

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 25 – 800/1" – 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

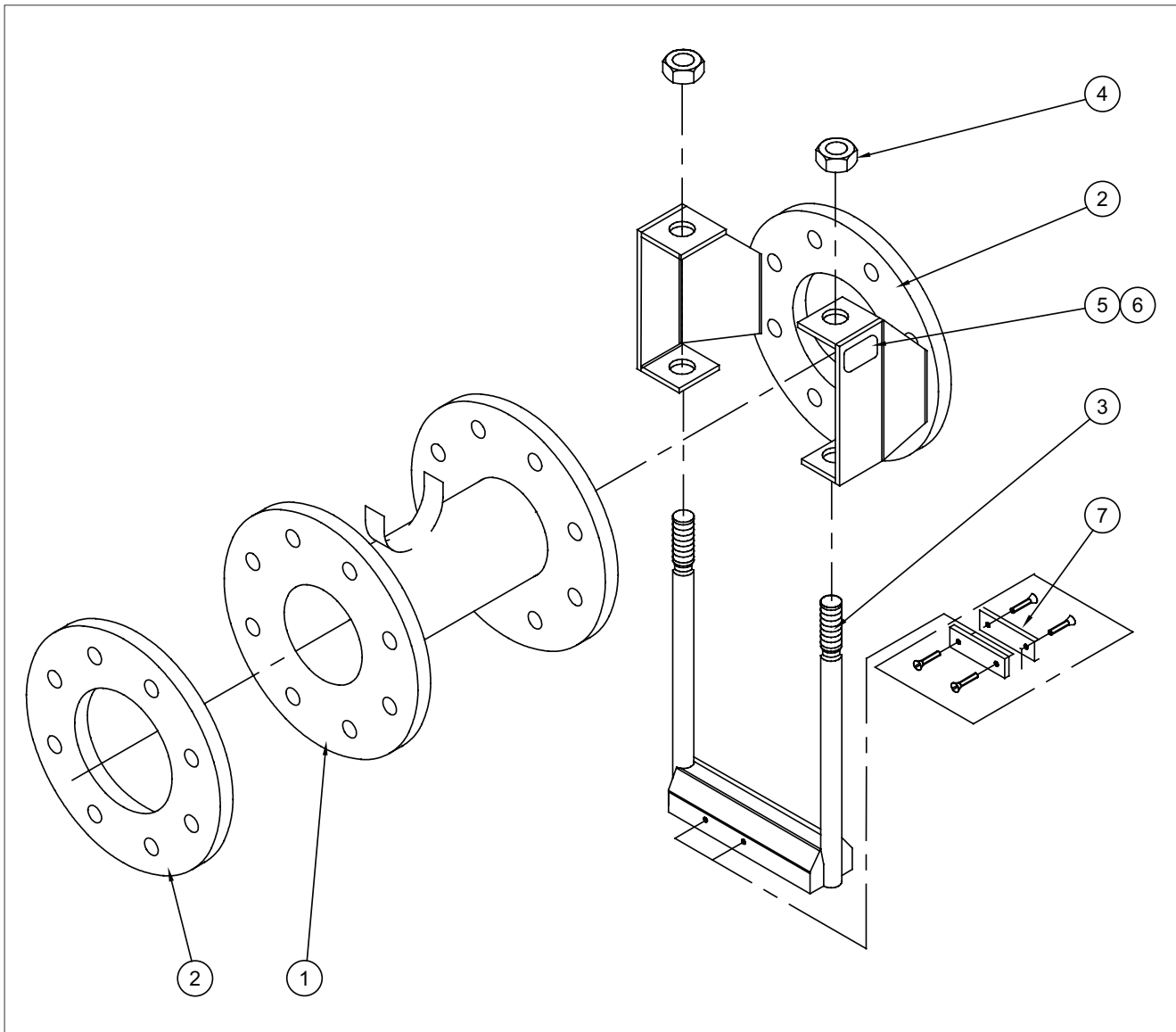
Materials

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

Flange drillings

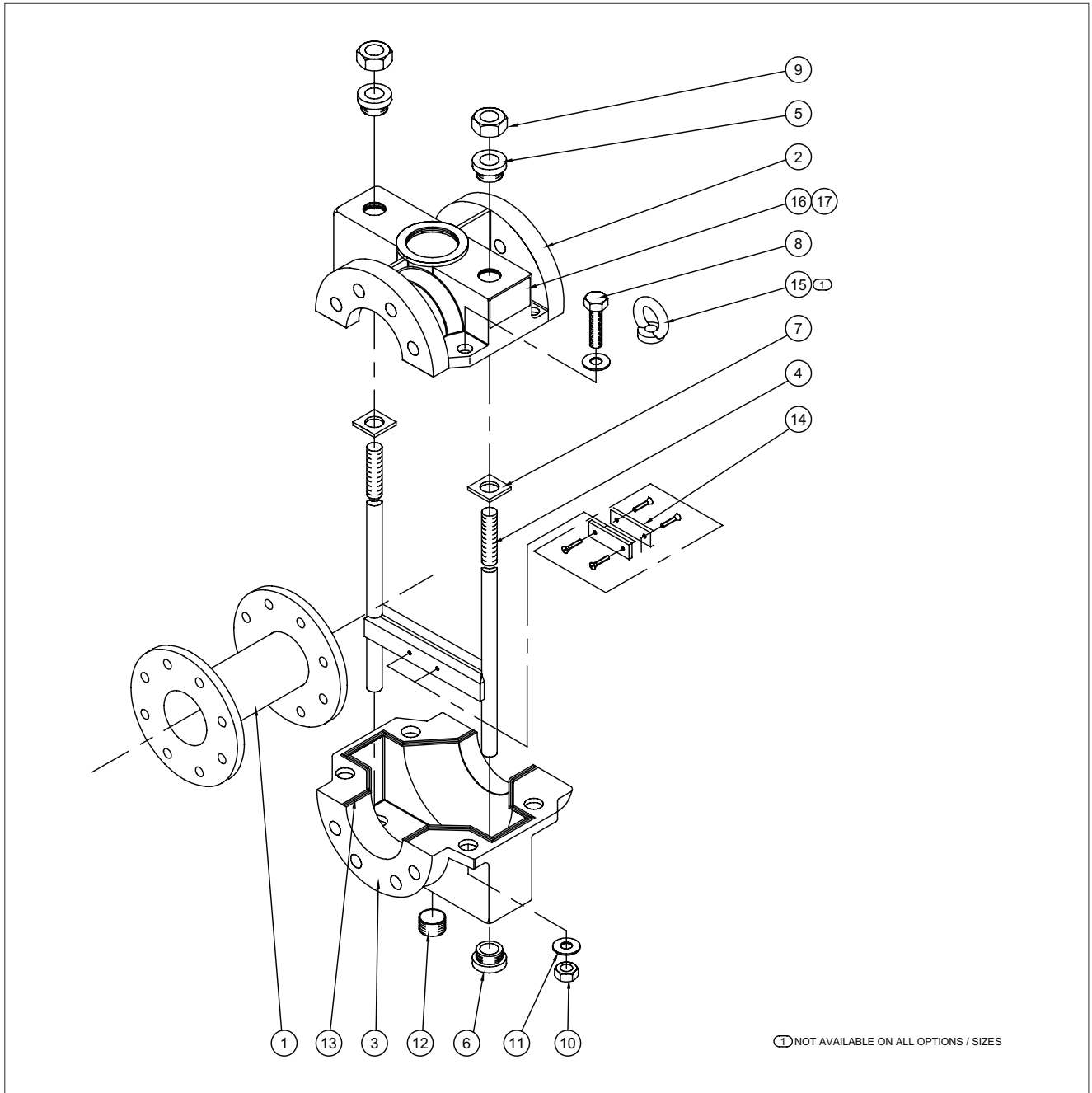
- DIN PN 10, DIN PN 16, DIN PN 25, DIN PN 40,
- ASME B16.5 Class 150, ASME B16.5 Class 300
- BS TABLE D, AS TABLE D, AS TABLE E
- JIS 10K, JIS 16K
- Others on request

Exploded view and parts list, type PV



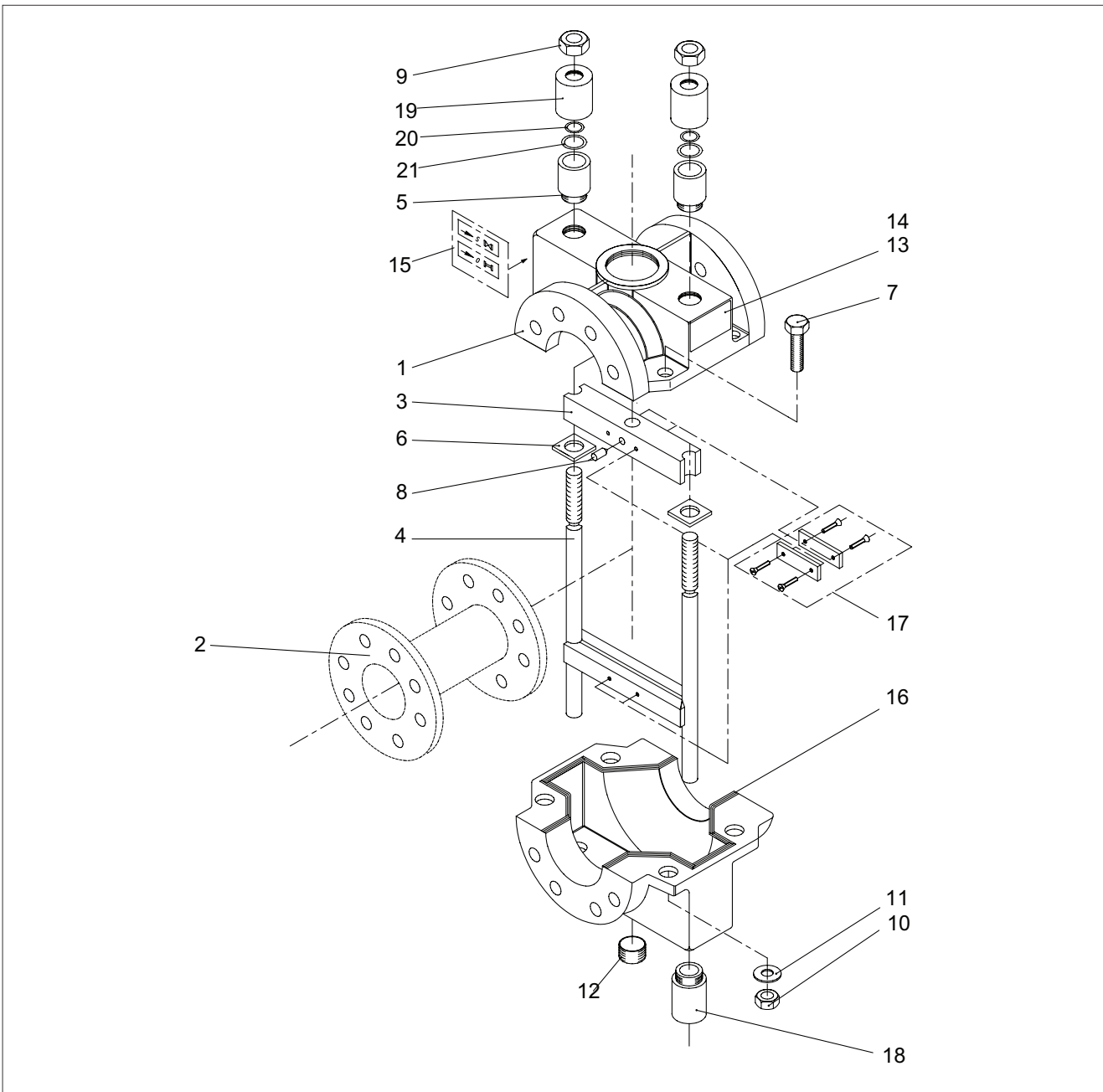
Part	Description
1	SLEEVE
2	BODY
3	LOWER PINCH BAR
4	HEX NUT
5	TAG PLATE
6	HAMMERDRIVE SCREW
7	FIXING SET

Exploded view and parts list, type PVE



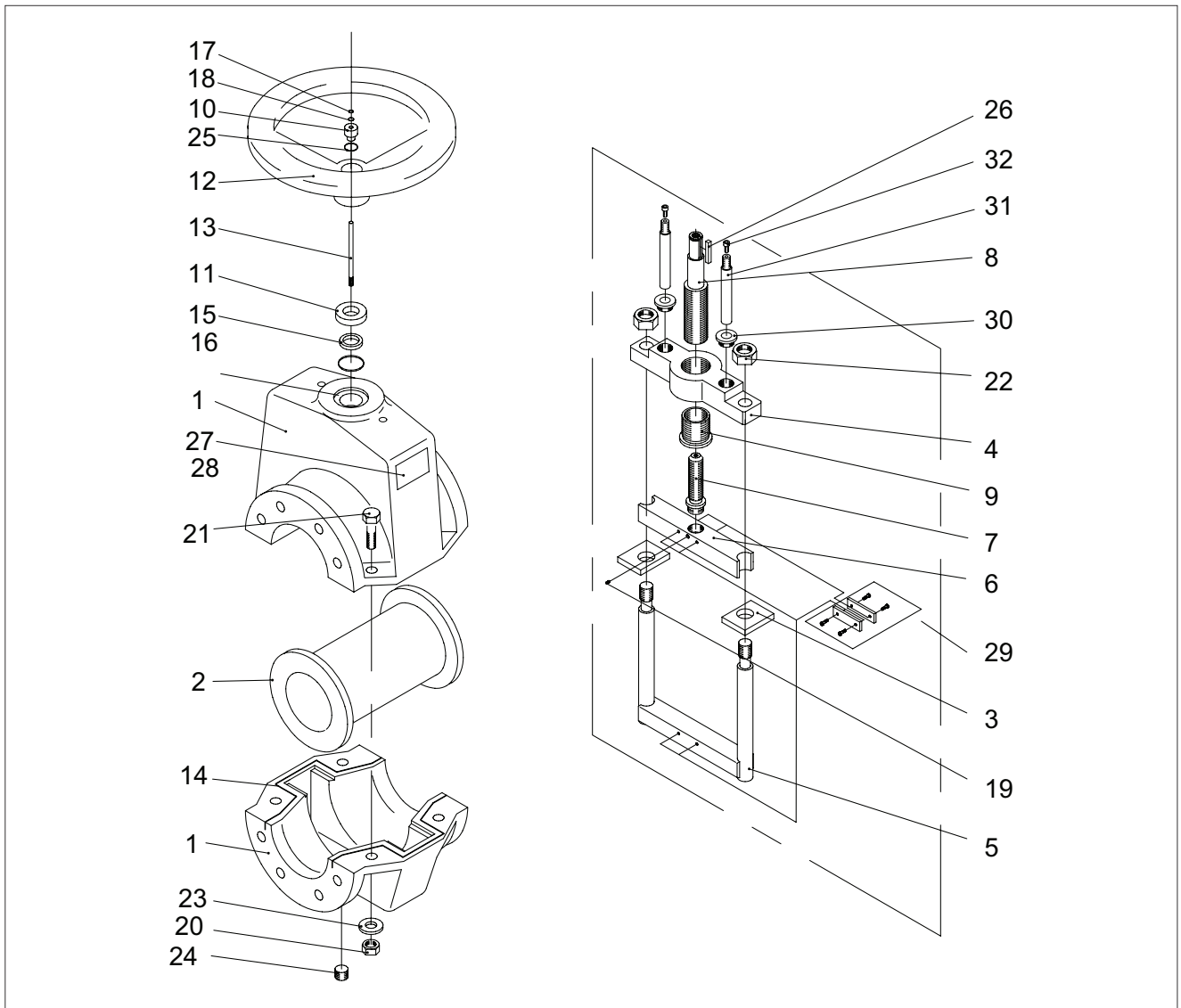
Part	Description	Part	Description
1	SLEEVE	10	HEX NUT
2	UPPER BODY	11	WASHER
3	LOWER BODY	12	PLUG
4	LOWER PINCH BAR	13	SEALING STRIP
5	THREADED BUSHING	14	FIXING SET
6	THREADED BUSHING	15	LIFTING EYE NUT
7	GUIDE PLATE	16	TAG PLATE
8	HEX SCREW	17	HAMMERDRIVE SCREW
9	HEX NUT		

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:

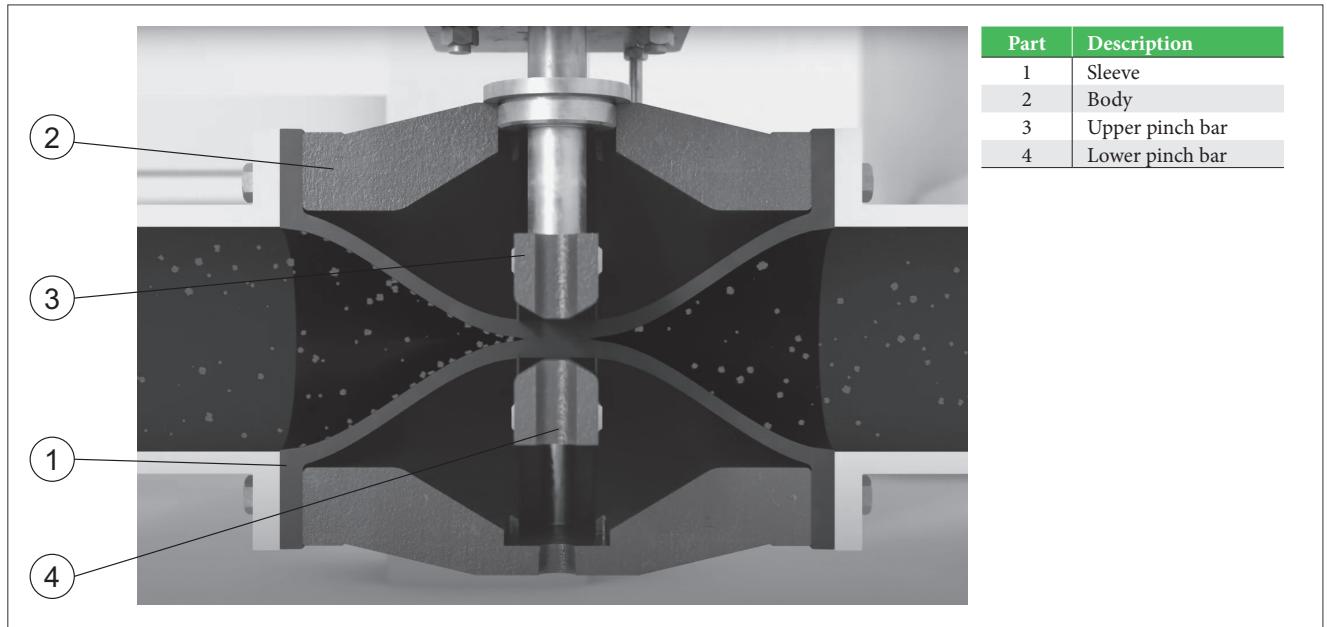
- Body material:
- Cast iron / Ductile iron
 - Welded steel
 - AISI 316
 - Aluminium
 - Polyurethane / Polyamide

Standard sleeve materials for Flowrox valves

Rubber quality	Application examples	Temperature range	Typical media
SBRT Styrene Butadiene, Flowrox Blend	Heavy wearing High cycle frequency	-40°C - +110°C / -40°F - +230°F	Abrasive materials, diluted acid, alkali and chemical applications
EPDM Ethylene Propylene	Chemical applications • Applicable to 75% of all industrial chemical applications	-40°C - +120°C / -40°F - +248°F	Concentrated and oxidizing chemicals

Other sleeve material options

Rubber quality	Application examples	Temperature range	Typical media
NBR Nitrile Rubber	Applications involving oils, fats and hydrocarbon	-30°C - +100°C / -22°F - +212°F	Oils, fats, fuels hydrocarbon, lubricants
NR Natural Rubber	High wear applications	-50°C - +75°C / -58°F - +167°F	Abrasive materials, diluted acids, alkali & chemicals
HNBR Hydrogenated Nitrile	High temperature applications	-30°C - +160°C / -22°F - +320°F	Oils, fats, fuels hydrocarbon, lubricants
NRF Natural Rubber Foodstuff Quality White inner lining	Foodstuff applications • Fulfills FDA (Food and Drug Administration) requirements	-40°C - +75°C / -40°F - +167°F	Media used in food and other CIP (clean-in-place) processes, alcohol
NBRF Nitrile Rubber White inner lining	Applications involving fatty foodstuff • Fulfills FDA (Food and Drug Administration) requirements	-30°C - +100°C / -22°F - +212°F	Vegetable and animal oils and fats
EPDM/B Ethylene Propylene, Flowrox Blend	Pulp and paper industry's green liquor application	-40°C - +100°C / -40°F - +212°F	Green liquor, alkaline and extraneous matter in green liquor processes
CR Chloroprene Rubber	Special-purpose chemical applications • Resilient to ozone and adverse weather	-40°C - +100°C / -40°F - +212°F	Chemicals, acids, several solvents, aliphatic oils, fats, lubricants
FPM Fluorine Rubber (Viton®)	Special-purpose chemical applications • Resilient to ozone and adverse weather	-20°C - +120°C / -4°F - +248°F	Chemicals, aliphatic oils, aromatic and halogenated hydrocarbon
CSM Chloro-sulphone-ethylene (Hypalon®)	Special-purpose chemical applications • Resilient to ozone and adverse weather	-40°C - +100°C / -40°F - +212°F	Chemicals, acids, several solvents, aliphatic oils, fats, lubricants
IIR Butyl	Special-purpose chemical applications • Impermeable to gas	-40°C - +100°C / -40°F - +212°F	Concentrated and acidic chemicals, vegetable oils
PU SBRT with polyurethane lining	Abrasive media applications	-10°C - +80°C / 14°F - +176°F	Abrasive materials, diluted chemicals, hydrocarbon, oils, lubricants

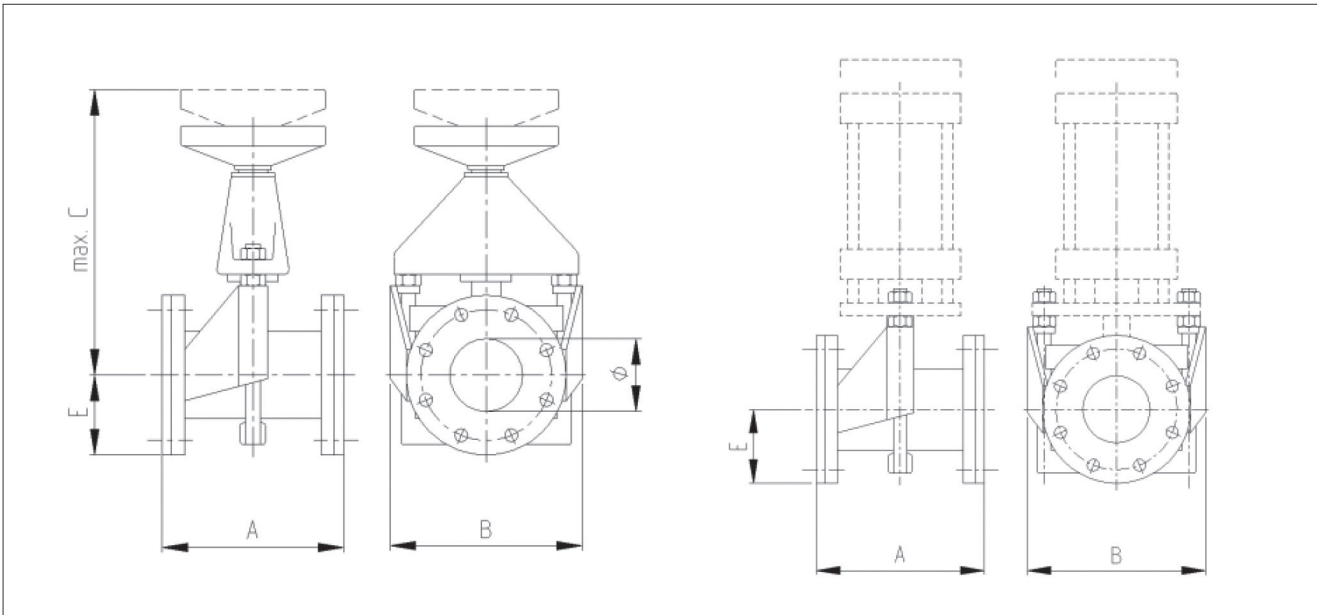


The operating principle of Flowrox pinch valves is simple. In the open position, the valve is full bore with no flow restrictions. During closing, two pinch bars squeeze the valve sleeve shut on the centerline. The sleeve is naturally wear-resistant and when particles hit the sleeve's rubber surface,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

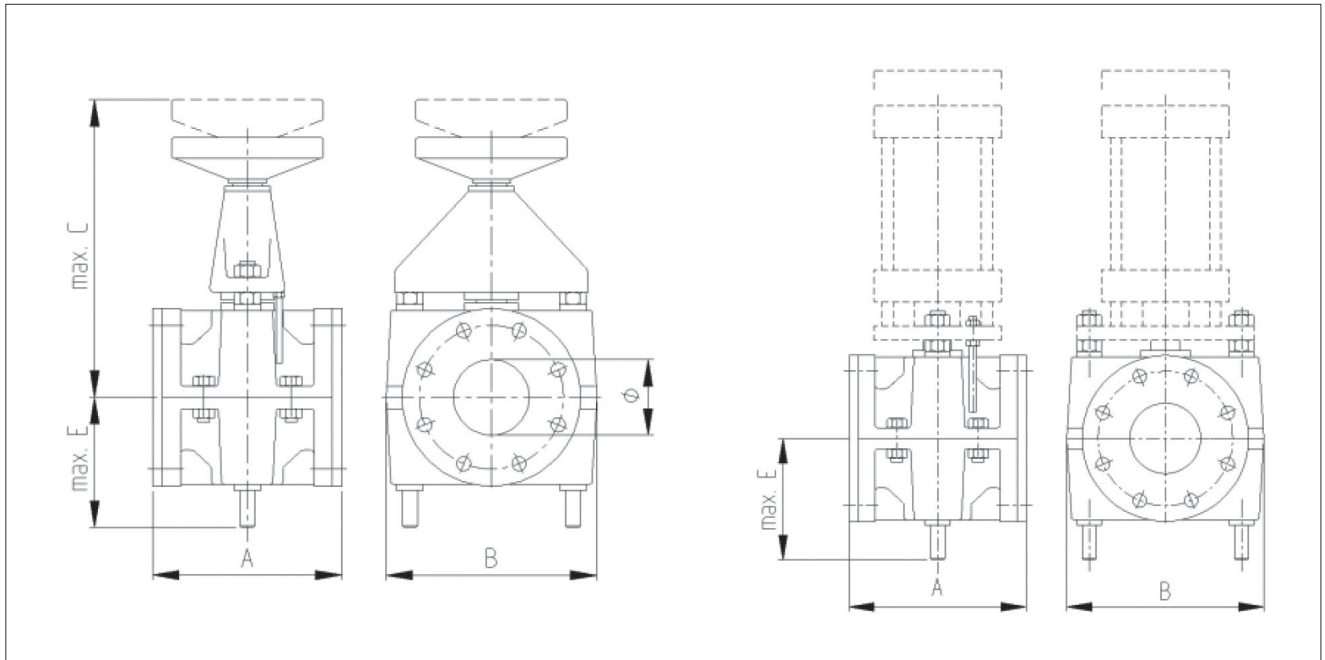
Dimensions, PV valves



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	-

Type code

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
PVE	0100			B025	L	00	A	G	N	1	A	A

PVE0100B025L00AGN1AA

1. Sign	VALVE SERIES
PV	Pinch valve open model
PVE	Pinch valve Enclosed model
PVE/S	Pinch valve Enclosed/Sealed model
PVS	Pinch valve Sealed model

5. Sign	PRESSURE RATING
B001	1 BAR
B006	6 BAR
B007	7 BAR (Only AS Table D and BS Table D)
B010	10 BAR
B014	14 BAR (Only AS Table E and BS Table E)
B016	16 BAR
B020	20 BAR
B025	25 BAR
B040	40 BAR
B064	64 BAR
B100	100 BAR
B00Y	Special

2. Sign	BODY SIZE	
0025	DN 25	1"
0032	DN 32	1- 1/4"
0040	DN 40	1- 1/2"
0050	DN 50	2"
0065	DN 65	2- 1/2"
0080	DN80	3"
0100	DN100	4"
0125	DN125	5"
0150	DN150	6"
0200	DN200	8"
0250	DN250	10"
0300	DN300	12"
0350	DN350	14"
0400	DN400	16"
0450	DN450	18"
0500	DN500	20"
0600	DN600	24"

6. Sign	FLANGE DRILLING
J	PN 10 EN 1092
K	PN 16 EN 1092
L	PN 25 EN 1092
M	PN 40 EN 1092
C	ASME B16.5 Class 150
D	ASME B16.5 Class 300
B	BS TABLE D
A	AS TABLE D
E	AS TABLE E
R	JIS 10K
S	JIS 16K
Y	Other

3. Sign	VALVE SERIES
/	Only if reduced port valve required (CONTROL VALVES ONLY)
-	Blank

7. Sign	BODY MATERIAL
00	Grey Cast iron EN 1561-GJL-250
02	AISI 316 (EN 1.4408 / A351 CF8M)
03	Aluminum AlSi12
04	Welded steel
05	Polyurethane
06	Polyamide
YY	Other

4. Sign	SLEEVE REDUCTION (REDUCTION UP TO TWO SIZES)	
0015	DN 15	1/2"
0020	DN 20	3/4"
0025	DN 25	1"
0032	DN 32	1- 1/4"
0040	DN 40	1- 1/2"
0050	DN 50	2"
0065	DN 65	2- 1/2"
0080	DN 80	3"
0100	DN 100	4"
0125	DN 125	5"
0150	DN 150	6"
0200	DN 200	8"
0250	DN 250	10"
0300	DN 300	12"
0350	DN 350	14"
0400	DN 400	15"
0500	DN 500	20"
-	Blank no reduction	

8. Sign	SLEEVE MATERIAL
A	SBRT Styrene Butadiene, Flowrox™ Blend
B	EPDM Ethylene Propylene
C	NR Natural Rubber
D	NBR Nitrile
E	CSM Chlorosulfonated Polyethylene (Hypalon®)
F	EPDMB Green Liquor Sleeve Flowrox™ Blend
G	CR Chloroprene
H	IIR Butyl
I	NRF Natural Rubber Foodstuff (No FDA approval)
J	NBRF Nitrile Foodstuff (No FDA approval)
K	HNBR Hydrogenated Nitrile
L	FMP Fluorine Rubber (Viton®)

9. Sign	SLEEVE TYPE
G	General (Full Bore)
FOR CONTROL APPLICATION	
C	Conical even $DN \geq 80$
S	Conical straight outer surface $80 > DN$

10. Sign	SLEEVE FEATURES/OPTIONS
A	Flowrox SensoMate sleeve
B	PU-Lining inside the sleeve (Available only with SBRT)
C	Suction sleeve (For negative pressure)
N	NONE

11. Sign	BUSHING MATERIAL
1	UHMWPE (RCH1000) (Standard)
N	None (Applies to PV Series)
Y	Other

12. Sign	FASTENERS MATERIAL
A	FEZN (Standard)
C	All Stainless steel, A4
Y	Other

13. Sign	FLANGE FACING
A	Standard EN 1092-1/A Flat Face
B	EN 1092-1/B1 Raised Face (Only Certain size and pressure rating)
R	ASME B16.5 RF, Raised Face (Only Certain size and pressure rating)

Flowrox™ valves manual actuator type code

1.	2.	3.	4.	5.	6.	7.	8.	9.
FXMH	9	1	PV6	/	0100	S	250	N

FXMH91PV6/0100S250N

1. Sign	ACTUATOR SERIES
FXMH	Flowrox Manual actuator with direct handwheel
FXMC	Manual with chainwheel

2. Sign	HOUSING MATERIAL/ATTACHMENT FRAME
2	AISI 316
3	Aluminum, Painted (ONLY PV & PVE DN40-150)
4	Mild steel, painted
9	Not applicable (For PVEG, PVG series only)

3. Sign	STEM MATERIAL
1	Mild steel
2	AISI 316
3	AISI 304
Y	Other

4. Sign	MOUNTING FACE
PV1	PV
PV2	PVE
PV3	PVE/S
PV4	PVS
PV5	PVEG
PV6	PVG
SK1	SKF/SKW (DN50-250)

6. Sign	VALVE SIZE
0025	0025, 0032, 0040, 0050, 0065, 0080, 0100, 0125, 0150, 0250, 0300, 0350, 0400, 0450, 0500, 0600

7. Sign	BUSHINGS
A	Stainless steel (AISI 316)
B	Brass (PVEG-series)
C	Carbon Steel (PVG-series)
E	PE-1000-AST – 50 °C to 80 °C (For Ex-areas)
H	High temperature (PA6G 30F) – 30 °C to 120 °C
N	Not applicable
S	PE-1000 – 50 °C to 80 °C
Y	Other

8. Sign	HANDWHEEL SIZE
150	Direct handwheel Diameter 150 mm.
175	Direct handwheel Diameter 175 mm.
200	Direct handwheel Diameter 200 mm.
220	For chainwheel 220 outer diameter.
225	Direct handwheel Diameter 225 mm.
250	Direct handwheel Diameter 250 mm.
320	Direct handwheel Diameter 320 mm.
390	For chainwheel D393-394 outer diameter.
400	Direct handwheel Diameter 400 mm.
600	Direct handwheel Diameter 600 mm.
660	For chainwheel D660 outser diameter.
800	Direct handwheel Diameter 800 mm.
YYY	Other

9. Sign	BOLT MATERIAL
A	FEZN (Standard)
C	Stainless steel, A4
N	Not applicable (For PVEG, PVG series only)

10. Sign	SPECIAL FEATURES
-	Blank
Y	Other

Flowrox™ valves pneumatic actuator type code

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
FXA	S	2	F	S080	A	0100			/	S	1	PV1	/	M	N

FXAS2FS080A0100/S1PV1/MN

1. Sign	ACTUATOR SERIES
FXA	Flowrox Pneumatic actuator

8. Sign	SEPARATOR
/	Used only for REDUCED BORE pinch valves.

2. Sign	APPLICATION
C	For Control duty
S	Shut-Off, for On/Off duty

9. Sign	REDUCED STROKE
0080	0025, 0032, 0040, 0050, 0065, 0080, 0100, 0125, 0150, 0250, 0300, 0350, 0400, 0450, 0500, 0600, 0700, 0750, 0800, 0900, 1000, 1100, 1200, 1300, 1350, 1400, 1500
-	Blank

3. Sign	CYLINDER ACTION
1	Single acting, Spring to close
2	Double acting
3	Single acting, Spring to open

10. Sign	SEPARATOR
/	Used only for REDUCED BORE pinch valves.

4. Sign	MODEL (Selected by Valmet Flow Control.)
A	Model A
F	Model F
Y	Other model

11. Sign	SEAL OPTION
S	Standard temperature (NBR) -20...+80 °C
H	High temperature -20...+120 °C
C	Cold temperature -40...+60 °C
A	Arctic temperature -50...+60 °C

5. Sign	CYLINDER SIZE
S080	ø80 mm
S100	ø100 mm
S125	ø125 mm
S160	ø160 mm
S200	ø200 mm
S250	ø250 mm
T250	øT250 mm (Tandem)
S320	ø320 mm
T320	øT320 mm (Tandem)
S400	ø400 mm
S500	ø500 mm
S508	ø508 mm
S600	ø600 mm
S609	ø609 mm
S700	ø700 mm

12. Sign	CYLINDER MATERIAL
1	Standard (Aluminum barrel/ Steel Chrome coated piston rod)
2	Aluminum barrel (painted) + AISI 316 piston rod
3	AISI 316 (No painting)
4	Fibreglass barrel & Aluminum flanges
Y	Other

6. Sign	DESIGN
A	Standard
B	Double piston rod for Manual override.
F	Integrated positioner (FESTO DFPI-...-C1V-NB3)

13. Sign	MOUNTING FACE
PV1	PV AND PVE
PV3	PVE/S
PV4	PVS
PV5	PVEG
PV6	PVG
SK1	SKF & SKW
SK2	SKH

7. Sign	STROKE
0100	0025, 0032, 0040, 0050, 0065, 0080, 0100, 0125, 0150, 0250, 0300, 0350, 0400, 0450, 0500, 0600, 0700, 0750, 0800, 0900, 1000, 1100, 1200, 1300, 1350, 1400, 1500

14. Sign	SEPARATOR
/	

15. Sign	MAGNETIC PISTON FEATURE
M	Magnetic piston (YES)
N	No

16. Sign	INTEGRATED AIR TANK
N	None

Flowrox™ valves hydraulic actuator type code

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
FXH	2	H	100	A	0150	/	100	S	1	PV1

FXH2H100A0150/100S1PV1

1. Sign	ACTUATOR SERIES
FXH	Flowrox hydraulic actuator

2. Sign	CYLINDER ACTION
2	Double acting

3. Sign	MODEL
H	Model H
Y	Other

4. Sign	CYLINDER SIZE
040	ø40 mm
050	ø50 mm
063	ø63 mm
080	ø80 mm
100	ø100 mm
125	ø125 mm
160	ø160 mm
200	ø200 mm
250	ø250 mm
320	ø320 mm
YYY	Other

5. Sign	DESIGN
A	Standard
B	Integrated solenoid valve(Normally Open) 24 VDC
C	Integrated solenoid valve(Normally Open) 110/120 VAC
D	Integrated solenoid valve(Normally Open) 230 VAC
E	Integrated solenoid valve(Normally Closed) 24 VDC
F	Integrated solenoid valve(Normally Closed) 110/120 VAC
G	Integrated solenoid valve(Normally Closed) 230 VAC
H	Integrated solenoid valve(Fail Last) 24 VDC
J	Integrated solenoid valve(Fail Last) 110/120 VAC
K	Integrated solenoid valve(Fail Last) 230 VAC
P	Integrated positioner (ONLY FOR CONTROL VALVES)
Y	Other

6. Sign	STROKE
0100	0025, 0032, 0040, 0050, 0065, 0080, 0100, 0125, 0150, 0250, 0300, 0350, 0400, 0450, 0500, 0600, 0700, 0750, 0800, 0900, 1000, 1100, 1200, 1300, 1350, 1400, 1500

7. Sign	SEPARATOR
/	Only if reduced port valve required (CONTROL VALVES ONLY)
-	Blank

8. Sign	REDUCED STROKE
0080	0025, 0032, 0040, 0050, 0065, 0080, 0100, 0125, 0150, 0250, 0300, 0350, 0400, 0450, 0500, 0600, 0700, 0750, 0800, 0900, 1000, 1100, 1200, 1300, 1350, 1400, 1500

9. Sign	SEAL OPTION
H	High temperature (Viton) -15...200 °C
S	Standard temperature (NBR) -30...+90 °C (Standard option)

10. Sign	CYLINDER MATERIAL
1	Standard Steel flanges and barrel, Chrome coated piston rod
2	Standard Steel flanges and barrel, AISI 316 piston rod
Y	Other

11. Sign	MOUNTING FACE
PV1	PV AND PVE
PV3	PVE/S
PV4	PVS
SK1	SKF & SKW
SK2	SKH

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