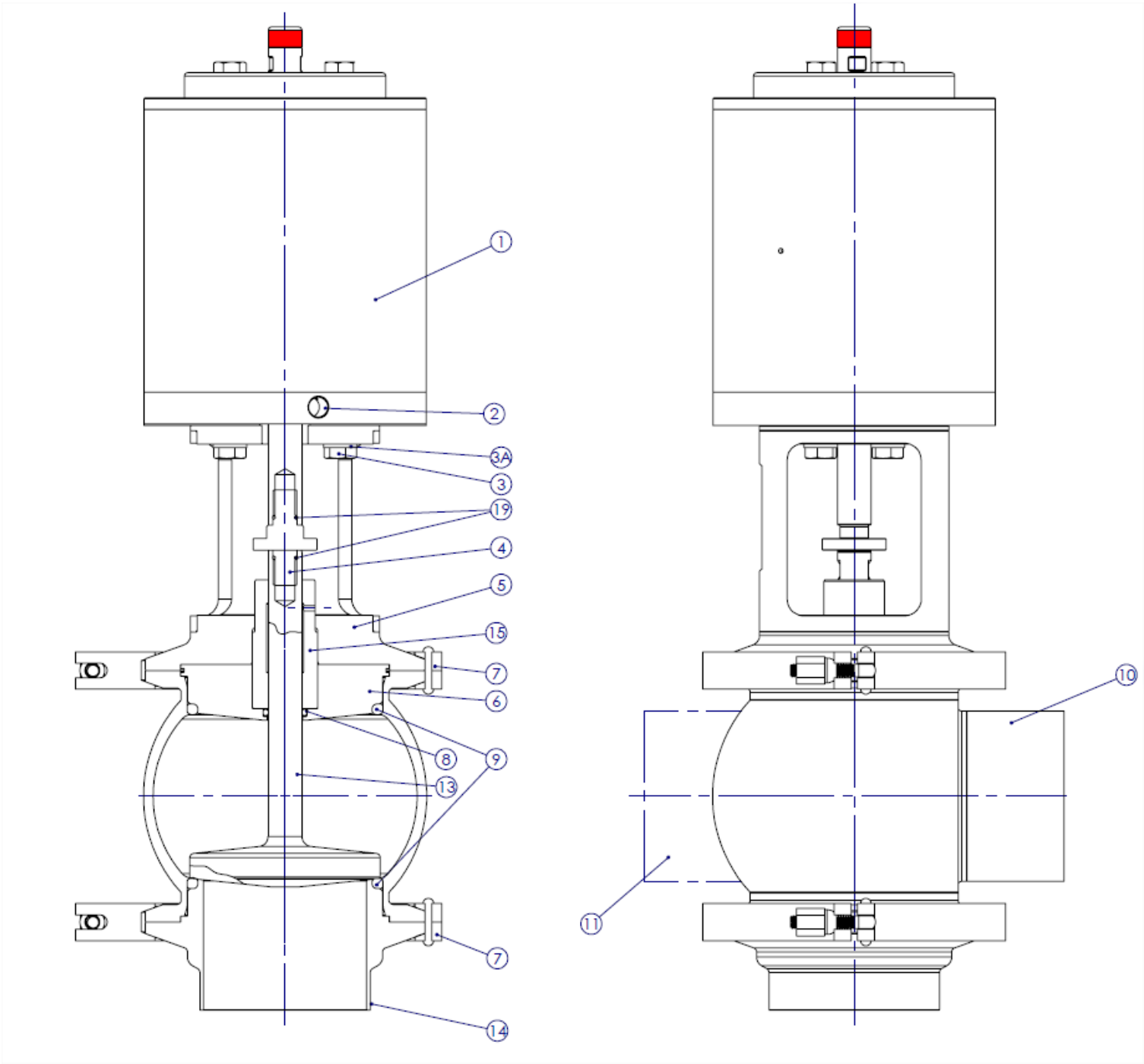
***TYPE OF CONNECTIONS: C = Clamp W = Butt-Weld B = Bevel Seat Thread E = E-Line Female**

Viton® is registered by DuPont Dow Elastomers

PVE SHUT OFF VALVE

EGPVE-7-NC(NO)-SIZE

For PVE size 4.0"



TYPE OF PART NUMBER FOR THE COMPLETE VALVE	
EPVEP = Bevel	EPVEI = E-line
EGPVE = Clamp	EPVE = Weld

SHUT OFF VALVE

REPLACEMENT PARTS FOR PVE SIZE 4.0"

Item #	Part Number	Description
1.	PVEP-1-NC-(NO)-4.0	Pneumatic Actuator, NO/NC
3.	PVEP-3-4.0	Fastening Bolt,Bonnet to Actuator
3A.	PVEP-3A-4.0	Spring Washer for fastening bolt
4.	PVEP-4-4.0	Stem Drive Connection
5.	PVEP-5-4.0	Bonnet & Yoke for 4"
6.	PVEP-6-4.0	Upper ring seal
7.	13MHHMD Clamp 6"	Heavy Duty Clamp 6" With Nut
8.	PVEP-8-4.0 (S)(V)	Stem seal .EPDM, Silicone, or Viton® Stem O-Ring For 4˝ (2 required for Shut-off and for Divert)
9.	PVEP-9-4.0 (S)(V)	Seat seal .EPDM, Silicone, or Viton® Seat Seal for 4 ˝ EPDM is Standard. For Viton® add V and Silicone add S to the end of the part number. (2 required for Shut-off / 4 required for Divert)
*10.	PVEP-7-10C-4.0	Tee Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
*11.	PVEP-9-11C-4.0	Cross Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
13.	PVEP-7-13-4.0	Stem for 4" Shut off
*14.	PVEP-14C-4.0	Lower Connection (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
15.	PVEP-8A-4.0	Stem Guide
19.	PVEP-4A-4.0	Stem Drive O-ring

***TYPE OF CONNECTIONS: C = Clamp W = Butt-Weld B = Bevel Seat Thread E = E-Line Female**

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Shut Off Valve Assembly:

- **Note :** Only grease which complies with FDA 21 CFR 178.3570 may be used .

- For EPDM or Viton seat seals, Grease the seat seals with recommended grease : Kluber PARALIQ® GTE 703.
  For Silicon seat seals, Please contact Egmo for greasing instructions.
- For EPDM or Viton stem seal, Grease the stem seal and groove with recommended grease : Kluber PARALIQ® GTE 703.
  For Silicon stem seal, Please contact Egmo for greasing instructions.
- Insert the stem seal into its position in the bonnet (use your fingers and **not** a sharp object to avoid damage to the seal).
- Place the seat seals onto the bonnet and onto the lower connection.
- Press the bonnet onto the main valve body, check the seal position, and tighten with the clamp.
- Insert the valve stem from the bottom into the main valve body and continue until it extends through the bonnet.
- Air Actuator must be open before lower body can be clamped.
- Put the lower connection onto the valve body, and when in position, tighten with the clamp.

  ***Note** before tightening the clamps make sure that the seals are properly mounted.

Actuator To Valve Assembly:

- For PVE sizes 1" and 4" insert the actuator shaft through the yoke and screw the Stem Drive Connection to the valve stem.
- For PVE sizes 1.5″ to 3" insert the actuator shaft through the yoke until the quick coupling connects to the valve stem.
- Line up the actuator body holes with the fastening bolt holes in the yoke.
- Insert the actuator fastening bolts and tightening gradually by hand.
- With a wrench tighten each bolt partially in a clockwise direction, alternating the bolts to maintain an even pressure. Repeat until each bolt is fully tightened.

Shut Off Valve Disassembly:

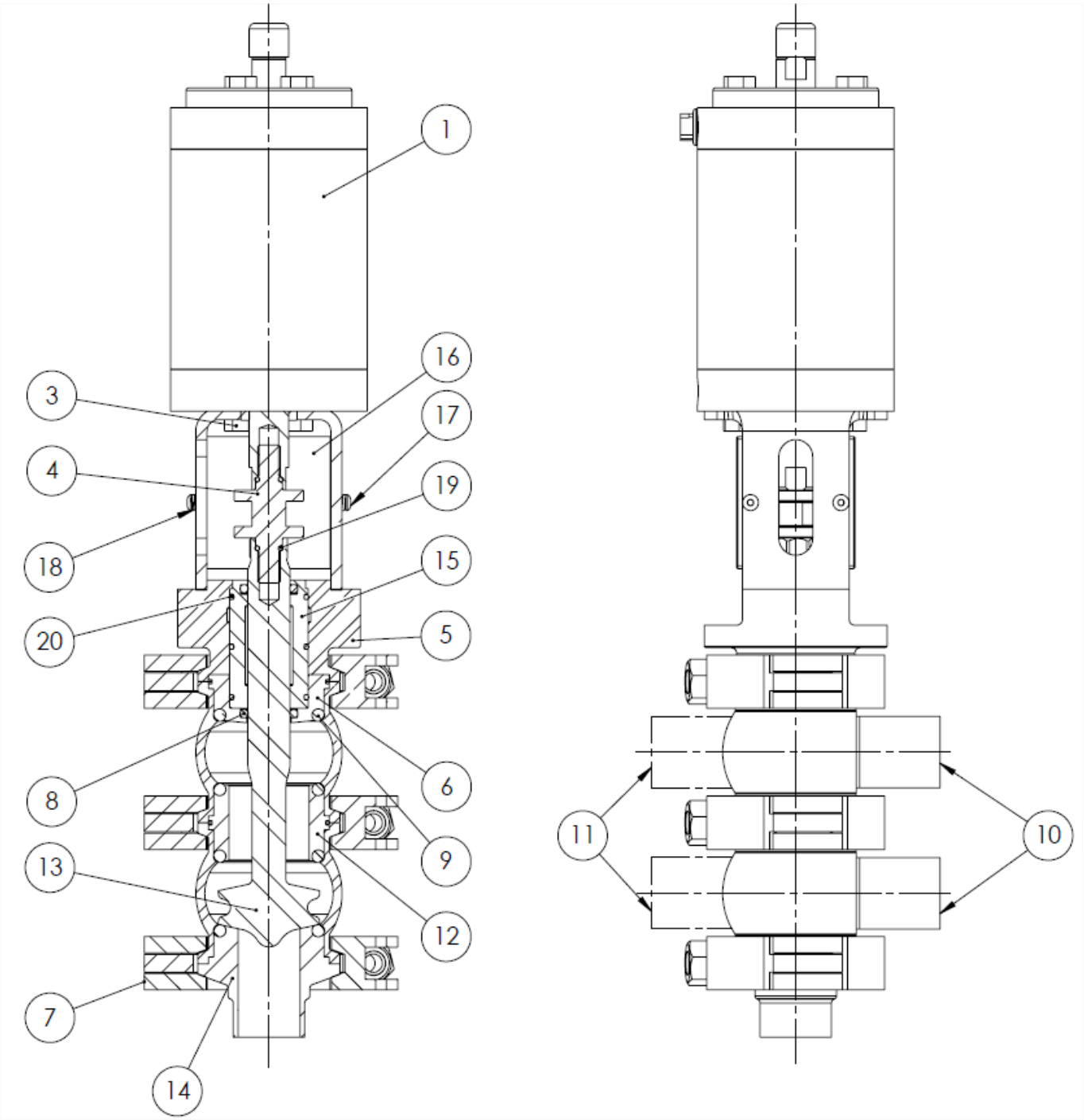
- Pressure is released when disassembling the actuator from the valve. Adhere to all necessary safety precautions when proceeding with disassembly.
- Remove the actuator fastening bolts.
- Reverse the assembly sequence to disassemble the shut off valve.

  ***Note** always re-grease the valve seals before re-installation to avoid damage to the seals.

PVE DIVERT VALVE

EGPVE-77-NC(NO)-SIZE

For PVE size 1.0"



PVE DIVERT VALVE

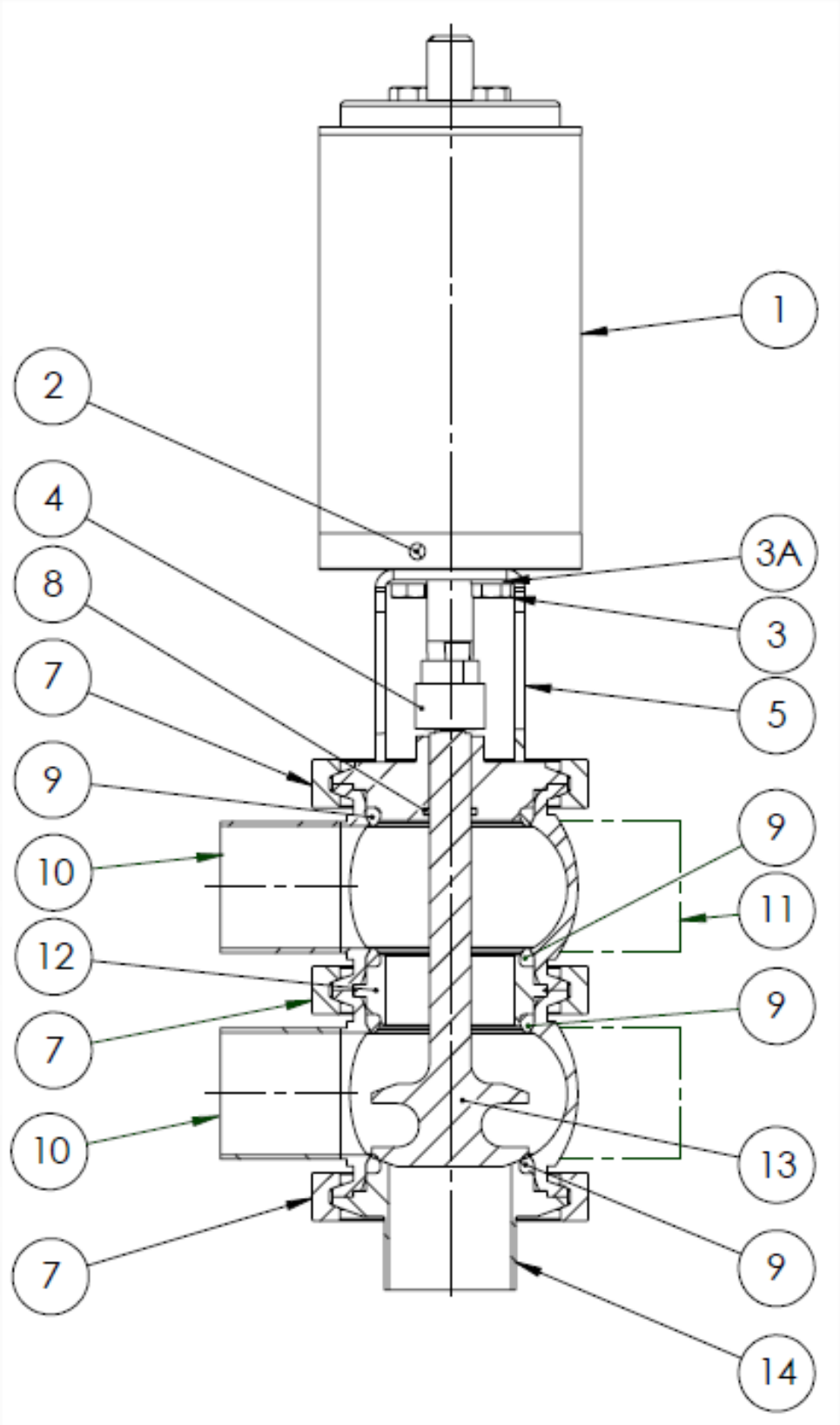
REPLACEMENT PARTS FOR PVE SIZE 1.0"

Item #	Part Number	Description
1.	PVEP-1-NC-(NO)-1.0	Pneumatic Actuator, NO/NC
3.	PVEP-3-1.0	Fastening Bolt,Bonnet to Actuator
4.	PVEP-4-1.0	Stem Drive Position Trigger
5.	PVEP-5-1.0	Bonnet & Yoke
6.	PVEP-6-1.0	Upper ring seal
7.	13MHHM-H 1.5"	Heavy Duty Clamp With Hex.Nut
8.	PVEP-8-1.0 (S)(V)	Stem seal . EPDM, Silicone, or Viton® (2 required for Shut-off and for Divert)
9.	PVEP-9-1.0 (S)(V)	Seat seal . EPDM, Silicone, or Viton® EPDM is Standard. For Viton® add V and Silicone add S to the end of the part number. (2 required for Shut-off / 4 required for Divert)
*10.	PVEP-7-10C-1.0	Tee Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
*11.	PVEP-9-11C-1.0	Cross Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
12.	PVEP-12-1.0	Seal Base Adapter
13.	PVEP-77-13-1.0	Divert Valve Stem
*14.	PVEP-14C-1.0	Lower outlet (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
15.	PVEP-8A-1.0	Stem Guide
16.	PVEP-5A-1.0	Bonnet Safety cover
17.	PVEP-5C-1.0	Bonnet safety cover screw
18.	PVEP-5B-1.0	Bonnet safety cover washer
19.	PVEP-4A-1.0	Stem Drive O-ring
20.	PVEP-8B-1.0	Guide seal

***TYPE OF CONNECTIONS: C = Clamp W = Butt-Weld B = Bevel Seat Thread E = E-Line Female**

Viton® is registered by DuPont Dow Elastomers

PVE DIVERT VALVE (Sizes 1.5" to 3") EGPVE-77-NC(NO)SIZE



PVE DIVERT VALVE

REPLACEMENT PARTS For PVE sizes 1.5" to 3"

Item #	Part Number	Description
1.	PVEP-1-NC-(NO)-1.5 & 2.0	Actuator is reversible for normally open or normally closed
	PVEP-1-NC-(NO)-2.5 & 3.0	Actuator is reversible for normally open or normally closed
2.	PVEP-2-ALL	Air Inlet
3.	PVEP-3-ALL	Fastening Bolt 2 required for 1 1/2″ & 2″ Valves 4 Fastening bolts required for 2 1/2″ & 3″ Valves
3A.	PVEP-3A-ALL	Washer for fastening bolt
4.	PVEP-4-ALL	Quick Disconnect Coupling
5.	PVEP-5-1.5	Bonnet & Yoke for 1 1/2″
	PVEP-5-2.0	Bonnet & Yoke for 2″
	PVEP-5-2.5	Bonnet & Yoke for 2 1/2″
	PVEP-5-3.0	Bonnet & Yoke for 3″
7.	13MHHS Clamp-3" 3pc	Heavy Duty Clamp 3″ 3 Piece clamp (For 1 1/2″ & 2″ Valves)
	13MHHS Clamp-4" 3pc	Heavy Duty Clamp 4″ 3 Piece clamp (For 2 1/2″ & 3″ Valves)
8.	PVEP-8-1.5-2.0 (S)(V)	EPDM, Silicone, or Viton® Stem O-Ring (For 1 1/2″ & 2″ Valves)
	PVEP-8-2.5-3.0 (S)(V)	EPDM, Silicone, or Viton® Stem O-Ring (For 2 1/2″ & 3″ Valves)
9.	PVEP-9-1.5 (S)(V)	EPDM, Silicone, or Viton® Seat Seal for 1 1/2″
	PVEP-9-2.0 (S)(V)	EPDM, Silicone, or Viton® Seat Seal for 2″
	PVEP-9-2.5 (S)(V)	EPDM, Silicone, or Viton® Seat Seal for 2 1/2″
	PVEP-9-3.0 (S)(V)	EPDM, Silicone, or Viton® Seat Seal for 3″ EPDM is Standard. For Viton® add V and Silicone add S to the end of the part number. (2 required for Shut-off / 4 required for Divert)
*10.	PVEP-7-10C-1.5	Tee Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-7-10C-2.0	Tee Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-7-10C-2.5	Tee Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-7-10C-3.0	Tee Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
*11.	PVEP-9-11C-1.5	Cross Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-9-11C-2.0	Cross Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-9-11C-2.5	Cross Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-9-11C-3.0	Cross Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
12.	PVEP-12-1.5	Seal Base Adapter 1 1/2″ (For Divert Valve Only)
	PVEP-12-2.0	Seal Base Adapter 2″ (For Divert Valve Only)
	PVEP-12-2.5	Seal Base Adapter 2 1/2″ (For Divert Valve Only)
	PVEP-12-3.0	Seal Base Adapter 3″ (For Divert Valve Only)
13.	PVEP-7-13-1.5	Stem for 1 1/2″ Shut off
	PVEP-7-13-2.0	Stem for 2″ Shut off
	PVEP-7-13-2.5	Stem for 2 1/2″ Shut off
	PVEP-7-13-3.0	Stem for 3″ Shut off
	PVEP-77-13-1.5	Stem for 1 1/2″ Divert Valve
	PVEP-77-13-2.0	Stem for 2″ Divert Valve
	PVEP-77-13-2.5	Stem for 2 1/2″ Divert Valve
	PVEP-77-13-3.0	Stem for 3″ Divert Valve
*14.	PVEP-14C-1.5	Lower Connection (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-14C-2.0	Lower Connection (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-14C-2.5	Lower Connection (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
	PVEP-14C-3.0	Lower Connection (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)

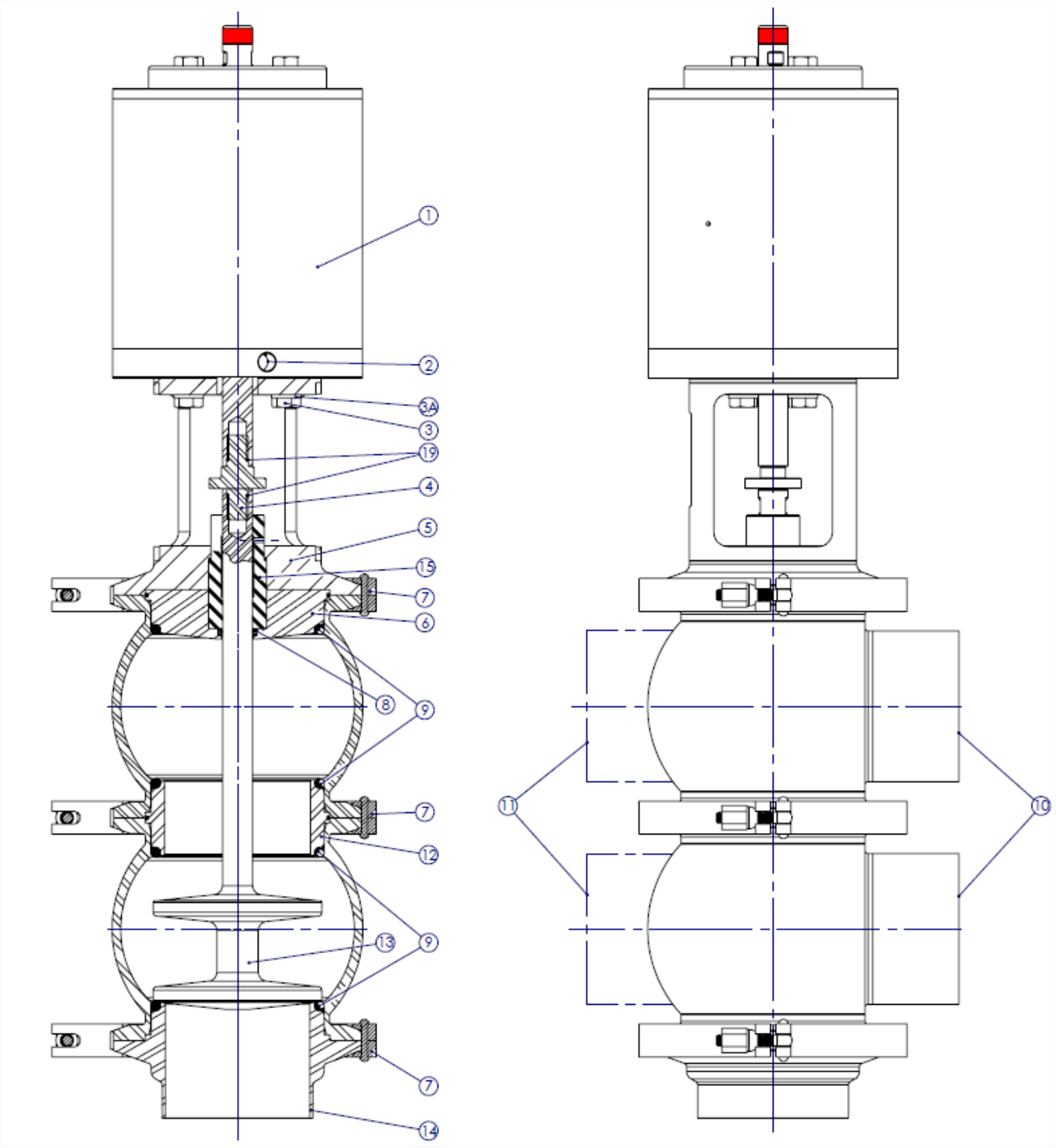
***TYPE OF CONNECTIONS: C = Clamp W = Butt-Weld B = Bevel Seat Thread E = E-Line Female**

Viton® is registered by DuPont Dow Elastomers

PVE DIVERT VALVE

EGPVE-77-NC(NO)-SIZE

For PVE size 4.0"



PVE DIVERT VALVE

REPLACEMENT PARTS FOR PVE SIZE 4.0"

Item #	Part Number	Description
1.	PVEP-1-NC-(NO)-4.0	Pneumatic Actuator, NO/NC
3.	PVEP-3-4.0	Fastening Bolt,Bonnet to Actuator
3A.	PVEP-3A-4.0	Spring Washer for fastening bolt
4.	PVEP-4-4.0	Stem Drive Connection
5.	PVEP-5-4.0	Bonnet & Yoke for 4"
6.	PVEP-6-4.0	Upper ring seal
7.	13MHHMD Clamp 6"	Heavy Duty Clamp 6" With Nut
8.	PVEP-8-4.0 (S)(V)	Stem seal .EPDM, Silicone, or Viton® Stem O-Ring For 4″ (2 required for Shut-off and for Divert)
9.	PVEP-9-4.0 (S)(V)	Seat seal .EPDM, Silicone, or Viton® Seat Seal for 4 ″ EPDM is Standard. For Viton® add V and Silicone add S to the end of the part number. (2 required for Shut-off / 4 required for Divert)
*10.	PVEP-7-10C-4.0	Tee Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
*11.	PVEP-9-11C-4.0	Cross Body (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
12.	PVEP-12-4.0	Seal Base Adapter 4″
13.	PVEP-77-13-4.0	Stem for 4″ Divert Valve
*14.	PVEP-14C-4.0	Lower Connection (C=Clamp, W=Butt-Weld, B=Bevel Seat,E=E-Line)
15.	PVEP-8A-4.0	Stem Guide
19.	PVEP-4A-4.0	Stem Drive O-ring

***TYPE OF CONNECTIONS: C = Clamp W = Butt-Weld B = Bevel Seat Thread E = E-Line Female**

Viton® is registered by DuPont Dow Elastomers

Divert Valve Assembly:

- **Note :** Only grease which complies with FDA 21 CFR 178.3570 may be used .

- For EPDM or Viton seat seals, Grease the seat seals with recommended grease :
  Kluber PARALIQ® GTE 703.
  For Silicon seat seals, Please contact Egmo for greasing instructions.
- For EPDM or Viton stem seal, Grease the stem seal and groove with recommended grease :
  Kluber PARALIQ® GTE 703.
  For Silicon stem seal, Please contact Egmo for greasing instructions.
- Insert the stem seal into its position in the bonnet (use your fingers and not a sharp object to avoid damage to the seal).
- Place the seat seal onto the bonnet.
- Place the seat seal onto the lower connection.
- Place the seat seal onto the seal base (from both sides).
- Insert the seal base between the two valve bodies, check the seal positions, and tighten with the clamp.
- Press the bonnet onto the upper valve body, check the seal positions, and tighten with the clamp.
- Insert the valve stem from the bottom into the lower valve body, and continue through the seal vase and upper body, until it extends through the bonnet.
- Put the lower connection onto the lower valve body, check the seal position, and tighten with the clamp.

***Note** before tightening the clamps make sure that the seals are properly mounted.

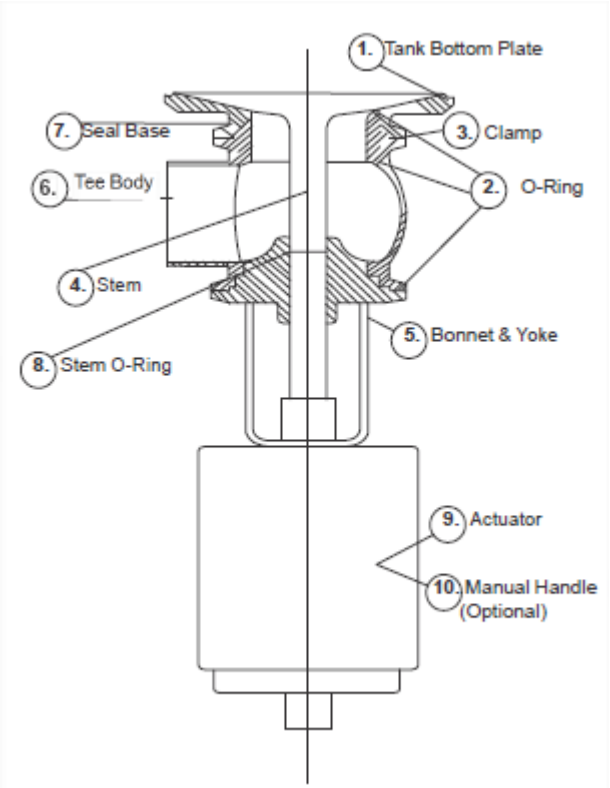
Actuator To Valve Assembly:

- For PVE sizes 1" and 4" insert the actuator shaft through the yoke and screw the Stem Drive Connection to the valve stem.
- For PVE sizes 1.5˝ to 3" insert the actuator shaft through the yoke until the quick coupling connects to the valve stem.
- Line up to actuator body holes with fastening bolt holes in the yoke.
- Insert the actuator fastening bolts and tighten gradually by hand.
- With a wrench tighten each bolt partially in a clockwise direction, alternating the bolts to maintain an even pressure. Repeat until each bolt is fully tightened.

Divert Valve Disassembly:

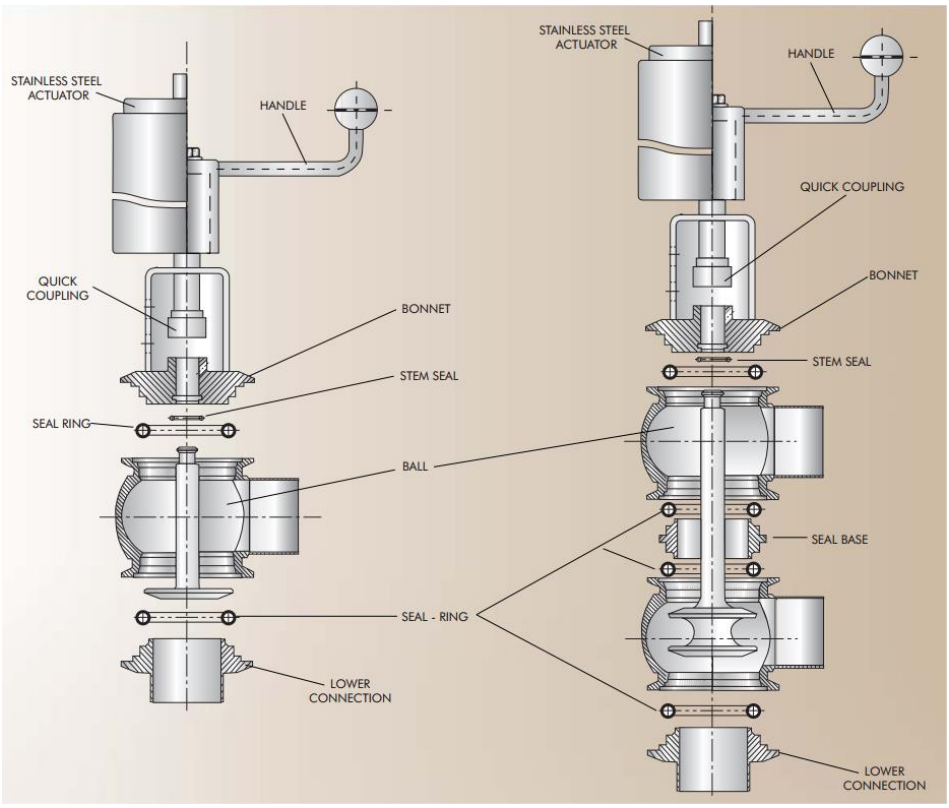
- Pressure is released when disassembling the actuator from the valve. Adhere to all necessary safety precautions when proceeding with the disassembly.
- Remove the actuator fastening bolts.
- Reverse the assembly sequence to disassemble the divert valve.
- ***Note** always re-grease the valve seals before re-installation to avoid damage to the seals.

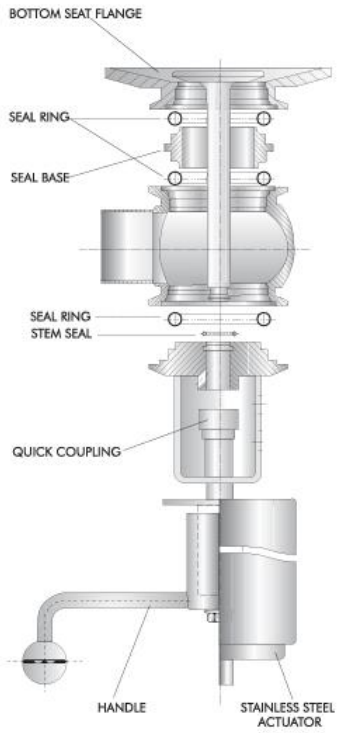
TANK-BOTTOM VALVE
EGPVE-TANK-SIZE

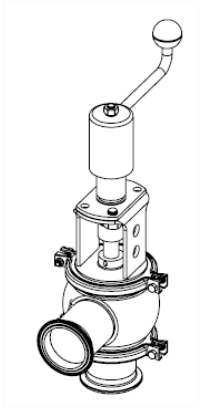


Item #	Part Number	Description
1	PVEP-TANK-1.5	Tank Bottom Plate for 1 1/2″
	PVEP-TANK-2.0	Tank Bottom Plate for 2″
	PVEP-TANK-2.5	Tank Bottom Plate for 2 1/2″
	PVEP-TANK-3.0	Tank Bottom Plate for 3″
2	PVEP-9-1.5 (S)(V)	Seat Seal, **EPDM** Standard, **Silicone**, and **Viton®** option (3 seals required)
	PVEP-9-2.0 (S)(V)	Seat Seal, **EPDM** Standard, **Silicone**, and **Viton®** option (3 seals required)
	PVEP-9-2.5 (S)(V)	Seat Seal, **EPDM** Standard, **Silicone**, and **Viton®** option (3 seals required)
	PVEP-9-3.0 (S)(V)	Seat Seal, **EPDM** Standard, **Silicone**, and **Viton®** option (3 seals required)
3	13MHHMD-3.0	Clamp for 1 1/2″ & 2″
	13MHHMD-4.0	Clamp for 2 1/2″ & 3″
4	PVEP-TANK-4-1.5	Stem
	PVEP-TANK-4-2.0	Stem
	PVEP-TANK-4-2.5	Stem
	PVEP-TANK-4-3.0	Stem
5	PVEP-TANK-5-1.5	Bonnet & Yoke
	PVEP-TANK-5-2.0	Bonnet & Yoke
	PVEP-TANK-5-2.5	Bonnet & Yoke
	PVEP-TANK-5-3.0	Bonnet & Yoke
6	PVEP-7-10C-1.5	Tee Body (C = Clamp, W = Weld, B = Bevel Seat, E = E-Line)
	PVEP-7-10C-2.0	Tee Body (C = Clamp, W = Weld, B = Bevel Seat, E = E-Line)
	PVEP-7-10C-2.5	Tee Body (C = Clamp, W = Weld, B = Bevel Seat, E = E-Line)
	PVEP-7-10C-3.0	Tee Body (C = Clamp, W = Weld, B = Bevel Seat, E = E-Line)
7	PVEP-12-1.5	Seal Base Adapter
	PVEP-12-2.0	Seal Base Adapter
	PVEP-12-2.5	Seal Base Adapter
	PVEP-12-3.0	Seal Base Adapter
8	PVEP-8-1.5-2.0 (V)	Stem O-Ring **EPDM** Standard, **Viton®** option
	PVEP-8-2.5-3.0 (V)	Stem O-Ring **EPDM** Standard, **Viton®** option
9	PVEP-1-NC(NO)-1.5 & 2.0	4″ Actuator Regulates 1 1/2″ - 3″ Valves
10	PVEP-MANUAL-ALL	Manual Handle is Optional (Fits All Sizes)

PVE Manual operation



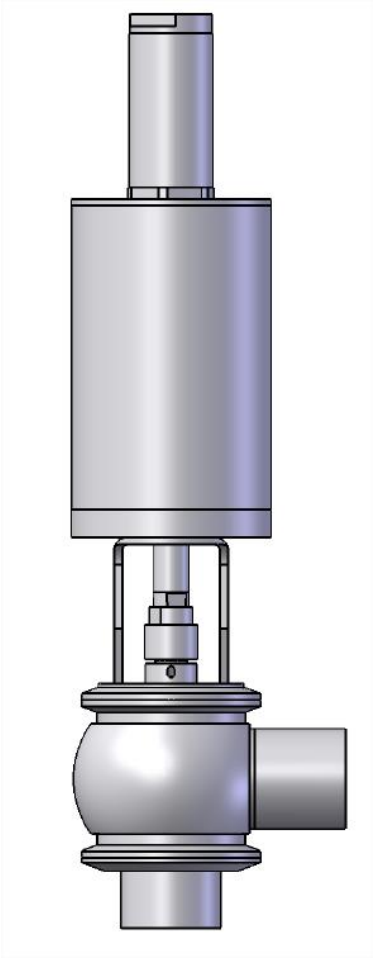


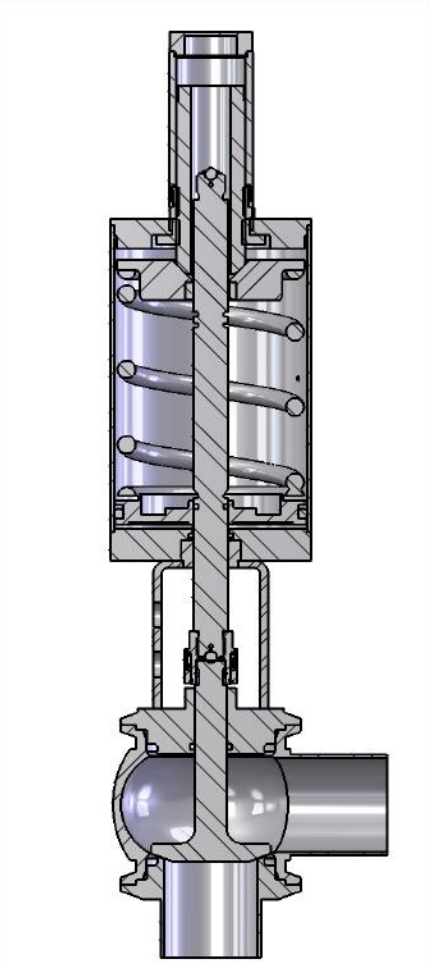


Manual handle To Valve Assembly:

- Insert the handle shaft through the yoke until the quick coupling connects to the valve stem.
- Line up to handle body holes with fastening bolt holes in the yoke.
- Insert the handle fastening bolts and tighten gradually by hand.
- With a wrench tighten each bolt partially in a clockwise direction, alternating the bolts to maintain an even pressure. Repeat until each bolt is fully tightened.

PVE PRESSURE RELIEF VALVE (OVERFLOW VALVE)





- Pressure relief valves normally should be installed in the upright position with the spindle vertical. Where space or piping configuration preclude such an installation, the valve may be installed in other than the vertical position provided that:
  1. The valve design is satisfactory for such position.
  2. The media is such that material will not accumulate at the inlet of the valve
  3. Drainage of the discharge side of the valve body and discharge piping is adequate.

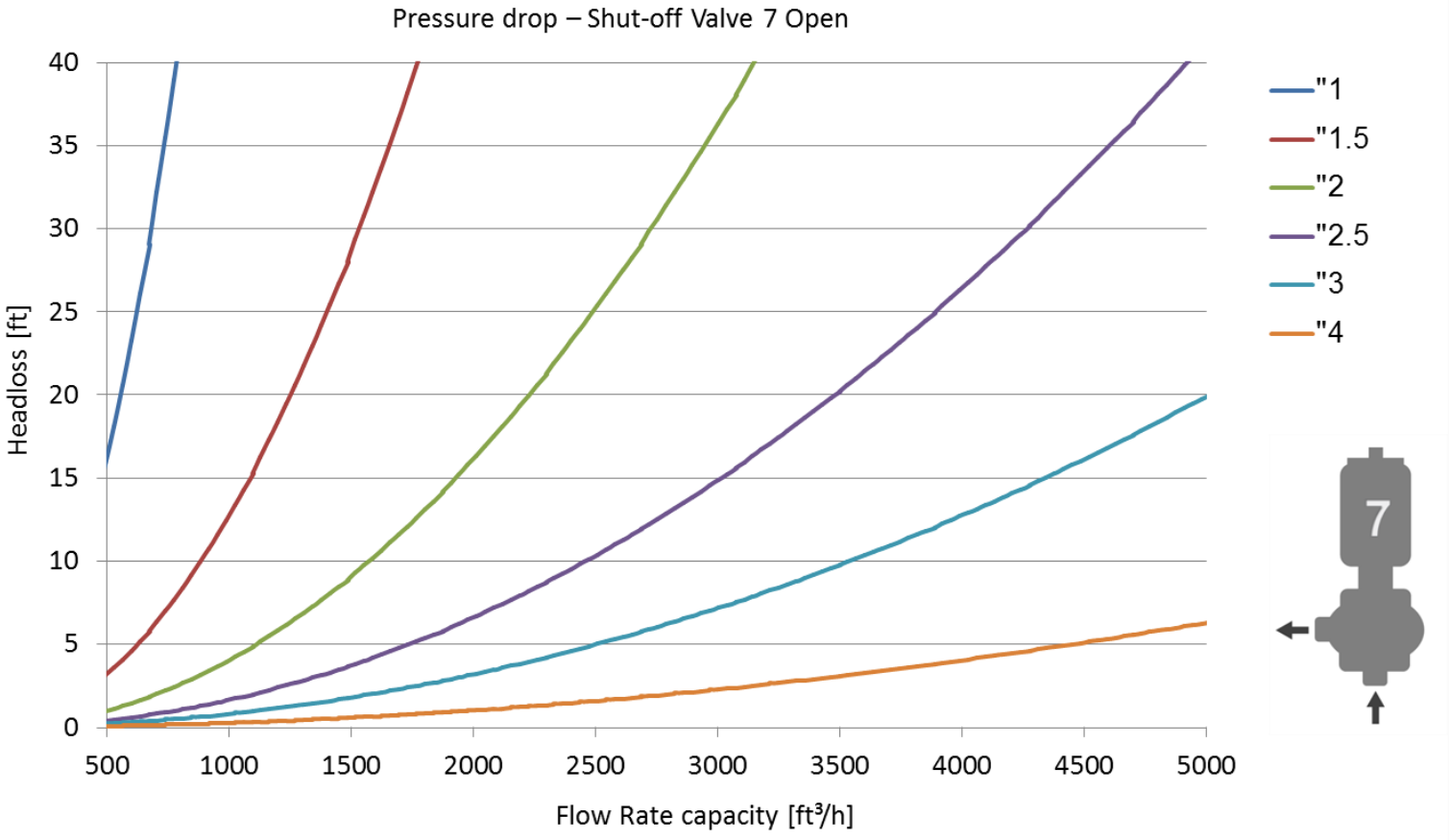
- Operates as a pressure-release valve with the option to completely open the valve using a pneumatic actuator.
- Overflow valves are used mainly for automatic CIP operation or bypass.

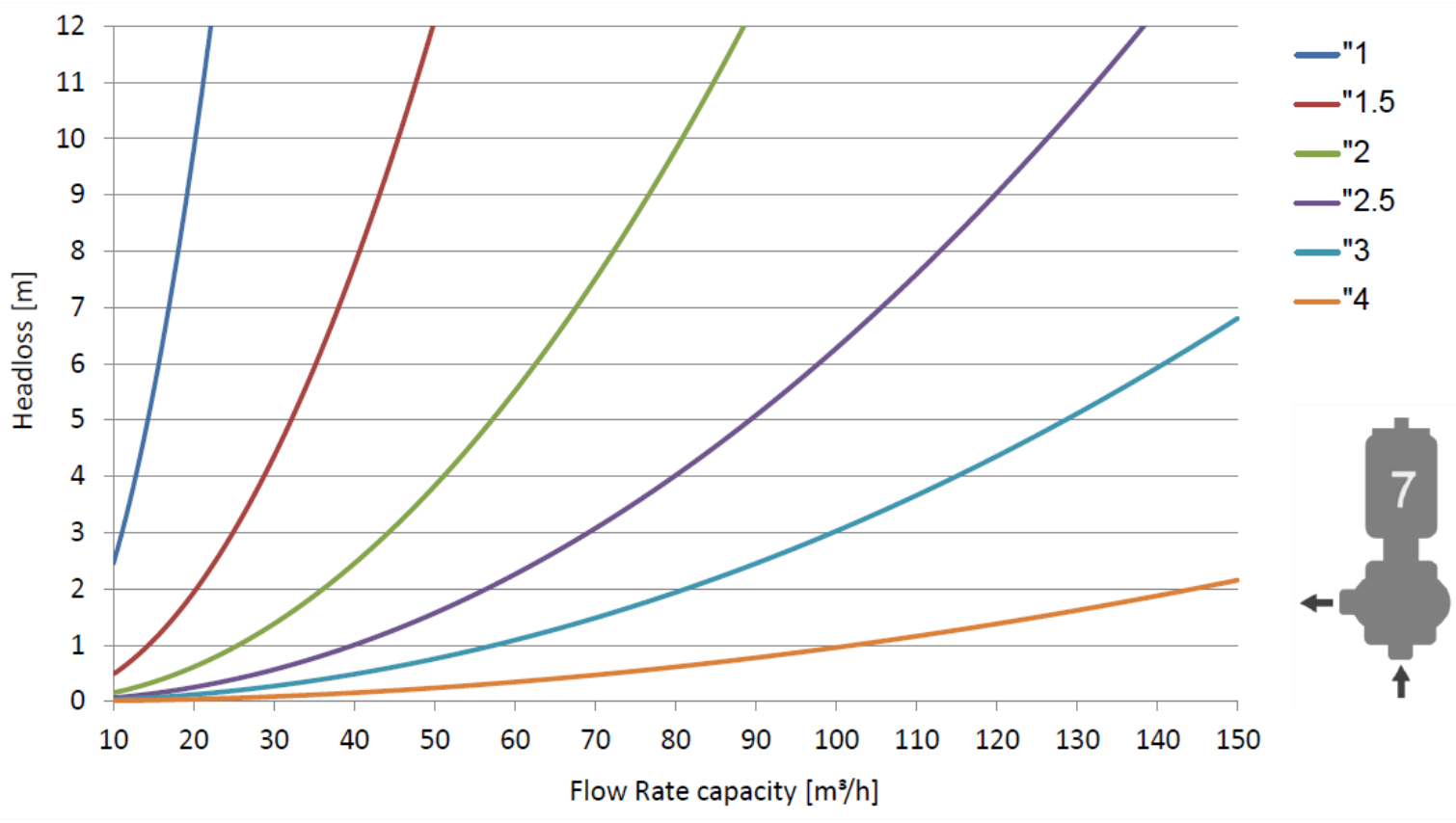
- Each pressure relief valve installation shall be subjected to the approval of EGMO ltd.

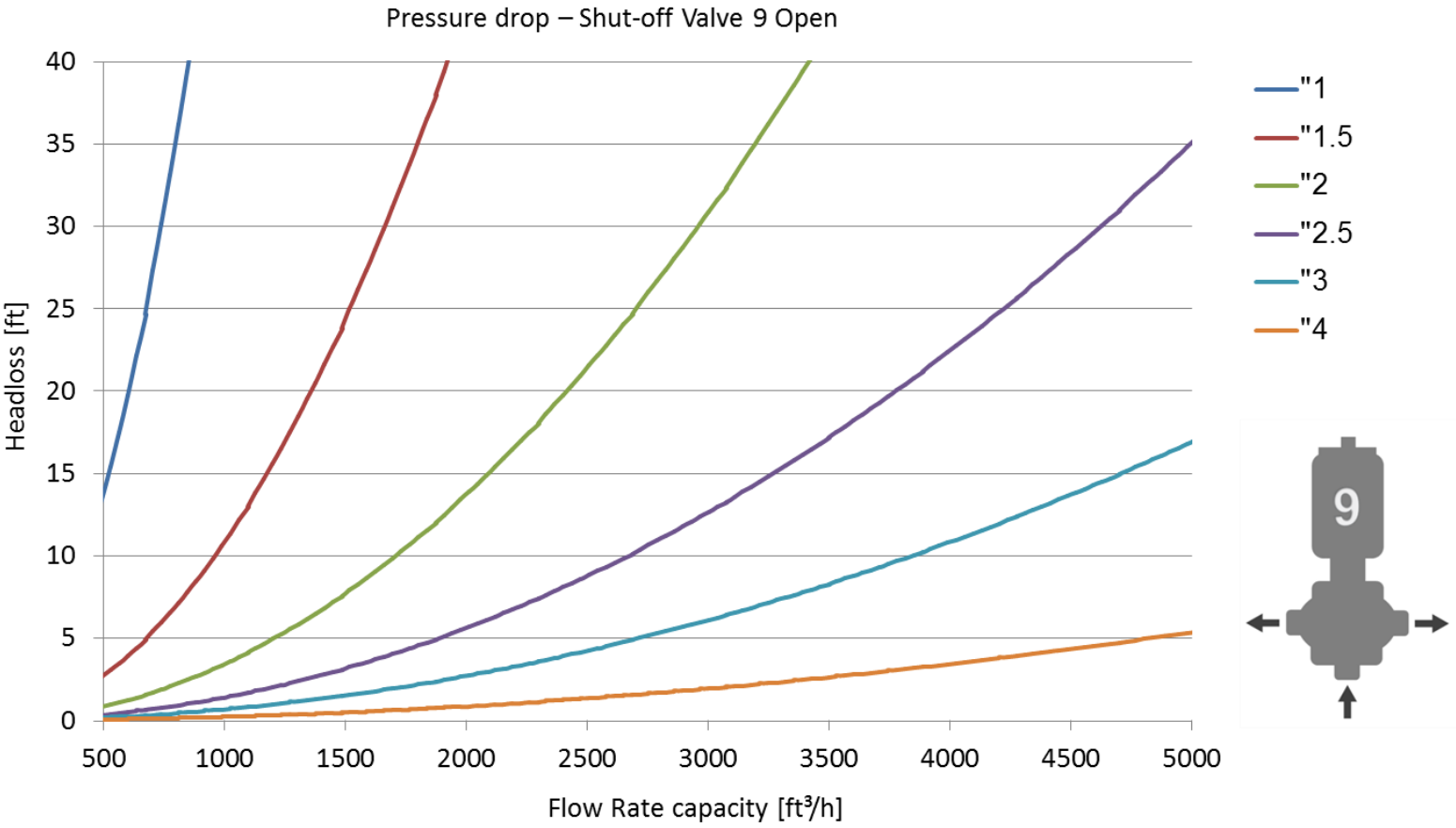
Pressure Relief Valve Properties:

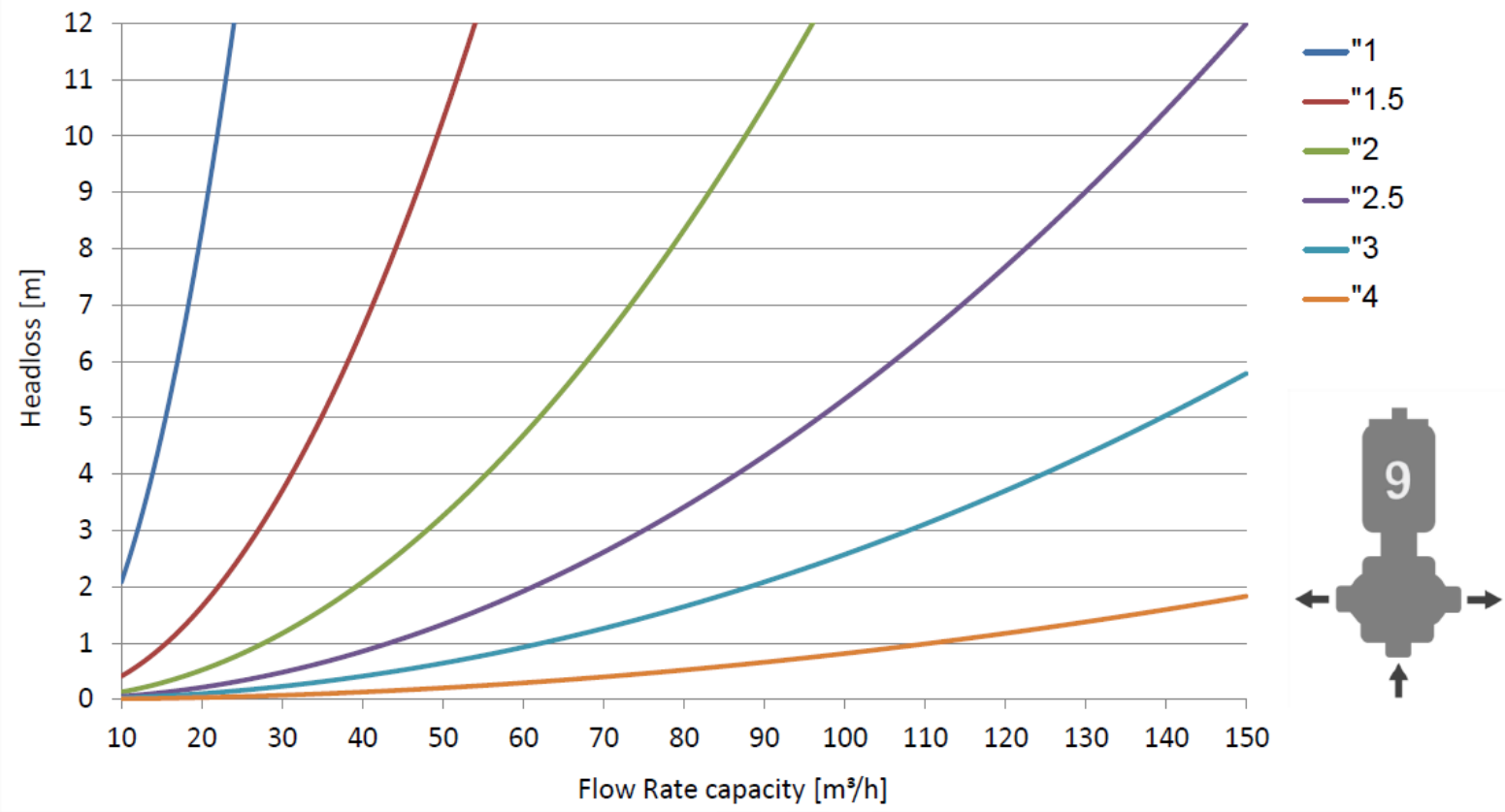
- Operating pressure 2- 7 bar
- Pressure to open pneumatically - Min 5 - Max 8 bar
- Construction materials:
  - Actuator: AISI 304L
  - Valve Body: AISI 316L & EPDM / Silicon / Viton gaskets

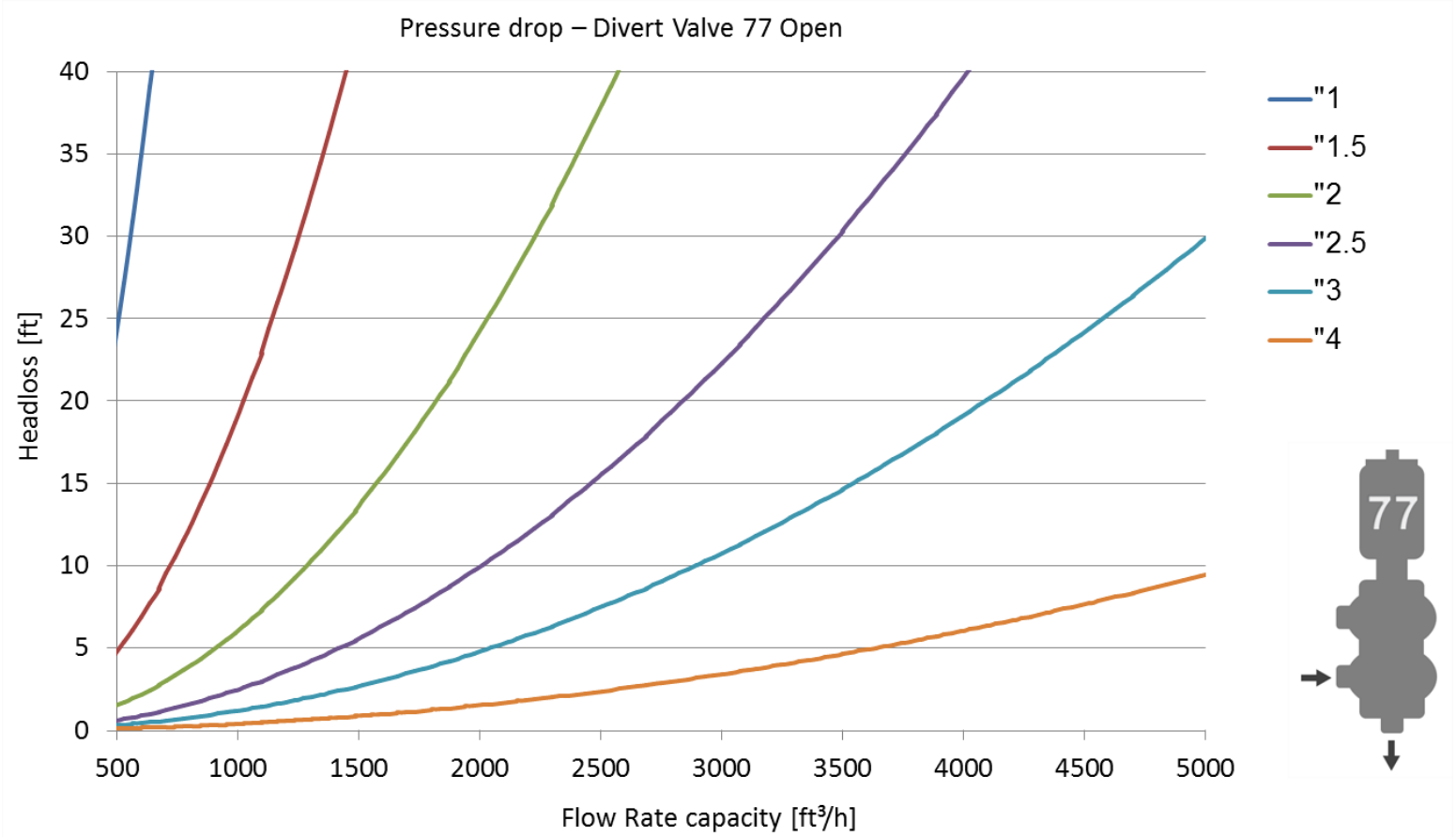
PVE HEAD LOSS CHARTS

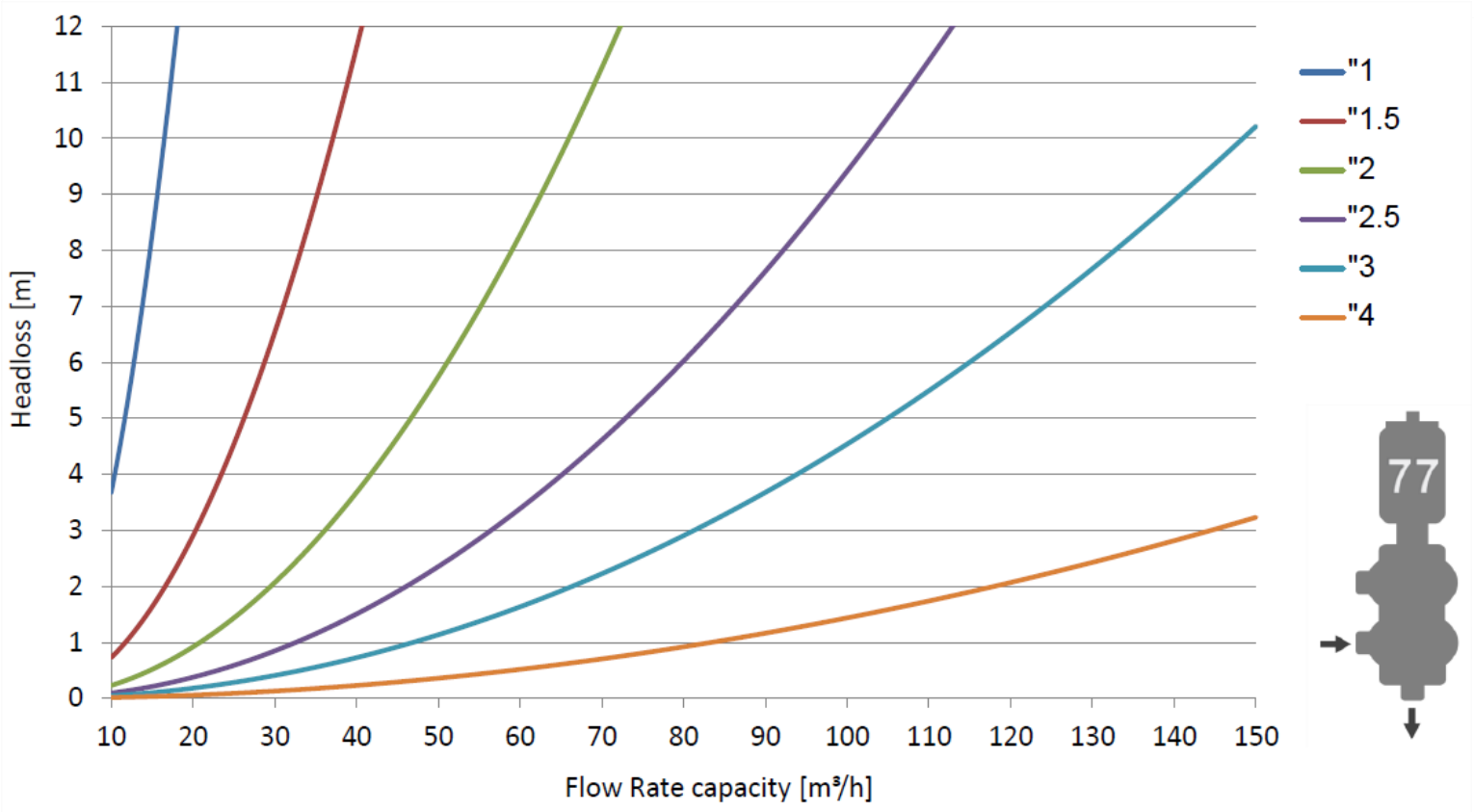


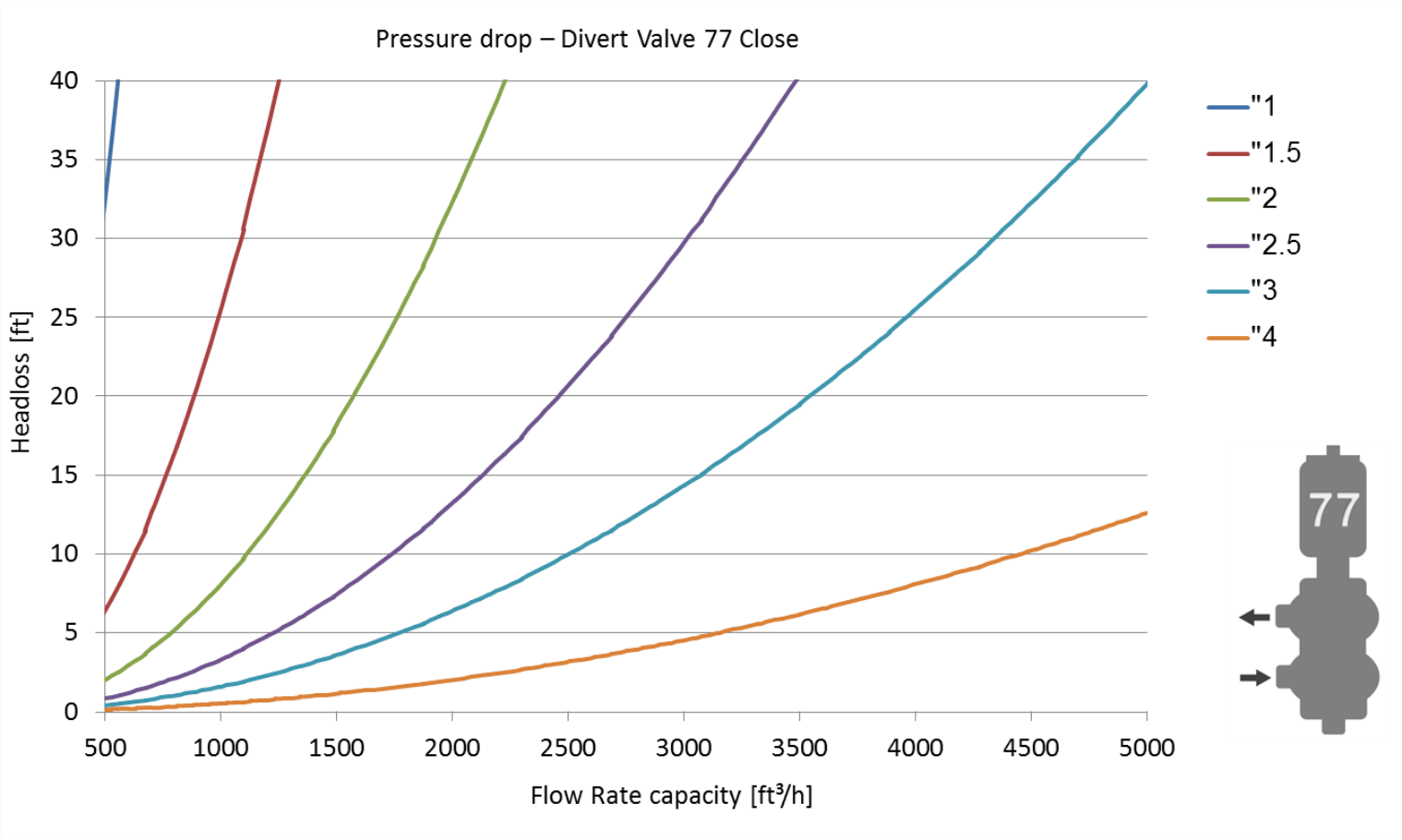


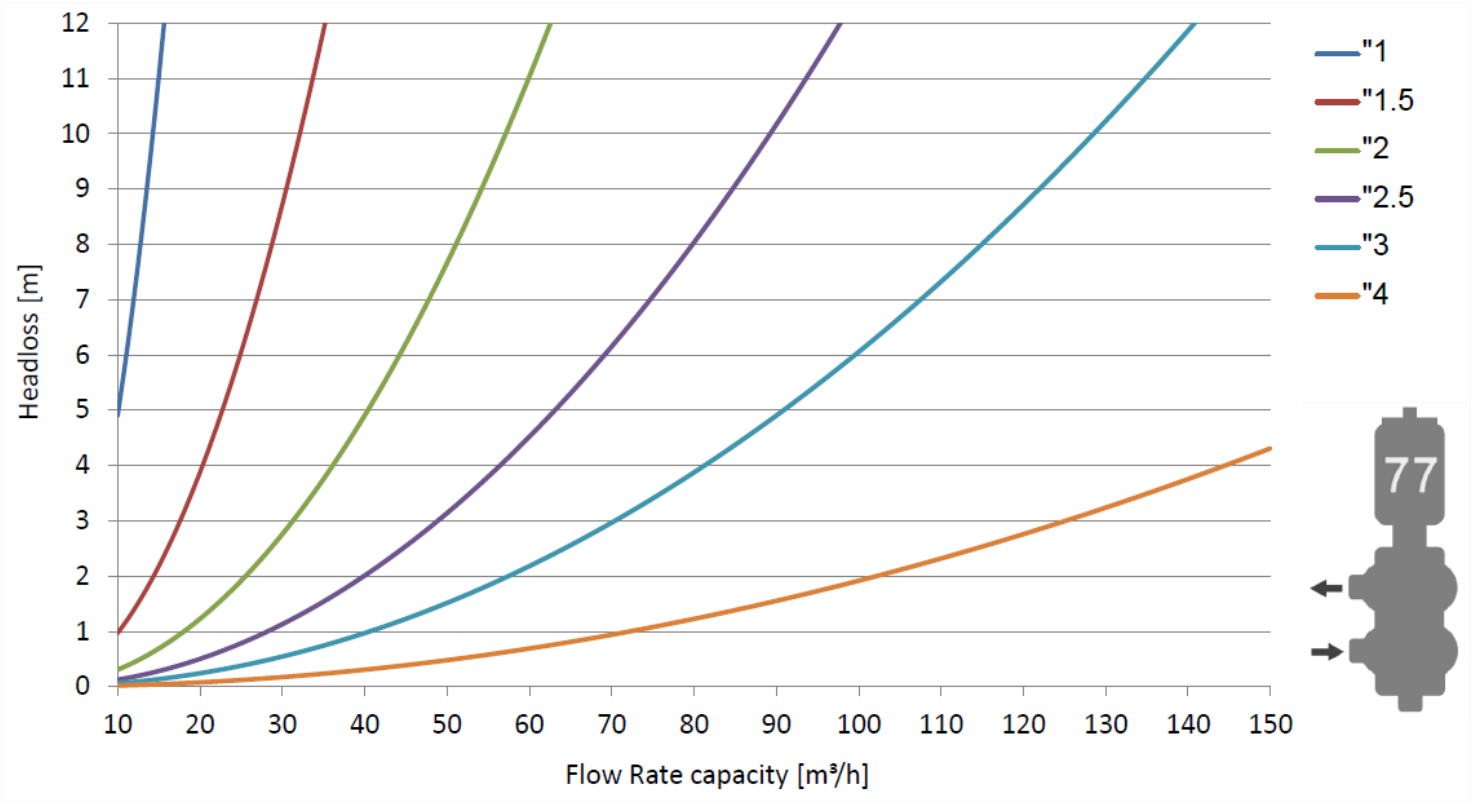

Pressure drop – Shut-off Valve 9 Open
Headloss [ft]
0
5
10
15
20
25
30
35
40
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
Flow Rate capacity [ft³/h]
"1
"1.5
"2
"2.5
"3
"4
9

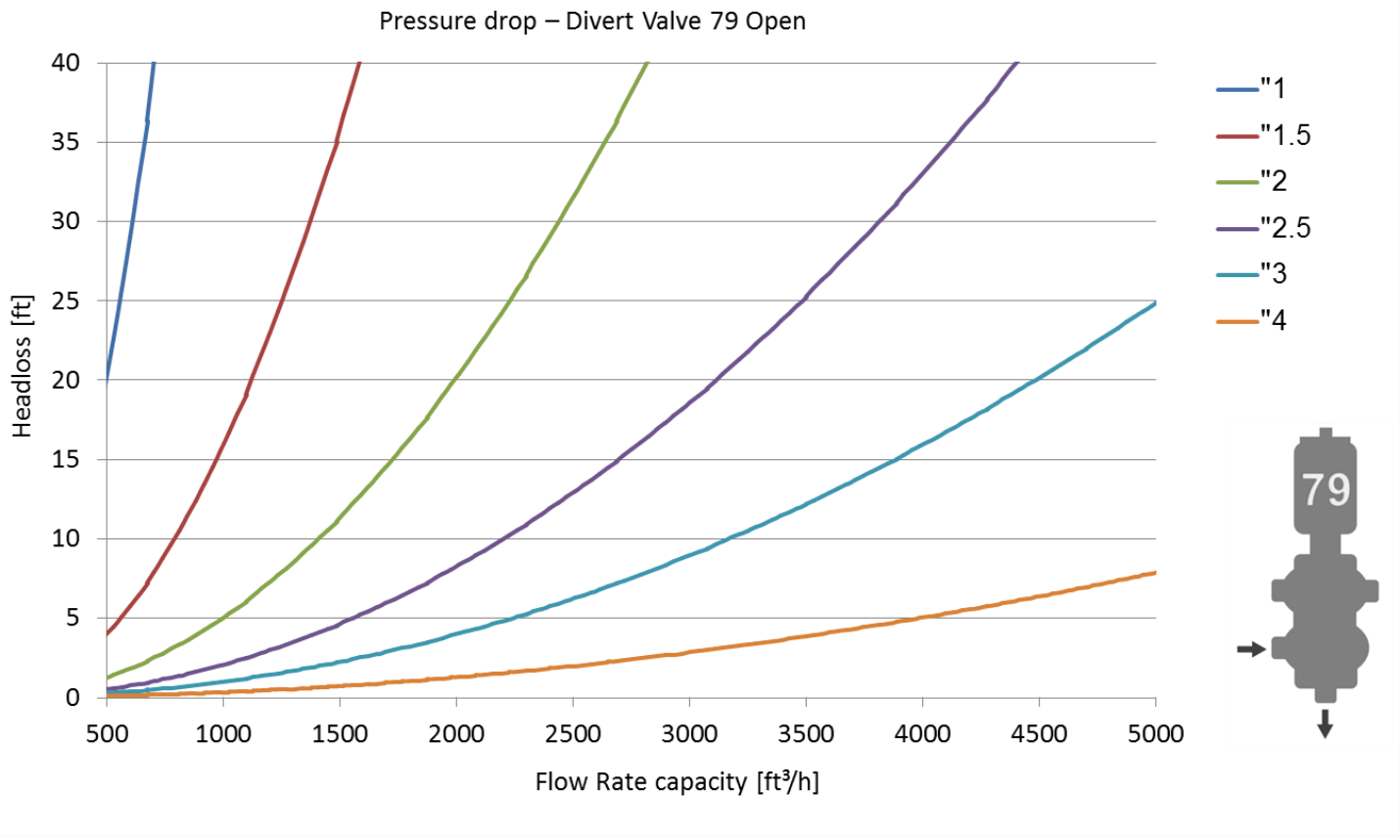

Headloss [m]
0
1
2
3
4
5
6
7
8
9
10
11
12
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
Flow Rate capacity [m³/h]
"1
"1.5
"2
"2.5
"3
"4
9

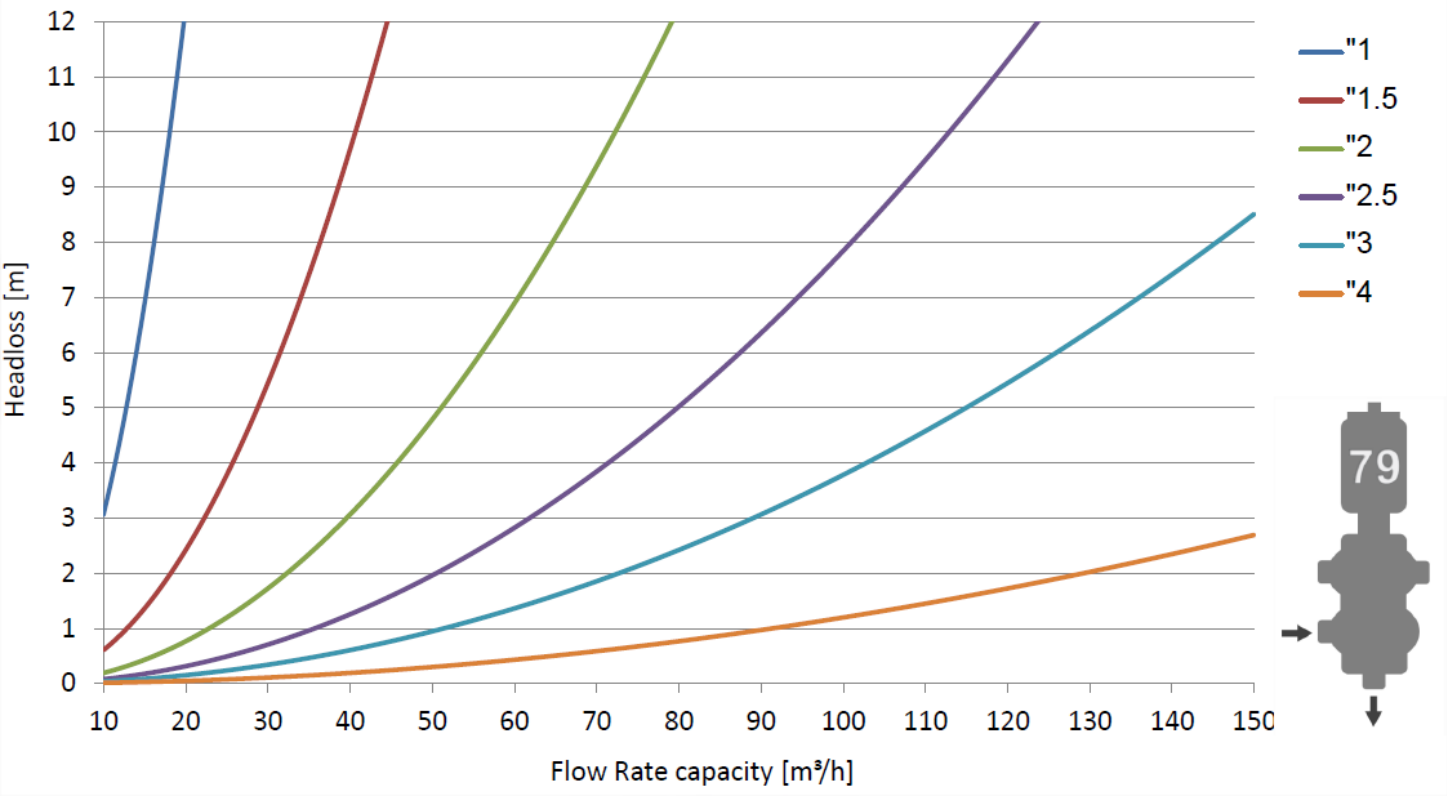

Pressure drop – Divert Valve 77 Open
Headloss [ft]
40
35
30
25
20
15
10
5
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
Flow Rate capacity [ft³/h]
"1
"1.5
"2
"2.5
"3
"4
77

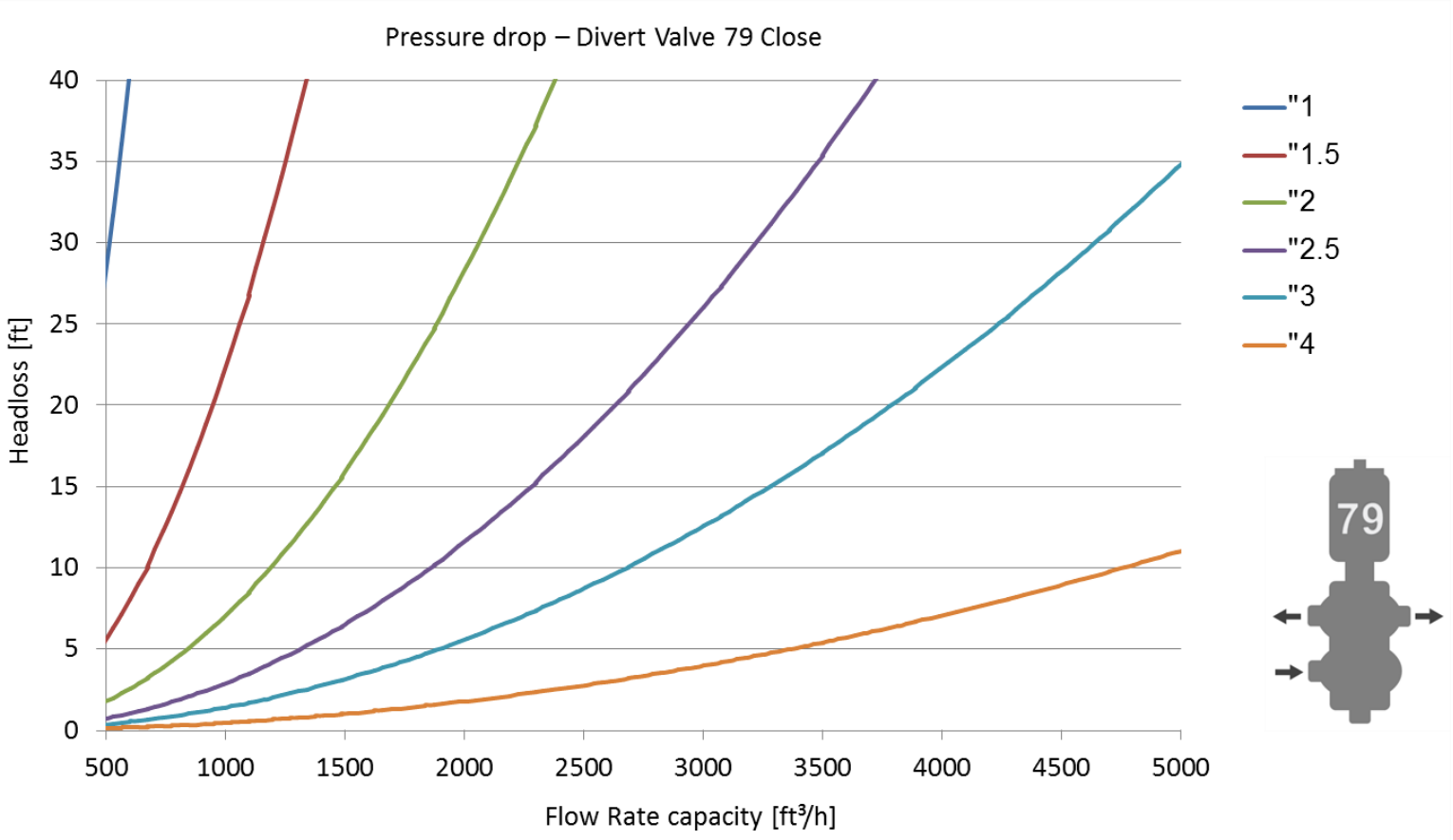

Headloss [m]
12
11
10
9
8
7
6
5
4
3
2
1
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
Flow Rate capacity [m³/h]
"1
"1.5
"2
"2.5
"3
"4
77

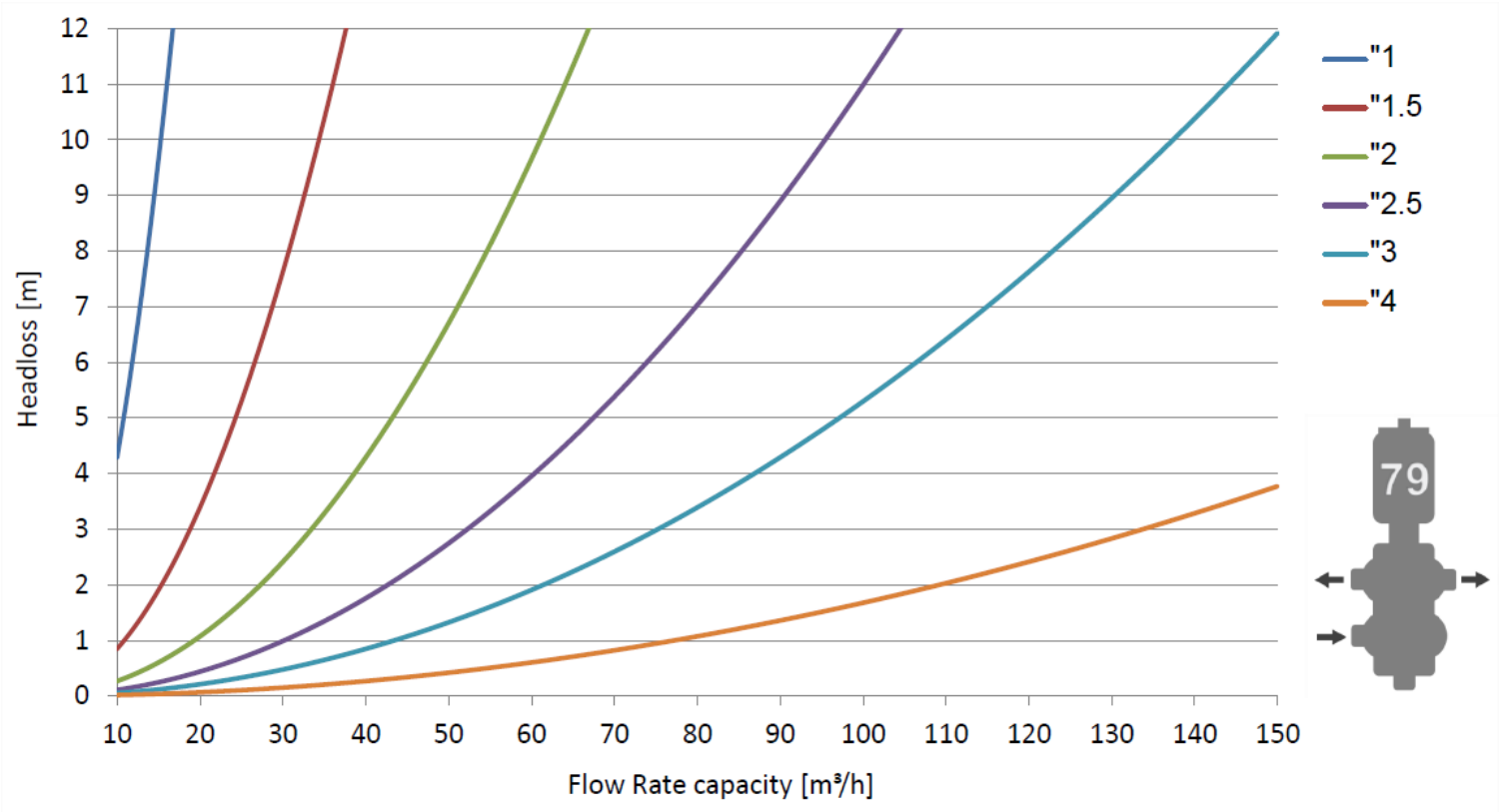

Pressure drop – Divert Valve 77 Close
Headloss [ft]
0
5
10
15
20
25
30
35
40
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
Flow Rate capacity [ft³/h]
"1
"1.5
"2
"2.5
"3
"4
77

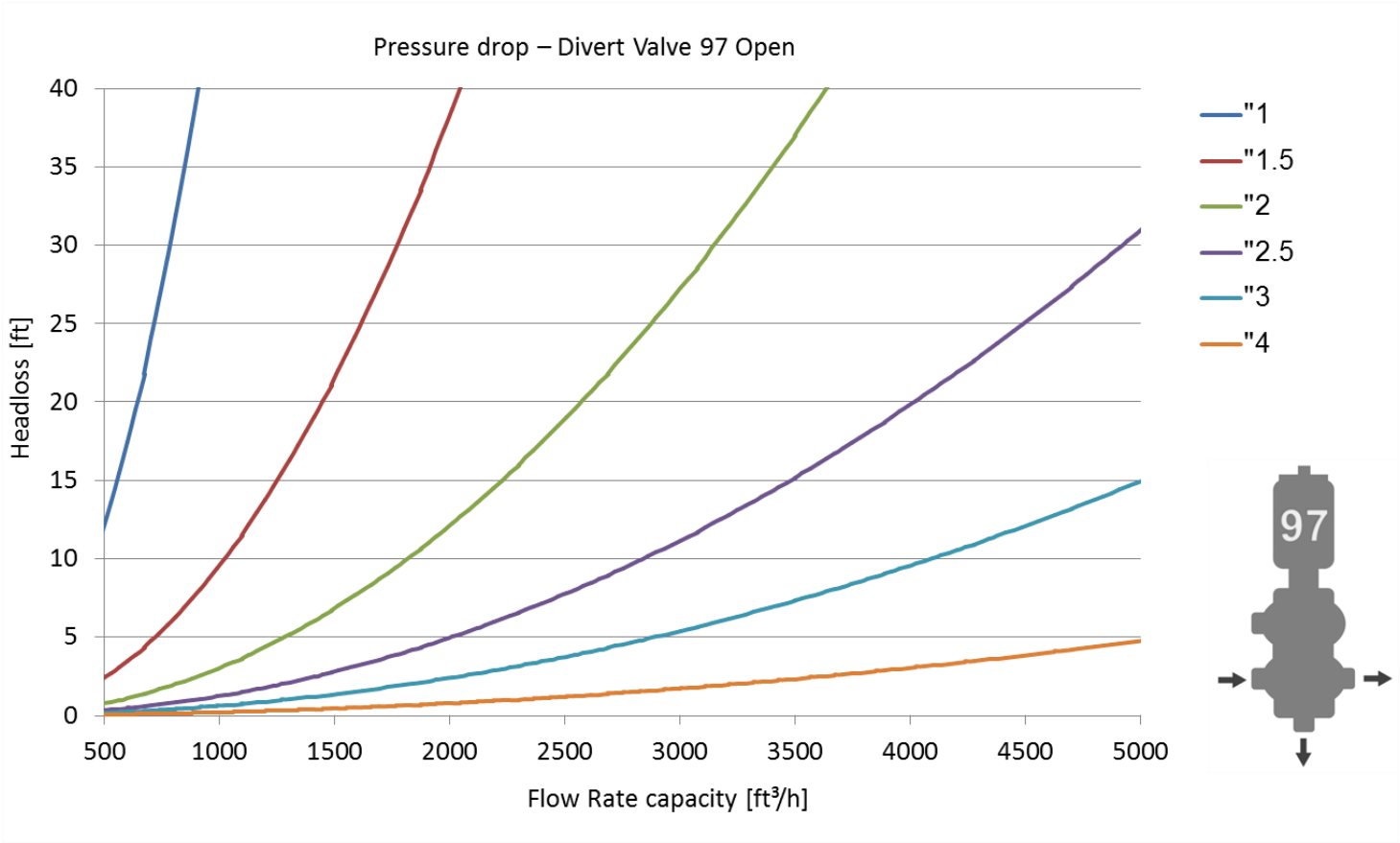

Headloss [m]
0
1
2
3
4
5
6
7
8
9
10
11
12
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
Flow Rate capacity [m³/h]
"1
"1.5
"2
"2.5
"3
"4
77

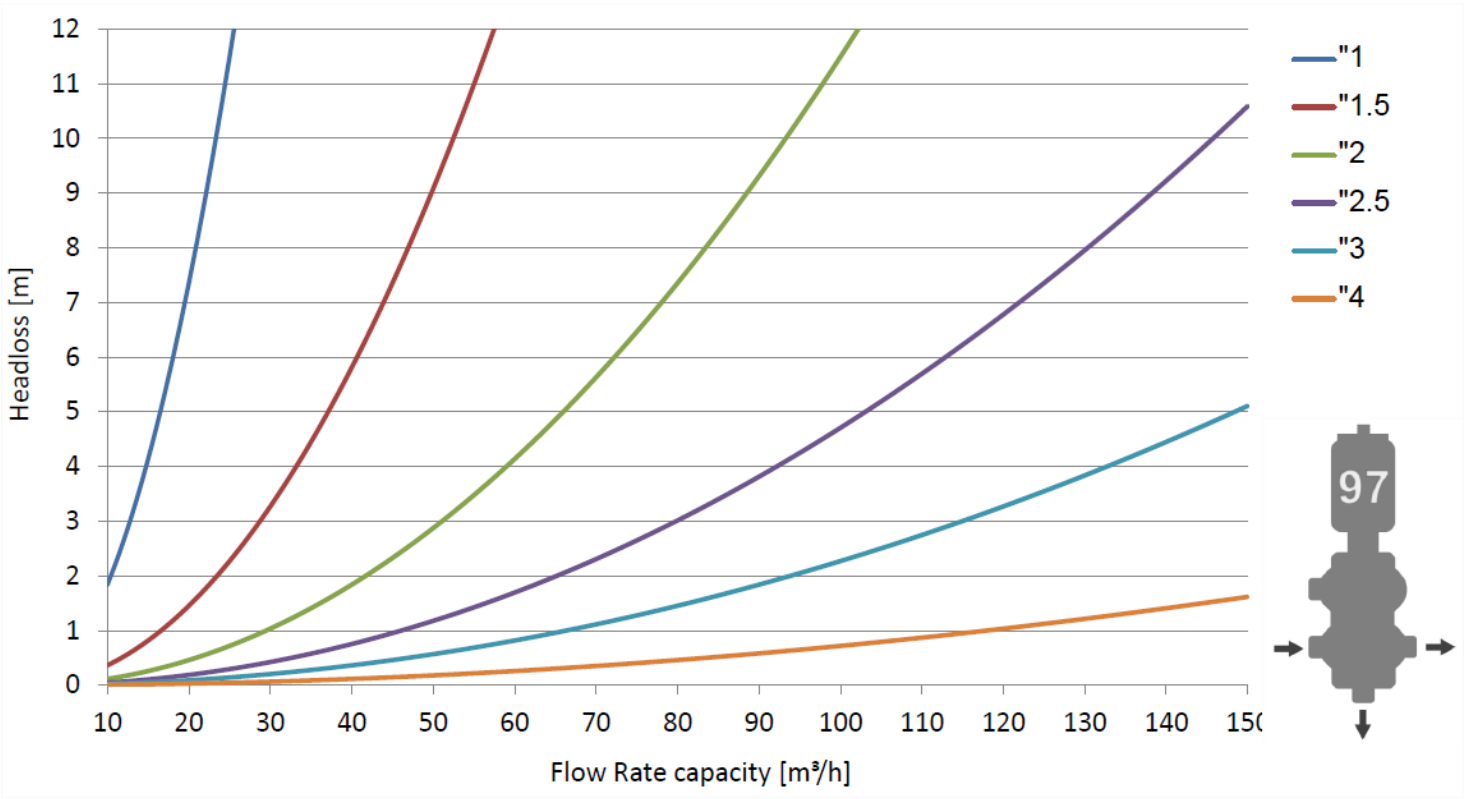

Pressure drop – Divert Valve 79 Open
Headloss [ft]
Flow Rate capacity [ft³/h]
"1
"1.5
"2
"2.5
"3
"4
79

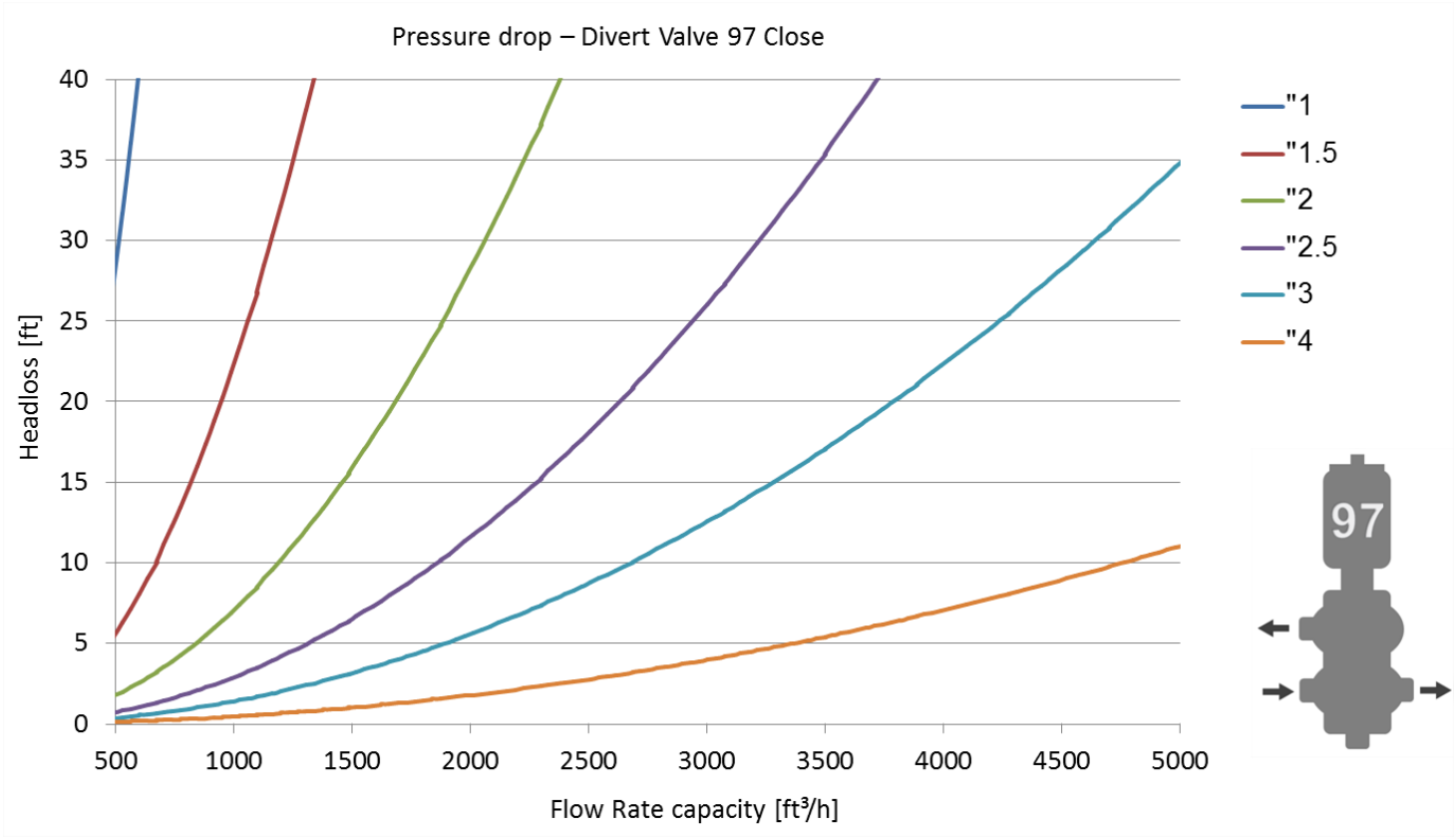

Headloss [m]
Flow Rate capacity [m³/h]
"1
"1.5
"2
"2.5
"3
"4
79

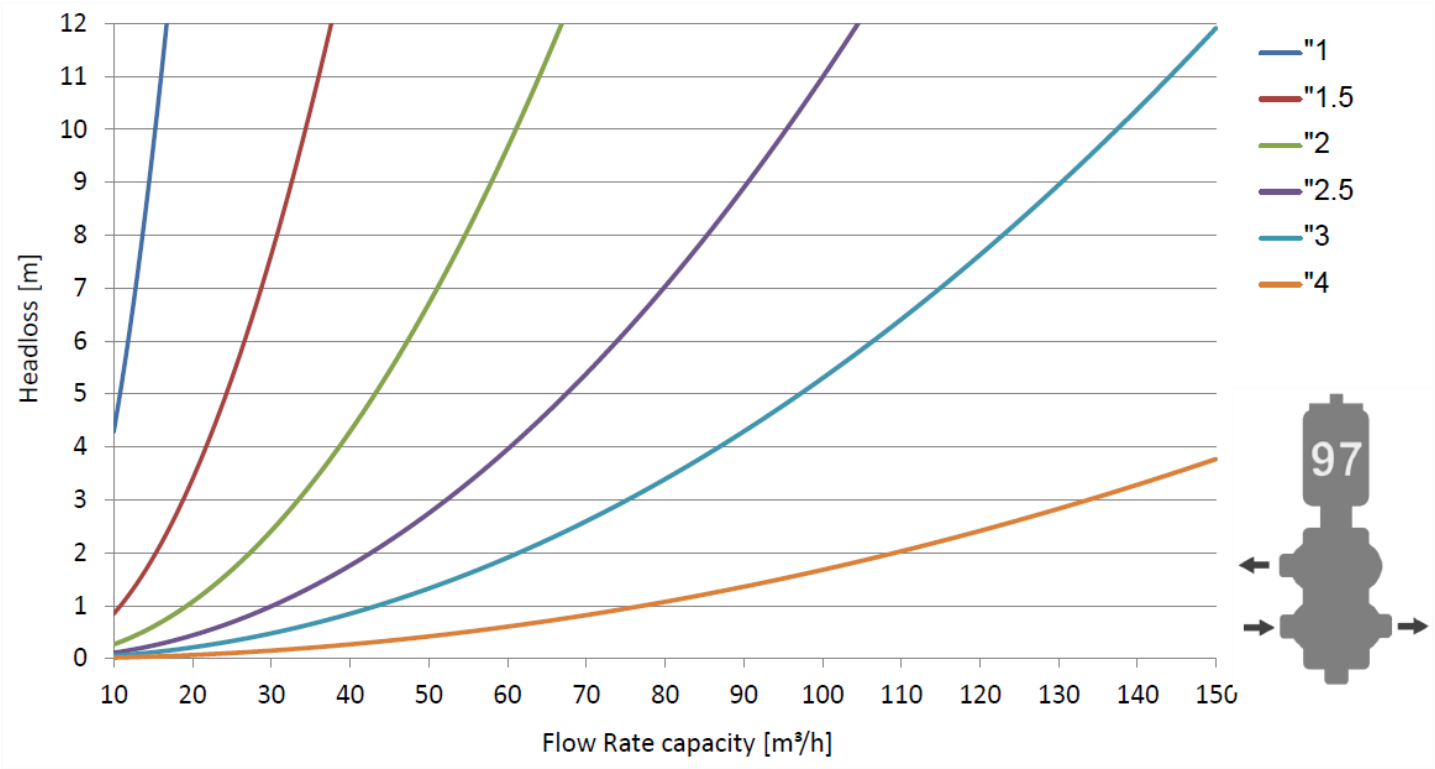

Pressure drop – Divert Valve 79 Close
Headloss [ft]
Flow Rate capacity [ft³/h]
"1
"1.5
"2
"2.5
"3
"4
79

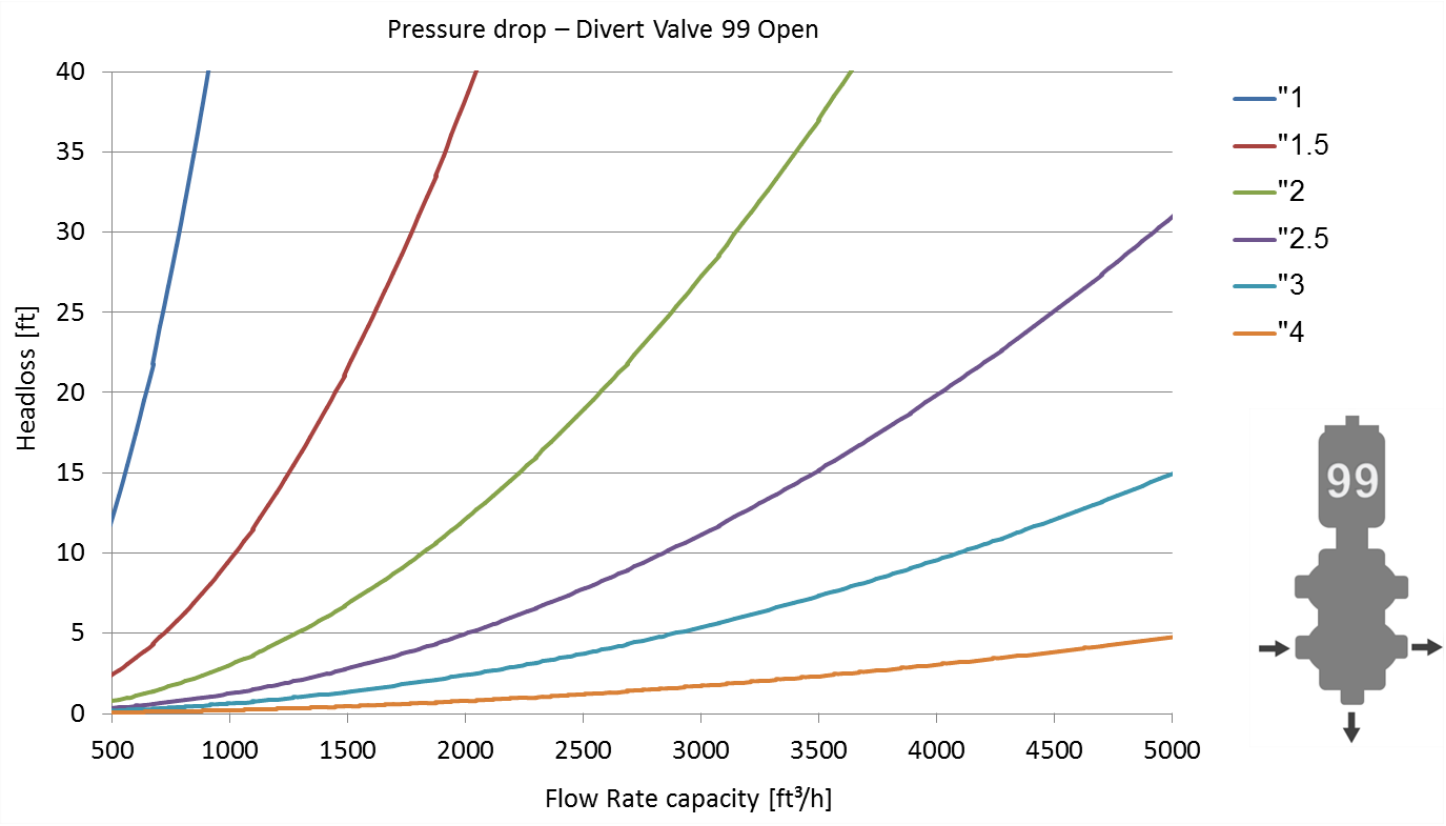

Headloss [m]
Flow Rate capacity [m³/h]
"1
"1.5
"2
"2.5
"3
"4
79

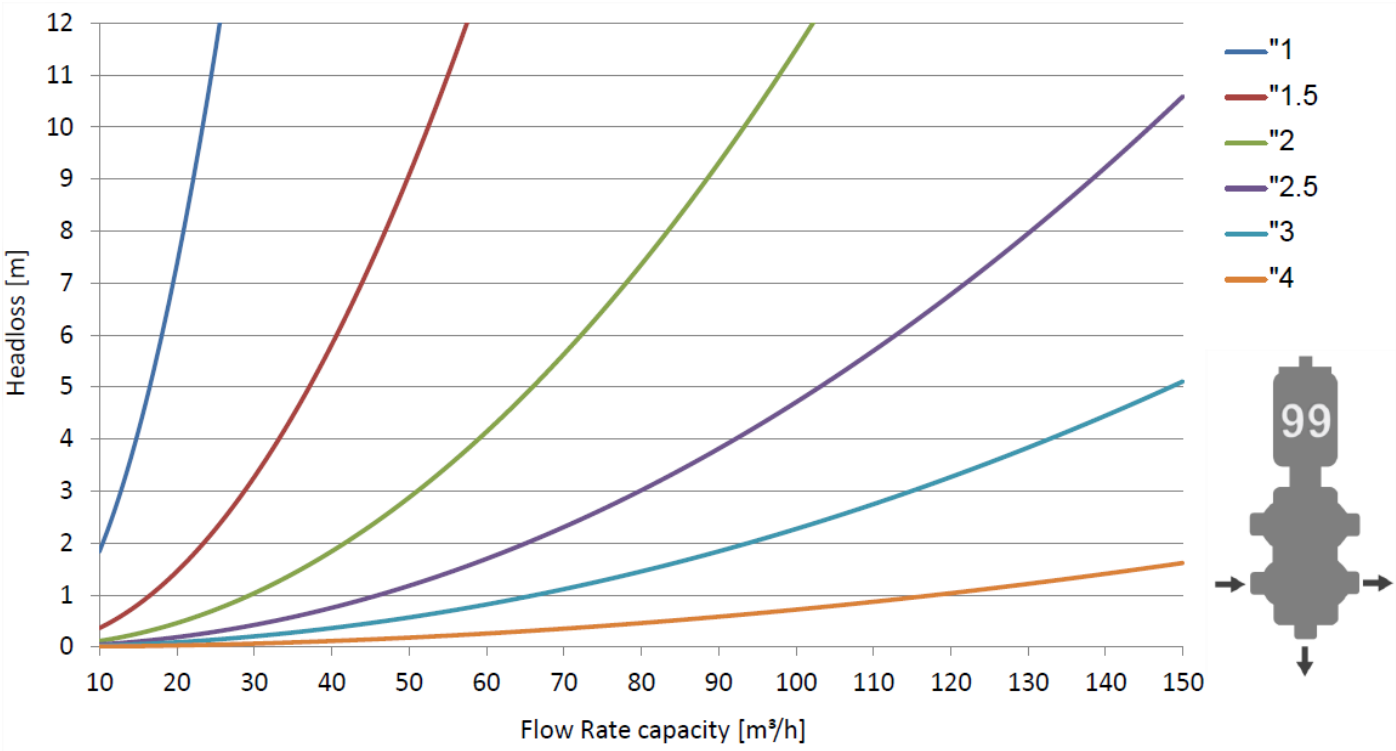

Pressure drop – Divert Valve 97 Open
Headloss [ft]
0
5
10
15
20
25
30
35
40
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
Flow Rate capacity [ft³/h]
"1
"1.5
"2
"2.5
"3
"4
97

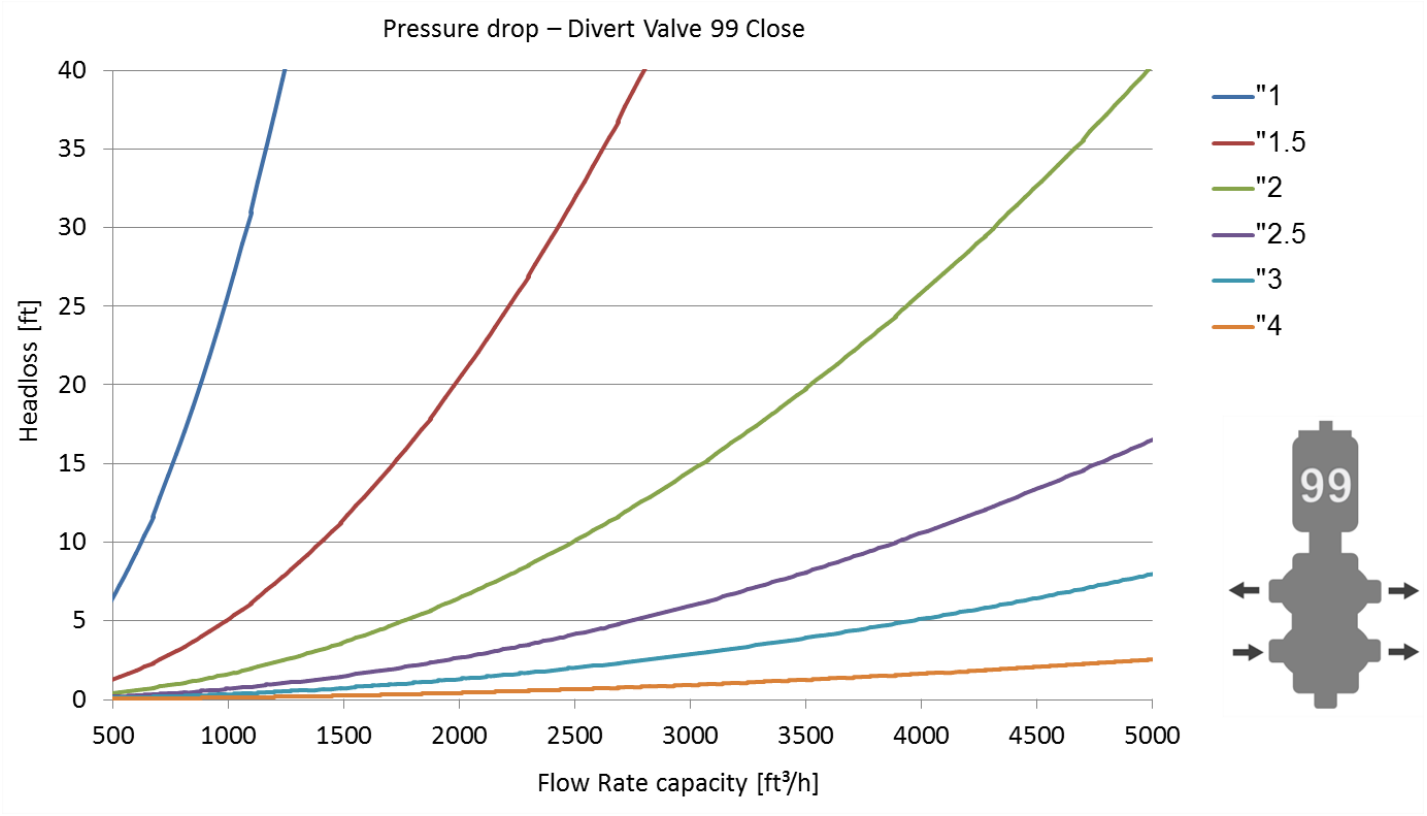

Headloss [m]
0
1
2
3
4
5
6
7
8
9
10
11
12
10
20
30
40
50
60
70
80
90
100
110
120
130
140
Flow Rate capacity [m³/h]
"1
"1.5
"2
"2.5
"3
"4
97

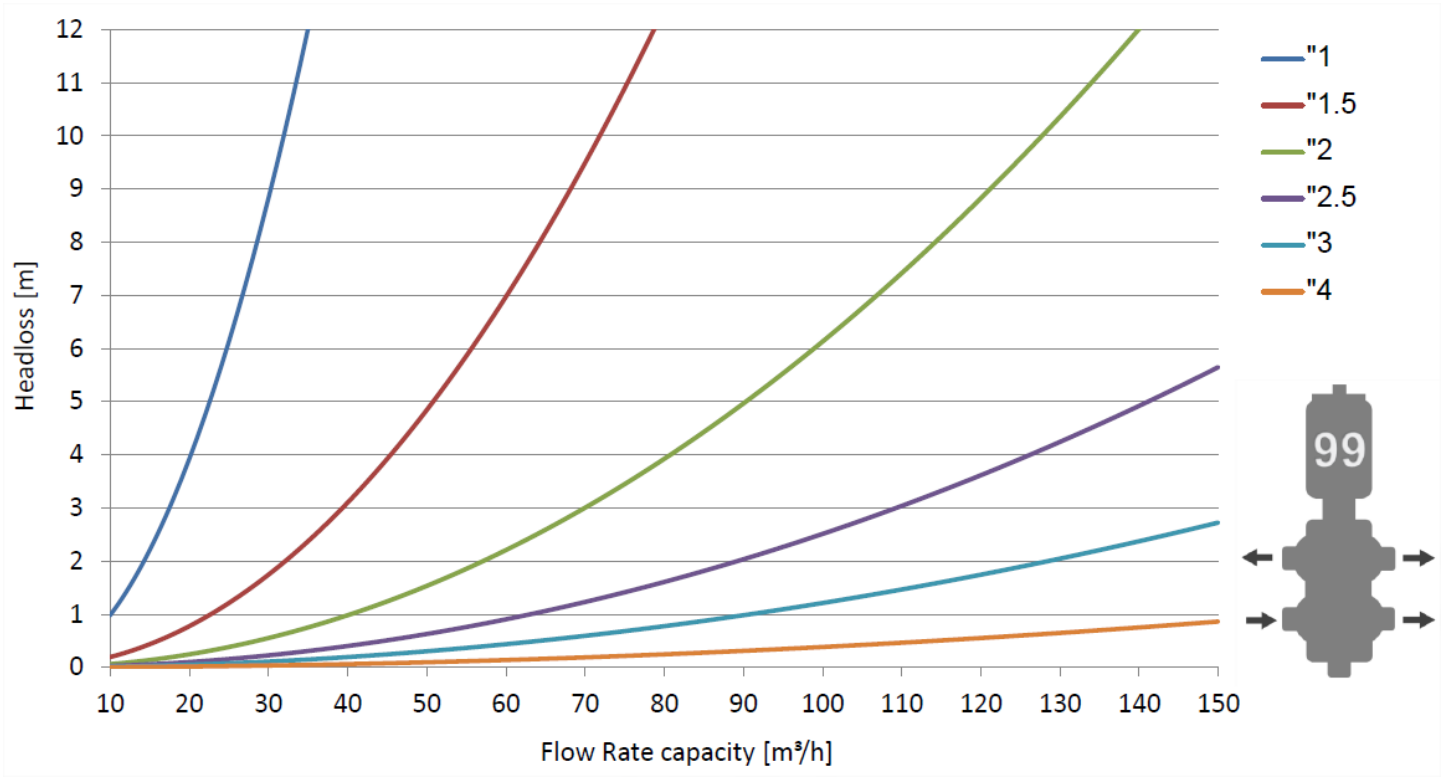

Pressure drop – Divert Valve 97 Close
Headloss [ft]
0
5
10
15
20
25
30
35
40
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
Flow Rate capacity [ft³/h]
"1
"1.5
"2
"2.5
"3
"4
97


Headloss [m]
0
1
2
3
4
5
6
7
8
9
10
11
12
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
Flow Rate capacity [m³/h]
"1
"1.5
"2
"2.5
"3
"4
97


Pressure drop – Divert Valve 99 Open
Headloss [ft]
Flow Rate capacity [ft³/h]
"1
"1.5
"2
"2.5
"3
"4
99


Headloss [m]
Flow Rate capacity [m³/h]
"1
"1.5
"2
"2.5
"3
"4
99

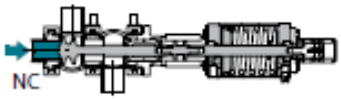
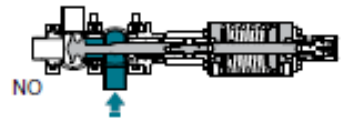

Pressure drop – Divert Valve 99 Close
Headloss [ft]
0
5
10
15
20
25
30
35
40
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
Flow Rate capacity [ft³/h]
"1
"1.5
"2
"2.5
"3
"4
99


Headloss [m]
0
1
2
3
4
5
6
7
8
9
10
11
12
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
Flow Rate capacity [m³/h]
"1
"1.5
"2
"2.5
"3
"4
99

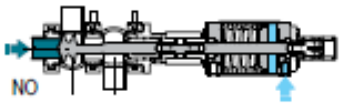
Maximum Working Pressure Data

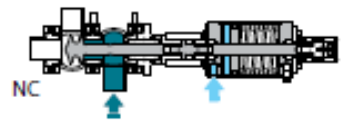
Spring Actuator

■ Media ■ Air

Actuator & Valve body combinations	Actuator Mode	Air pressure	Valve Size					
			1"	1½"	2"	2½"	3"	4"
			PVE0	PVE1	PVE1	PVE2	PVE2	PVE3
 NC	Spring	0 Bar	7.0	11.5	6.0	6.5	4.5	5.0
	Spring	0 PSI	102	167	87	94	65	73
 NC	Spring	0 Bar	8.0	11.5	6.0	6.5	4.5	5.0
	Spring	0 PSI	116	167	87	94	65	73
 NO	Spring	0 Bar	9.5	11.5	6.0	6.5	4.5	5.0
	Spring	0 PSI	138	167	87	94	65	73

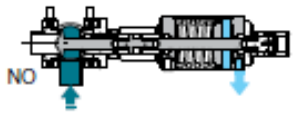
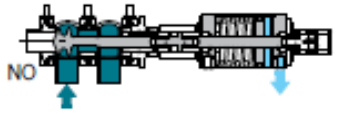
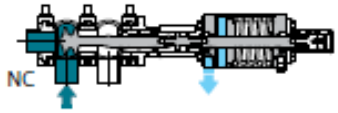
Air Actuator

Actuator & Valve body combinations	Actuator Mode	Air pressure	Valve Size					
			1"	1½"	2"	2½"	3"	4"
			PVE0	PVE1	PVE1	PVE2	PVE2	PVE3
 NO	Air	5 Bar	6.5	7.5	4.5	5.2	4.5	5.0
	Air	72.5 PSI	94	109	65	75	65	73
 NO	Air	5 Bar	7.0	7.5	4.5	5.2	4.5	5.0
	Air	72.5 PSI	102	109	65	75	65	73
 NC	Air	5 Bar	9.5	7.5	4.5	5.2	4.5	5.0
	Air	72.5 PSI	138	109	65	75	65	73

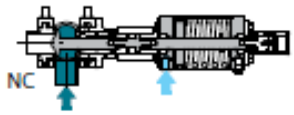
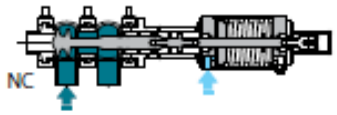
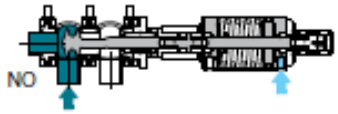
Actuator & Valve body combinations	Actuator Mode	Air pressure	Valve Size					
			1"	1½"	2"	2½"	3"	4"
			PVE0	PVE1	PVE1	PVE2	PVE2	PVE3
 NO	Air	6 Bar	9.5	12	7	8.5	6.5	7.0
	Air	87 PSI	138	174	102	123	94	102
 NO	Air	6 Bar	10.0	12.0	7.0	8.5	6.5	7.0
	Air	87 PSI	145	174	102	123	94	102
 NC	Air	6 Bar	12.0	12.0	7.0	8.5	6.5	7.0
	Air	87 PSI	174	174	102	123	94	102

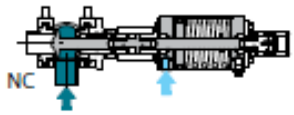
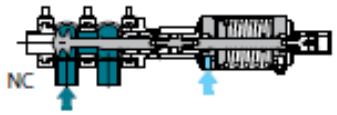
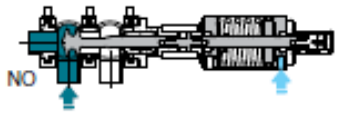
Relief Air Actuator

■ Media ■ Air

Actuator & Valve body combinations	Actuator Mode	Air pressure	Valve Size					
			1"	1½"	2"	2½"	3"	4"
			PVE0	PVE1	PVE1	PVE2	PVE2	PVE3
 NO	Spring	0 Bar	12.5	17.0	9.0	10.0	8.5	6.5
	Spring	0 PSI	181	247	131	145	123	94
 NO	Spring	0 Bar	12.0	17.0	9.0	10.0	8.5	6.5
	Spring	0 PSI	174	247	131	145	123	94
 NC	Spring	0 Bar	9.0	17.0	9.0	10.0	8.5	6.5
	Spring	0 PSI	131	247	131	145	123	94

Compress Air Actuator

Actuator & Valve body combinations	Actuator Mode	Air pressure	Valve Size					
			1"	1½"	2"	2½"	3"	4"
			PVE0	PVE1	PVE1	PVE2	PVE2	PVE3
 NC	Air	5 Bar	12.5	12.5	7.0	7.0	5.0	6.0
	Air	72.5 PSI	181	181	102	102	73	87
 NC	Air	5 Bar	10.5	12.5	7.0	7.0	5.0	6.5
	Air	72.5 PSI	152	181	102	102	73	87
 NO	Air	5 Bar	8.5	12.5	7.0	7.0	5.0	6.5
	Air	72.5 PSI	123	181	102	102	73	87

Actuator & Valve body combinations	Actuator Mode	Air pressure	Valve Size					
			1"	1½"	2"	2½"	3"	4"
			PVE0	PVE1	PVE1	PVE2	PVE2	PVE3
 NC	Air	6 Bar	17.0	18	10	10.0	7.0	8.5
	Air	87 PSI	247	254	145	145	102	123
 NC	Air	6 Bar	15.5	17.5	10.0	10.0	7.0	8.5
	Air	87 PSI	225	254	145	145	102	123
 NO	Air	6 Bar	17.5	17.5	10.0	10.0	7.0	8.5
	Air	87 PSI	254	145	94	102	102	123