

PINCH VALVE

The PA model pinch valve is a heavy-duty enclosed construction full bore valve that employs elastomer sleeves for flow shut-off and control in applications with abrasive and corrosive slurries. The sleeve is the only part in contact with the media, no other mechanical parts are required, and it is a maintenance free part. The PA pinch valve is mainly used in industries such as:

- Mining
- Chemical plants
- Pulp and paper
- Etc.
- Power plants
- Wastewater treatment
- Cement and ceramic

Sizes:

DN 1"/25mm to 12"/DN 300mm

Working pressure:

DN 1"/ 25mm to 6"/150mm	150 psi / 10 bar
DN 8"/200mm	125 psi / 8.5 bar
DN 10"/250mm	100 psi / 7 bar
DN 12"/300mm	87 psi / 6 bar

Standard Flange connection:

DIN PN 10 and ANSI B16.5 (class 150)

Main features:

- Bi-directional operation, both for on/off and throttling service
- Clog resistant, 100% full bore design with no flow restrictions and turbulence, and self-cleaning
- Enclosed body, protecting the sleeve from outside conditions
- Sleeve is the only part exposed to the line process, no other mechanical parts required
- Single and double pinch closing mechanisms
- No packing, therefore drop-tight to the outside
- Reduced process downtime and maintenance cost with easy and quick replacement
- Manual and double acting pneumatic actuators. Electric actuators available upon request
- Face-to-face as per ANSI B16.10 up DN 6"/ 150 same as B16.10 (class 150) plug/ball/gate valves
- Operation under vacuum conditions feasible

All ORBINOX valves are tested prior to shipping

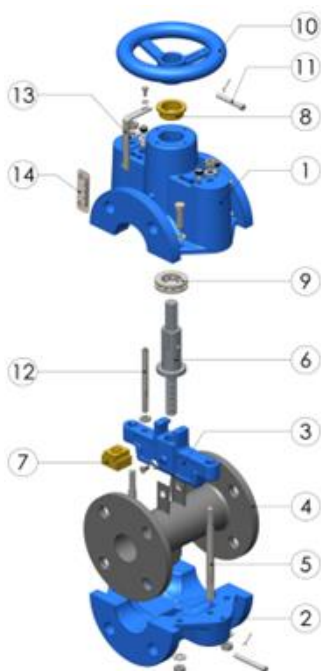


DESIGN FEATURES

PINCH CONFIGURATION:

ORBINOX PA pinch valve has been conceived with one single pinch bar configuration for small sizes up to DN 2,5"/65 and with a double pinch rod configuration for sizes from DN 3"/80 to DN 12"/300.

Single pinch:



STANDARD PART LIST

Part	Materials
1-Upper body	Ductile iron (EN GJS 400-15)
2-Lower body	Ductile iron (EN GJS 400-15)
3-Pinch bar	ASTM A216 GR. WCB
4-Sleeve	Natural rubber
5-Tie rod	SS 430F
6-Stem	SS 430F
7-Stem nut	Aluminium bronze
8-Stem guide bush	Aluminium bronze
9-Thrust bearing	Mfg Std.,
10-Handwheel	Carbon steel
11-Handwheel pin	SS 430F
12-Indicator rod	SS 430F
13-Indicator marker	SS 304
14-Indicator scale	SS 304

Double pinch:



STANDARD PART LIST

Part	Materials
1-Upper body	Ductile iron (EN GJS 400-15)
2-Lower body	Ductile iron (EN GJS 400-15)
3-Support	Ductile iron (EN GJS 400-15)
4-Upper pinch bar	Carbon steel A106 Gr. B
5-Lower pinch bar	Carbon steel A106 Gr. B
6-Sleeve	Natural rubber
7-Tie rod	SS 430F
8-Stem nut	Aluminium bronze
9-Lead screw	SS 430F
10-Thrust bearing	Mfg Std.,
11-Hand wheel	Carbon steel
12-Bellow	Rexine fabric
13-Indicator marker	SS 304
14-Indicator scale	SS 304

DESIGN FEATURES

BODY:

Two cast part body design for installation between flanges, designed for heavy duty applications. The enclosed construction protects the sleeve from ambient conditions and avoids premature sleeve wear.

As standard cast in ductile iron, other materials also available upon request.

SLEEVE:

The heart of the PA pinch valve a flexible, long-lasting, self-cleaning rubber sleeve available in a wide variety of elastomers suitable for any application. The sleeve is the only part exposed to the slurry materials, therefore avoiding body wear. The choice of the correct elastomer material can achieve longer-lasting performance. Self-cleaning by flexing the sleeve with opening /closing cycles prevents build-up scaling deposits. The full bore design without any pockets or cavities also avoids any slurry accumulation.

PINCH SYSTEM:

Single plug for sizes up to DN 2,5"/65 and double pinch rod system in mild steel construction. Stainless steel tie rods for sizes from DN 3"/80 up to DN 12"/300. Heavy-duty design for high cycle operation conditions.

STEM:

Made of stainless steel to provide high resistance to corrosion and a long life.

ACTUATORS:

All actuators supplied by ORBINOX are interchangeable. Standard mounting kit also available.

YOKE or ACTUATOR SUPPORT (PNEUMATIC AND ELECTRIC ACTUATORS):

Made of steel (stainless steel available on request) and epoxy coated. The robust design and high rigidity make them suitable for most adverse operating conditions

EPOXY COATING:

The epoxy coating on all ORBINOX cast iron and carbon steel components is electrostatically applied making the valves to be corrosion resistant with a high quality finished surface. The ORBINOX standard colour is RAL-5015 blue.



MODEL

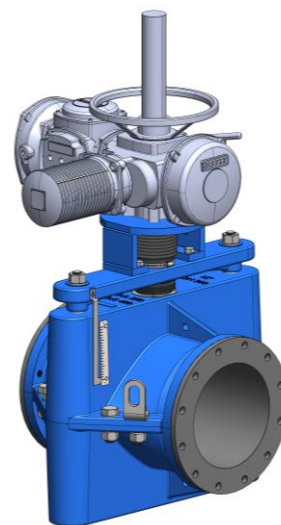
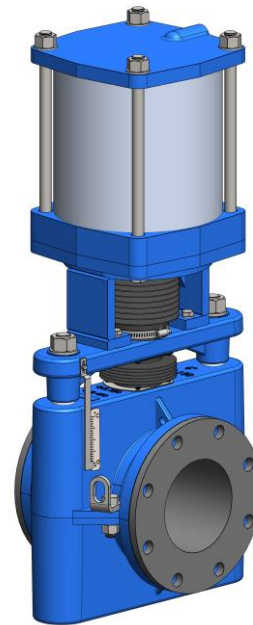
PA

ACTUATOR TYPES

MANUAL:
Handwheel
Bevel Gear



AUTOMATIC:
Pneumatic (double-acting)
Electric
Hydraulic (optional)



All actuators supplied by ORBINOX are interchangeable

TEMPERATURE CHART

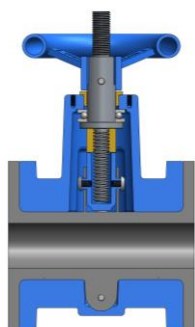
Polymer and compound code	Temperature range	Resistance						
		Abrasive slurry	Acids	Alkali	Aliphatic oils	Aromatic oils	Solvents	Water
NBR	(-55 to +72 °C)	E	A	A	A	G	P	E
EPDM	(-55 to +100 °C)	G	G	G	E	E	P	E
SBRT	(-55 to +80 °C)	E	A	A	A	E	P	E
Neoprene	(-40 to +110 °C)	G	E	E	E	E	P	E
NBR	(-40 to +120 °C)	E	E	E	E	E	P	E
Butyl rubber	(-60 to +120 °C)	G	E	E	E	E	P	E
White coloured natural rubber (Food grade & Pharmaapplication)	(-55 to +72 °C)	E	A	A	P	A	P	E
Hypalon	(-35 to +140 °C)	G	E	E	E	E	G	E
FKM	(-30 to +220 °C)	A	E	E	E	E	G	E

Rating	
P	Poor
E	Excellent
G	Good
A	Average

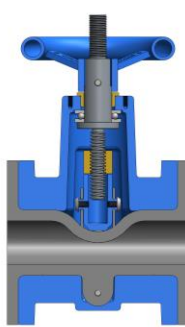
SLEEVES

The sleeve is the only part in contact with the media, no other mechanical parts are required. No special maintenance operations must be observed. The closing of the PA pinch valve is achieved by a single pinch bar up to DN 2,5"/65 or a double pinch rod from DN 3"/80. The sleeve is clog resistant and 100% full-bore

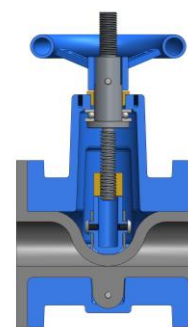
Single pinch:



OPEN

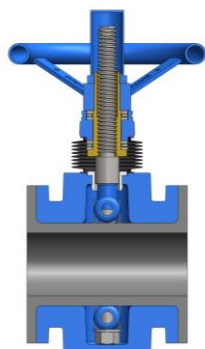


INTERMEDIATE

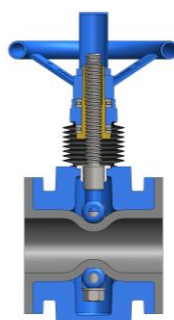


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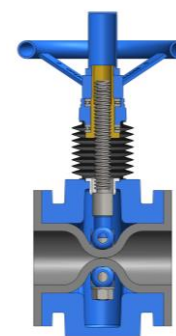
Double pinch:



OPEN



INTERMEDIATE

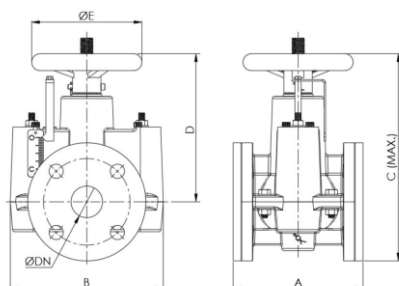


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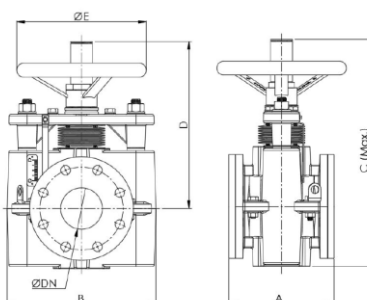
HANDWHEEL

- Available from DN 1"/25 to DN 12"/300
- Options (on request):
 - PVC bellow
 - Bevel gear

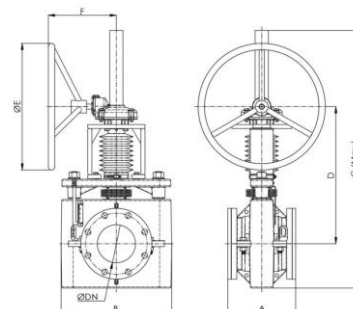
DN 1"/25 - DN 2,5"/65



DN 3"/80 - DN 5"/125



DN 6"/150 - DN 12"/300



HANDWHEEL (mm)

DN	A	B	C	D	ØE	Weight (kg.)
25	140	135	220	160	140	6
40	165	195	265	190	140	11,5
50	178	235	335	250	250	15
65	190	285	380	290	250	22
80	203	290	490	375	250	30
100	229	330	580	450	355	41
125	254	390	670	510	355	60

BEVEL GEAR (mm)

DN	A	B	C	D	ØE	F	Weight (kg.)
150	267	435	1030	645	500	280	115
200	406	565	1280	800	500	280	185
250	508	755	1400	820	500	280	285
300	610	795	1645	910	400	270	330

HANDWHEEL (inch)

DN	A	B	C	D	ØE	Weight (lbs)
1"	5,5	5,3	8,7	6,3	5,5	13
1 1/2"	6,5	7,7	10,4	7,5	5,5	25
2"	7,0	9,3	13,2	9,8	9,8	33
2 1/2"	7,5	11,2	15,0	11,4	9,8	49
3"	8,0	11,4	19,3	14,8	9,8	66
4"	9,0	13,0	22,8	17,7	14,0	90
5"	10,0	15,4	26,4	20,1	14,0	132

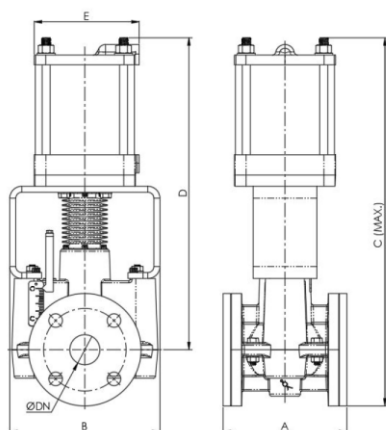
BEVEL GEAR (inch)

DN	A	B	C	D	ØE	F	Weight (lbs)
6"	10,5	17,1	40,6	25,4	19,7	11,0	254
8"	16,0	22,2	50,4	31,5	19,7	11,0	408
10"	20,0	29,7	55,1	32,3	19,7	11,0	628
12"	24,0	31,3	64,8	35,8	15,7	10,6	728

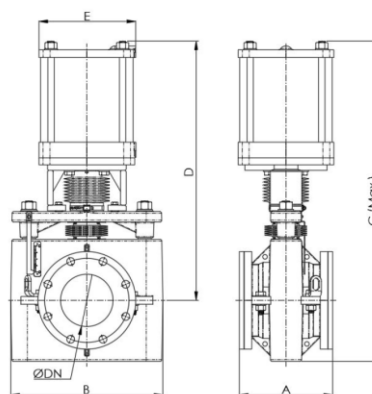
PNEUMATIC ACTUATOR

- The standard pneumatic actuator (double acting cylinder) consists of:
 - Aluminium barrels
 - Aluminium end caps
 - Stainless Steel (AISI 304) piston rod
 - Nitrile coated steel piston
 - PVC bellows
- Available from DN 1"/25 to DN 12"/300
- Supply Pressure: 90 psi / 6 bar
- Reinforced design of support plates is standard from DN 8"/200
- Instrumentation (on request):
 - Positioners
 - Flow regulators
 - Solenoid valves
 - Air preparation unit

DN 1"/25 - DN 4"/100



DN 6"/150 - DN 12"/300



DN	A	B	C	D	E	Air pressure (bar)	Weight (kg.)
25	140	140	415	355	115	6 bar	9,5
40	165	200	505	430	140	6 bar	14,5
50	178	240	555	475	140	6 bar	24,5
65	190	265	635	545	175	6 bar	38,5
80	203	290	735	620	175	6 bar	50
100	229	330	805	675	220	6 bar	70
125	254	390	950	790	277	6 bar	90
150	267	435	1020	845	277	6 bar	110
200	406	565	1225	1005	335	6 bar	170
250	508	755	1490	1220	390	6 bar	275
300	610	795	1630	1330	390	6 bar	350

DN	A	B	C	D	E	Air pressure (psi)	Weight (lbs)
1"	5,5	5,5	16,3	14,0	4,5	90 psi	21
1 1/2"	6,5	7,9	19,9	16,9	5,5	90 psi	32
2"	7,0	9,4	21,9	18,7	5,5	90 psi	54
2 1/2"	7,5	12,0	25,0	21,5	6,9	90 psi	85
3"	8,0	11,4	28,9	24,4	6,9	90 psi	110
4"	9,0	13,0	31,7	26,6	8,7	90 psi	154
5"	10,0	15,4	37,4	31,1	10,9	90 psi	198
6"	10,5	17,1	40,2	33,3	10,9	90 psi	243
8"	16,0	22,2	48,2	39,6	13,2	90 psi	375
10"	20,0	29,7	58,7	48,0	15,4	90 psi	606
12"	24,0	31,3	64,2	52,4	15,4	90 psi	772

Reserves the right to change specifications without notice.

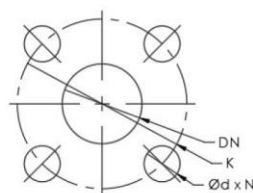
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FLANGE AND BOLTING DETAILS

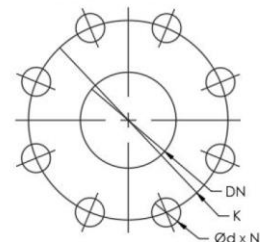
EN 1092-2 PN10

DN	ØD	ØK	M	Ød	⊕
25	115	85	M-12	14	4
40	150	110	M-12	18	4
50	165	125	M-16	18	4
65	185	145	M-16	18	8
80	220	160	M-16	18	8
100	250	180	M-16	18	8
125	285	210	M-16	18	8
150	280	240	M-20	22	8
200	340	295	M-20	22	8
250	395	350	M-20	22	12
300	445	400	M-20	22	12

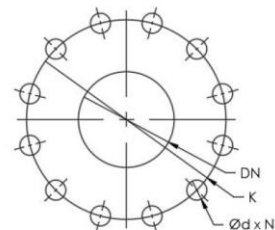
DN 25 - DN 50



DN 65 - DN 200



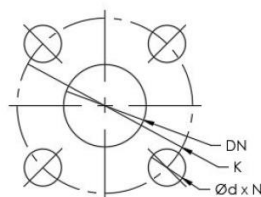
DN 250 - DN 300



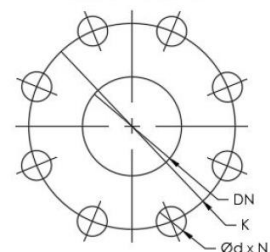
ANSI B16.5, class 150

DN	ØD	ØK	M	Ød	⊕
1"	110	79.4	M-12	16	4
1 1/2"	127	98.4	M-12	16	4
2"	152	120.7	M-16	19	4
2 1/2"	180	139.7	M-16	19	4
3"	190	152.4	M-16	19	4
4"	230	190.5	M-16	19	8
5"	255	215.9	M-16	22.2	8
6"	280	241.3	M-19	22.2	8
8"	345	298.5	M-19	22.2	8
10"	406	362	M-22	25.4	12
12"	485	431.8	M-22	25.4	12

DN 1" - DN 3"



DN 4" - DN 8"



DN 10" - DN 12"

