

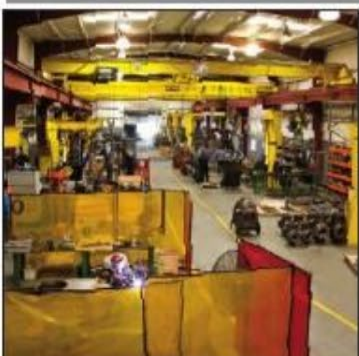


CALVARY VALVE, INC.



Full Port Swing Check Valves

“FLOW SOLUTIONS”



Full Port Swing Check Valves—API6D

CLASS:150#-2500#

SIZE :2"-36"



[Product Preview]

Full Port Swing Check Valves - API 6D

Basic Design: ANSI/ASME B16.34, conforms to API 6D

Shell Wall Thickness: API 6D

Face-to-Face: ANSI/ASME B16.10

Flange End Dimensions: ANSI/ASME 16.5 (2" - 24") MSS SP-44 (26" & up)

Butt-Weld End Dimensions: ANSI/ASME B16.25

Inspection & Testing: API 6D

Design Features

CVI Full Port Swing Check Valves are all designed to operate without any assistance, reacting to dominate flow direction. Minimal forward flow will instantly open the valve disc, while zero flow closes the valve disc preventing backflow. Optional mechanical devices (manual levers or gear operators) are available to manually or remotely open or close the valve. The full port design results in lower turbulence and pressure drops than competitors. Full Port Swing Check Valves are fully "piggable" to accommodate inspection and cleaning devices. Available sizes range from 2" thru 36" in Classes 150 thru 2500.

Optional Features

Extended Shaft Gland/Seal Assembly

Extended Shaft Cover

Lock Open Lever

Lock Open Gear

Slam Retarder



Note: CVI reserves the right to change any technical design and dimensional data without prior notice. Please contact CVI to confirm all Dimensions and Data offered in this catalog.

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Full Port Swing Check Valves-API6D

CLASS:150#-2500#

SIZE :2"-36"



Design and Manufacturing Standards	
Basic Design	API 6D & ANSI B16.34
Shell Wall Thickness	API 6D
Face to Face Dimension	ANSI/ASME B16.10
Flange End Dimension	ANSI/ASME B16.5 (2" to 24") MSS SP-44 (26" & up)
Butt-Weld End Dimension	ANSI/ASME B16.25
Inspection & Testing	API 6D



[Optional Features]

Extended Shaft Gland/Seal Assembly

The gland seal assembly is standard for extended shaft valve designs and bolts to the valve body to allow for lock open lever, lock open gear, slam retarder, or extended shaft cover installation. It also features a shaft seal and a lubricant/sealant injection port.

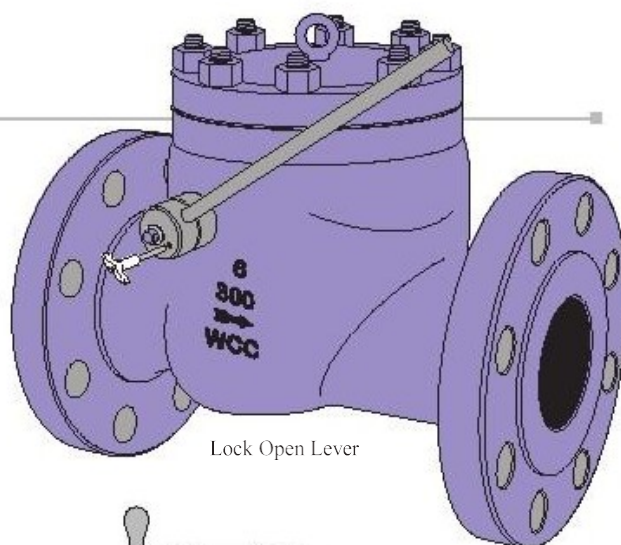
Extended Shaft Cover

Used to protect the extended shaft when lock open devices are not being utilized.

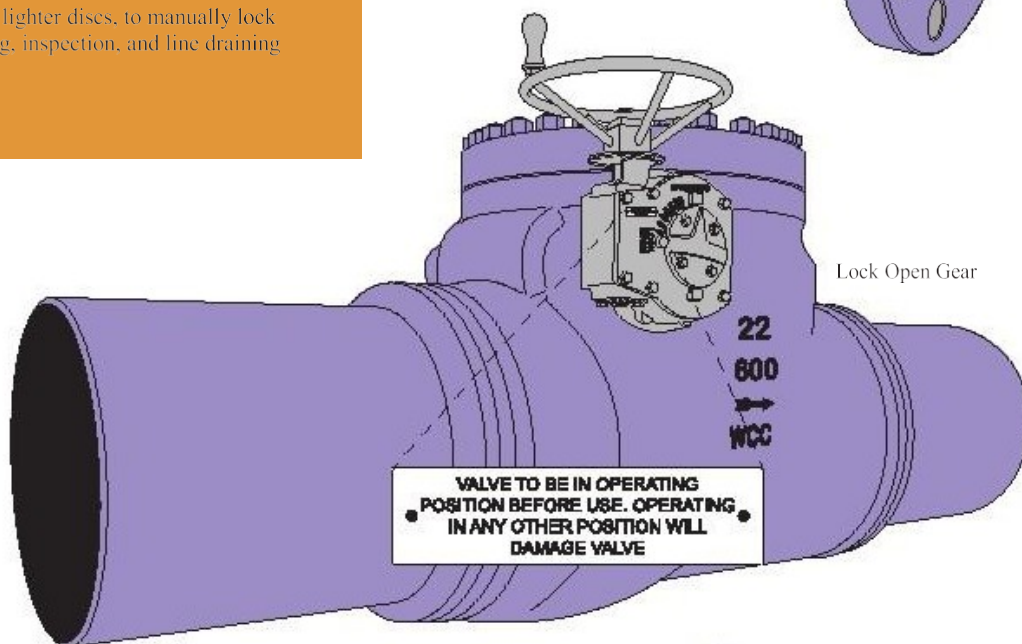
Lock Open Lever

Used on smaller diameter valves, with lighter discs, to manually lock the disc in the open position for pigging, inspection, and line draining procedures.

Sizes: 2" thru 16"



Lock Open Lever



Lock Open Gear

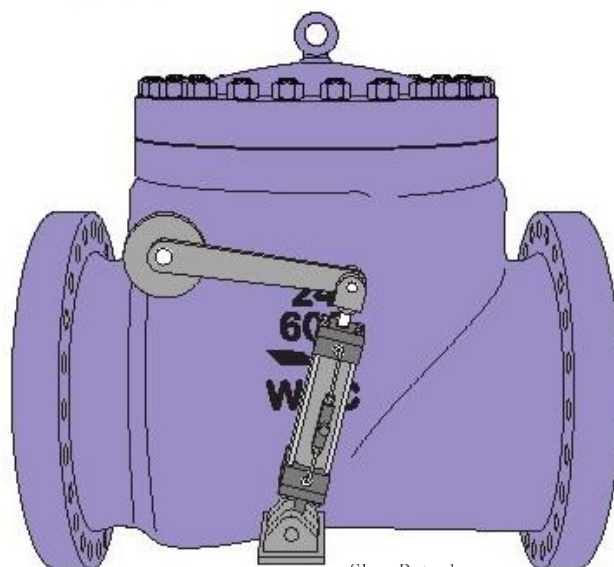
Lock Open Gear

Used on larger diameter valves, with heavier discs, to manually lock the disc in the open position for pigging, inspection, and line draining procedures.

Sizes: 18" thru 36"

Slam Retarder

Used to decelerate the disc during closing to prevent slamming against the seat during backflow situations which could result in valve damage or malfunction. A hydraulic assembly with an adjustable governor regulates the speed of closure.



Slam Retarder

[Installation, Operations & Maintenance]

The trouble - free performance of a valve largely depends on the selection of a right valve for the job followed by proper storage, Neat Installation gentle operation and timely maintenance. Please follow the guidelines given for the valve to function well to your satisfaction.

1. GENERAL

- 1.1 Upon delivery, inspect the valve for any shipping damage.
- 1.2 As per the packing-slip placed inside the box, verify the goods received, items packed loose within the box are separately identified in the packing - slip check for short supply, if any.

2. STORAGE

- 2.1 Do not take - off the end protectors until installation.

Caution: Avoid possible entry of any foreign matter such as water, dirt, mud, sand, etc, into the valve in order to protect the lapped sealing faces of the valve seats.

3. INSTALLATION

- 3.1 Valve conforming to the customer's specification in all respects is duly tested prior to dispatch, however ensure once again that specifications mentioned over the name plate are in line with your requirements with regard to size, Material of construction, working pressure etc.

- 3.2 Alignment and proper supports for the pipings are essential to prevent unwanted stresses in the valves.

Caution: Blow-out or flush the pipe lines thoroughly before valve installation, of not, the hard particles left within the pipe line can easily ruin the seating faces-A common cause for most of the valve failures.

- 3.3 Ensure that valves is freely accessible to the operator.
- 3.4 Mating flange faces should be clean for proper sealing at the joint.
- 3.5 Take off end-protectors just prior to the installation.
- 3.6 Remove additional packing stuff placed inside the valve bore.

Caution: Correct actuator calibration is critical for proper valve performance and longevity. Incorrect TRAVEL LIMIT and TORQUE LIMIT settings can result in catastrophic valve failure!

Important: CVI recommends that all actuation is installed and calibrated in a controlled testing environment. Utilize a hydro-test to simulate the targeted operating conditions while setting TRAVEL LIMITS and TORQUE LIMITS.

4. DIRECTION OF MOUNTING

- 4.1 Should be mounted with flow tending to open the disc. Body exterior has an arrowhead to indicate the direction of flow. It can be installed both in horizontal and vertical pipe-lines if vertical, flow has to be in upward direction only-however preferred mounting is in horizontal pipelines.

5. RECOMMENDED SPARES

- 5.1 Bonnet gasket
- 5.2 Soft seal ring (Applicable for soft seated valves only)

6. GENERAL ARRANGEMENT OF CONSTRUCTION

- 6.1 Refer general assembly drawing.

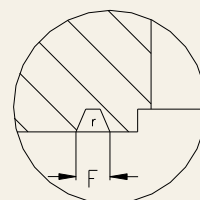
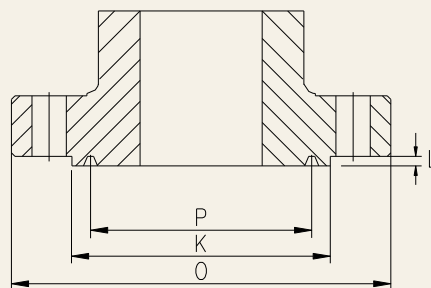
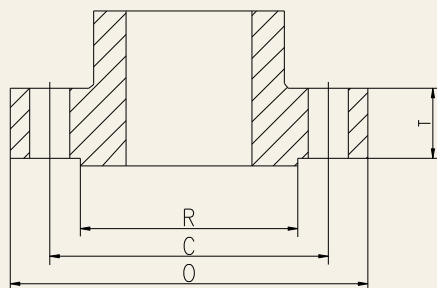
7. ASSEMBLY/DISASSEMBLY

- 7.1 Refer assembly - specifications of the standard valves supplied on request.

[TROUBLESHOOTING]

TROUBLE		POSSIBLE CAUSE & REMEDY (KEY NO.)*
Seat leakage ^{a)}		1, 2, 3
No.	Possible Reason	Remedy
1	Pipelines were not properly flushed prior to installation	Flush pipelines thoroughly
2	Sealing faces of seats and wedges are damaged	Remove the damaged areas by machining (if necessary) and lapping
3	Soft seat ring (if required) is damaged	Replace the soft seat ring
4	Compression load on packing is insufficient	Tighten the gland flange nut further
5	Packing have worn out	Operate the valve to full-open to take the backseating and install additional packing or replace all the packing
6	Gasket sealing faces of body and bonnet/cover are damaged	Remove the damage marks
7	Gasket is damaged	Replace
8	Body bolting is not properly tightened	Bolting should be tightened in a uniform criss-cross pattern to the specified torque

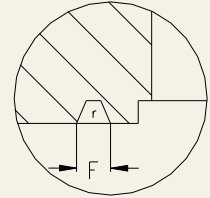
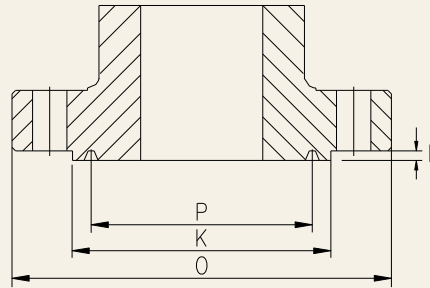
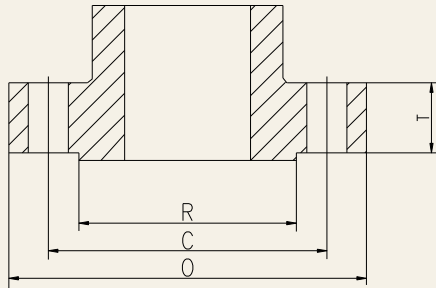
[Flange Dimensions - ANSI B16.5 & B16.47]



Groove Detail

Class	Size	Flg. Dia.	Flg. Thick.	Raised Face Dia.	Drilling			Face Dia.	Ring Joint				
		Ø	T		Bolt Circle Dia.	# of Bolts	Hole Dia.		Pitch Dia.	Grv Depth	Grv Width	Btm Radius	Ring No.
150	2	6.00	0.75	3.62	4.75	4	0.75	4.00	3.250	0.250	0.344	0.03	R22
	2.5	7.00	0.88	4.12	5.50	4	0.75	4.75	4.000	0.250	0.344	0.03	R25
	3	7.50	0.94	5.00	6.00	4	0.75	5.25	4.500	0.250	0.344	0.03	R29
	4	9.00	0.94	6.19	7.50	8	0.75	6.75	5.875	0.250	0.344	0.03	R36
	6	11.00	1.00	8.50	9.50	8	0.88	8.62	7.625	0.250	0.344	0.03	R43
	8	13.50	1.12	10.62	11.75	8	0.88	10.75	9.750	0.250	0.344	0.03	R48
	10	16.00	1.19	12.75	14.25	12	1.00	13.00	12.000	0.250	0.344	0.03	R52
	12	19.00	1.25	15.00	17.00	12	1.00	16.00	15.000	0.250	0.344	0.03	R56
	14	21.00	1.38	16.25	18.75	12	1.12	16.75	15.625	0.250	0.344	0.03	R59
	16	23.50	1.44	18.50	21.25	16	1.12	19.00	17.875	0.250	0.344	0.03	R64
	18	25.00	1.56	21.00	22.75	16	1.25	21.50	20.375	0.250	0.344	0.03	R68
	20	27.50	1.69	23.00	25.00	20	1.25	23.50	22.000	0.250	0.344	0.03	R72
	22	29.50	1.81	25.25	27.25	20	1.38	/	/	/	/	/	/
	24	32.00	1.88	27.25	29.50	20	1.38	28.00	26.500	0.250	0.344	0.03	R76
	26	34.25	2.69	29.50	31.75	24	1.38	/	29.500	0.500	0.781	0.060	R93
	28	36.50	2.81	31.50	34.00	28	1.38	/	31.500	0.500	0.781	0.060	R94
	30	38.75	2.94	33.75	36.00	28	1.38	/	33.750	0.500	0.781	0.060	R95
	32	41.75	3.19	36.00	38.50	28	1.62	/	36.000	0.562	0.906	0.060	R96
	34	43.75	3.25	38.00	40.50	32	1.62	/	38.000	0.562	0.906	0.060	R97
	36	46.00	3.56	40.25	42.75	32	1.62	/	40.250	0.562	0.906	0.060	R98
300	2	6.50	0.88	3.62	5.00	8	0.75	4.25	3.250	0.312	0.469	0.03	R23
	2.5	7.50	1.00	4.12	5.88	8	0.88	5.00	4.000	0.312	0.469	0.03	R26
	3	8.25	1.12	5.00	6.62	8	0.88	5.75	4.875	0.312	0.469	0.03	R31
	4	10.00	1.25	6.19	7.88	8	0.88	6.88	5.875	0.312	0.469	0.03	R37
	6	12.50	1.44	8.50	10.62	12	0.88	9.50	8.312	0.312	0.469	0.03	R45
	8	15.00	1.62	10.62	13.00	12	1.00	11.88	10.625	0.312	0.469	0.03	R49
	10	17.50	1.88	12.75	15.25	16	1.12	14.00	12.750	0.312	0.469	0.03	R53
	12	20.50	2.00	15.00	17.75	16	1.25	16.25	15.000	0.312	0.469	0.03	R57
	14	23.00	2.12	16.25	20.25	20	1.25	18.00	16.500	0.312	0.469	0.03	R61
	16	25.50	2.25	18.50	22.50	20	1.38	20.00	18.500	0.312	0.469	0.03	R65
	18	28.00	2.38	21.00	24.75	24	1.38	22.62	21.000	0.312	0.469	0.03	R69
	20	30.50	2.50	23.00	27.00	24	1.38	25.00	23.000	0.375	0.531	0.06	R73
	22	33.00	2.62	25.25	29.25	24	1.62	27.00	25.000	0.438	0.594	0.06	R81
	24	36.00	2.75	27.25	32.00	24	1.62	29.50	27.250	0.438	0.656	0.06	R77
	26	38.25	3.31	29.50	34.50	28	1.75	31.88	29.500	0.500	0.781	0.06	R93
	28	40.75	3.56	31.50	37.00	28	1.75	33.88	31.500	0.500	0.781	0.06	R94
	30	43.00	3.75	33.75	39.25	28	1.88	36.12	33.750	0.500	0.781	0.06	R95
	32	45.25	3.94	36.00	41.50	28	2.00	38.75	36.000	0.562	0.906	0.06	R96
	34	47.50	4.12	38.00	43.50	28	2.00	40.75	38.000	0.562	0.906	0.06	R97
	36	50.00	4.38	40.25	46.00	32	2.12	43.00	40.250	0.562	0.906	0.06	R98

[Flange Dimensions - ANSI B16.5 & B16.47]



Class	Size	Flg. Dia.	Flg. Thick.	Circle Raise	Drilling			Face Dia.	Ring Joint				
					Bolt Circle Dia.	# of Bolts	Hole Dia.		Pitch Dia.	Grv Depth	Grv Width	Btm Radius	Ring No.
		O	T	R	C	K	P	L	F				
600	2	6.50	1.00	3.62	5.00	8	0.75	4.25	3.250	0.312	0.469	0.03	R23
	2.5	7.50	1.12	4.12	5.88	8	0.88	5.00	4.000	0.312	0.469	0.03	R26
	3	8.25	1.25	5.00	6.62	8	0.88	5.75	4.875	0.312	0.469	0.03	R31
	4	10.75	1.50	6.19	8.50	8	1.00	6.88	5.875	0.312	0.469	0.03	R37
	6	14.00	1.88	8.50	11.50	12	1.12	9.50	8.312	0.312	0.469	0.03	R45
	8	16.50	2.19	10.62	13.75	12	1.25	11.88	10.625	0.312	0.469	0.03	R49
	10	20.00	2.50	12.75	17.00	16	1.38	14.00	12.750	0.312	0.469	0.03	R53
	12	22.00	2.62	15.00	19.25	20	1.38	16.25	15.000	0.312	0.469	0.03	R57
	14	23.75	2.75	16.25	20.75	20	1.5	18.00	16.500	0.312	0.469	0.03	R61
	16	27.00	3.00	18.50	23.75	20	1.62	20.00	18.500	0.312	0.469	0.03	R65
	18	29.25	3.25	21.00	25.75	20	1.75	22.62	21.000	0.312	0.469	0.03	R69
	20	32.00	3.50	23.00	28.50	24	1.75	25.00	23.000	0.375	0.531	0.06	R73
22	34.25	3.75	25.25	30.62	24	1.88	27.00	25.000	0.438	0.594	0.06	R81	
24	37.00	4.00	27.25	33.00	24	2.00	29.50	27.250	0.438	0.659	0.06	R77	
900	2	8.5	1.5	3.62	6.5	8	1	4.88	3.75	0.312	0.469	0.03	R24
	2.5	9.62	1.62	4.12	7.50	8	1.12	5.39	4.250	0.312	0.469	0.03	R27
	3	9.50	1.50	5.00	7.50	8	1.00	6.12	4.875	0.312	0.469	0.03	R31
	4	11.50	1.75	6.19	9.25	8	1.25	7.12	5.875	0.312	0.469	0.03	R37
	6	15.50	2.19	8.50	12.50	12	1.25	9.50	8.312	0.312	0.469	0.03	R45
	8	18.50	2.50	10.62	15.50	12	1.50	12.12	10.625	0.312	0.469	0.03	R49
	10	21.50	2.75	12.75	18.50	16	1.50	14.25	12.750	0.312	0.469	0.03	R53
	12	24.00	3.12	15.00	21.00	20	1.50	16.50	15.000	0.312	0.469	0.03	R57
	14	25.25	3.38	16.25	22.00	20	1.62	18.38	16.500	0.438	0.656	0.06	R62
	16	27.75	3.50	18.50	24.25	20	1.75	20.62	18.500	0.438	0.656	0.06	R66
	18	31.00	4.00	21.00	27.00	20	2.00	23.38	21.00	0.500	0.781	0.06	R70
	20	33.75	4.25	23.00	29.50	20	2.12	25.50	23.000	0.500	0.781	0.06	R74
24	41.00	5.50	27.25	35.50	20	2.62	30.38	27.250	0.625	1.062	0.09	R78	
1500	2	8.50	1.50	3.62	6.50	8	1.00	4.88	3.750	0.312	0.469	0.03	R24
	2.5	9.62	1.62	4.12	7.50	8	1.12	5.38	4.250	0.312	0.469	0.03	R27
	3	10.50	1.88	5.00	8.00	8	1.25	6.62	5.375	0.312	0.469	0.03	R35
	4	12.25	2.12	6.19	9.50	8	1.38	7.62	6.375	0.312	0.469	0.03	R39
	6	15.50	3.25	8.50	12.50	12	1.50	9.75	8.312	0.375	0.531	0.06	R46
	8	19.00	3.62	10.62	15.50	12	1.75	12.50	10.625	0.438	0.656	0.06	R50
	10	23.00	4.25	12.75	19.00	12	2.00	14.62	12.750	0.438	0.656	0.06	R54
	12	26.00	4.88	15.00	22.50	16	2.12	17.25	15.000	0.562	0.906	0.06	R58
	14	29.50	5.25	16.25	25.00	16	2.38	19.25	16.500	0.625	1.062	0.09	R63
	16	32.50	5.75	18.50	27.75	16	2.62	21.50	18.500	0.688	1.188	0.09	R67
	18	36.00	6.38	21.00	30.50	16	2.88	24.12	21.000	0.688	1.188	0.09	R71
	20	38.75	7.00	23.00	32.75	16	3.12	26.50	23.000	0.688	1.312	0.09	R75
24	46.00	8.00	27.25	39.00	16	3.62	31.25	27.250	0.812	1.438	0.09	R79	
2500	2	9.25	2.00	3.62	6.75	8	1.00	4.48	4.000	0.312	0.469	0.030	R26
	2.5	10.50	2.25	4.12	7.75	8	1.13	5.86	4.375	0.375	0.531	0.060	R28
	3	12.00	2.62	5.00	9.00	8	1.25	6.61	5.000	0.375	0.531	0.060	R32
	4	14.00	3.00	6.19	10.75	8	1.50	7.99	6.188	0.438	0.656	0.060	R38
	5	16.50	3.62	7.31	12.75	8	1.75	9.48	7.500	0.500	0.781	0.060	R40
	6	19.00	4.25	8.50	14.50	8	2.00	10.98	9.000	0.500	0.781	0.060	R47
	8	21.75	5.00	10.62	17.25	12	2.00	13.38	11.000	0.562	0.906	0.060	R51
	10	26.50	6.50	12.75	21.75	12	2.50	16.73	13.500	0.688	1.188	0.090	R55
12	30.00	7.25	15.00	24.38	12	2.75	19.48	16.000	0.688	1.312	0.090	R60	

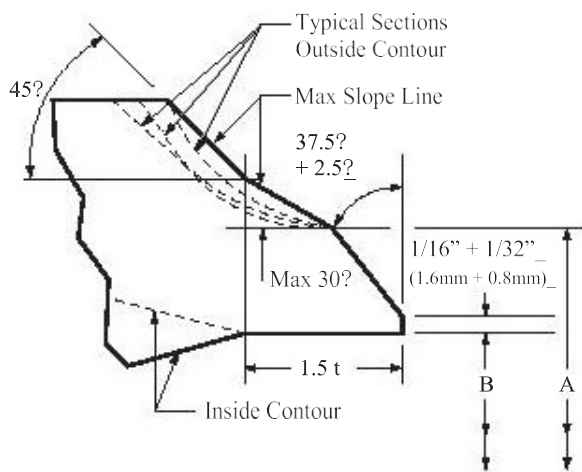
[Butt-welding Dimensions - ANSI B16.25]

Nominal Pipe Size	Schedule Number or Wall	Outside Diameter (Cast Steel Valves) A		Nominal Inside Diameter B		Machined Inside Diameter C		Nominal Wall Thickness t	
		Inches	mm	Inches	mm	Inches	mm	Inches	mm
3	xxs	3-19/32	91.282	2.300	58.42	2.409	61.19	0.600	15.24
4	xxs	4-5/8	117.48	3.152	80.06	3.279	83.29	0.674	17.12
5	160	5-11/16	144.46	4.313	109.55	4.428	112.47	0.625	15.88
	xxs			4.063	103.20	4.209	106.91	0.750	19.05
6	120	6-25/32	172.34	5.501	139.72	5.600	142.24	0.562	14.27
	160			5.189	131.80	5.327	135.31	0.719	18.26
	xxs			4.897	124.38	5.072	128.83	0.864	21.95
8	100	8-23/32	223.04	7.439	188.93	7.546	191.67	0.594	15.09
	120			7.189	182.60	7.327	186.11	0.719	18.26
	140			7.001	177.83	7.163	181.94	0.812	20.62
	xxs			6.875	174.63	7.053	179.15	0.875	22.23
	160			6.813	173.05	6.998	177.75	0.960	23.01
10	50	10-15/16	277.81	9.564	242.93	9.671	245.64	0.594	15.09
	100			9.314	236.58	9.452	240.08	0.719	18.26
	120			9.064	230.23	9.234	234.54	0.844	21.44
	140			8.750	222.25	8.959	227.56	1.000	25.40
	160			8.500	215.90	8.740	222.00	1.125	28.58
12	60	12-31/32	329.41	11.626	295.30	11.725	297.82	0.562	14.27
	80			11.376	288.95	11.507	292.28	0.688	17.48
	100			11.064	281.03	11.234	284.34	0.844	21.44
	120			10.750	273.05	10.959	278.36	1.000	25.40
	140			10.500	266.70	10.740	272.80	1.125	28.58
	160			10.126	257.20	10.413	264.49	1.312	33.32
14	60	14-1/4	361.95	12.814	352.48	12.921	328.19	0.594	15.09
	80			12.500	317.50	12.646	321.21	0.750	19.05
	100			12.126	308.00	12.319	312.90	0.938	23.83
	120			11.814	300.08	12.046	305.97	1.094	27.79
	140			11.500	292.10	11.771	298.98	1.250	31.75
	160			11.188	284.18	11.498	292.05	1.406	35.71
16	60	16-1/4	412.75	14.688	373.08	14.811	376.20	0.656	16.66
	80			14.314	363.58	14.484	367.89	0.844	21.44
	100			13.938	354.03	14.155	359.54	1.031	26.19
	120			13.564	344.53	13.827	351.21	1.219	30.96
	140			13.124	333.35	13.442	341.43	1.438	36.53
	160			12.814	325.48	13.171	334.54	1.594	40.49
18	40	18-9/32	464.34	16.876	428.65	16.975	431.17	0.562	14.27
	60			16.500	419.10	16.646	422.81	0.750	19.05
	80			16.126	409.60	16.319	414.50	0.938	23.83
	100			15.688	398.48	15.936	404.50	1.156	29.36
	120			15.250	387.35	15.553	395.05	1.375	34.93
	140			14.876	377.85	15.225	386.72	1.562	39.67
	160			14.438	366.73	14.842	376.99	1.781	45.24
20	40	20-5/16	515.94	18.814	477.88	18.921	480.59	0.594	15.09
	60			18.376	466.75	18.538	470.87	0.812	20.62
	80			17.938	455.63	18.155	461.14	1.031	26.19
	100			17.438	442.93	17.717	450.01	1.281	32.54
	120			17.000	431.80	17.334	440.28	1.500	38.10
	140			16.500	419.10	16.896	429.16	1.750	44.45
	160			16.064	408.03	16.515	419.48	1.969	50.01
24	30	24-3/8	619.13	22.876	581.05	22.975	583.57	0.562	14.27
	40			22.626	574.70	22.757	578.03	0.688	17.48
	60			22.064	560.43	22.265	565.53	0.969	24.61
	80			21.564	547.73	21.827	554.41	1.219	30.96
	100			20.938	531.83	21.280	540.51	1.531	38.89
	120			20.376	517.55	20.788	528.02	1.812	46.02
	140			19.876	504.85	20.350	516.89	2.062	52.37
	160			19.314	490.58	19.859	504.42	2.344	59.54

[Butt-welding Dimensions - ANSI B16.25]

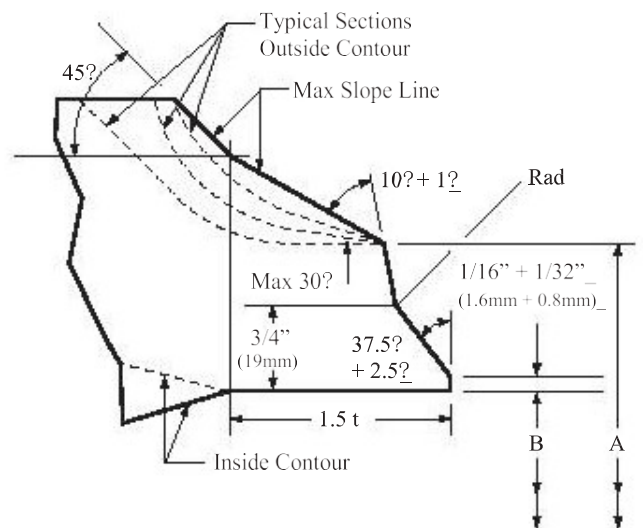
Plain Bevel Butt-welding End for Pipe Wall Thickness is $7/8''$ (22.23mm) or less.

Welding end details for cast components for use without backing ring or with split backing ring.



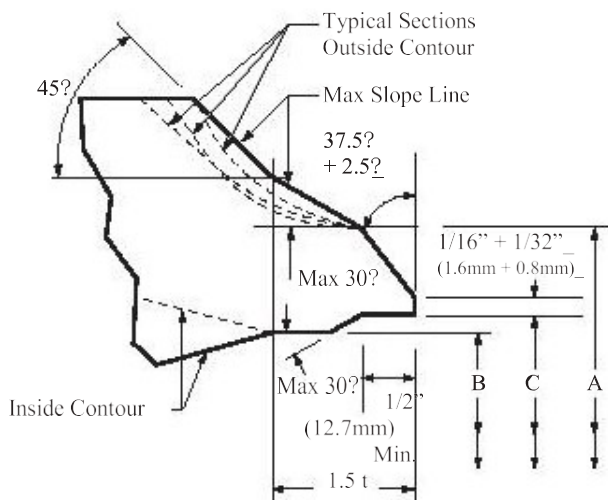
Compound Bevel Butt-welding End for Pipe Wall Thickness Greater than $7/8''$ (22.23mm).

Welding end details for cast components for use without backing ring or with split backing ring.



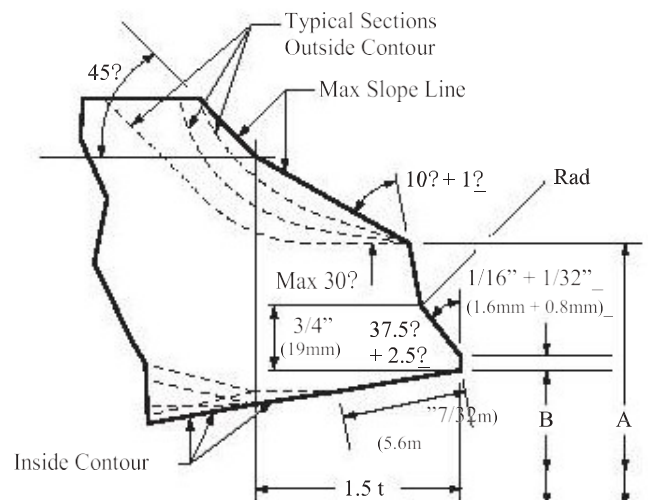
Plain Bevel Butt-welding End for Pipe Wall Thickness is $7/8''$ (22.23mm) or less.

Welding end details for cast components for use with continuous rectangular or tapered backing ring.



Compound Bevel Butt-welding End for Pipe Wall Thickness Greater than $7/8''$ (22.23mm).

Welding end details for cast components for use with continuous rectangular or tapered backing ring.





HOW TO SPECIFY AND ORDER CVI API 6D CHECK VALVES

A	TYPE
C	Castbody Check Valve

C	PRESSURE CLASS			
15	Class 150	90	Class 900	
30	Class 300	150	Class 1500	
60	Class 600	250	Class 2500	
80	800	20	2 M	

E	BODY				
A1	WCB	A5	CF8M	B1	F316
A2	WCC	A6	CF8	B2	F304
A3	LCB	A7	WC6		
A4	LCC	A8	WC9		

G	SEAT			
D1	TEFLON	D5	EPDM	
D2	NYLON	D6	VITON	
D3	PEEK	D7	STELLITE COATED	
D4	PPL	D8	TUNGSTEN COATED	

B	DN		
FO	Full Opening	03	3"
SP	Standard Port	06	6"
01	1"	12	12"
02	2"	24	24" etc.

D	END
RJ	Ring joint
BW	Butt weld
RF	Raised face
SE	Screwed In

F	TRIM		
C1	105+ENP	C4	LF2+ENP
C2	316	C5	105+HCr
C3	304	C6	TUNGSTEN COATED

H	OPERATION		
0	Standard (Flow Controlled)	3	Electric
1	Outside Lever	4	Pneumatic
2	Gear	5	Hydraulic

A	B	C	D	E	F	G	G
							
TYPE	DN	PRESSURE CLASS	END	BODY	BALL	SEAT	OPERATION

EXAMPLE

	C	F	0	2	4	6	0	R	F	A	2	C	2	D	6	0
--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Cast Swing Check Valve, Full Opening Pigable, 24", 600class, Raised Face, WCC, Trim 316, Seats Viton, Operation Standard

[Industry Standards for Valve Manufacturing]

This information is for reference only.

American Society of Mechanical Engineers (ASME)

ASME Code - Boiler & pressure vessel code
ASME A13.1 - Scheme for the identification of piping systems
ASME B1.1 - Unified inch screw threads, UN, & UNR thread form
ASME B1.5 - ACME screw threads
ASME B1.7M - Nomenclature, definitions, & letter symbols for screw threads
ASME B1.8 - Stub ACME screw threads
ASME B1.12 - Class 5 interference - fit thread
ASME B1.20.1 - Pipe threads, general purpose, inch
ASME B1.20.3 - Dry-seal pipe threads, inch
ANSI/ASME B16.1 - Cast iron pipe flanges & flanged fittings
ANSI/ASME B16.5 - Pipe flanges & flanged fittings: NPS 1/2" - 24"
ASME B16.9 - Factory made wrought steel butt welding fittings
ANSI/ASME B16.10 - Face-to-face & end-to-end dimensions of valves
ASME B16.11 - Forged fittings, socket welding & threaded
ASME B16.20 - Metallic gaskets for pipe flanges: ring joint spiral wound & jacketed
ASME B16.21 - Non-metallic flat gaskets for pipe flanges
ASME B16.25 - Butt welding ends
ANSI/ASME B16.33 - Manually operated metallic gas valves for use in gas piping systems up to 125 PSI (sizes NPS 1/2" - 2")
ANSI/ASME B31.1 - Power piping
ANSI/ASME B31.3 - Process piping
ANSI/ASME B16.34 - Valves flanged, threaded & welding end
ANSI/ASME B16.36 - Orifice flanges
ANSI/ASME B16.38 - Large metallic valves for gas distribution (manually operated, NPS 2-1/2" - 12", 125 PSIG maximum)
ANSI/ASME B16.42 - Ductile iron pipe flanges & flanged fittings: classes 150 & 300
ANSI/ASME B16.47 - Large diameter steel flanges
ANSI B17.1 - Keys & keyseats
ANSI B18.2.2 - Square & hex nuts
ASME B31.4 - Pipeline transportation systems for liquid hydrocarbons & other ammonia & alcohols
ANSI/ASME B31.8 - Gas transmission & distribution piping systems
ANSI/ASME B36.10 - Welded & seamless wrought steel pipe
ANSI/ASME B36.19 - Stainless steel pipe
ANSI FC1-2 - Control valve seat leakage

American Society Non-destructive Test (ASNT)

ASNT-TC-1A - Recommended practice no. SNT-TC-1A 1996

American Society for Testing and Materials (ASTM)

American Petroleum Institute (API)

API RP 574 - Inspection practices for piping system components
API 589 - Fire test for evaluation of valve stem packing
API RP 591 - Process valve qualification procedure
API 594 - Check valves-flanged, lug, wafer & butt welding
API 597 - Steel venturi gate valves, flanged, butt welding ends
API 598 - Valve inspection & testing
API 599 - Metal plug valves - flanged, welding ends
API 601 - Metallic gaskets for raised-face pipe flanges & flanged connections (double-jacketed corrugated & spiral wound)
API 600 - Bolted bonnet steel gate valves for petroleum & natural gas industries "ISO adoption from ISO 10434"
API 602 - Steel gate, globe, & check valves for sizes DN100 and smaller for the petroleum & natural gas industries
API 603 - Corrosion-resistant, bolted bonnet gate valves-flanged & butt welded ends
API 604 - Ductile iron gate valves, flanged ends
API 605 - Large-diameter carbon steel flanges (nominal pipe sizes 26" - 60", classes 75, 150, 300, 400, 600, & 900 (replaced by ANSI/ASME B16.47)
API 606 - Compact steel gate valves, extended body (included in API 602) fire test for soft-seated quarter-turn valves "ISO adoption from ISO 10497-5 2004"
API 607 - Fire test for soft-seated quarter-turn valves "ISO adoption from ISO 10497-5 2004"
API 608 - Metal ball valves, flanged, threaded, & welding ends
API 609 - Butterfly valves-double flanged, lug & wafer-type
API RP 941 - Steel for hydrogen service at elevated temperatures & pressures in petroleum refineries & petrochemical plants
API RP 520, Part 1 - Sizing, selection & installation of pressure relieving devices in refineries
API RP 520, Part 2 - Sizing, selection & installation of pressure relieving devices in refineries devices in refineries
API Spec 6A - Specification for wellhead & christmas tree equipment
API Spec 6D - Specifications for pipeline valves
API Spec 14D - Specifications for wellhead surface safety valves & underwater safety valves for offshore service
API 5B - Threading, gauging thread inspection of coring, tubing, & line pipe threads
API 6AM - Material toughness
API 6EA - Fire test for valves
API 6FC - Fire test for valves with backseats
API 6FD - Specification for fire test for check valves
API Q1 - Specification for quality programs for the petroleum, petrochemical, & natural gas

National Association of Corrosion Engineers (NACE)

MR0175 - Sulfide stress cracking resistant metallic materials for oil field equipment
MR0103 - Materials resistant to sulfide stress cracking in corrosive petroleum refining environments

British Standards Institute (BS)

BS 1414 - Gate, wedge & double disk valves: steel
BS 1868 - Check valves: steel
BS 1873 - Globe & check valves: steel
BS 2080 - Flanged & butt welded end steel valves
BS 5146 - (withdrawn) Replaced by BS 6755 p.1 steel valves testing (1986) & BS 6755 p.2 (1984)
BS 5152 - Globe & check: cast iron
BS 5153 - Check: cast iron
BS 5159 - Ball: cast iron & carbon steel
BS 5160 - Globe & check: steel
BS 5163 - Gate, wedge & double disk: cast iron
BS 5351 - Ball: steel
BS 5352 - Globe & check: steel
BS 5418 - (withdrawn) Replaced by BS EN 19 (1992) marking: general purpose industrial
BS 5840 - Valve mating details for actuator operation
BS 6364 - Cryogenic
BS 6683 - Guide: installation & use of valves
BS 6755: Part 1 - Specification for production pressure testing requirements
BS 6755: Part 2 - Specification for fire type-testing requirements
BS EN 19 - Marking of general purpose industrial valves

Canadian Standards Association

B51-97 - Boiler, pressure vessel, & pressure piping code
Z245.15-96 - Steel valves
CAN3-z299.4-85 - Quality assurance program - Category 4
CAN3-z299.3-85 - Quality assurance program - Category 3

International Organization for Standardization

ISO 5211/1 - Industrial valves- part-turn actuator attachments
ISO 5211/2 - Part-turn valve actuator attachment-flange & coupling performance characteristics
ISO 5211/3 - Part-turn valve actuator attachment-dimensions of driving components
ISO 5752 - Metal valves for use in flanged pipe systems face-to-face & center-to-face dimensions
ISO 9000 - Quality management systems and fundamentals & vocabulary
ISO 10012-1 - Quality assurance requirements for measuring equipment

Manufacturers Standardization Society

SP-6 - Standard finishes for contact faces of pipe flanges & connecting-end flanges of valves & fittings
SP-9 - Spot facing for bronze, iron & steel flanges
SP-25 - Standard marking system for valves, fittings, flanges & unions
SP-42 - Class 150 corrosion resistant gate, globe, angle, & check valves with flanged & butt welded ends
SP-44 - Steel pipeline flanges
SP-45 - Bypass & drain connections
SP-51 - Class 150 w corrosion resistant cast flanges & flanged fittings
SP-53 - Quality standard for steel castings & forgings for valves, flanges, & fittings & other piping components: magnetic particle exam method
SP-54 - Quality standard for steel castings for valves, flanges, & fittings and other piping components: radiographic examination method
SP-55 - Quality standard for steel castings for valves, flanges other piping components-visual method for evaluation of surface irregularities
SP-60 - Connecting flange joint between tapping sleeves & tapping valves
SP-61 - Pressure testing of steel valves
SP-65 - High pressure chemical industry flanges & threaded stubs for use with lens gaskets
SP-67 - Butterfly valves
SP-69 - ANSI MSS edition pipe hangers & supports, selection & application
SP-70 - Cast iron gate valves, flanged & threaded ends
SP-71 - Gray iron swing check valves, flanged & threaded ends
SP-72 - Ball valves with flanged or butt-welding ends for general service
SP-79 - Socket-welding reducer inserts
SP-81 - Stainless steel, bonnetless, flanged knife gate valves
SP-82 - Valve pressure testing methods
SP-84 - Valves - socket welding & threaded ends
SP-85 - Cast iron globe & angle valves, flanged & threaded ends
SP-86 - Guidelines for metric data in standards for valves, flanges, fittings & actuators
SP-88 - Diaphragm valves
SP-91 - Guidelines for manual operation of valves
SP-92 - MSS valve user guide
SP-93 - Quality standard for steel castings & forgings for valves, flanges & fittings & other piping components- liquid penetrant exam method
SP-94 - Quality standard for ferritic & martensitic steel castings for valves, flanges, & fittings and others piping components - ultrasonic exam method
SP-96 - Guidelines on terminology for valves & fittings
SP-98 - Protective coatings for the interior of valves, hydrants, & fittings
SP-99 - Instrument valves
SP-101 - Part-turn valve actuator attachment-flange and driving component dimensions & performance characteristics
SP-102 - Multi-turn valve actuator attachment: flange and driving component dimensions & performance characteristics
SP-110 - Ball valves threaded, socket-welding, solder joint, grooved, & flared ends
SP-117 - Bellows seals for globe & gate valves
SP-118 - Compact steel globe and check valves-flanged, flangeless, threaded & welding ends (chemical & petroleum refinery service)
SP-120 - Flexible graphite packing system for rising stem steel valves (design requirements)
SP-121 - Qualification testing methods for stem packing for rising stem steel valves



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