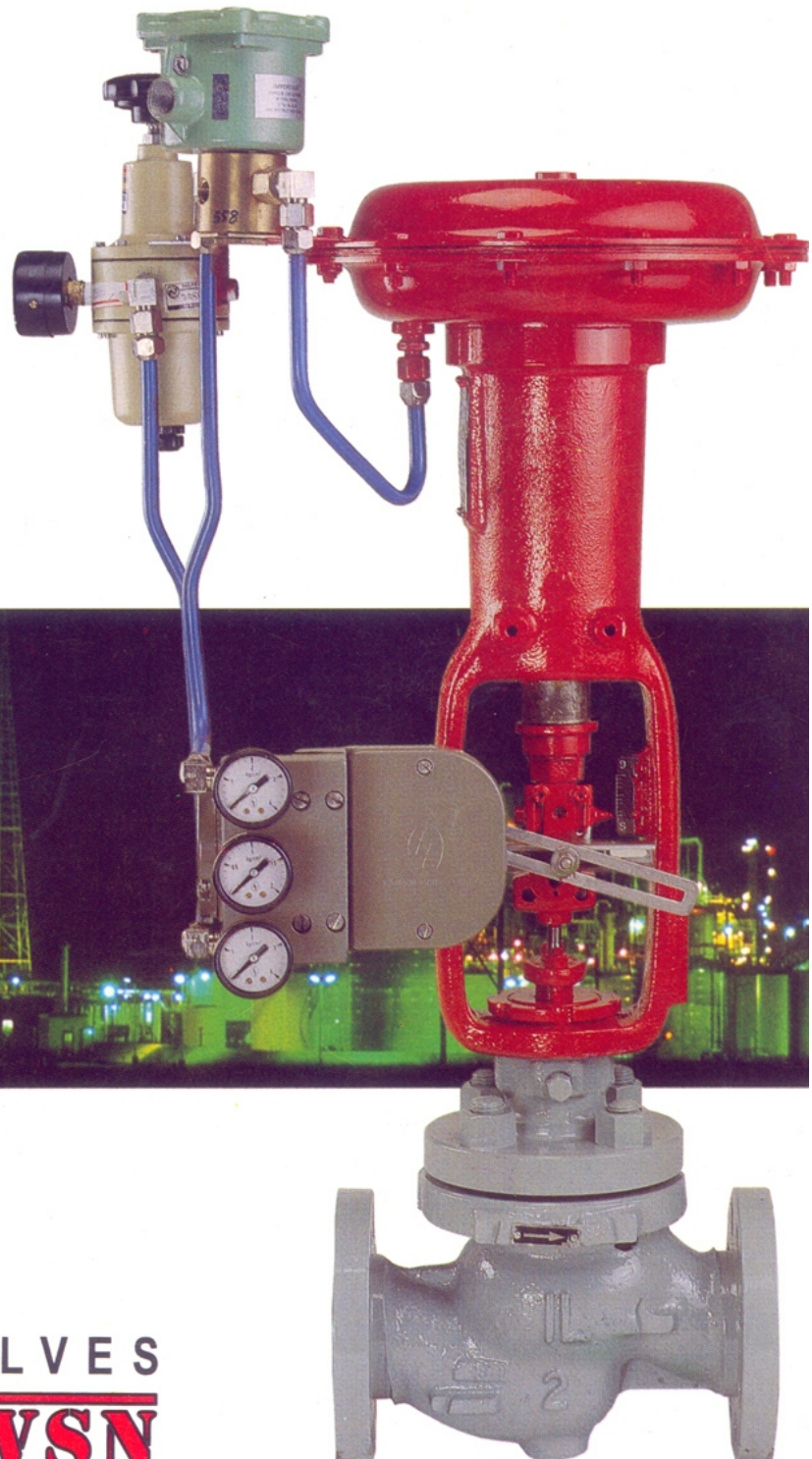




INSTRUMENTATION LTD., PALAKKAD

Cage guided valves have the inherent advantages of capability to handle large flows of clean fluids at relatively tougher operating conditions, smooth operation throughout the stroking range and economy of actuator selections due to reduced unbalanced force. Low noise trim option ensures reduction of noise. Soft seated trim is available for Bubble tight closure. With the chance of incipient flashing getting considerably reduced, this valve is the best choice for services involving hot liquids such as feed water, condensate etc. Large variety of material combinations is available to meet the needs of process industries.



CAGE GUIDED VALVES
VDC · VDN · VSC · VSN



I. FEATURES

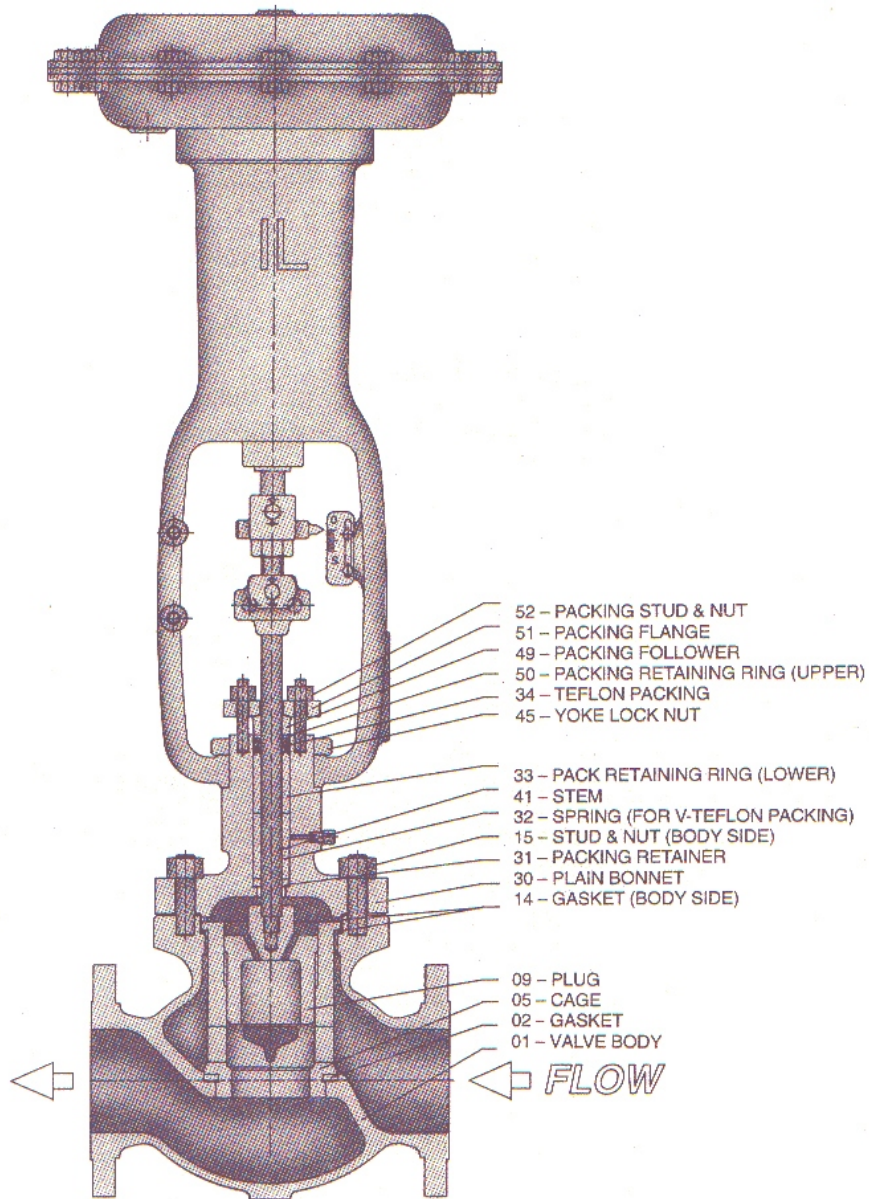
- Cage guided valves are Pressure Balanced.
- Smaller actuators for Higher Differential Pressures.
- Easier inspection of trim and parts replacement.
- Single and Double seated valves are available.
- Greater resistant to vibration and wear.
- Anti cavitation trim for stage pressure reduction
- Flow through characterized window holes of the cage.
- Soft seated trim for Tight Shut-off valves.

SPECIFICATIONS*	TYPE OF VALVE ASSEMBLY	VDC - Double Seated Cage guided Globe valve. VDN - Double Seated Cage guided Low Noise Globe valve. VSC - Single Seated Cage guided Globe valve. VSN - Single Seated Cage guided Low Noise Globe valve.	
	PRESSURE RATING	ANSI 150, 300, 600, 900, 1500, 2500 Allowable pressure for Bellow Sealed valve is 26 Kg/Cm ² at 300° C and 40 Kg/Cm ² at ambient temperature.	
	NOMINAL SIZE (INCHES)	1, 1½, 2, 2½, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20 & 24	
	END CONNECTION	Flanged End (RF, FF, RJ & TG), Butt Welded	
	SERVICE TEMP, RANGE	-150° C to 600° C (Max 200° C for soft seat) -30° C to 300° C For Bellow sealed valves	
STANDARD MATERIALS	VALVE BODY	Carbon Steel ASTM A216 WCB Stainless Steel ASTM A351 CF8, CF8M Alloy Steel A217 WC6, WC9 Hastalloy & Alloy 20 Other materials against specific request.	
	TRIM	Refer table 3.	
	PACKINGS	Teflon, Asbestos, Teflon Impregnated Asbestos, Graphited Asbestos & Graphoil etc. Other materials on request	
	GASKET	Stainless Steel, Monel, Spiral wound etc. Other materials on request.	
	FLOW CHARACTERISTICS	Linear, Equal Percentage and On-Off Mod. Linear for Low noise Trims.	
PERFORMANCE	RANGEABILITY	30:1 (Higher rangeabilities are available against specific requests)	
	LEAKAGE AT FULL CLOSURE (% OF Cv) AS PER ANSI B16. 104.	Soft Seat : 0.00001% (Class VI) or less (For VDC ANSI 150-600) Metallic Seat 0.5% or less (Class II) (For Double Seated Valves) (Class III can be offered as a special case) 0.01% or less (Class IV) (For Single Seated Valves) (Class V can be offered as a special case)	
	BONNET	Plain, Finned, Extension and Bellows Bellow sealed valves are available only with actuators up to VA5	
	ACTION	With Positioner	Without positioner
	HYSTERESIS	1% FS or less	3% FS or less
	LINEARITY	± 1% or less	± 5% FS or less
MAX. ALLOWABLE PRESSURE DROP	Diaphragm Type, Pneumatic Single Piston or Double piston cylinder type actuators. Refer Tables 4 to 13. The values given are for normal leakage class. For higher pressure drop contact Manufacturer. Electrical Actuators available against request.		
CV VALUE	Refer Tables 1 to 2		
OPTIONS	TUBING	Copper Tubing (Std 8mm / 10mm O.D. without / with PVC coating) SS Tubing for Copper prohibition(Std. 8mm O.D.) Air Connection : ¼" NPT (STD) for VA1-VA3 actuators. ½" NPT (STD) for VA4 & VA5 actuators ¾" NPT on request	
	ACCESSORIES	Valves with Steam Jacketing with a max. rating of ANSI 300 for the Jacket, can be provided. Manual Actuators. Side or Top mounted Handwheel. Pneumatic & Electro-Pneumatic Positioners. I/P Converters, Solenoid valve, Air Filter Regulator, Air lock relay, Position Transmitters Limit Switches, Volume Boosters etc.	

* For exact Product range refer Cv Tables



VALVE ASSEMBLY



FLOW DIRECTION SHOWN IS FOR ANSI 150 - 600.

NOTE : MONEL GASKET FOR ANSI 900 & ABOVE AND SPIRAL WOUND FOR ANSI 150 - 600.

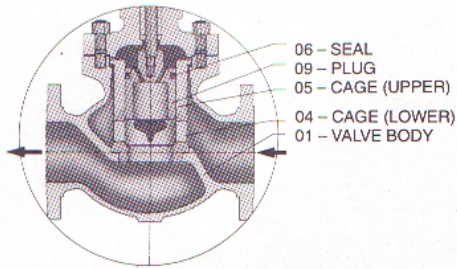


Fig. 2
ASSEMBLY WITH VSC TRIM
FOR ANSI 150 - 600

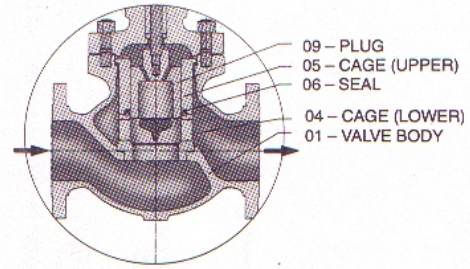


Fig. 3
ASSEMBLY WITH VSC TRIM
FOR ANSI 900 - 2500

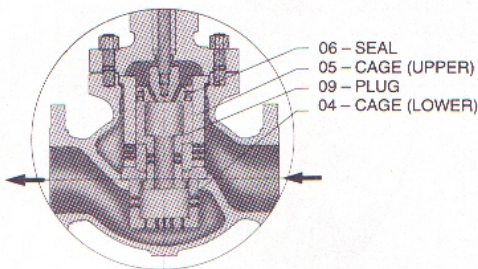


Fig. 4
ASSEMBLY WITH VSN TRIM
FOR ANSI 150-600

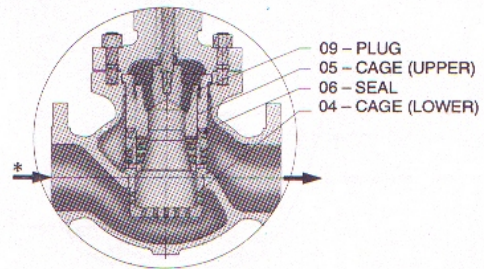


Fig. 5
* ASSEMBLY WITH VSN TRIM
FOR ANSI 900-2500

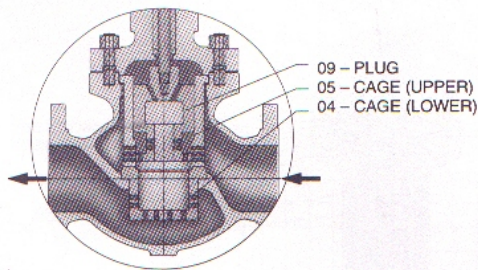


Fig. 6
ASSEMBLY WITH VDN TRIM
FOR ANSI 150-600

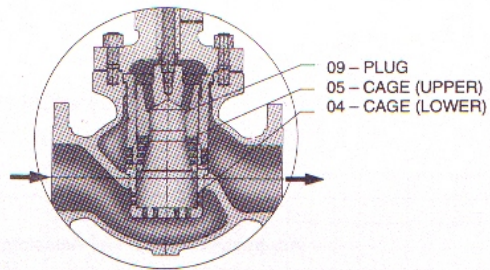


Fig. 7
* ASSEMBLY WITH VDN TRIM
FOR ANSI 900-2500

* Flow Direction is Side to Bottom for valves 2" and less.

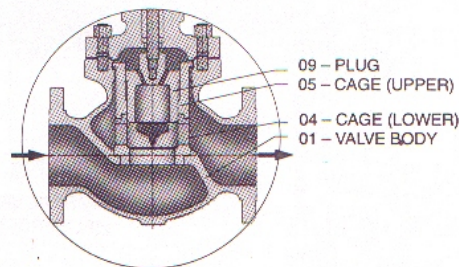


Fig. 8
ASSEMBLY WITH VDC TRIM
FOR ANSI 900-2500

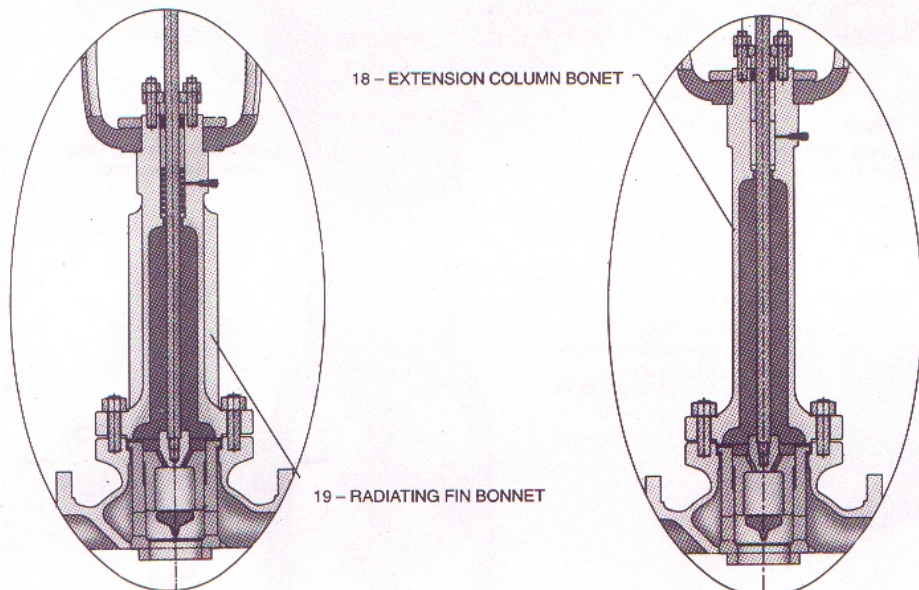


Fig. 9
VALVE ASSEMBLY WITH
RADIATING FIN BONNET
(FOR -30° TO 650°C)

Fig. 10
VALVE ASSEMBLY WITH
EXTENSION COLUMN BONNET
(FOR 0° TO +195°C)

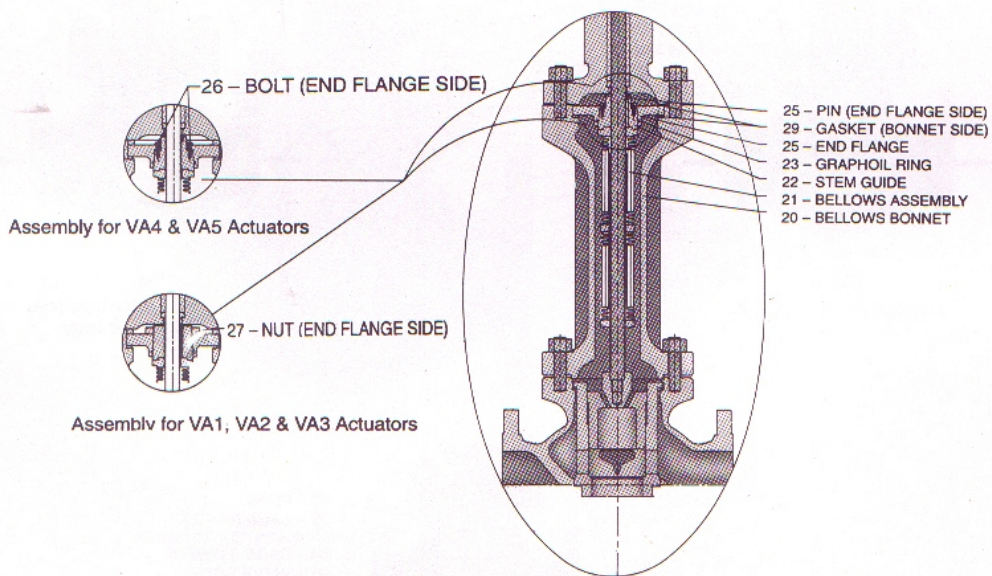
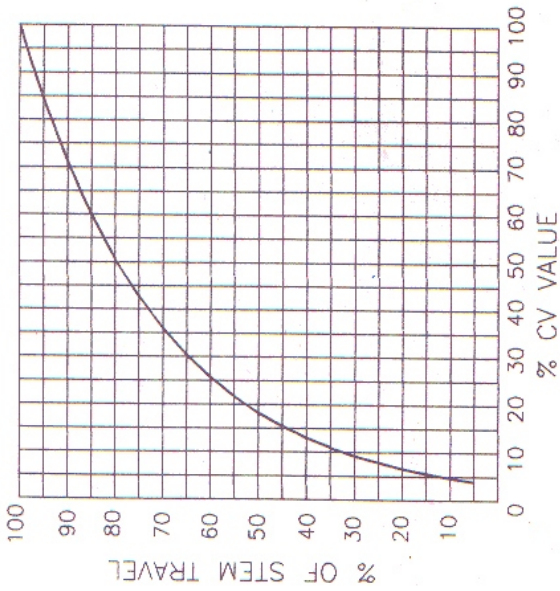


Fig. 11
BELLOW SEAL VALVE ASSEMBLY
(FOR -30° TO 300°C)

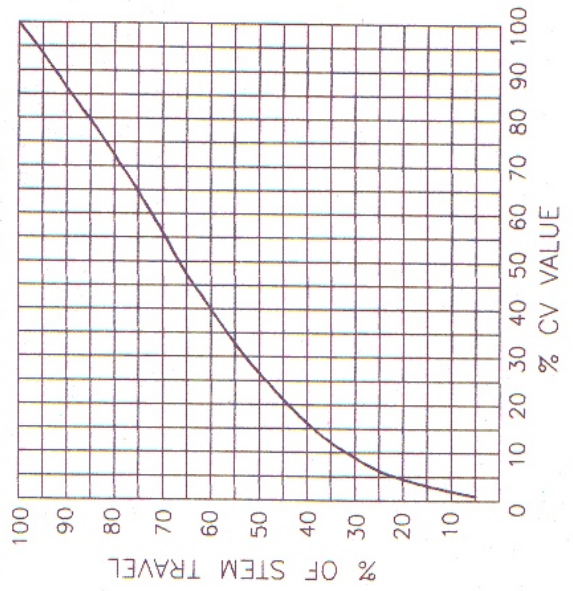
II. FLOW CHARACTERISTICS

II.1. Equal percentage Characteristics for VSC / VDC (Reduced port ANSI 150-600. Reduced and full port ANSI 900-2500. Rangeability 30:1)



GRAPH 1.1

II.2. Equal percentage Characteristics for VSC / VDC (Full port ANSI 150-600. Rangeability 30:1)



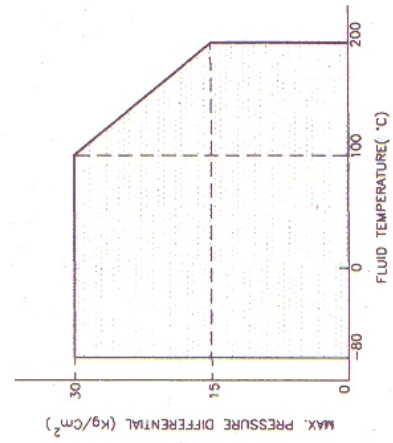
GRAPH 1.2

II.2. Flow Characteristics for VDN & VSN Trim



GRAPH 2

III. Operating Temperature & Pressure Difference Limit for Teflon Valves



GRAPH 3



IV. FLOW COEFFICIENT Cv WITH STEM TRAVEL

IV.1. Valves with VDC and VSC Trims (ANSI 150-2500)

Table 1

VALVE SIZE (Inch)		1½			2			2½			3			4			5			6		
PORT SIZE (Inch)		1	1¼	1½	1¼	1½	2	1½	2	2½	2	2½	3	2½	3	4	3	4	5	4	5	6
RATED Cv VALUE (ANSI 150-600)		11	17	24	17	24	44	24	44	68	44	68	99	68	99	175	99	175	275	175	275	395
STEM TRAVEL (mm)	LINEAR & EQUAL %	25			25			37.5			37.5			37.5			50			50		
	ON-OFF	14.3			14.3			25			25			25			37.5			37.5		
RATED Cv VALUE (ANSI 900-1500)		10	14	21	14	21	39	21	39	56	39	56	83	56	83	144	83	144	210	144	210	315
RATED Cv VALUE (ANSI 2500)		-	10	14	10	14	25	14	25	39	25	39	56	39	56	91	56	91	144	91	144	210
STEM TRAVEL (mm)	LINEAR & Equal %	25			25			37.5			37.5			37.5			50			50		
	On-Off	14.3			14.3			25			25			25			37.5			37.5		

VALVE SIZE (Inch)		8			10			12			14			16			18			20			24		
PORT SIZE (Inch)		5	6	8	6	8	10	8	10	12	10	12	14	12	14	16	14	16	18	16	18	20	18	20	24
RATED Cv VALUE (ANSI 150-600)		275	395	640	395	640	1000	640	1000	1440	1000	1440	1960	1440	1960	2560	1960	2560	3240	2560	3240	4000	3240	4000	5760
STEM TRAVEL (mm)	LINEAR & EQUAL %	75			100			100			100			150			150			150			200		
	ON-OFF	50			75			75			75			100			100			100			150		
RATED Cv VALUE (ANSI 900-1500)		210	315	540	315	540	840	540	840	1180	840	1180	1570	1180	1570	2050	-	-	-	-	-	-	-	-	-
RATED Cv VALUE (ANSI 2500)		144	210	365	210	365	580	365	580	820	-	-	-	-	-	1520	-	-	-	-	-	-	-	-	-
STEM TRAVEL (mm)	LINEAR & Equal %	75			100			100			100			150			-			-			-		
	On-Off	50			75			75			75			100			-			-			-		

IV.2. Valves with VDN and VSN Trims (ANSI 150-2500)

Table 2

VALVE SIZE (Inch)		1½			2			2½			3			4			5			6		
PORT SIZE (Inch)		1	1¼	1½	1¼	1½	2	1½	2	2½	2	2½	3	2½	3	4	3	4	5	4	5	6
RATED Cv VALUE (ANSI 150-600)		-	-	13	-	13	24	13	24	37	24	37	54	37	54	96	-	-	-	96	150	210
STEM TRAVEL (mm)		25			25			37.5			37.5			37.5			-			50		
RATED Cv VALUE (ANSI 900-1500)		-	-	14	-	14	25	14	25	39	25	39	56	39	56	91	56	91	144	91	144	210
STEM TRAVEL (mm)		25			25			37.5			37.5			37.5			50			50		
RATED Cv VALUE (ANSI 2500)		-	-	10	-	10	14	10	14	25	14	25	39	25	39	56	39	56	91	56	91	144
STEM TRAVEL (mm)		25			25			37.5			37.5			37.5			50			50		

VALVE SIZE (Inch)		8			10			12			14			16			18			20		
PORT SIZE (Inch)		5	6	8	6	8	10	8	10	12	10	12	14	12	14	16	14	16	18	16	18	20
RATED Cv VALUE (ANSI 150-600)		150	210	380	210	380	600	380	600	860	600	860	1170	860	1170	1520	1170	1520	1930	1520	1930	2380
STEM TRAVEL (mm)		75			100			100			100			150			150			150		
RATED Cv VALUE (ANSI 900-1500)		144	210	365	210	365	580	365	580	820	580	820	1070	820	1070	1400	-	-	-	-	-	-
STEM TRAVEL (mm)		75			100			100			100			150			-			-		
RATED Cv VALUE (ANSI 2500)		91	144	210	144	210	365	210	365	580	365	580	820	580	820	1070	-	-	-	-	-	-
STEM TRAVEL (mm)		50			75			75			100			100			-			-		

Note: Flow coefficient Cv other than tabulated can also be offered to suit specific flow conditions



VI. MAXIMUM PRESSURE DIFFERENTIAL

VI.1. Teflon Seated Valves

VI. 1.1. VDC Valve (ANSI 150 - 600)

Table 4

ACTUATOR MODEL	AIR TO DIAPHRAGM Kg/Cm ²	SPRING RANGE Kg/Cm ²	POSITIONER	MAX. PRESSURE DIFFERENTIAL (kg/Cm ²) CORRESPONDING TO VALVE SIZE (inch)													
				1½	2	2½	3	4	5	6	8	10	12				
VA1D	1.2	0.2-1.0	X	8.1	6.4	-	-	-	-	-	-	-	-	-	-	-	-
	1.4	0.2-1.0	O	16.3	12.8	-	-	-	-	-	-	-	-	-	-	-	-
	2.6	0.2-1.0	O	30	30	-	-	-	-	-	-	-	-	-	-	-	-
VA2D	1.2	0.2-1.0	X	11.8	9.3	7.4	6.3	4.8	-	-	-	-	-	-	-	-	-
	1.4	0.2-1.0	O	23.5	18.5	14.7	12.6	9.6	-	-	-	-	-	-	-	-	-
	2.6	0.2-1.0	O	-	-	-	-	-	30	30	30	-	-	-	-	-	-
VA3D	1.2	0.2-1.0	X	19.5	15.4	12.2	10.5	7.9	6.4	4.3	-	-	-	-	-	-	-
	1.4	0.2-1.0	O	30	30	24.4	21	15.9	12.8	8.6	-	-	-	-	-	-	-
	2.6	0.2-1.0	O	-	-	-	-	-	-	-	30	30	30	-	-	-	-
VA4D	1.2	0.2-1.0	X	17	14.6	11	8.9	6	5.6	-	-	-	-	-	-	-	-
	1.4	0.2-1.0	O	30	29	22	17.8	12	11.3	-	-	-	-	-	-	-	-
	2.6	0.2-1.0	O	-	-	-	-	-	-	-	30	30	30	-	-	-	-
VA5D	1.2	0.2-1.0	X	-	-	-	-	-	-	-	12.2	8.3	7.7	6.2	5.2	-	-
	1.4	0.2-1.0	O	-	-	-	-	-	-	-	24.4	16.5	15.4	12.4	10.3	-	-
	2.6	0.2-1.0	O	-	-	-	-	-	-	-	-	-	-	-	-	30	30
VA1R	1.4	0.2-1.0	X or O	8.2	6.4	-	-	-	-	-	-	-	-	-	-	-	-
	1.4	0.4-1.2	P	16.3	12.9	-	-	-	-	-	-	-	-	-	-	-	-
	2.8	0.8-2.4	O	30	25.7	-	-	-	-	-	-	-	-	-	-	-	-
VA2R	1.4	0.2-1.0	X or O	11.8	9.3	7.4	6.3	4.8	-	-	-	-	-	-	-	-	-
	1.4	0.4-1.2	P	23.5	18.5	14.7	12.6	9.6	-	-	-	-	-	-	-	-	-
	2.8	0.8-2.4	O	-	-	-	-	-	-	-	30	29.4	25.2	19.1	-	-	-
VA3R	1.4	0.2-1.0	X or O	19.5	15.4	12.2	10.5	7.9	6.4	4.3	-	-	-	-	-	-	-
	1.4	0.4-1.2	P	30	30	24.5	21	15.8	12.8	8.6	-	-	-	-	-	-	-
	2.8	0.8-2.4	O	-	-	-	-	-	-	-	30	30	30	25.5	17.3	-	-
VA4R	1.4	0.2-1.0	X or O	17	14.6	11	8.9	6	5.6	-	-	-	-	-	-	-	-
	1.4	0.4-1.2	P	30	29	22	17.8	12	11.3	-	-	-	-	-	-	-	-
	2.8	0.8-2.4	O	-	-	-	-	-	-	-	30	24	22.5	-	-	-	-
VA5R	1.4	0.2-1.0	X or O	-	-	-	-	-	-	-	15	12.2	8.3	7.7	6.2	5.2	-
	1.4	0.4-1.2	P	-	-	-	-	-	-	-	30	24.4	16.5	15.4	12.4	10.3	-
	2.8	0.8-2.4	O	-	-	-	-	-	-	-	-	-	-	-	-	30	30

Note : 1. Positioner; X... Without O... with P... Preferably with.
 2. The pressure differential limit for 0.4 - 2.0 Kg/Cm² spring range is same as that of 0.4 - 1.2 Kg/Cm²

V. TRIM MATERIAL SELECTION

Table 3

TRIM COMBINATION NO.	TRIM DESIGNATION	PLUG	CAGE	APPLICABLE TEMP. RANGE (°C)	
				VDC, VDN	VSC, VSN
1	SS 304	SS 304	SS304	-195 to 300	-195 to 300
2	SS 304 St. Seat	SS 304 St. Seat	SS 304 St. Seat	-195 to 425	-195 to 300
4	SS 304 Teflon Ins.	SS 304 Teflon Ins.	SS 304	-70 to 200	-
6	SS 316	SS 316	SS 316	-195 to 300	-195 to 300
7	SS 316 St. Seat	SS 316 St. Seat	SS 316 St. Seat	-195 to 425	-195 to 300
9	SS 316 St. Chrome	SS 316 St. Chrome	SS 316 St. Chrome	-30 to 590	-
10	SS 316 Teflon Ins.	SS 316 Teflon Ins.	SS 316	-70 to 200	-
11	SS 316L	SS 316L	SS 316L	-195 to 300	-195 to 300
12	SS 316L St. Seat	SS 316L St. Seat	SS 316L St. Seat	-195 to 425	-195 to 300
13	17-4-PH	17-4-PH	17-4-PH	-30 to 425	-30 to 300
14	17-4-PH Teflon Ins	17-4-PH Teflon Ins	17-4-PH	-30 to 200	-
15	17-4 PH CA6 NM	17-4-PH	CA6 NM	-30 to 425	-30 to 300
16	SS 440C	SS 440C	SS 440C	-30 to 425	-
17	Monel	K. Monel	K. Monel	-195 to 300	-
18	Hastalloy B	Hastalloy B	Hastalloy B	-195 to 370	-
19	Hastalloy C	Hastalloy C	Hastalloy C	-195 to 450	-
20	Titanium	Titanium	Titanium	-195 to 315	-
21	Alloy 20	Alloy 20	Alloy 20	-40 to 300	-
22	Monel 400	Monel 400	Monel 400	-195 to 300	-
23	SS 420 C	SS 420C	SS 420C	-30 to 425	-30 to 300

Note : Other material combinations can be offered on request.

VI.2.5. VDC, VDN Valves with Diaphragm Actuators (ANSI 900 - 2500)

Table 9

RATING	ACTUATOR MODEL	AIR TO DIAPHRAGM Kg/Cm ²	SPRING RANGE Kg/Cm ²	MAX. PRESSURE DIFFERENTIAL (kg/Cm ²) CORRESPONDING TO VALVE SIZE (Inch)													
				1½	2	2½	3	4	5	6	8	10	12	14"			
ANSI 900 & 1500	VA3D	2.6	0.4 - 2.0	170	170	170	170	170	170	170	170	170	170	170	170	170	170
		2.6	0.4 - 2.0	235	235	235	200	170									
		2.8	0.2 - 1.8	250	(155)												
	VA4D	2.6	0.4 - 2.0					150	(95)	(70)	(25)						
		2.6	0.4 - 2.0	210	210	180	(150)	180	120	60							
		2.8	0.2 - 1.8	250	(170)	240											
VA5D	2.6	0.4 - 2.0								130	(45)	(30)	(25)				
	2.6	0.4 - 2.0	240	185	185	165	(145)										
	2.8	0.2 - 1.8	305	(155)	250	240	200	(120)									
ANSI 2500	VA3D	2.6	0.4 - 2.0	170	170	170	130			150	(135)	(95)	(35)				
		2.6	0.4 - 2.0	235	235	200	170	(165)	(120)		210	210	180	175			
		2.8	0.2 - 1.8	305	(155)	250	240	200	(120)								
	VA4D	2.6	0.4 - 2.0								150	150	145	110			
		2.6	0.4 - 2.0	210	210	180	170	(165)	(120)		210	210	180	170			
		2.8	0.2 - 1.8	270	240	(170)											
VA5D	2.6	0.4 - 2.0								185	185	185	150				
	2.6	0.4 - 2.0	240	240	235	200	170	(120)		240	235	200					
	2.8	0.2 - 1.8															

Direct Action (Air to Close)

Note : * Applicable for VDC valves only.

1. The values in **reverse** are for VDN type only.
2. The maximum operating pressure is 150 kg/Cm² for ANSI 900
3. The values indicated in the brackets are for full open condition. The values for full open and close are same if only one value is specified.

VI.2.8. VSC, VSN Valves with Piston Cylinder Actuators (ANSI 900 - 2500)

Table 10

RATING	ACTUATOR MODEL	SUPPLY PRESSURE Kg/Cm ²	MAX. PRESSURE DIFFERENTIAL (kg/Cm ²) CORRESPONDING TO VALVE SIZE (Inch)					
			8	10	12	14	16	250*
ANSI 900 & 1500	SPA1X	2	245	250	250			
	SPA2	3	250					
	SPA2	2	256	375				
ANSI 2500	SPA1X	3	420	420				
	SPA2	2						

* Applicable only for VSC.

VI.2.5. VDC, VDN Valves with Diaphragm Actuators (ANSI 900 - 2500)

Table 11

RATING	ACTUATOR MODEL	AIR TO DIAPHRAGM Kg/Cm ²	SPRING RANGE Kg/Cm ²	MAX. PRESSURE DIFFERENTIAL (kg/Cm ²) CORRESPONDING TO VALVE SIZE (Inch)													
				1½	2	2½	3	4	5	6	8	10	12	14"			
ANSI 900 & 1500	VA3R	2.6	0.4 - 2.0	100	100	100	100	100	100	100	100	100	100	100	100	100	100
		2.8	0.8 - 2.4	235	235	200	170	130	(165)	(120)	(75)						
		2.6	0.4 - 2.0	250	(155)												
	VA4R	2.6	0.8 - 2.4					150	(100)	(70)							
		2.6	0.4 - 2.0	210	180	145	120										
		2.8	0.8 - 2.4	250	(170)	240											
VA5R	2.6	0.4 - 2.0								185	165	85					
	2.6	0.4 - 2.0	240	185	185	165	(145)										
	2.8	0.2 - 1.8	305	(155)	250	240	200	(120)									
ANSI 2500	VA3R	2.6	0.4 - 2.0	100	100	100	100	100	100	100	100	100	100	100	100	100	100
		2.8	0.8 - 2.4	235	235	200	170	130	(165)	(120)	(75)						
		2.6	0.4 - 2.0	250	(155)												
	VA4R	2.6	0.8 - 2.4					150	(135)	(95)	(35)						
		2.6	0.4 - 2.0	210	180	175	145	110									
		2.8	0.8 - 2.4	270	240	(170)											
VA5R	2.6	0.4 - 2.0								185	185	150					
	2.6	0.4 - 2.0	240	240	235	200	170	(120)		240	235	200					
	2.8	0.8 - 2.4															

Reverse Action (Air to Open)

Note : * Applicable for VDC valves only.

1. The values in **reverse** are for VDN type only.
2. The maximum operating pressure is 150 kg/Cm² for ANSI 900
3. The values indicated in the brackets are for full open condition. The values for full open and close are same if only one value is specified.

VI.2.4. VDC, VDN Valves with Piston Cylinder Actuators (ANSI 900 - 2500)

Table 12

RATING	ACTUATOR MODEL	SUPPLY PRESSURE Kg/Cm ²	MAX. PRESSURE DIFFERENTIAL (kg/Cm ²) CORRESPONDING TO VALVE SIZE (Inch)					
			8	10	12	14	16	250*
ANSI 900 & 1500	DPA1	5	250	250	250	200	160	
	SPA1	5	220	170	145	100	80	
	SPA1X	5						80
	SPA2	5	145	115	96	80		
ANSI 2500	DPA1	5	420	420	340	160		
	SPA1	5	270	220	170	80		
	SPA1X	5					80	
	SPA2	5	180	140	115			

Note : * Applicable for VDC valves only.

1. Pressure differential is same for both opened and closed conditions.



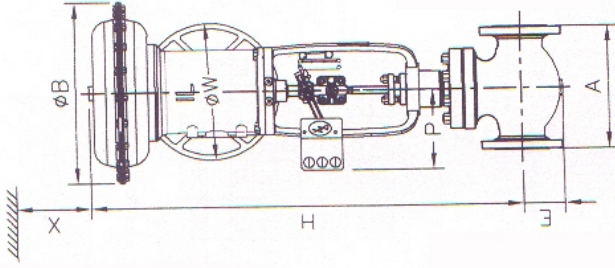


Table 14

VALVE SIZE (INCH)	A* (mm)												E (mm)		
	ANSI 150 RF/BS RJT/G	ANSI 300 RF/BS RJT/G	ANSI 600 RF/BS RJT/G	ANSI 900 RF/BS RJT/G	ANSI 1500 RF/BS RJT/G	ANSI 2500 RF/BS RJT/G	ANSI 150 RF/BS RJT/G	ANSI 300 RF/BS RJT/G	ANSI 600 RF/BS RJT/G	ANSI 900 RF/BS RJT/G	ANSI 1500 RF/BS RJT/G	ANSI 2500 RF/BS RJT/G	ANSI 150-600	ANSI 900-1500	ANSI 2500
1½	222	235	248	251	335	335	222	235	248	251	335	335	70	106	106
2	254	267	283	286	375	375	254	267	283	286	375	375	80	117	121
2½	276	289	292	308	314	410	276	289	292	308	314	410	85	133	128
3	298	311	318	333	340	440	298	311	318	333	340	440	100	151	143
4	352	365	368	384	394	397	352	365	368	384	394	397	130	205	205
5	403	416	425	441	457	460	403	416	425	441	457	460	150	250	230
6	451	464	473	489	508	511	451	464	473	489	508	511	175	285	255
8	543	556	568	584	610	613	543	556	568	584	610	613	275	350	330
10	673	686	708	724	752	756	673	686	708	724	752	756	300	430	426
12	737	749	775	791	819	822	737	749	775	791	819	822	345	500	500
14	889		927		972		889		927		972		375	550	-
**16	1016		1057		1108		1016		1057		1108		437	645	645
18			1180		1240				1180		1240		507	-	-
20			1300						1300				520	-	-
24			1584						1584				602.5	-	-

RF - RAISED FACE END B- BUTT WELD EDGE S- SOCKET WELD EDGE
 RJ - RING JOINT END TG - TONGUE GROOVE (SMALL & LARGE) END

*Tolerance is ± 1.6 for valve 10" and less & ± 3.2 for 12" and above
 ** 'E' Dimension for 16" ANSI 150 shall be 425 mm.

VI.2.7. VSC, VSN Valves with Diaphragm Actuators (ANSI 900 - 2500)

Table 13

RATING	ACTUATOR MODEL	AIR TO DIAPHRAGM Kg/Cm ²	SPRING RANGE Kg/Cm ²	MAX. PRESSURE DIFFERENTIAL (kg/Cm ²) CORRESPONDING TO VALVE SIZE (Inch)													
				1½	2	2½	3	4	5	6	8	10	12				
ANSI 900 & 1500	VA3D	2.6	0.4 - 2.0	250	250	250	250	200									
		3.0	0.2 - 1.8	250	250	250	250	250									
	VA4D	2.6	0.4-2.0					250	250								
		3.0	0.2 - 1.8					250	250								
	VA5D	2.6	0.4-2.0											131	83	61	
3.0		0.2 - 1.8											219	138	102		
ANSI 2500	VA3D	2.6	0.2 - 1.8	288	410	420	420	420									
		3.0	0.4-2.0	420	420	420	420	420									
	VA4D	2.6	0.2 - 1.8	420	420	420	420	420									
		3.0	0.4-2.0					420	420								
	VA5D	2.6	0.2 - 1.8					420	420								
ANSI 900 & 1500	VA3R	2.6	0.2 - 1.8										420	122	84		
		3.0	0.4-2.0										420	203	141		
	VA4R	2.6	0.4-2.0	179	250	250	250	207									
		2.8	0.8 - 2.4	250	250	250	250	250									
	VA5R	2.6	0.4-2.0					250	219								
ANSI 2500	VA3R	2.6	0.2 - 1.8										87	55	41		
		2.8	0.8 - 2.4										175	111	82		
	VA4R	2.6	0.4-2.0	179	273	420	420	420									
		2.8	0.8 - 2.4	358	420	420	420	420									
	VA5R	2.6	0.4-2.0					420	420								
ANSI 2500	VA5R	2.6	0.4-2.0					420	420								
		2.8	0.8 - 2.4					420	420								

- Note : 1. Shut off pressure shown in the table are for class IV leakage.
 2. The differential pressure at fully open condition is limited to 250 irrespective of spring range for VA3, VA4, VA5 actuators.
 3. Class V leakage can be obtained by increasing the supply pressure and spring range for Direct and Reverse action respectively.

Table 14.1

ACTUATOR MODEL	X	ØW	P
VA1	230	280	216
VA2	245	355	220
VA3	295	450	240
VA4	360	570	262
VA5	420	570	270





IX.5. VDC, VSC Bellow Seal Valves

Table 21

VALVE SIZE (Inch)	RATING (ANSI)	Weight (Kg)													
		Flanged End						Buttweld End							
		VA1	VA2	VA3	VA4D	VA4R	VA5D	VA5R	VA1	VA2	VA3	VA4D	VA4R	VA5D	VA5R
1½	150	40	55						37	52					
	300	45	60						39	55					
	600	53	68						47	62					
2	150	46	60	88					41	55	83				
	300	47	61	89					40	54	82				
	600	64	78	106					56	70	98				
2½	150		65	95						57	87				
	300		70	100						60	90				
	600		115	145						104	134				
3	150		87	118						78	109				
	300		90	121						77	108				
	600		127	158						112	143				
4	150		105	133						92	120				
	300		120	148						99	127				
	600		160	188						129	157				
6	150			245	320	345	345	370			228	303	328	328	353
	300			245	330	355	355	380			229	294	319	319	344
	600			315	390	415	415	440			255	330	355	355	380
8	150				430	455						403	428		
	300				470	495						431	456		
	600				600	625						507	532		

IX.6. VDN, VSN Bellow Seal Valves

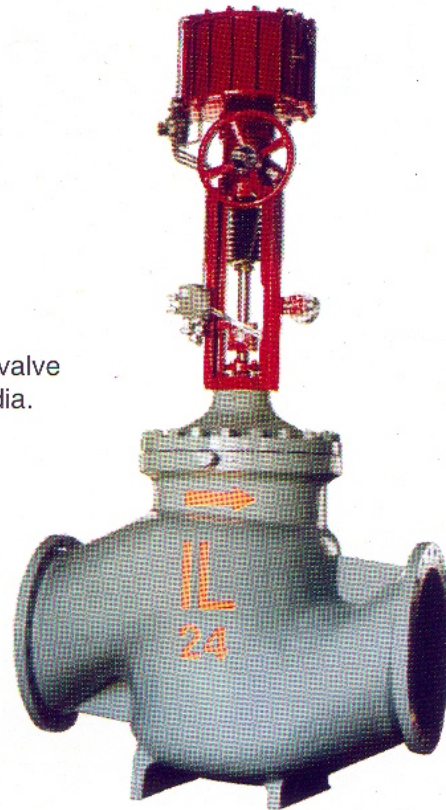
Table 22

VALVE SIZE (Inch)	RATING (ANSI)	Weight (Kg)													
		Flanged End						Buttweld End							
		VA1	VA2	VA3	VA4D	VA4R	VA5D	VA5R	VA1	VA2	VA3	VA4D	VA4R	VA5D	VA5R
1½	150	40	55						37	52					
	300	45	60						39	55					
	600	53	68						47	62					
2	150	46	60	88					41	55	83				
	300	47	61	89					40	54	82				
	600	64	78	106					56	70	98				
2½	150		65	95						57	87				
	300		70	100						60	90				
	600		115	145						104	134				
3	150		88	119						79	110				
	300		91	122						78	109				
	600		128	159						113	144				
4	150		107	135						94	122				
	300		122	150						101	129				
	600		162	190						131	159				
6	150			250	325	350	350	375			233	308	333	333	358
	300			270	335	360	360	385			234	299	324	324	349
	600			320	395	420	420	445			260	335	360	360	385
8	150				452	467						425	450		
	300				492	517						453	478		
	600				622	647						529	554		

*The contents of this catalogue may be altered for improvement without notice.

Valve Model
VSC 24" 150 RF

The largest control valve
manufactured in India.



Valve Model
VSC 16" 2500

Main feed water control
valve for 500 MW TPS

