

Heavy duty Flowrox™ pinch valves Series PV, PVE, PVE/S and PVS

Flowrox™ PV, PVE, PVE/S and PVS heavy duty pinch valves are designed for shut off and control applications involving abrasive or corrosive slurries, powders or granular substances.

In the open position, the valve is full bore with no flow restrictions. During closing, two pinch bars squeeze the valve sleeve shut on the center line. Bubble tight shut-off is provided even if solids have built up on the sleeve wall.

Flowrox control valves are designed for demanding control applications in which conventional valves encounter problems with wear due to increased turbulence. Controllability can be further improved, i.e. linearized and widened, with conical sleeves and smart positioners.

- PV** The open body pinch valve is designed for non-hazardous media, lower pressure, and operating temperatures than the enclosed body. This design isolates vibration and tolerates minor misalignment of the pipeline. It is also light-weight and easy to service.
- PVE** The enclosed body valve is the most common body type for Flowrox pinch valves. Its enclosed design prevents premature sleeve deterioration and protects the sleeve from the environment, making it extremely safe to operate.
- PVE/S** PVE/S includes extra stem and body seals to provide a secondary containment of the fluid in the valve and to prevent leakage to the outside environment from the valve body.
- PVS** The structure of PVS encases all moving parts of the valve. It is optimized for high pressure applications and for aggressive and toxic mediums. The PVS structure has no rising parts.

Benefits

- Improved process efficiency
- Improved customers' productivity
- Accurate control
- Ease of maintenance
- Extended service intervals

Features

- 100% tight shut-off
- When compressed, any crystallized particles flake off the sleeve surface.
- Full bore: Ensured free flow of the medium and less pumping energy is required.
- Improved controllability with conical sleeve results in linear control curve.
- Only the sleeve is in contact with the medium and is the only replaceable part. Can be easily changed on site.
- High corrosion resistance and flexible sleeve.



Sizes

- DN 50 - 800/2" - 32"
- Bigger sizes on request

Working pressure

Up to 100 bar / 1500 psi

Pressure classes

- PN 1, PN 4, PN 6, PN 10, PN 16, PN 25, PN 40, PN 64, PN 100

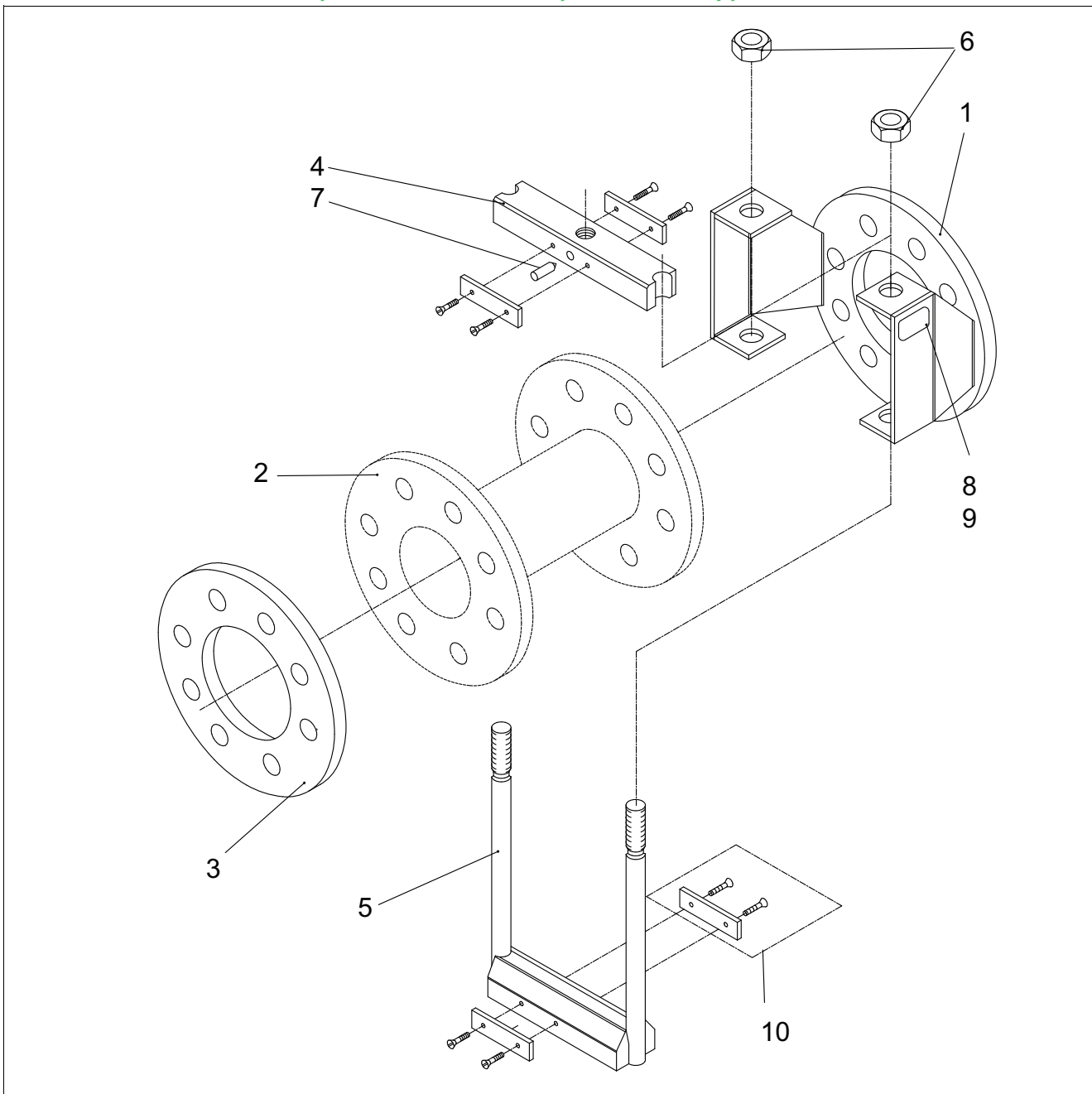
Materials

- Cast iron / Ductile iron
- Welded steel
- AISI 316
- Aluminium
- Polyurethane / Polyamide

Flange drillings

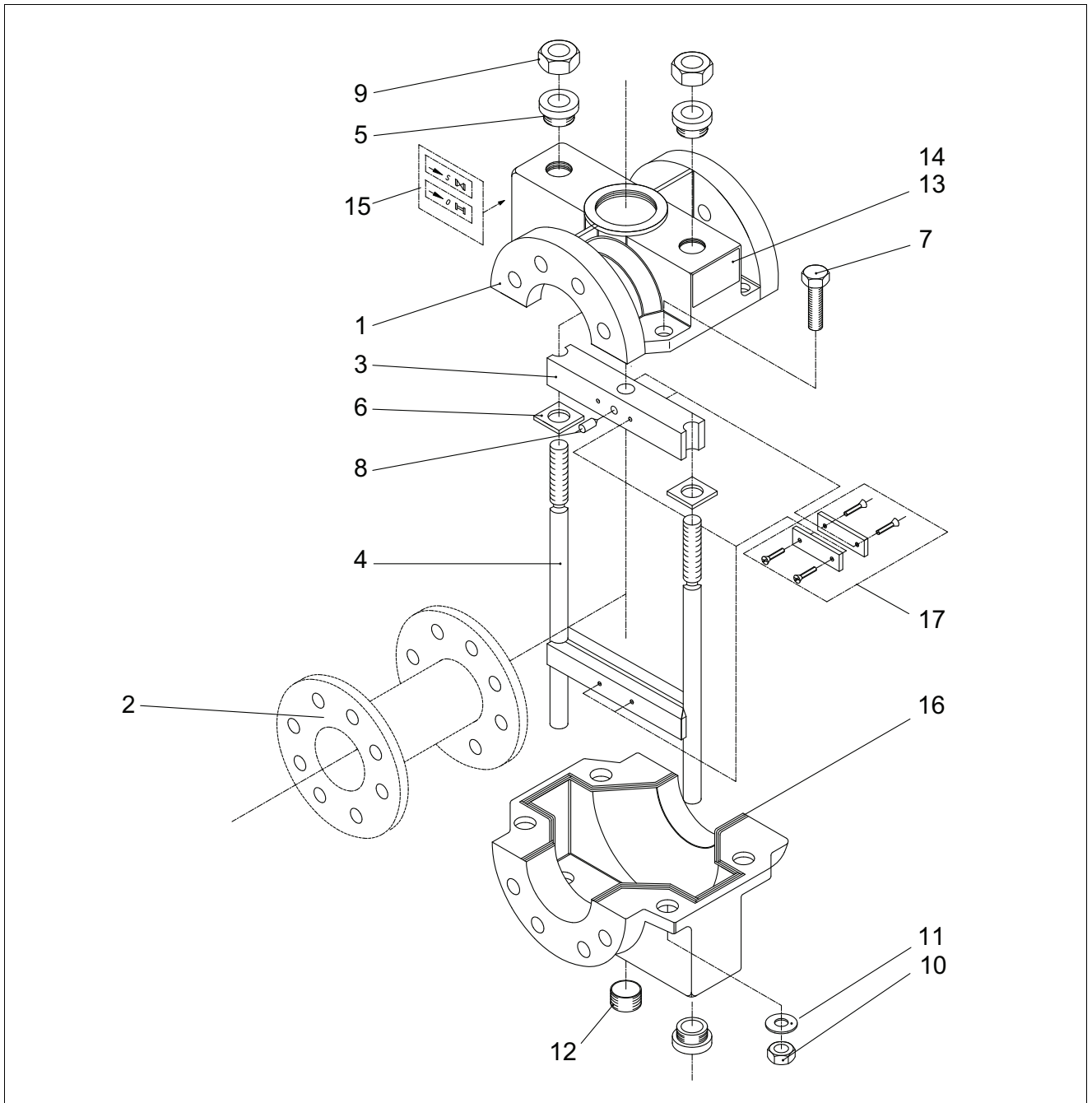
- DIN PN 10, DIN PN 16, DIN PN 25, DIN PN 40,
- ASME B16.5 Class 150, ASME B16.5 Class 300
- BS TABLE D, AS TABLE D, AS TABLE E
- JIS 10K, JIS 16K
- Others on request

Exploded view and parts list, type PV



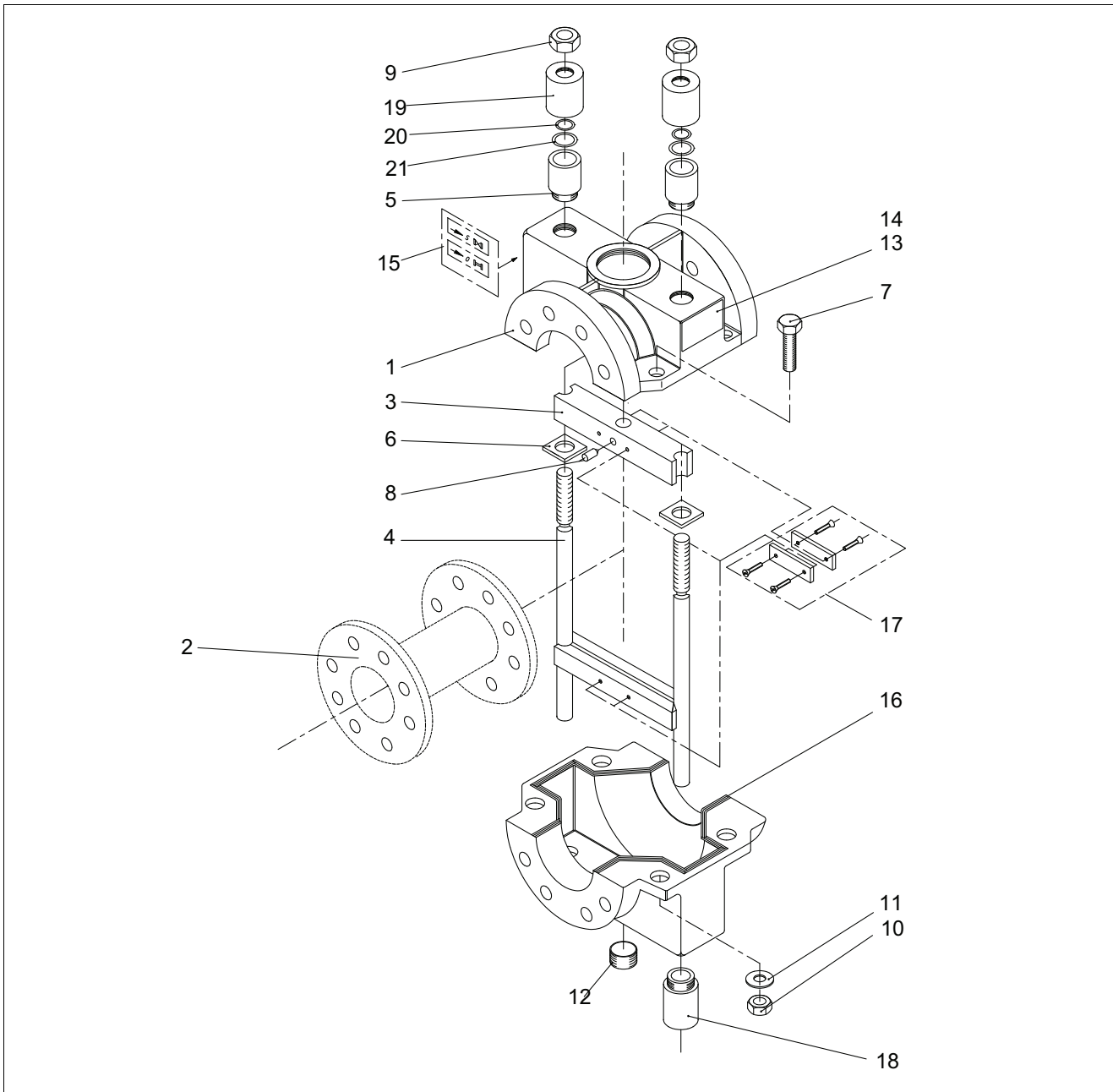
Part	Description
1	Valve body
2	Sleeve
3	Flange
4	Upper pinch bar
5	Lower pinch bar
6	Hex nut
7	Set screw
8	Tag plate
9	Drive screw
10	Fixing set

Exploded view and parts list, type PVE



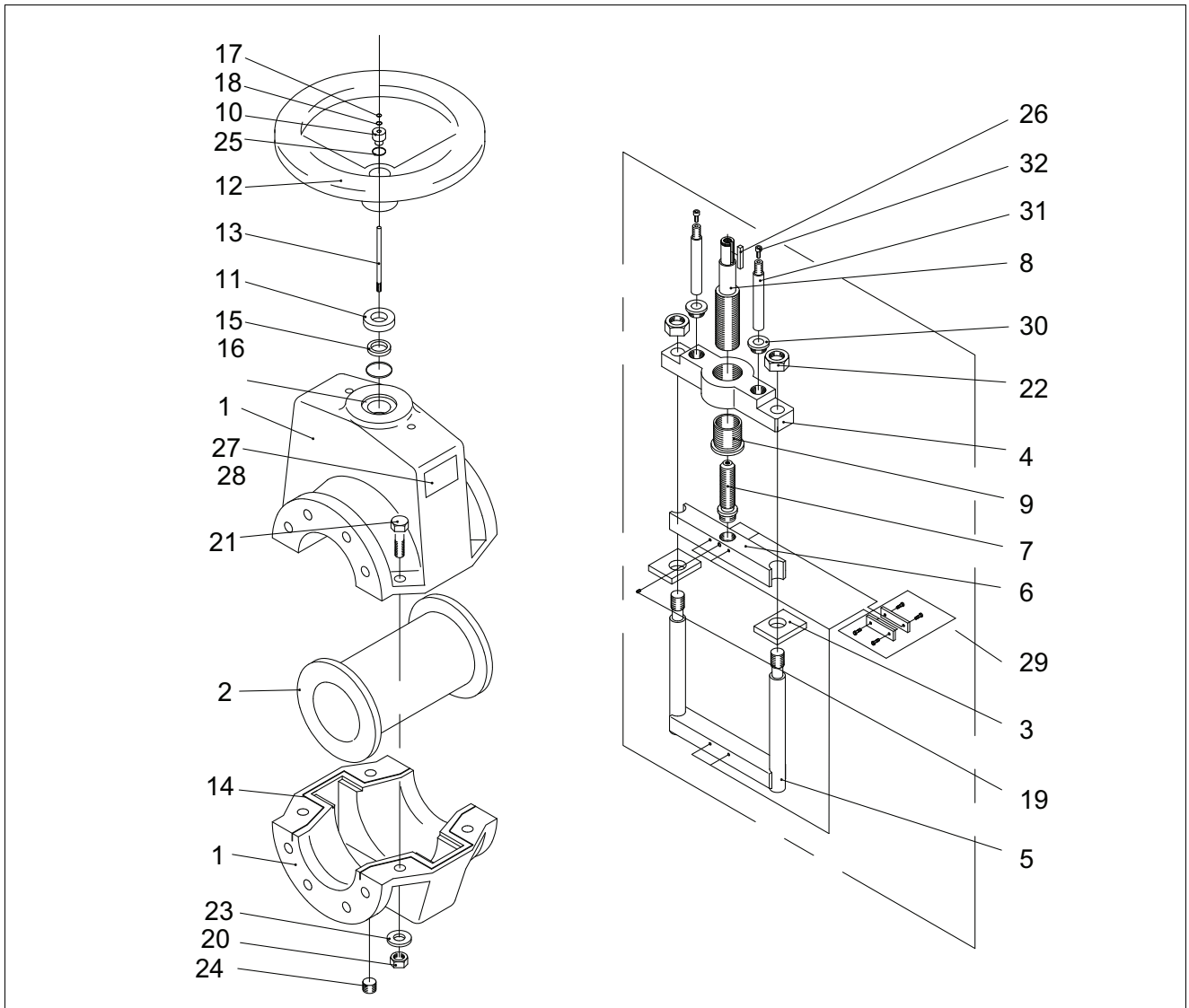
Part	Description	Part	Description
1	Valve body	10	Hex nut
2	Sleeve	11	Washer
3	Upper pinch bar	12	Plug
4	Lower pinch bar	13	Tag plate
5	Bushing	14	Drive screw
6	Guide plate	15	Sticker
7	Hex screw	16	Sealing
8	Set screw	17	Fixing set
9	Hex nut		

Exploded view and parts list, type PVE/S



Part	Description	Part	Description
1	Valve body	12	Plug
2	Sleeve	13	Tag plate
3	Upper pinch bar	14	Drive screw
4	Lower pinch bar	15	Sticker
5	Bushing	16	Sealing
6	Guide	17	Fixing set
7	Hex screw	18	Bushing
8	Set screw	19	Cover bushing
9	Hex nut	20	Sealing
10	Hex nut	21	Sealing
11	Washer		

Exploded view and parts list, type PVS



Part	Description	Part	Description
1	Valve body	17	Sealing
2	Sleeve	19	Set screw
3	Guide	20	Hex nut
4	Attachment frame	21	Hex screw
5	Lower pinch bar	22	Hex nut
6	Upper pinch bar	23	Washer
7	Pinch bar stem	24	Plug
8	Handwheel stem	25	Locker
9	Stem nut	26	Wedge
10	Bushing	27	Tag plate
11	Bushing	28	Drive screw
12	Handwheel	29	Fixing set
13	Indicator pin	30	Bushing*
14	Sealing	31	Guide bar*
15	Sealing	32	Hex socket head*
16	Sealing		

* Not in all sizes

Technical specifications

Type:

Heavy duty PV, PVE and PVS type pinch valves.

Sizes:

PV: DN 80 - 800 / NPS 3" - 32"

PVE, PVE/S, PVS: DN 25 - 800 / NPS 1" - 32"

Temperature range:

PV: -50°C...+50°C / -58°F...+122°F

PVE, PVE/S, PVS: -50°C...+160°C / -58°F...+320°F

Pressures classes:

PV: 25 bar / 375 psi

PVE, PVE/S, PVS: 0 - 100 bar / 0 - 1500 psi

Actuators:

- Manual
- Manual with gear
- Pneumatic
- Electric
- Hydraulic

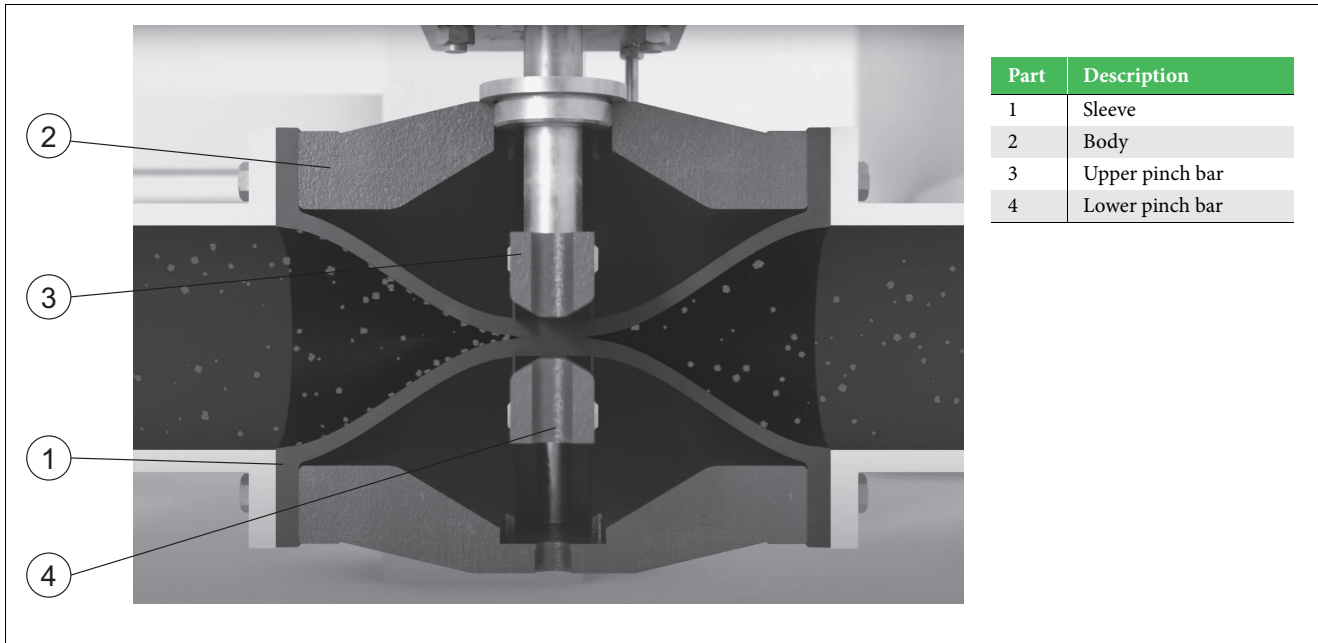
Construction materials:

Body material:

- Cast iron / Ductile iron
- Welded steel
- AISI 316
- Aluminium

Sleeve material:

- Polyurethane / Polyamide
- SBRT = Styrene butadiene
- EPDM = Ethylene propylene
- NR = Natural rubber
- NBR = Nitrile
- CSM = Hypalon
- EPDMB = Green liquor sleeve
- CR = Chloroprene
- IIR = Butyl
- NRF = Foodstuff natural rubber
- NBRF = Foodstuff nitrile
- HNBR = Hydrogenated nitrile
- FMP = Fluorine rubber
- Additional features:*
- /M = Flowrox SensoMate sleeve
- /PU = PU-coating inside the sleeve
- /VAC = Vacuum sleeve
- * Some restrictions apply.

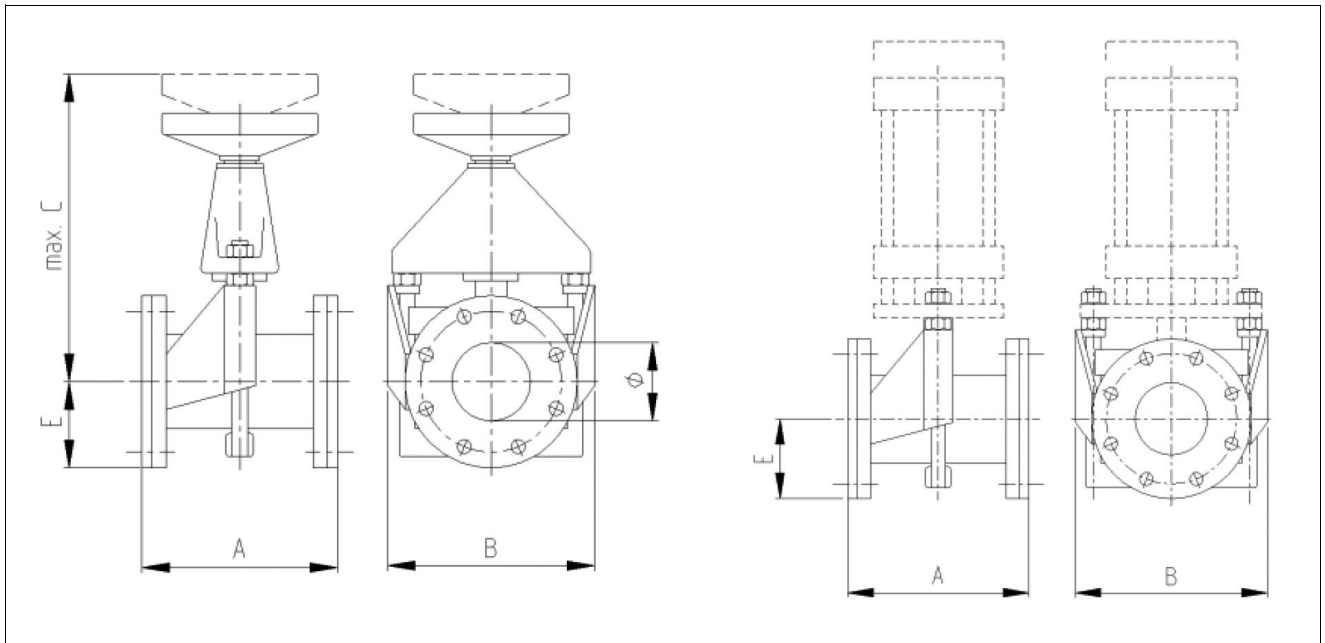


The operating principle of Flowrox pinch valves is simple. In the open position, the valve is full bore with no flow restrictions. During closing, two pinch bars squeeze the valve sleeve shut on the centerline. The sleeve is naturally wear-resistant and when particles hit the sleeve's rubber surface, the energy is absorbed and released when the rubber bounces back.

Heavy duty pinch valves provide bubble tight shut-off even if solids have built up on the sleeve wall. When compressed, any crystallized particles flake off the sleeve surface. The full bore structure ensures free flow of the medium.

The construction and materials of the three main components (sleeve, body and actuator) can be tailored to suit your process conditions.

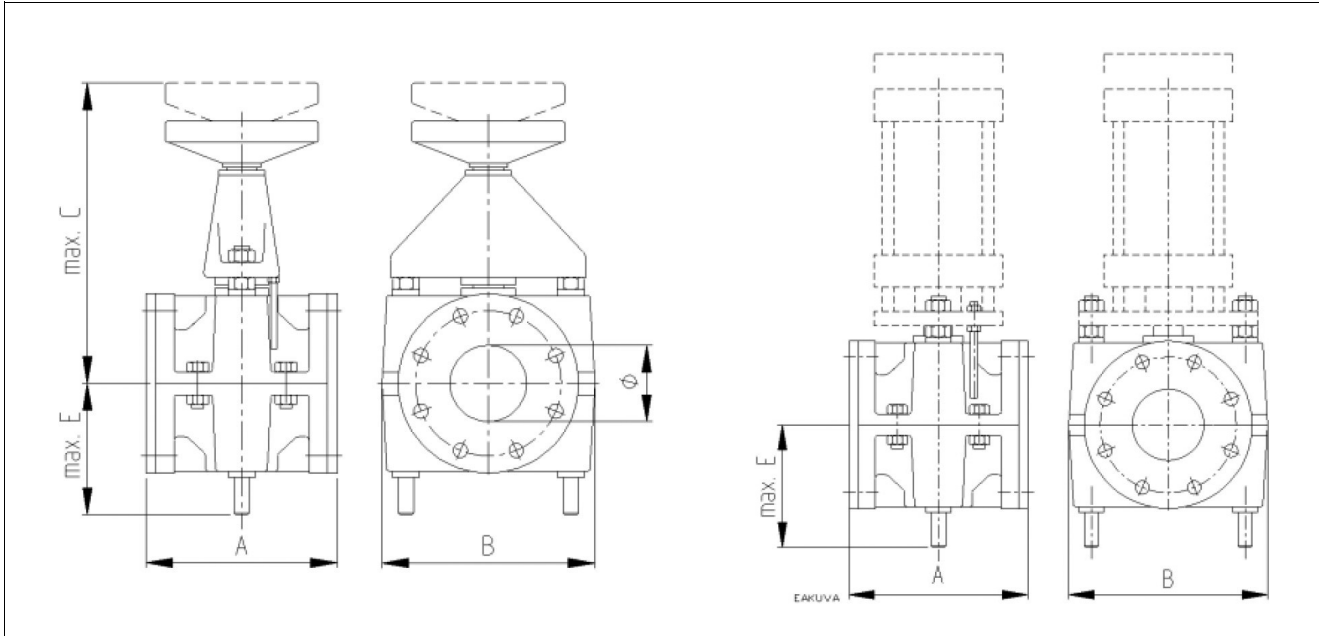
Dimensions, PV valves



Valve size (PV) M&A	PN (bar)	A	B	C	E	Weight Manual valves (kg)	Weight Automatic valves (kg)
80	1-25	200	235	370	100	22	14
100	1-25	250	265	410	110	29	16
125	1-25	310	325	465	135	46	23
150	1-16	375	381	560	143	67	36
200	1-16	500	461	690	170	88	47
250	1-10	625	545	865	210	137	85
300	1-6	750	704	1020	250	167	100

Valve size (PV) M&A	PN (PSI)	A	B	C	E	Weight Manual valves (lb)	Weight Automatic valves (lb)
3	15-375	7.9	9.3	14.6	3.9	49	31
4	15-375	9.8	10.4	16.1	4.3	64	36
5	15-375	12.2	12.8	18.3	5.3	102	51
6	15-240	14.8	15.0	22.0	5.6	148	80
8	15-240	19.7	18.1	27.2	6.7	194	104
10	15-150	24.6	21.5	34.1	8.3	302	188
12	15-90	29.5	27.7	40.2	9.8	368	221

Dimensions, PVE valves



Valve size (PVE) M&A	PN (bar)	A	B	C	E	Weight Manual valves (kg)		Weight Automatic valves (kg)	
						FE	AL	FE	AL
25	1-25	165	125	255	87	11	7	8	4
32	1-25	165	140	260	90	14	9	10	5
40	1-25	165	180	265	105	16	9	12	6
50	1-25	165	190	280	120	18	9	13	7
65	1-25	165	210	310	136	22	12	17	9
80	1-25	200	245	370	155	36	17	27	13
100	1-25	250	278	410	175	46	25	33	17
125	1-25	310	340	465	210	74	41	48	25
150	1-16	375	400	560	240	106	74	75	43
200	1-10	500	480	690	295	159	-	119	-
250	1-6	625	570	865	380	213	-	161	-
300	1	750	720	1020	445	279	-	212	-

Valve size (PVE) M&A	PN (PSI)	A	B	C	E	Weight Manual valves (lbs)		Weight Automatic valves (lbs)	
						FE	AL	FE	AL
1	15-375	6.5	5.0	10.1	3.4	25	16	18	9
1.25	15-375	6.5	5.5	10.2	3.5	31	20	22	11
1.5	15-375	6.5	7.1	10.4	4.1	36	20	27	14
2	15-375	6.5	7.5	11	4.7	40	20	29	16
2.5	15-375	6.5	8.3	12.2	5.4	49	27	38	20
3	15-375	8	9.6	14.6	6.1	80	38	60	29
4	15-375	10	10.9	16.1	6.9	102	55	73	38
5	15-375	12.2	13.4	18.3	8.3	163	91	106	55
6	15-240	14.8	15.7	22	9.4	234	163	166	95
8	15-150	19.7	18.9	27.2	11.6	351	-	263	-
10	15-90	24.6	22.4	34.1	15	470	-	355	-
12	15	29.5	28.3	40.2	17.5	615	-	468	-

How to order

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
PVE	300	A	10	-	2	0	3	L	R2Z3	,	SBRT

1.	Product type
PV	Open
PVE	Enclosed
PVE/S	Enclosed /sealed
PVS	Sealed

2.	Product size DN
25..600	Conical mark with directly with conical reduction Example 50-40

3.	Actuator														
AKUIC								EB				H		MG	
Pneumatic								Electric				Hydraulic		Manual	
Cylinder		Manual override		Positioner		Options		Type		Voltage range		Type		Type	
A	Pneumatic cylinder	BLANK	NONE	BLANK	NONE	BLANK	NONE	E	Electric On-Off/AUMA Norm	BLANK	400V/50hz	H	Hydraulic	M	Manual handwheel
A1S	Pneumatic with stainless piston rod, tie rods and painted cylinder	B	Manual override	K	Positioner Neles ND9000 series	U1C	With pneumatic spring FAIL CLOSE	EP	Electric On-Off with feedback unit EWG 01.1, AUMA	B	380V/50hz	HA	Intergated Solenoid valve 24 VDC	MG	Manual with bevel gear
A2S	Pneumatic "Stainless" no painting			KF	With integrated (Festo DFPI) positioner a)	U1O	With pneumatic spring FAIL OPEN	ES	Electric On-Off AUMA-Matic	C	440V/50hz	HB	Intergated Solenoid valve 110VAC	MCW	Chainwheel
				KL	Standard Positioner with special auxiliaries or other brand than Flowrox Selected Standard	U2C	With pneumatic spring (Pressure switch) FAIL CLOSE c)	EO	Electric On-Off with positioner, Aumatic	D	525V/50hz	HC	Intergated Solenoid valve 230VAC		
						U2O	With pneumatic spring (Pressure switch) FAIL OPEN c)	EL	Electric (Other)	E	460V/60hz	HP	Hydraulic positioner		
						VC	With mechanical spring FAIL CLOSE			N	Other	HL	Other		
						VO	With mechanical spring FAIL OPEN								

4.	Pressure class (PN)*
1	1 bar / 15psi
6	6 bar / 90 psi
10	10 bar / 150 psi
25	25 bar / 375 psi
40	40 bar / 600 psi
64	64 bar / 960 psi
100	100 bar / 1500 psi

5.	Flange drilling**
2	DIN PN 10
3	DIN PN 16
4	DIN PN 25
5	DIN PN 40
6	ASME B16.5 Class 150
7	ASME B16.5 Class 300
8	BS TABLE D
9A	AS TABLE D
9B	AS TABLE E
9C	JIS 10
9D	JIS 16
9	OTHER

6.	Body material*
0	Cast Iron / Fe
2	AISI 316
3	Aluminium
4	Other
5	Polyurethane / polyamide

7.	Flange type
	Type 1 Type 3 Type 4 Determined by the valve Flowrox

12.	Sleeve material
SBRT	Styrene butadiene
EPDM	Ethylene propylene
NR	Natural rubber
NBR	Nitrile
CSM	Hypalon
EPDMB	Green liquor sleeve
CR	Chloroprene
IIR	Butyl
NRF	Foodstuff natural rubber
NBRF	Foodstuff nitrile
HNBR	Hydrogenated nitrile
FMP	Fluorine rubber
Additional features:*	
/M	Flowrox SensoMate sleeve
/PU	PU-coating inside the sleeve
/VAC	Vacuum sleeve

10.	Auxiliaries			
	Description	Extra info	Applicable actuator	
B	Pressure Booster in air supply	Pressure booster determined by Flowrox, used to increase the supply air pressure to secure enough force for pneumatic cylinder.	PNEUMATIC	*
F	Filter Regulator + gauge	Filter Regulator + Gauge Flowrox selected model.	PNEUMATIC	*
F1	Filter Regulator + gauge (stainless steel AISI 316)	Filter Regulator + Gauge Flowrox selected model. FESTO PCR P G1/4 & G1/2	PNEUMATIC	*
F5	Filter Regulator OR Filter Regulator+ gauge	Filter Regulator OR Filter Regulator+ gauge (Non-standard)	PNEUMATIC	
H	Hydraulic Handpump (For Hydraulic only)	Manual hydraulic handpump for hydraulic actuators H only.	HYDRAULIC	*
J1	Junction box small (Flowrox Standard)	Junction box small, for limit switches or solenoid valve, IP66, plastic, 2 pcs M12x1.5 and 1 pc M20x1.5, pre-wired.	ANY	*
J2	Junction box large (Flowrox Standard)	Junction box large, for limit switches and solenoid valve, IP66, plastic, 4 pcs M12x1.5 and 1 pc M20x1.5, pre-wired.	ANY	*
J4	Junction Box (Non-Standard)	Junction box out of Flowrox standard scope specification clarified on the proposal and under valve serial number.	ANY	
P1	Stainless steel fittings + Corrosion resistant tubing	High temperature & corrosion resistance	PNEUMATIC	
P2	AISI 316 Fitting and piping	Stainless steel fitting and piping	PNEUMATIC	
Q	Quick exhaust valve	Quick exhaust valve to maximize the speed of cylinder.	PNEUMATIC	*
R	Readiness for ind. Limit switches	Readiness for d18mm inductive limit switches.	ANY	*
R1	AC/DC (18mm cylindrical switch) (Flowrox Standard)	AC/DC, 2-wire type, (24...240VAC / 24...240VDC) Flowrox selected model	ANY	*
R2	DC, PNP (18mm cylindrical switch) (Flowrox Standard)	DC, 3-wire type, PNP (12...24V) Flowrox selected model	ANY	*
R3	DC, NPN (18mm cylindrical switch) (Flowrox Standard)	DC, 3-wire type, NPN (12...24V) Flowrox selected model	ANY	*
R5	Limit switch (Non-Standard)	Limit switch out of Flowrox standard scope specification clarified on the proposal and under valve serial number.	ANY	
S	Magnetic limit switches (Flowrox Standard)	Magnetic limit switches, attached to aluminium pneumatic cylinder actuators. Cylinder fitted with magnetic piston.	PNEUMATIC	*
S5	Magnetic limit switches (Non-Standard)	Magnetic limit switches, attached to aluminium pneumatic cylinder actuators. Cylinder fitted with magnetic piston.	PNEUMATIC	
T	Mechan. Limit switches (Flowrox Standard)	Mechanical limit switches Flowrox selected model	ANY	*
T5	Mechan. Limit switches (Non-Standard)	Mechanical limit switches (Non-standard) Consult with Flowrox	ANY	
Z1	Solenoid valve, 24VDC, Monostable (Flowrox Standard)	Solenoid valve 24 VDC (for pneumatic actuator) with necessary tubing Flowrox selected model, monostable (Single coil).	PNEUMATIC	*
Z1B	Solenoid valve, 24VDC, Bistable (Flowrox Standard)	Solenoid valve 24 VDC (for pneumatic actuator) with necessary tubing Flowrox selected model, Bistable (Double coil).	PNEUMATIC	*
Z2	Solenoid valve, 230V, 50/60Hz, Monostable (Flowrox Standard)	Solenoid valve 230V - 50/60Hz (for pneumatic actuator) with necessary tubing Flowrox selected model, monostable (Single coil).	PNEUMATIC	*
Z2B	Solenoid valve, 230V, 50/60Hz, Bistable (Flowrox Standard)	Solenoid valve 230V - 50/60Hz (for pneumatic actuator) with necessary tubing Flowrox selected model, Bistable (Double coil).	PNEUMATIC	*
Z3	Solenoid valve, 110V, 50/60Hz, Monostable (Flowrox Standard)	Solenoid valve 110V, 50/60Hz (for pneumatic actuator) with necessary tubing Flowrox selected model, monostable (Single coil).	PNEUMATIC	*
Z3B	Solenoid valve, 110V, 50/60Hz, Bistable (Flowrox Standard)	Solenoid valve 110V, 50/60Hz (for pneumatic actuator) with necessary tubing Flowrox selected model Bistable (Double coil).	PNEUMATIC	*
Z5	Solenoid valve, 24VDC, Monostable (Non-Standard)	24 VDC monostable (Single coil) solenoid valve out of Flowrox standard scope specification clarified on the proposal and under valve serial number.	PNEUMATIC	
Z5B	Solenoid valve, 24VDC, Bistable (Non-Standard)	24 VDC Bistable (Double coil) solenoid valve out of Flowrox standard scope. To be specified on the proposal and under valve serial number.	PNEUMATIC	
Z6	Solenoid valve, 230V, 50/60Hz, Monostable (Non-Standard)	230V 50/60Hz monostable (Single coil) solenoid valve out of Flowrox standard scope. To be specified on the proposal and under valve serial number.	PNEUMATIC	
Z6B	Solenoid valve, 230V, 50/60Hz, Bistable (Non-Standard)	230V 50/60Hz Bistable (Double coil) solenoid valve out of Flowrox standard scope. To be specified on the proposal and under valve serial number.	PNEUMATIC	
Z7	Solenoid valve, 110V, 50/60Hz, Monostable (Non-Standard)	110V 50/60Hz monostable (Single coil) solenoid valve out of Flowrox standard scope. To be specified on the proposal and under valve serial number.	PNEUMATIC	
Z7B	Solenoid valve, 110V, 50/60Hz, Bistable (Non-Standard)	110V 50/60Hz Bistable (Double coil) solenoid valve out of Flowrox standard scope. To be specified on the proposal and under valve serial number.	PNEUMATIC	
X	Must be specified	Additional auxiliary equipment not listed.	ANY	

* Flowrox standard options

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