

## 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

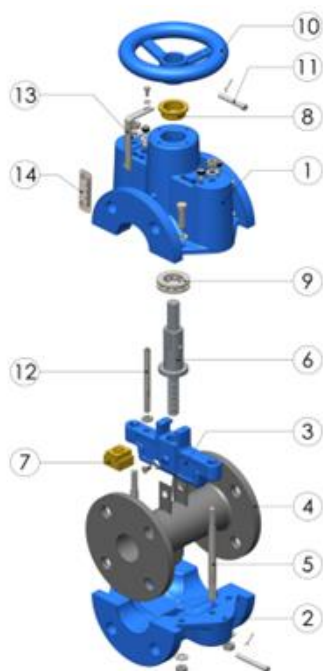


## DESIGN FEATURES

### PINCH CONFIGURATION:

ORBINOX PA pinch valve has been conceived with one single pinch bar configuration for small sizes up to DN 2"/50 and with a double pinch rod configuration for sizes from DN 2,5"/65 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"/50 and double pinch rod system in mild steel construction. Stainless steel tie rods for sizes from DN 2,5"/65 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.



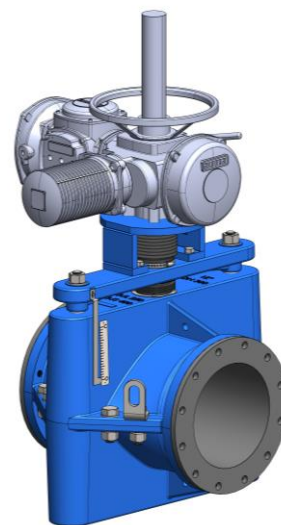
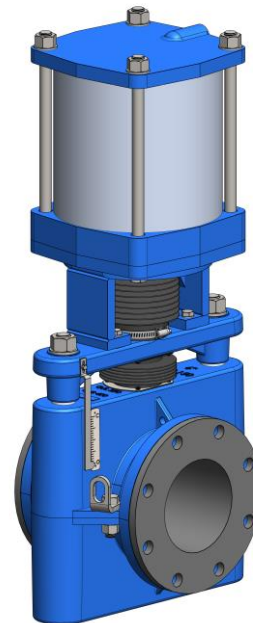
MODEL

PA

## ACTUATOR TYPES

MANUAL:  
Handwheel  
Bevel Gear

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



All actuators supplied by ORBINOX are interchangeable

Reserves the right to change specifications without notice.

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ORBINOX CANADA, ORBINOX USA, ORBINOX BRAZIL, ORBINOX CHILE, ORBINOX PERU, ORBINOX SPAIN, ORBINOX UK, ORBINOX FRANCE, ORBINOX GERMANY, ORBINOX INDIA, ORBINOX CHINA

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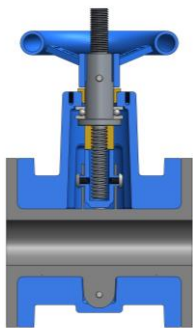
Rev. 4

PA\_4

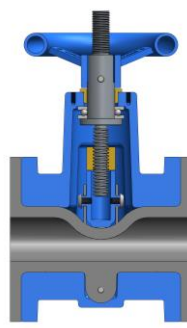
SLEEVES

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"/50 or a double pinch rod from DN 2,5"/65. The sleeve is clog resistant and 100% full-bore

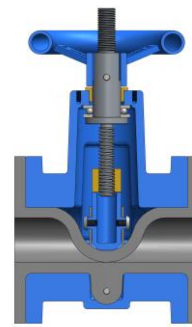
Single pinch:



OPEN

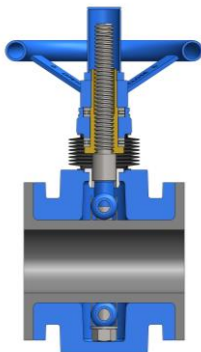


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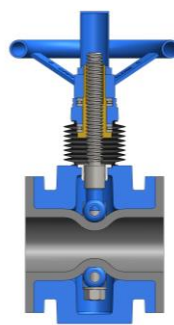


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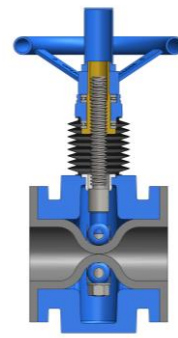
Double pinch:



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INTERMEDIATE

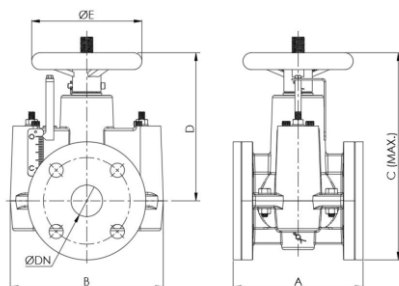


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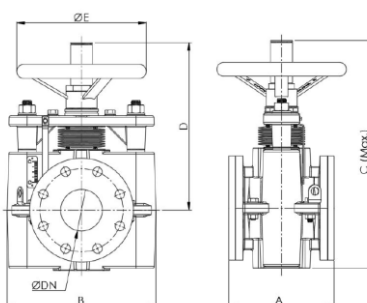
## HANDWHEEL

- Available from DN 1"/25 to DN 12"/300
- Options (on request):
  - PVC bellow
  - Bevel gear (advisable for high pressure rating applications)

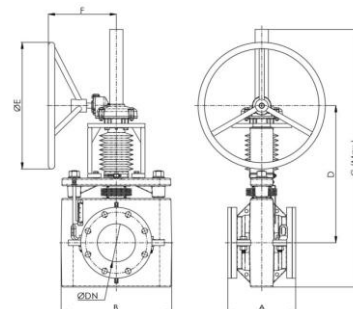
### DN 1"/25 - DN 2"/50



### DN 2,5"/65 - 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	12
50	178	235	335	250	250	16
65	190	285	380	290	250	27
80	203	290	490	375	250	31
100	229	330	580	450	355	45
125	254	390	670	510	355	65

#### BEVEL GEAR (mm)

DN	A	B	C	D	ØE	F	Weight (kg.)
150	267	435	1030	645	500	280	100
200	406	565	1280	800	500	280	170
250	508	755	1400	820	500	280	265
300	610	795	1645	910	400	270	345

#### 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)

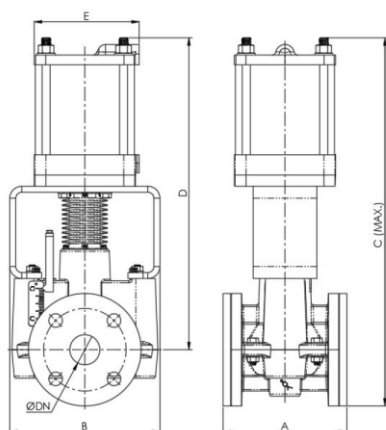
DN	A	B	C	D	ØE	F	Weight (lbs)
6"	10,5	17,1	40,6	25,4	19,7	11,0	254
8"	16,0	22,2	50,4	31,5	19,7	11,0	408
10"	20,0	29,7	55,1	32,3	19,7	11,0	628
12"	24,0	31,3	64,8	35,8	15,7	10,6	728



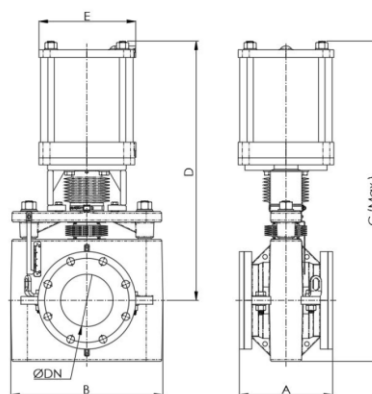
## PNEUMATIC ACTUATOR

- 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 2"/50**



**DN 2,5"/65 - DN 12"/300**



DN	A	B	C	D	E	Air pressure (bar)	Weight (kg.)
25	140	140	415	355	115	6 bar	10
40	165	200	505	430	140	6 bar	16
50	178	240	555	475	140	6 bar	21
65	190	265	635	545	175	6 bar	45
80	203	290	735	620	175	6 bar	50
100	229	330	805	675	220	6 bar	64
125	254	390	950	790	277	6 bar	100
150	267	435	1020	845	277	6 bar	120
200	406	565	1225	1005	335	6 bar	205
250	508	755	1490	1220	390	6 bar	340
300	610	795	1630	1330	390	6 bar	420

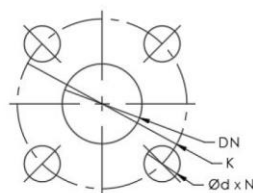
DN	A	B	C	D	E	Air pressure (psi)	Weight (lbs)
1"	5,5	5,5	16,3	14,0	4,5	90 psi	22
1 1/2"	6,5	7,9	19,9	16,9	5,5	90 psi	35
2"	7,0	9,4	21,9	18,7	5,5	90 psi	46
2 1/2"	7,5	12,0	25,0	21,5	6,9	90 psi	99
3"	8,0	11,4	28,9	24,4	6,9	90 psi	110
4"	9,0	13,0	31,7	26,6	8,7	90 psi	141
5"	10,0	15,4	37,4	31,1	10,9	90 psi	220
6"	10,5	17,1	40,2	33,3	10,9	90 psi	265
8"	16,0	22,2	48,2	39,6	13,2	90 psi	452
10"	20,0	29,7	58,7	48,0	15,4	90 psi	750
12"	24,0	31,3	64,2	52,4	15,4	90 psi	927

**FLANGE AND BOLTING DETAILS**

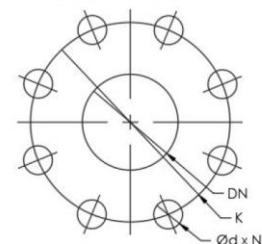
**EN 1092-2 PN10**

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

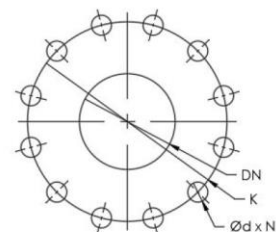
DN 25 - DN 50



DN 65 - DN 200



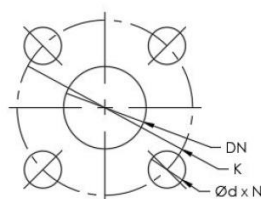
DN 250 - DN 300



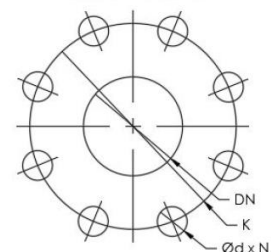
**ANSI B16.5, class 150**

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"

