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- Pinch valves have long been recognized as ideal for use in the hydraulic transport of solids in pipelines but have in the past been restricted in their use because of their relatively low working pressures.
- In every other respect they are probably one of the most simple and efficient valves available, being simply a rubber tube pinched together by a double acting vice.
- Pinch Valves are supplied for both low and high pressures. Size for size the Pinch Valves are probably suitable for higher pressures than any other similar valve.
- Pinch Valves are used in applications where other valves such as plug, ball, gate, knife gate, diaphragm or other pinch valves require high maintenance due to wear or pressure or both.
- The Pinch Valve has an excellent resistance to abrasion and because of this it is ideal for use on slurries. When fully open it is similar to a straight through rubber lined pipe and when closed gives complete isolation. Turbulence is minimal thus greatly increasing the life of the valve and the valves are not subject to scaling.
- Because of the immense strength of the rubber sleeve the Pinch Valve can be used on high pressure applications or where surges in the pipeline can be expected, as well as in standard applications
- Pinch Valves can handle materials such as mine tailings, metallic ores, ash, sand, raw sewerage, dry powder, wood chips, pulps and paper stock, sugar pulp, cement and chemicals.
- Where Pinch Valves are required as isolating valves they are supplied with a full round bore. If the valves are required for use as control valves then they would be of a pre-pinched design for more accurate control. Where high pressure and/or high velocities are involved the use of the valves as a control valve is not recommended

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- TECHNICAL DESCRIPTION
- The Pinch Valve consists of 3 basic parts:
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1) Reinforced Rubber Sleeve
2) A Closing Mechanism
3) A Totally Enclosed Body or Open Frame

- 1) Reinforced Rubber Sleeve
  - The rubber sleeves are built using high strength synthetic fiber or steel cord reinforcement depending on size and pressure rating required.
  - Different grades of sleeves are available for standard, high pressure or extra high pressure use.
  - Every sleeve is pressure tested to twice the maximum recommended working pressure and is supplied with a test certificate.
  - The sleeve liner is natural rubber for abrasion resistance and suitable for temperatures up to 80°C. Other liners are available to suit various aggressive media and/or higher temperatures.
  - The sleeve is unaffected by repeated operation and will always resume normal shape even after long periods of being closed.
  - The high quality of the Pinch Valve Sleeves enables the Sleeves to handle high velocities. This often means that the valves can be sized closer to the discharge size of the pump and then discharge into a larger pipeline, thus reducing cost. Smaller size also means higher working pressures and the valves are easier to close.

- 2) Closing Mechanism

- Handwheel Operation
  - The closing mechanism, which is a double acting vice, has all its moving parts outside the sleeve and does not come into contact with the media being pumped thus reducing wear and maintenance.
  - Because of the forces involved in operating pinch valves, particularly at high pressure, the mechanism is designed for great strength as well as ease of operation.
  - At low pressures the valves can be operated either pneumatically or using Electro-Mechanical Actuators.
- Hydraulic Operation
  - Pinch valves require a great deal of force to close and seal particularly as size and pressure increases. The ideal way to operate pinch valves is hydraulically and at higher pressures the only recommended method.
  - Pinch Valves of 100mm and larger are fitted with two opposed trunnion mounted hydraulic cylinders. Smaller valves have one cylinder.
  - Hydraulic power packs can be supplied to operate one or more valves for either automatic/remote or local control. Alternatively the valves can be fitted with a manual hydraulic system.

- 3) Valve Body
  - The valve is supplied with the sleeve and closing mechanism mounted in a totally enclosed body or in a very robust open frame.
  - Up to 350mm the body is cast in ductile (S.G.) iron, larger sizes are fabricated. The enclosed body will protect the mechanism from dirt and corrosion which in turn reduces maintenance. It will also contain the Sleeve test pressure in the event of a sleeve failure.
  - As the valve has a non rising spindle the enclosed valve is fitted with an indicator to show whether the valve is open or closed.

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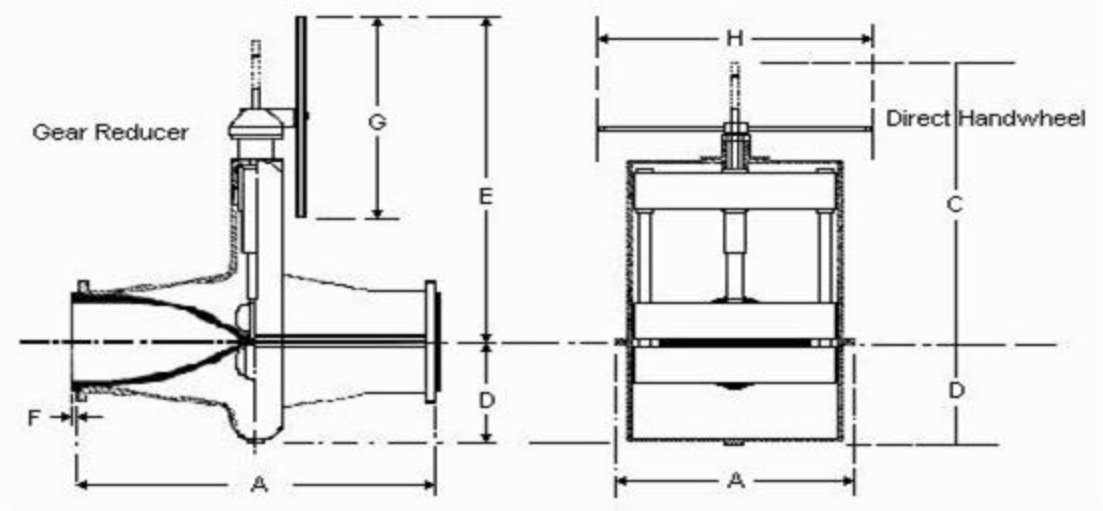
Manually operated valves



DIA	A	B	C	D	E	F	G	H	WEIGHT
50	188	190	270	90	315	6	175	175	12
75	252	240	330	105	425	6	175	225	25
100	295	320	460	140	525	10	225	300	70
150	395	410	560	195	630	10	400	400	115
200	780	270	775	280	900	10	600	750	290
250	980	680	965	325	1095	10	750	900	440
300	1180	820	1080	390	1260	10	750	900	700
350	1380	950	1170	410	1325	10	900	900	915
400	1580	1050	1295	450	1425	10	900	900	900
450	1780	1100	1400	480	1580	10	900	900	1050
500	1980	1140	1670	560	1725	10	900	900	1450

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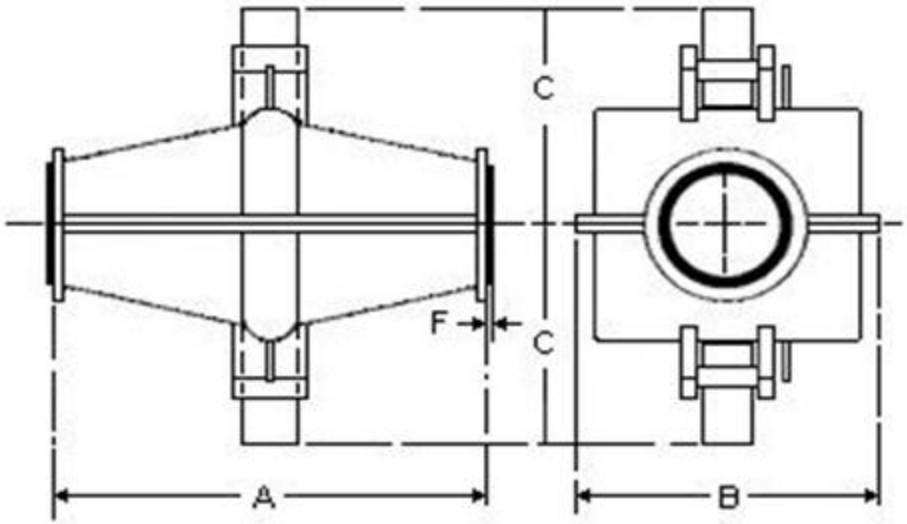
Hydraulic operated valves



DIA	A	B	C	F	WEIGHT
150	395	410	450	10	175
200	780	570	650	10	415
250	980	680	725	10	525
300	1180	820	800	10	750
350	1380	950	900	10	1075
400	1580	1050	1020	10	1335
450	1780	1225	1040	10	2020
500	1980	1335	1325	10	2250