

ATVAL FOR -
QUALITY, VALUE
AND SERVICE



PINCH VALVES



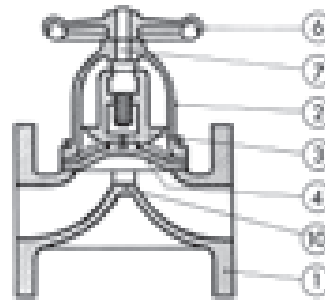
What are Pinch Valves?

Valve Manufacturers Definition

'A valve in which the flowing medium is isolated or controlled by the compression of a shoe on a flexible sleeve, usually made of rubber and which also isolates the operating mechanism from the line fluid'.

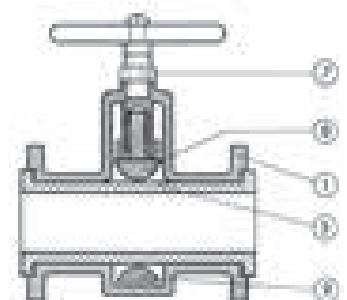


Diaphragm Valve



- 1: Body
- 2: Bonnet
- 3: Compressor

Pinch Valve



- 4: Diaphragm
- 5: Flexible Tube
- 6: Hand wheel
- 7: Spindle
- 8: Top Pinch Bar
- 9: Lower Pinch Bar

2: PINCH VALVES are particularly suitable for solids in bulk or in suspension in air or liquids. The fluid handled is isolated from all metal parts by the rubber or synthetic tube so that corrosives can be efficiently controlled. As shut off is effected by clamping the soft rubber tube, closure can be effected over small solids without either affecting the drop tight shut off or damaging the seating in any way; additionally the flow in the partially closed position is smooth. In the fully open or fully closed positions there is little or no wear. They are mainly used where abrasion, sewerage, solids handling and / or corrosion is a factor. They are the ideal slurry valve and have many advantages over other types of valves in these conditions.

3: PINCH VALVES ARE PARTICULARLY SUITABLE FOR HEAVY DUTIES SUCH AS

- Mines (slurries, corrosives and acids),
- Power stations (ash and dust),
- Cement works (powdered cement),
- Chemical works (corrosives and slurries),
- Mineral dressing plants (acids and slurries),
- Fertiliser manufacture (acids and slurries),
- General industry (corrosives, abrasives powders and delicate fluids).

In addition PINCH VALVES are now becoming recognised as a reliable rubber lined valve, where the lining is cheap and easy to replace.

'C' SERIES PINCH VALVES



- Fast and simple servicing
- Full bore, full flow conditions
- Sleeves specially manufactured for product
- Will not clog
- Full closure around relatively large partical size
- Reduced pipe line vibration and water hammer
- Inexpensive automatic control
- Changing the pressure or the closing medium can open, throttle or close the valve as required
- Applications enhanced using pressure or volume boosters
- Pressure drop across the valve should not exceed 25%
- For full closure, medium must be at least 2 Bar more than line pressure
- Bodies available in cast iron or alumimium

Size Range: 25mm to 1000mm

Description

Atval's 'C' series pinch valves offer maximum economy and provide unequalled performance coupled with long-life. Like all quality products, the design is simple, yet versatile, enabling system control to be effected at minimum cost.

Sleeve

The easily replaceable moulded reinforced rubber sleeve has been specially developed and manufactured for this application and offers minimal pressure differential to affect fluid control and full valve closure.

The sleeves are self-supporting and are made to standard pipe line internal diameters and offer outstanding longevity even in highly abrasive situations.

Applications

Performing with unchallenged reliability, Atval's 'C' series pinch valves are used extensively for abrasive and slurry applications in many industries, including mining, power generation, sewage treatment, pulp and paper and chemical industries. The valves can handle waste and effluent, raw sewage, sludge, slime, grease, grit, cement, asbestos fibres, mine tailings, pneumatic conveying and many other aggressive applications.

Service Requirements

When ordering Atval pinch valves please refer to the table for the correct sleeve grade to suit the particular application. If in doubt please consult our sales office and provide the following key information:

1. Chemical analysis of product being handled
2. Concentration
3. Maximum operating temperature
4. Maximum working pressure



'C' Series Pinch Valves

The valves can be operated using either gas or liquids as the operating medium.

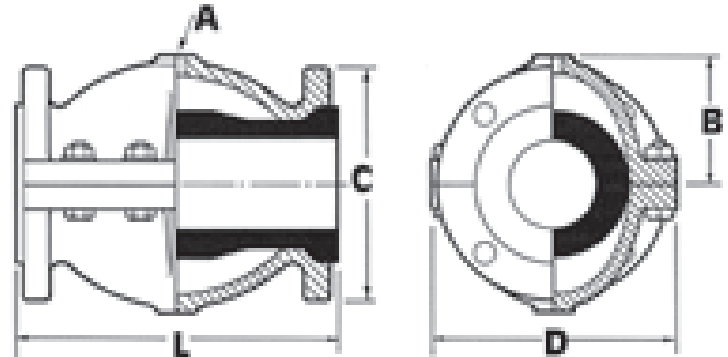
The operating pressure must exceed the line pressure by a minimum of 2 bar to effect closure.

The valves are not drop tight on clear fluids and gasses.

For optimum sleeve life, pipe line bolting flange torques must be strictly observed. As a guide the following bolting torques should not be exceeded.

Bold/Nut Size (mm)	Socket Spanner Size (mm)	Maximum Torque (Newton-Meter)
M12 (1/2")	19	10
M16 (5/8")	24	25
M20 (3/4")	30	70
M24 (1")	36	125
M30 (1 1/4")	46	250

For more detailed information please refer to the comprehensive operating and maintenance instructions available from our factory



Valve Size (mm)	Max CWP (Bar)	A ₁ (BSP)	Dimensions (mm)				Cast Iron Weight (Kgs)	Volume (Litres)
			B	C	D	L		
25	10	1/4"	60	115	115	134	6	0.1
40	10	1/4"	75	150	150	166	7	0.2
50	10	1/4"	82	165	165	198	10	0.3
80	10	1/4"	103	200	200	262	19	1.2
100	10	1/4"	117	220	220	312	22	2.5
150	10	1/2"	164	285	285	415	43	7.4
200	10	1/2"	202	340	340	530	74	17.0
250	10	1/2"	230	405	405	645	110	32.0
300	10	1/2"	300	460	460	760	140	55.0
350	10	1/2"	325	530	530	990	210	87.0
400	10	1/2"	450	590	600	1200	395	180
450	10	1/2"	450	640	650	1350	475	240
500	10	1/2"	500	700	700	1500	550	290

Sleeve Selection

This condensed classification indicates applications at a glance. For a more comprehensive appraisal please contact our sales department.

Sleeve		Application	Temp. °C	
Grade	Colour		Min.	Max.
A	Red	Slurry & Abrasives	-30	+70
B	Black	Slurry & Abrasives Ozone Resistant	-30	+80
D	Black	Oils, Solutions & Some Chemicals	-20	+110
E	Black	Acids & Chemicals	-30	+130
F	Black	Acids, Gases & Some Chemicals	-30	+120
T	Black	Oils, Abrasives, moderate Chemicals & Acids	-30	+90

'K' & 'KE' SERIES PINCH VALVES

Size Range: 25mm to 1000mm

'K'



'KE'



- 25 years Proven Service.
- Superior Quality.
- Offers Easy Maintenance.
- Cost Effective.
- Full Bore, Full Flow feature.
- Reduces Water Hammer.
- Short Pattern Design
- interchangeable with Diaphragm Valves.
- Internal slots in sleeve ensure Bi-Directional Drop Tight Closure, over entire pressure range.
- Working pressure in excess of 8000kPa are available.
- Full Range of Sleeves offers
- Exceptionally Wide Application Versatility.
- Designed to accept All Forms of Actuators, including Pneumatic, Electric and Hydraulic.
- All Sleeves Independently Tested prior to dispatch and Test Certificates supplied as standard.



'K' & 'KE' Series Pinch Valves

Description

Atval's 'K' and 'KE' series pinch valves offer maximum economy and provide unequalled performance coupled with long-life and cost effectiveness. Like all quality products, the design is simple yet versatile, enabling powered, automated and remote control actuators to be fitted without costly modifications.

Sleeve

The easily replaced moulded reinforced Elastomer sleeve ensures a smooth flow and outstanding longevity - even in highly abrasive situations. The sleeve flange is metal reinforced to ensure a rigid and leak proof connection to the piping flanges. The sleeves are self supporting and are made to standard pipe line internal diameters and are available as standard for CWP ratings of 1000, 1600, 2500 and 4000kPa from our local manufacturing plant.

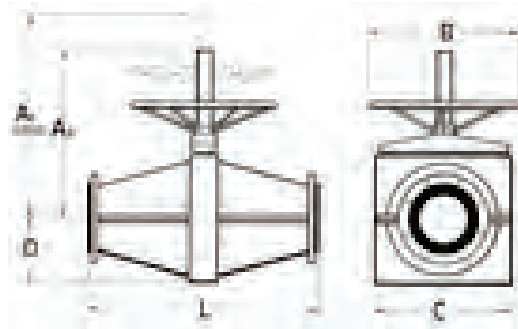
Applications

Performing with unchallenged reliability, 'K' and 'KE' pinch valves are used extensively for abrasive and slurry applications in many industries, including mining, power generation, sewage treatment, pulp and paper and chemical industries. The valves can handle waste and effluent, raw sewage, sludge, slime, grease, grit, cement, asbestos fibres, mine tailings, pneumatic conveying and many other aggressive applications.

Sleeve Selection

This list is not exhaustive and the different grades indicated may be suitable for other applications. Should there be any uncertainty regarding grade selection and to avoid any subsequent complication, contact our sales office indicating:

- Chemical analysis of product handled.
- Maximum operating temperature.
- Maximum working pressure.
- All other requirements or pertinent data.



Other sizes and pressure ratings are available and can be made to special order!

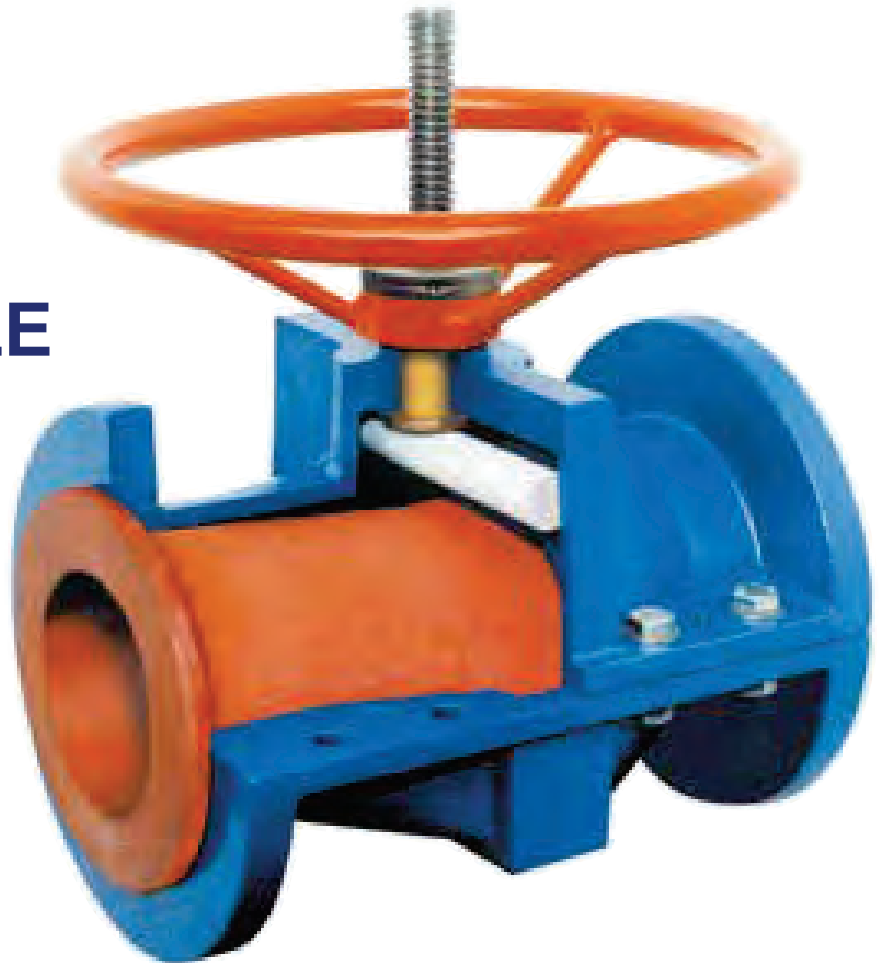
Valve Size (mm)	Dimensions (mm)					'L' Dimensions	
	A ₁	A ₂	B	C	D	Short Pattern	Long Pattern
25	195	180	100	120	70	134	-
40	270	250	150	200	80	166	-
50	300	275	200	220	95	196	-
80	340	300	250	245	100	262	-
100	400	350	350	310	130	312	-
150	595	520	500	410	185	415	-
200	780	680	650	550	300	530	800
250	905	780	800	640	320	645	1000
300	1050	900	800	730	335	760	1200
350	1175	1000	1000	850	390	990	1400
400	1310	1110	1000	900	400	1200	1600
450	1345	1120	1500	1060	530	1350	1800
500	1530	1280	1600	1200	600	1500	2000

Sleeve Selection

This condensed classification indicates applications at a glance. For a more comprehensive appraisal please contact our sales department.

Sleeve		Application	Temp. °C	
Grade	Colour		Min.	Max.
A	Red	Slurry & Abrasives	-30	+70
B	Black	Slurry & Abrasives Ozone Resistant	-30	+80
D	Black	Oils, Solutions & Some Chemicals	-20	+110
E	Black	Acids & Chemicals	-30	+130
F	Black	Acids, Gases & Some Chemicals	-30	+120
T	Black	Oils, Abrasives, moderate Chemicals & Acids	-30	+90

'TRUFLO' SINGLE ANVIL PINCH VALVE



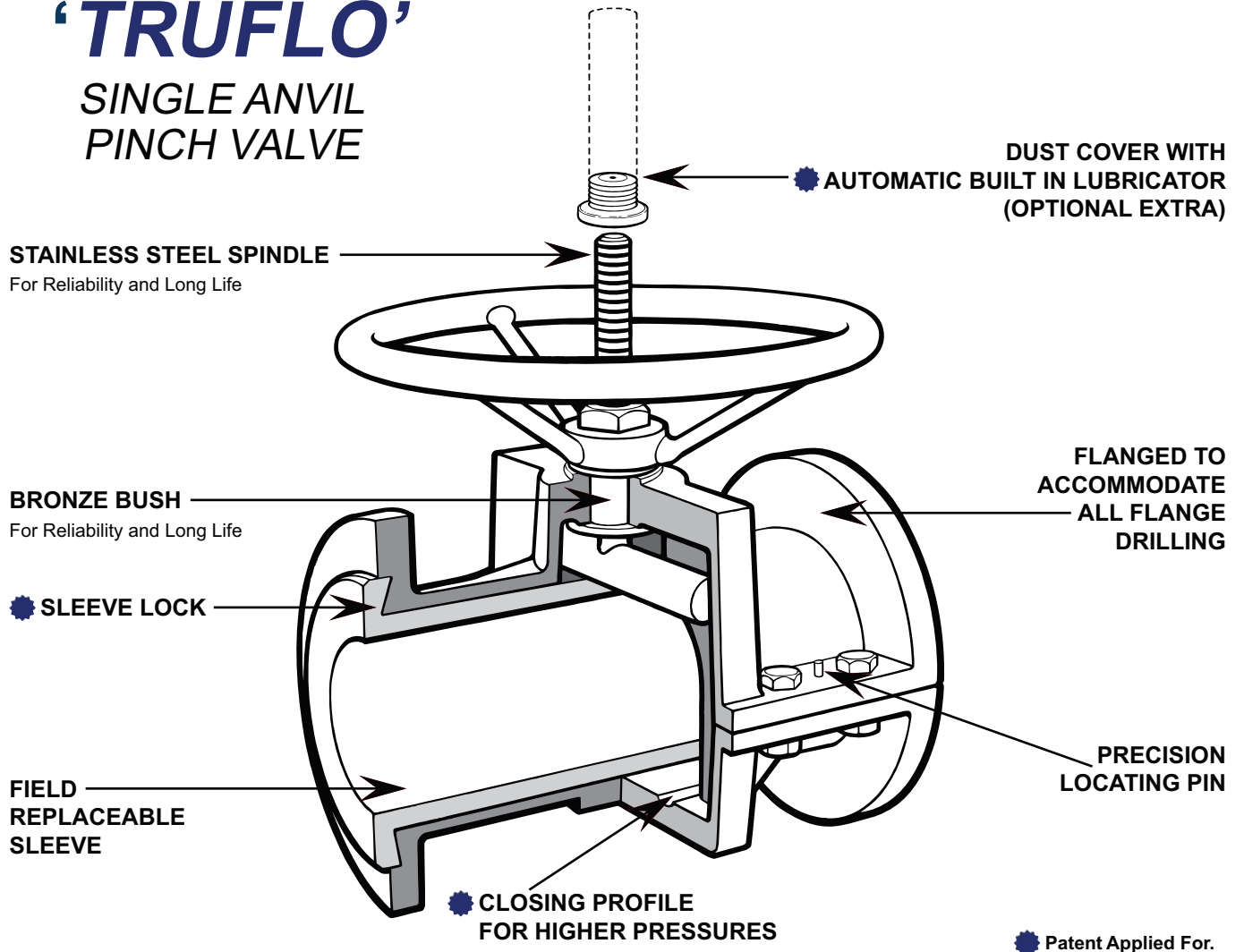
ATVAL'S Hi-Tech Alternative to the Matronly Diaphragm Valve!

- Straight line flow, no cavities.
- Drop tight Bi-Directional shut off.
- Easy to use, easy to maintain, fitter friendly.
- All types of actuators can be fitted.
- Self cleaning flexing action of sleeve eliminates in line scaling and line blockage.
- Field replaceable sleeve extends in line service and lowers maintenance costs.
- Sleeves available in a wide range of polymers and trims to meet exact service and flow specifications.
- All mechanical parts completely isolated from pipe line medium.
- Sizes 25mm to 300mm. Normal CWP 1000kPa. For higher pressures consult our factory.



'TRUFLO'

SINGLE ANVIL PINCH VALVE



Valve Size	5	40	50	65	80	100	125	150	200	250	300
Face to Face	4	166	198	225	263	312	365	415	535	644	760
Centre to Top (open)	00	140	150	180	215	265	300	350	400	550	630
Hand wheel	110	110	150	150	200	250	250	300	350	500	600
Weight	5	7	10	13	18	26	40	55	100	170	220

Body	Sleeve Rubbers	Spindle
Cast Iron	Gum	Stainless 304
Aluminium	Natural	Stainless 316
Coated (Specify)	Synthetic	To Customer Specification

Other valve sizes available - Please consult our factory.

UTILITY 'CONTROL' PINCH VALVES

Size Range: 25mm to 300mm

- 50 years of proven service.
- Drop tight bi-directional shut off.
- Easy to use, easy to maintain, fitter friendly.
- Modular structure allows independent choice of actuator, body and sleeve type.
- Excellent control and throttling characteristics.
- All types of actuators can be fitted.
- High wear resistant, field replaceable sleeves, extend inline service and lowers maintenance costs.
- Self cleaning, flexing action of sleeve eliminates scaling and line blockage.
- Sleeves available in full bore, reduced port and cone design in a wide range of polymers to meet exact service and flow specifications.

Possibly the best slurry control valve available on the market at this time!

In producing the ATVAL 'Utility Pinch Valve, we offer a valve which is reliable, economical and specially pre-pinch for accurate repeatable linear flow control. The stream lined, pre-pinch flow design only marginally restricts flow when the valve is in the fully open position and has approximately 90% of the flow of full bore valves. The valve is specially designed for flow control, which begins immediately the valve starts to close, providing a near linear flow characteristic. Reduced port, or cone sleeves can be specified to further enhance control performance and match the exact C_v values desired.

Atval offers a free valve sizing service to its customers, which accurately selects valve size and sleeve type for optimum performance. If you require this service, please complete the valve inquiry details available on our website.

Today these valves are used in almost every industry controlling the most delicate and dangerous fluids, as well as simple ones. It is a proven departure in valve design, incorporating the use of an internal rubber sleeve, which is unique in its application.

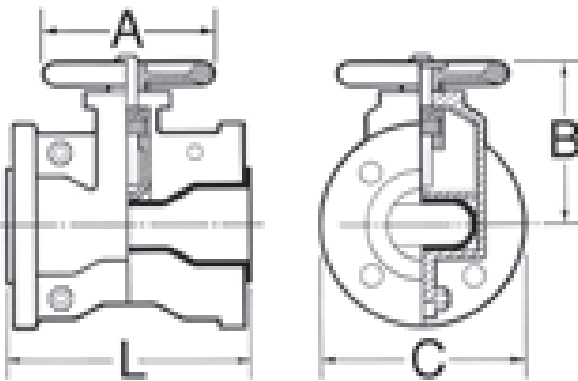
When ordering ATVAL 'Utility' Control valves please refer to the tables shown on reverse page for C_v (Flow Coefficient), Flow Control Curve and sleeve selection. These tables indicate applications at a glance. For more comprehensive details, please consult our sales office.





'UTILITY' CONTROL PINCH VALVES

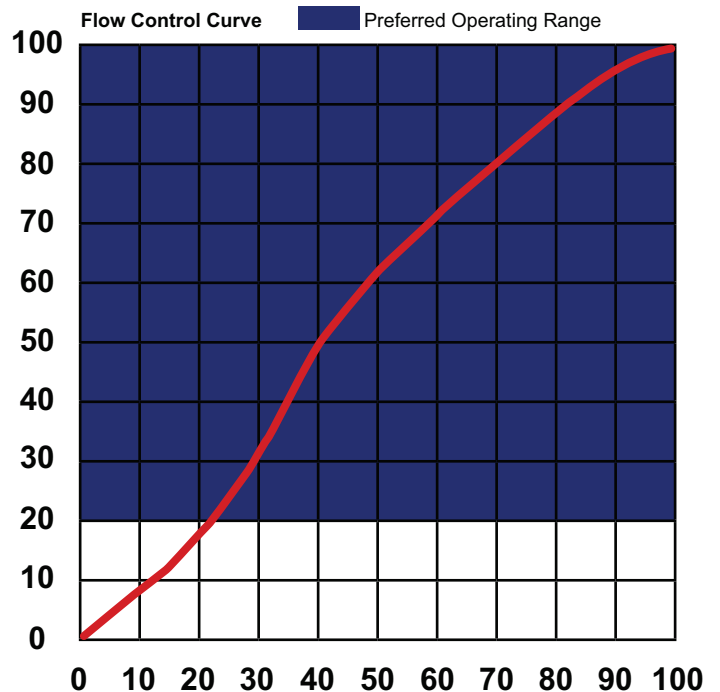
Valve Size (mm)	Max CWP (Bar)	Dimensions (mm)				Weight (Kgs)	C _v
		A	B	C	L		
25	16	80	80	115	134	4.0	67
40	16	105	125	150	166	7.0	170
50	16	140	130	165	198	10.5	280
80	16	190	160	200	263	16.0	710
100	10	230	220	220	312	28.0	1110
150	10	350	280	280	415	55.0	2495
200	10	460	340	340	535	113.0	4425
250	10	650	440	405	644	180.0	6910
300	10	730	490	460	760	230.0	9965



Sleeve Selection

This condensed classification indicates applications at a glance. For a more comprehensive appraisal please contact our sales department.

Sleeve		Application	Temp. °C	
Grade	Colour		Min.	Max.
A	Red	Slurry & Abrasives	-30	+70
B	Black	Slurry & Abrasives Ozone Resistant	-30	+80
D	Black	Oils, Solutions & Some Chemicals	-20	+110
E	Black	Acids & Chemicals	-30	+130
F	Black	Acids, Gases & Some Chemicals	-30	+120
T	Black	Oils, Abrasives, moderate Chemicals & Acids	-30	+90



BI-DIRECTIONAL KNIFE GATE VALVE



High Performance Heavy Duty Water Knife Gate Valves incorporating Field Replaceable Seats

- High Quality at highly competitive prices.
- Field replaceable seats extends in-line service and lowers maintenance costs.
- Dual Seats for full bore flow and positive Bi-Directional shut off.
- 'V' Port Seats available for metering service.
- Line pressure assists positive shut off.
- Specially profiled knife gate assures non-clogging shut off on suspended solids and prevents blade deflection.
- Solid one piece cast body for robustness and long service life.
- Sizes 50mm through 600mm.
- Working pressure 1000kPa through out the size range.
- Only the best non-corrosive materials are used in the operating mechanism for reliable hand wheel operation.

Body

- Ductile Iron
- Lined (Specify)

Gate

- 304 Stainless Steel
- 316 Stainless Steel

Seat

- Polyurethane

Superstructure

- Mild Steel

For other materials and sizes please consult our factory.

These valves are designed to handle most process conditions in the Pulp and Paper Industries, Chemical Plants, Waste Water Treatment Plants, Sewerage Works, Mineral Processing, Mining and Food Processing Industries.

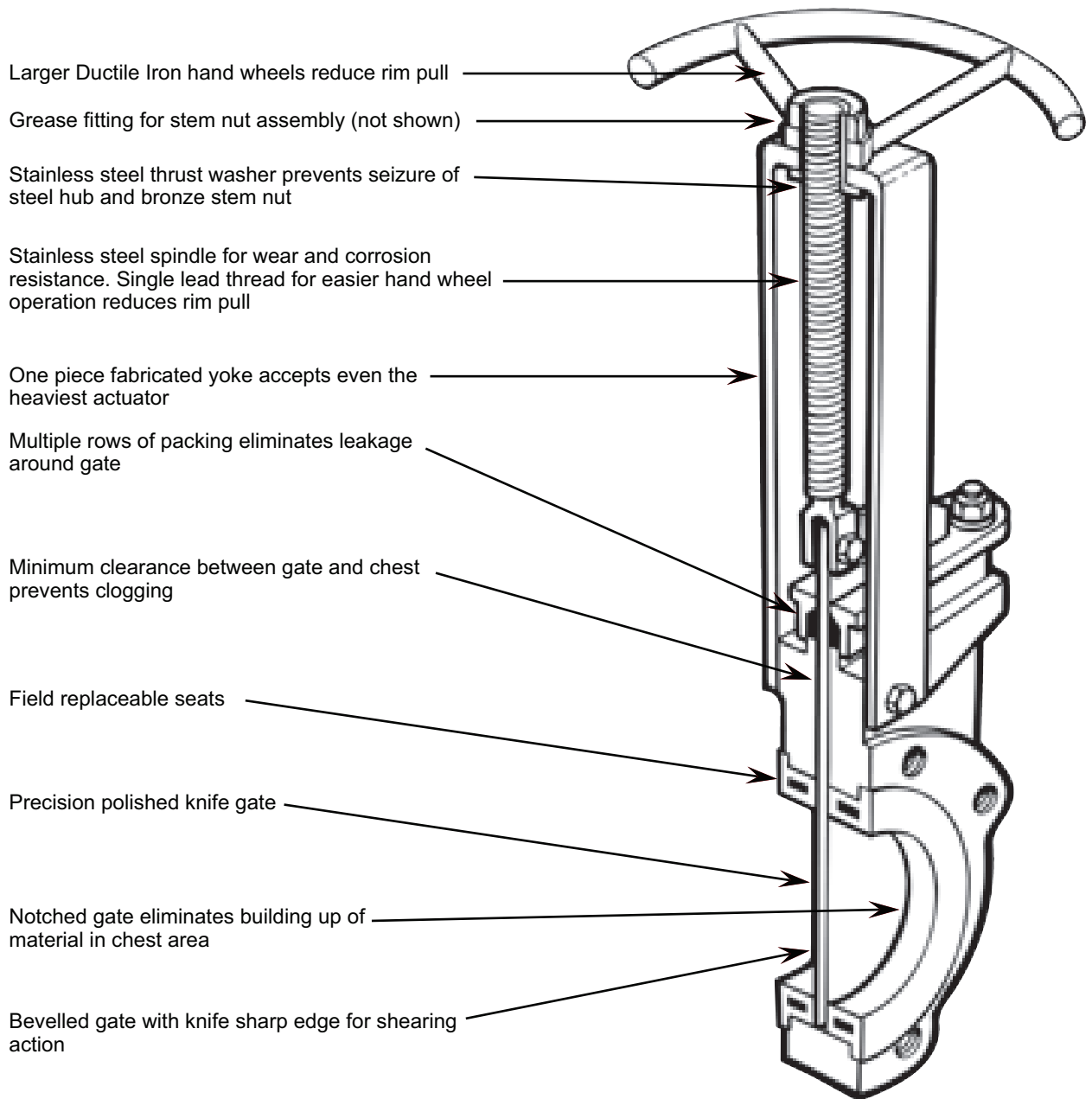
Critical Dimensions and Weights:

Valves Size	50	80	100	150	200	250	300	350	400	450	500	600
Face to Face	40	50	50	60	60	70	70	80	90	100	110	130
Centre to Top Open	345	450	510	690	890	1050	1180	1340	1540	1720	1860	2200
Hand wheel	150	200	200	300	300	400	400	500	500	500	500	500
Weights (kg)	10	12	14	26	40	63	85	130	180	250	300	340

Specifications subject to change without notice.



BI-DIRECTIONAL KNIFE GATE VALVE



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