Ithuba Valves & Industrial Supplies

Sleeve Valves

Hydraulic Operated

ITHUBA VALVES AND INDUSTRIAL SUPPLIES cc
Reg. No. 2000/003315/23

THE PREFFERED VALVE PARTNER IN INDUSTRY

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Introduction

Sleeve Valves are widely used in flow control application as energy dissipating valves discharging to atmosphere. These operate by breaking discharge of water into a hollow jet by means of cone on the downstream end. The valves generally used as outlet valves in dams, turbine by-passes, hydraulic turbine relief valves, irrigation and many other applications. These valves, when appropriately designed, can operate vibration free in any position between fully open or closed position. The valves can also operate well in submerged conditions. Some of these valves are of cast iron or graphite material while others are of fabricated steel or stainless steel. Looking at how differently all sleeve valve manufacturers approach their unique designs for this particular valve, it is so apparent that besides the mounting and bore specification that are kept standard, the rest of this valve is mainly on the engineer's discretion and perspective or mainly contractual requirements. The valves seals can be replaced while in-line, provided the line is in-active by closing the isolation valve upstream. Ithuba Valves has been manufacturing and refurbishing sleeve valves ever since their establishment. They have become one of the known flow control valve suppliers around Africa supplying water utilities such as Department of Water Affairs, Lesotho Highlands Development Authority and many more.

Flanges: Valves have welded flanges (for sizes bigger than DN300) that conform to SANS 1123, BS 4504 or other approved pipeline specification drilled to suit customer or contractual specification requirements.

Coating: Body internal and external coatings can be of Twin Pack Epoxy, Fusion Bonded Epoxy or approved equivalent. Sleeve is pickled and passivated.

Operation: The valve can be operated by means of two hydraulic cylinders that are mounted on the body, manually by means of a pedestal-mounted gearbox (the latter is usually in case of submerged valves) or as per customer or contractual requirements. Hydraulic operated valves can, on request, be supplied complete with a hydraulic power pack. Manually operated valves can be handwheel or electric actuator driven. For manually operated valves, all drive mechanisms are mainly of 3CR12 material and Stainless Steel 304 for submerged valves. All other components are as shown on the list or as per customer/contractual requirements.

Installation: All valves are built for horizontal pipe installation. However, valves can operate equally well in vertical pipe installation or submerged. Valve hoods can be supplied free standing or cast in concrete as per contractual requirements.

Size Range: Sizes range from DN100 up to DN1800

Rating: Valves are rated for PN6 to PN40 (Up to DN600), DN700 up to DN1000 (PN6 up to PN40 on request) and PN6 up to PN25 (Up to DN1800SV) water working pressure.

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Materials Of Construction

For all low cost application valves exposed to non-corrosive environment the material for barrel and flanges conforms to Mild Steel 300WA treated to DWS 9900 or SABS 1217 coating specifications. The material for components locating the seals and the sleeve conforms to St/Steel 304.

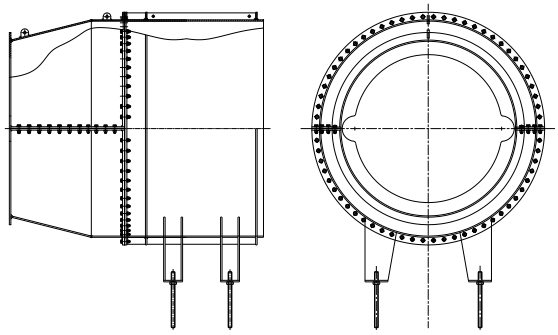
Component	**Specification**	
	Low Cost Application	High Quality
Body	Mild Steel 300WA	St/Steel 304
Sleeve	St/Steel 304	St/Steel 304
Seal Ring	St/Steel 304	St/Steel 304
Seal Barrel	St/Steel 304	St/Steel 304
Bearing	N.A. Bronze (Weld Deposit)	N.A. Bronze (Weld Deposit)
Seal	Nitrile/EPDM	Nitrile/EPDM/Viton
Clamp Ring	St/Steel 304	St/Steel 304

For high standard valves, located in chamber walls, material for all body components conforms to St/Steel 304.
For submerged valves all components material conforms to St/Steel 316.

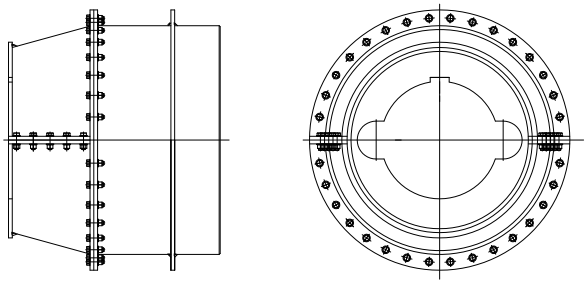
Valve Hoods

Valve hoods material conforms to Steel 3CR12 for low cost application and St/Steel 304 for high standard applications. The hoods can be sized by Ithuba Valves on request or can be made to customer requirements. These hoods can be supplied for casting in concrete or as anchored free standing. Sizing of the hood is of equal importance as valve sizing. Inappropriate sizing of the hood can lead to unusual behavior of the water jet, thus leading to system instability. Site details must be supplied in full for accurate design work and installations.

The hoods can be cast in concrete or free standing and anchored to the floor at any required position.



A typical example of free-standing hood for floor anchoring



A typical example of no-leg hood for in-situ casting

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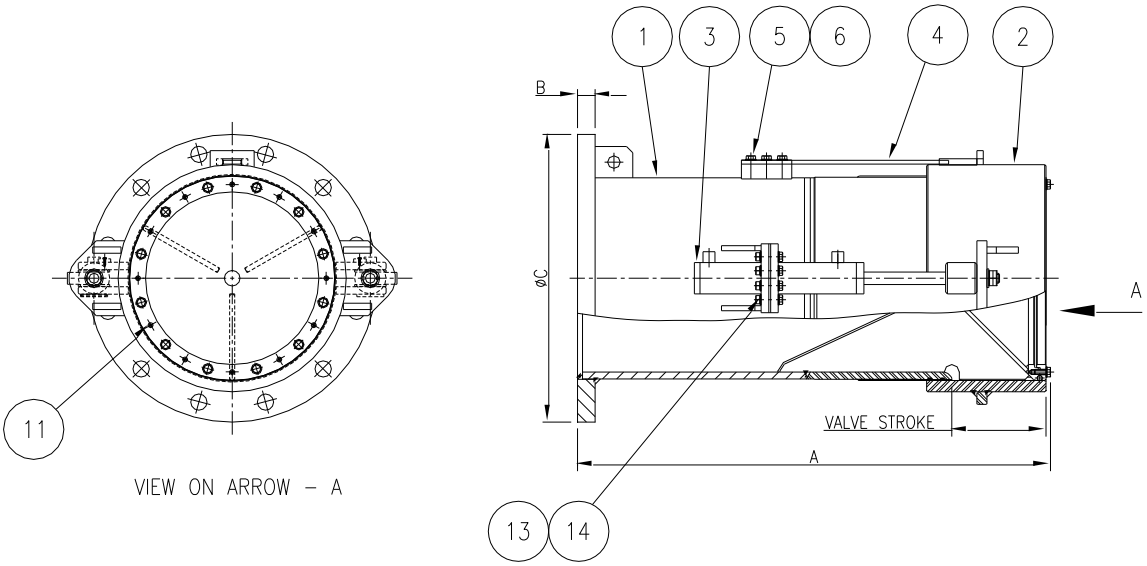
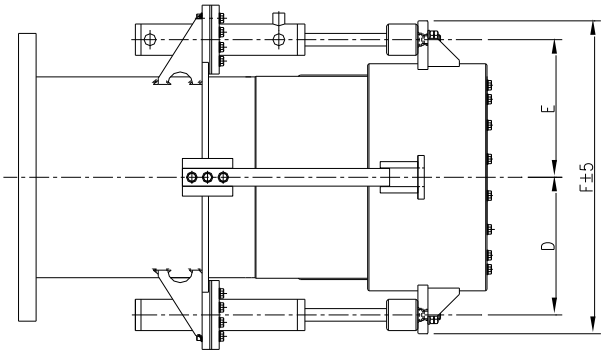
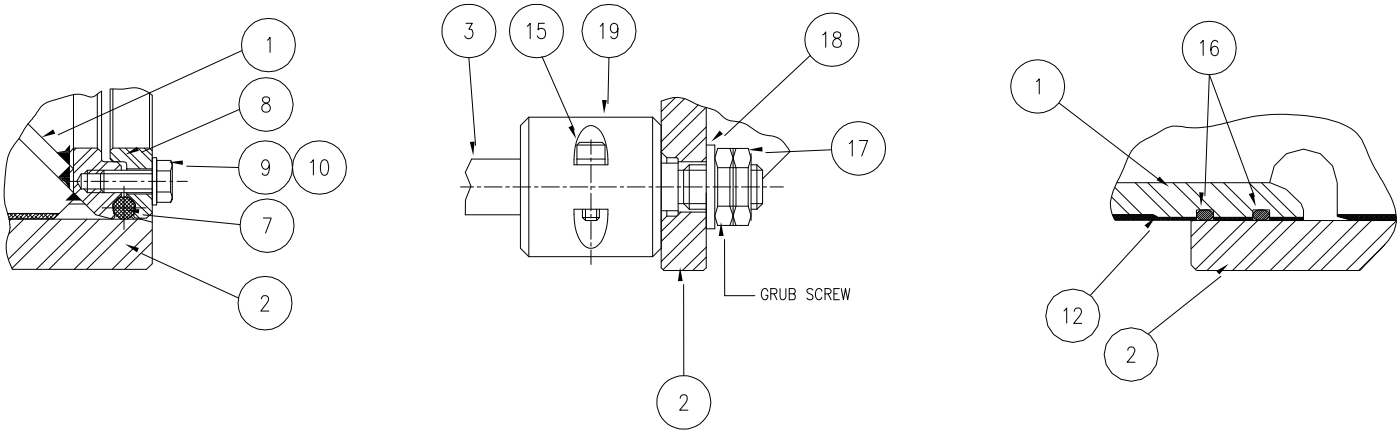
General Construction (Typical):







Typical hydraulic operated sleeve valve

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Dimensions in Milimetres

	PN16 RATING						PN25 RATING						PN40 RATING					
SIZE	A	B	C	D&E	F±5	MASS (kg)	A	B	C	D&E	F±5	MASS (kg)	A	B	C	D&E	F±5	MASS (kg)
100	**	14	220	**	**	**	**	24	235	**	**	**	**	24	235	**	**	**
150	**	18	285	**	**	**	**	28	300	**	**	**	**	28	300	**	**	**
200	615	22	340	170	430	*175*	615	30	360	170	430	*202*	615	32	375	170	430	*202*
250	570	25	405	170	430	*195*	570	32	425	170	430	*225*	570	38	450	170	430	*225*
300	753	28	460	220	500	*250*	753	34	485	220	500	*288*	753	40	515	220	500	*288*
400	1038	32	580	335	800	*380*	1038	10	620	335	800	*440*	1038	50	660	335	800	*440*
450	1040	34	640	316	720	*425*	1040	43	670	316	720	*490*	1040	60	685	316	720	*490*
500	1130	34	715	379	900	*610*	1130	48	730	379	900	*702*	1130	70	755	379	900	*702*
600	1336	36	840	425	1030	*720*	1336	58	845	425	1030	*865*	1336	58	845	425	1030	*865*
700	1507	36	910	1100	1240	*840*	1507	50	960	1100	1240	*1008*	1507	-	-	1100	1240	*1208*
750	1524	38	970	511	1132	*920*	1524	54	1020	511	1132	*1105*	1524	-	-	511	1132	*1326*
800	1682	38	1025	565	1270	*1180*	1682	54	1085	565	1270	*1415*	1682	-	-	565	1270	*1698*
900	1670	40	1125	580	1260	*1295*	1670	58	1185	580	1260	*1554*	1670	-	-	580	1260	*1865*
1000	1756	42	1255	630	1440	*1460*	1756	62	1320	630	1440	*1680*	1756	-	-	630	1440	*2016*
1200	1930	48	1485	793	1716	*1790*	1930	70	1530	793	1716	*2150*	**	**	**	**	**	**
1400	2095	52	1685	1720	1850	*2460*	2095	76	1755	1720	1850	*2830*	**	**	**	**	**	**
1600	2350	65	1930	1950	2228	*2680*	2350	81	1975	1950	2228	*2910*	**	**	**	**	**	**
1800	2650	62	2130	2196	2456	*7320*	2650	90	2195	1098	2456	*8786*	**	**	**	**	**	**

NOTE: All ** dimensions are for manually operating valves and vary according to site requirements. Some of these can also be supplied with spool pieces. For more info on these items, please contact Ithuba Valves for detailed drawings.

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Component Material List as indicated on the schematic diagram

ITEM	DESCRIPTION	MATERIAL	ITEM	COMPONENT	DESCRIPTION
1	VALVE BODY ASSEMBLY	ST/STEEL 304 (OR SEE 1.3)	13	CYLINDER BOLTING	ST/STEEL 304
2	SLEEVE	ST/STEEL 304	14	SPRING WASHER	ST/STEEL 304
3	HYDRAULIC CYLINDER	ST/STEEL 304 & 316	15	LIMIT STOP BOLTING	ST/STEEL 304
4	ANTI-TORSION BAR	ST/STEEL 304	16	SECONDARY SEAL ('D' SEAL)	N.B. RUBBER
5	BOLT ANTI-TORSION BAR	ST/STEEL 304	17	CYLINDER LOCK NUT	ST/STEEL 304
6	SPRING WASHER	ST/STEEL 304	18	Flat WASHER	ST/STEEL 304
7	PRIMARY SEAL	NITRILE/EPDM/VITON	19	LIMIT STOP	ST/STEEL 304
8	CLAMP RING	ST/STEEL 304	20	CYLINDER GASKET	KLINGER ASBESTOS FREE
20	NAME PLATE (NOT SHOWN)	ST/STEEL 304	21	H/DRIVE SCREW (NOT SHOWN)	ST/STEEL 304
10	SPRING WASHER	ST/STEEL 304			
11	CLAMP RING GRUB SCREW	ST/STEEL 304			
12	WELD DEPOSIT	NICKEL ALUMINUM BRONZE			