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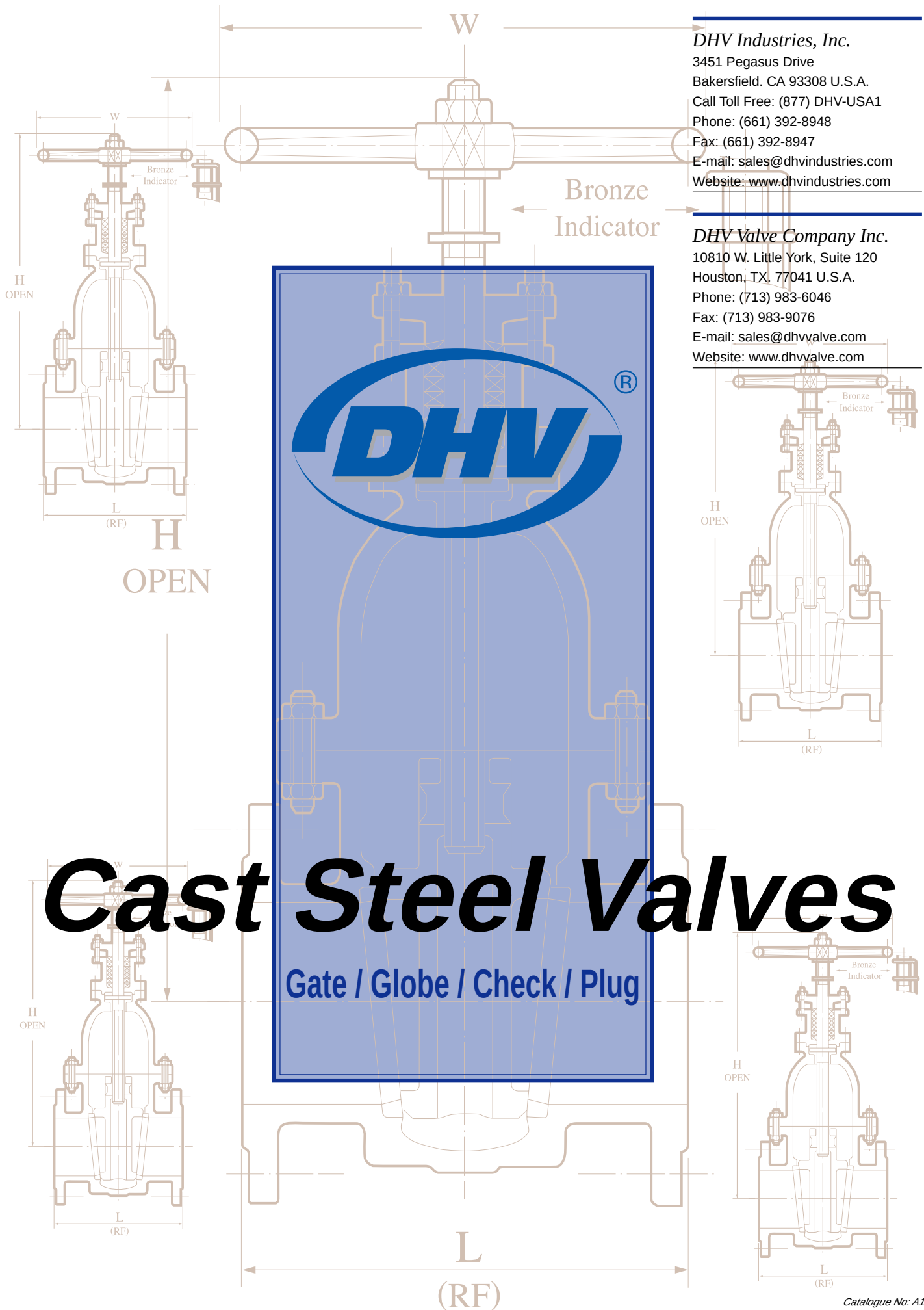




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Introduction

Quality is our commitment, while competitive price and timely delivery is our promise.

From the beginning, the DHV name has become associated with quality in every step of our manufacturing process. For the past decades our customers worldwide have trusted us to provide them with consistent and reliable valve products in their most severe and critical service.

We at DHV are proud of our ability to meet the stringent requirements of Refining, Gas/Oil, Pipeline, Petrochemical and Power Plant.

DHV Gate / Globe / Check Valves are designed, manufactured and tested to the latest manufacturing specifications of the American & International Standards Organizations. We welcome your challenges and look forward to serving your critical project needs.

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DHV Figure Numbers

Cast Steel Valves

Type C

1 = OS & Y Gate
2 = Globe
3 = Swing Check
4 = NRS GATE
5 = Pressure Seal Bonnet Gate
6 = Pressure Seal Bonnet Globe
7 = Pressure Seal Bonnet Check
8 = Y Pattern
9 = Angle
A = Conduit Gate
B = Plug Valve
C = Strainer
D = Soft Seat Block & Bleed Gate
E = API 6D Swing Check
F = Twin Seal Plug Valve
X = Special

Type WC

1 = Single-Plate Wafer Check
2 = Dual-Plate Wafer Check
3 = Lift Wafer Check
X = Special

Pressure Class

1 = Class 150
2 = Class 300
3 = Class 600
4 = Class 900
5 = Class 1500
6 = Class 2500

Body and Bonnet Material

0 = ASTM A216 WCB
1 = ASTM A216 WCC
2 = ASTM A352 LCB
3 = ASTM A352 LCC
4 = ASTM A351 CF8M
5 = ASTM A351 CF8
6 = ASTM A351 CF3M
7 = ASTM A351 CF3
8 = ASTM A890 4A
X = Special

End Connections

F = Raised Face Flanged End
R = Ring Type Joint Flanged End
P = Plain Flate Face Flanged End
B = Butt-welding End
T = Threaded End
S = Socket-welding End
W = Wafer-Type
L = Lug-Type or Full Flange
D = Double Flange-Type
X = Other Type End Connection

Conduit Gate & Plug Valve Seat Type

None = Other Valves
S = Soft Seal
M = Metal Seal

*8" OS & Y Gate valve, class 300,
A216 WCB body & bonnet, raised
face, flanged end, with HF / HF
Trim, Gear Operated*

Example: 8"-C120F2-XX-X-GO

Code

C = Cast Steel Valves
F = Forged Steel Valves
I = Cast Iron Valves
B = Ball Valves
WB = Wafer Butterfly
WC = Wafer Check Valve
W = Wellhead Valves

Trim Material

	Seat Seal	Disc Seal	Stem
	Face	Face	Material
1 =	13CR	13CR	F6
2 =	HF	HF	F6
3 =	HF	13CR	F6
4 =	Monel	Monel	Monel
5 =	316 SS	316 SS	F316
6 =	HF	316 SS	F316
7 =	304 SS	304 SS	F304
8 =	HF	304 SS	F304
9 =	Inconel	Inconel	Inconel
A =	HF	HF	F316
B =	Duplex S.S.		
X =	Special		

Operator

None = Lever or Handwheel Operator
CO = Chain Wheel Operator
GO = Gear Operator
BS = Bare Stem
EM = Electric Motor Operator
PA = Pneumatic Actuator
HA = Hydraulic Actuator
PH = Pneumatic-Hydraulic Actuator

Conduit Gate Type

None = Other Valves
EG = Expanding Gate
SG = Slab Gate



Body & Bonnet Material

Material Type	ASTM Specification	Recommended Service Condition	Standard Trim *		
			#150, #300	#600-#1500	#2500
Carbon Steel	A216 WCB	Non-corrosive water, oil and gases between -29°C & 425°C	1 or 8	8 or 5	5
Low Temp. Carbon Steel	A352 LCB	Low Temp. Service between -46°C & 345°C	2 or 12	12 or 5	5
Low Temp. Carbon Steel	A352 LC1	Low Temp. Service between -60°C & 345°C	2 or 12	12 or 5	5
3 1/2% Nickle	A352 LC3	Low Temp. Service between -101°C & 345°C	2 or 12	12 or 5	5
Low Temp. Carbon Steel	A352 LCC	Low Temp. Service between -46°C & 345°C	2 or 12	12 or 5	5
1 1/4% Chrome 1/2% Moly	A217 WC6	Non-corrosive water, oil and gases between -26°C & 595°C	8 or 5	5	5
5% Chrome 1/2% Moly	A217 C5	Corrosive, non-corrosive or erosive water, oil and gases between -29°C & 649°C	8 or 5	5	5
9% Chrome 1/2% Moly	A217 C12	Corrosive, non-corrosive or erosive water, oil and gases between -10°C & 649°C	8 or 5	5	5
Cast 304	A351 CF8	Corrosive, cryogenic or high temp. service between -254°C & 649°C	10 or 12	12 or 5	5
Cast 316	A351 CF8M	Corrosive, cryogenic or high temp. service between -254°C & 649°C	10 or 12	12 or 5	5

* API Trim No.



Trim Materials & Comparison Chart

Material			DHV	API	CRANE	WALWORTH	PACIFIC	VELAN	STOCKHAN
Seat	Disc	Stem	Trim No.	Trim No.					
13CR	13CR	F6A	1	1	X	AA	1	/	1
HF	HF	F6A	2	5	U	HF	7	TS(316SS Stem)	11
HF	13CR	F6A	3	8	XU	UT	2	TY	UOR11
MONEL	MONEL	MONEL	4	9	A	AA	8	XY(HF Seat)	8
316	316	F316	5	10	L	18-8M	12	SX	12
HF	316	F316	6	12	/	/	/	/	/
304	304	F304	7	/	/	/	/	/	/
HF	304	F304	8	/	/	/	/	/	/
INCONEL	INCONEL	INCONEL	9	/	/	/	/	/	/
SPECIAL	SPECIAL	SPECIAL	0	/	/	/	/	/	/

Bolting Material

Application		Bonnet Bolting		Gland Bolting	
		Bolts	Nuts	Bolts	Nuts
High-Temperature Service	Up to 454°C	A193 Gr. B7, B7M	A194 Gr. 2H, 2HM	A193 Gr. B7, B7M	A194 Gr. 2H, 2HM
	593°C	A193 Gr. B16	A194 Gr. 4	A193 Gr. B16	A194 Gr. 4
	816°C	A193 Gr. B8M	A194 Gr. 8M	A193 Gr. B8M	A194 Gr. 8M
Low-Temperature Service		A320 Gr. L7M	A194 Gr. 7M	A320 Gr. B8M	A194 Gr. 8M
Cryogenic Service		A320 Gr. B8M	A194 Gr. 8M	A320 Gr. B8M	A194 Gr. 8M
Corrosive Service		A193 Gr. B7, B7M	A194 Gr. 2H, 2HM	A193 Gr. B8M	A194 Gr. 8M



Gland Packing Materials

Die-Formd Graphoil with braided graphite yarn as top and bottom rings are the standard gland packing materials for cast steel valves. Other special packing materials are also available optionally upon request as follows:

Packing material		Service Conditions
Flexible Graphite	Die-formed Rings Braided Graphite Yarn	1500°F(816°C) Corrosion Resistant
PTFE Filament Yarn Braided		450°F(232°C) Corrosion Resistant
Virgin PTFE		450°F(232°C) Corrosion Resistant
Inconel or SS wire Braided Graphite		1200°F(649°C) High Pressure

Bonnet Gasket Materials

Upon request various materials are available for body/bonnet flange gaskets used for cast steel valves.

Gasket Material	ANSI Class				
	150	300	600	900	1500
Reinforced Graphite*	•				
Corrugated Soft Iron	•	•			
Spiral wound 316SS Graphite filled	•	•	•		
Spiral wound 316SS PTFE filled	•	•	•		
Ring joint metal		•	•	•	•
Virgin PTFE	•	•			
Glass filled PTFE	•	•			

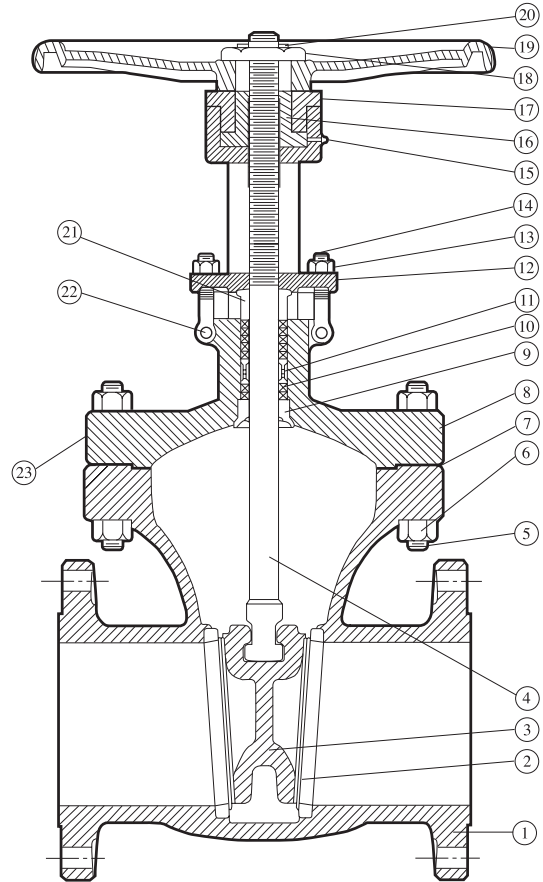
* Only for Gate valve, Class 150



Gate Valve

Trim Material to API 600

DHV Trim Code	Seat Ring Surface Part No.2	Wedge Seat Surface Part No.3	Stem Part No.4	Backseat Part No.9
1	13CR	13CR	F6A	F6A
2	HF	HF	F6A	F6A
3	HF	13CR	F6A	F6A
4	Monel	Monel	Monel	Monel
5	316	316	F316	F316
6	HF	316	F316	F316
7	304	304	F304	F304
8	HF	304	F304	F304
9	INCONEL	INCONEL	INCONEL	INCONEL
0	SPECIAL	SPECIAL	SPECIAL	SPECIAL



Standard Material Specifications

Part Name	Carbon Steel to ASTM						Alloy Steel to ASTM			Stainless Steel to ASTM	
1 Body	A216 WCB	A352 LCB	A352 LC1	A352 LC3	A352-LCC		A217 WC6	A217 C5	A217 C12	A351 CF8	A351 CF8M
8 Bonnet	A216 WCB	A352 LCB	A352 LC1	A352 LC3	A352-LCC		A217 WC6	A217 C5	A217 C12	A351 CF8	A351 CF8M
5 Bolts	A193 B7M	A320 L7M	A320 L7M	A320 L7M	A320 L7M		A193 B16	A193 B16	A193 B16	A193 B8M	A193 B8M
6 Nuts	A194 2HM	A194 7M	A194 7M	A194 7M	A194 7M		A194-4	A194-4	A194-4	A194 8M	A194 8M
22 Pins	Steel	Steel	Steel	Steel	Steel		Steel	Steel	Steel	S.S.	S.S.
21 Gland	A182 F6	A182 F6	A182 F6	A182 F6	A182 F6		A182 F6	A182 F6	A182 F6	304	316
11 Lantern	410	410	410	410	410		410	410	410	304	316
12 Gland Flange	A105	A350 LF2	A350 LF2	A350 LF2	A350 LF2		A105	A105	A105	304	316
13 Nuts	A194 2HM	A194 7M	A194 7M	A194 7M	A194 7M		A194 2HM	A194 2HM	A194 2HM	A194 8M	A194 8M
14 Gland Eyebolts	A193 B7M	A320 L7M	A320 L7M	A320 L7M	A320 L7M		A193 B7M	A193 B7M	A193 B7M	A193 B8M	A193 B8M
7 Gasket	See Gasket Materials Chart										
10 Packing	See Packing Materials Chart										
15 Lubricator	Steel										
16 Stem Nut	A439-D2										
17 Retainer Nut	Steel										
18 Handwheel Nut	Steel										
19 Handwheel	Ductile Iron										
20 Set Screw	Commercial										
23 Nameplate	Stainless Steel										

* Lantern ring shall be furnished only if specified in purchase order.



Class 150 Gate Valve

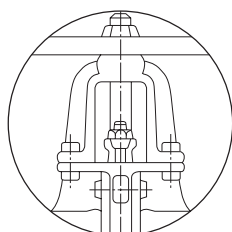
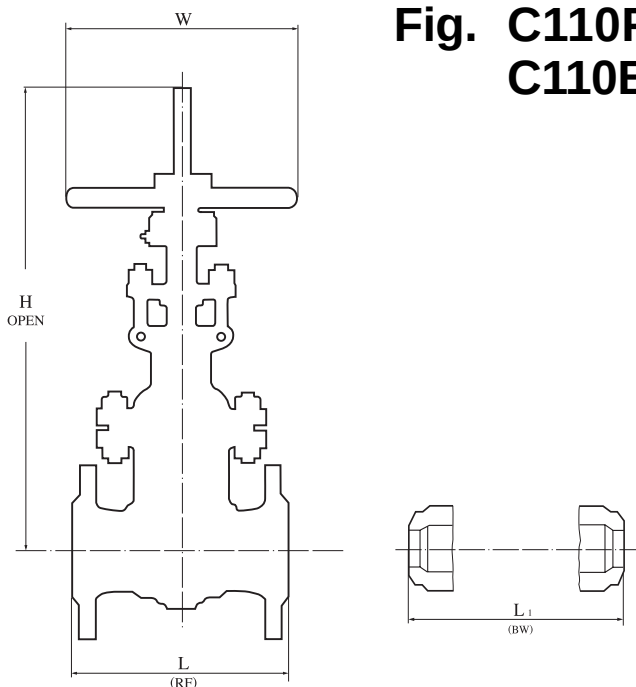
Features

- OS & Y, Rising Stem
- Flexible Wedge (2" Solid Wedge)
- Bolted Bonnet
- Renewable Seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends

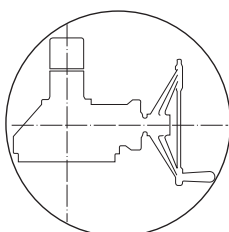
Specifications

Basic Design:	API-600 ANSI B16.34
Face to Face:	ANSI B16.10
End to End:	ANSI B16.10
End Flange:	
2"–24"	ANSI B16.5
26"– 36"	ANSI B16.47
B.W End:	ANSI B16.25
Test and Inspection:	API-598
Manufacturing to NACE MR0175 on request	

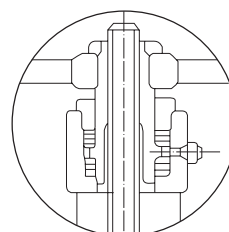
**Fig. C110F3
C110B3**



Separate Yoke
≥10"



Bevel Gear
≥16"



Bearing Yoke
≥16"

Dimensions and Weights

Description		Valve Size																
		2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	30"	32"	36"
Flanged End L	in	7.00	7.50	8.00	9.00	10.50	11.50	13.00	14.00	15.00	16.00	17.00	18.00	20.00	24.00	24.00	26.00	28.00
	mm	178	190	203	229	267	292	330	356	381	406	432	457	508	610	610	660	711
Weld End L1	in	8.50	9.50	11.12	12.00	15.88	16.50	18.00	19.75	22.50	24.00	26.00	28.00	32.00	36.00	36.00	38.00	40.00
	mm	216	241	283	305	403	419	457	502	572	610	660	711	813	914	914	965	1016
Height to Open H	in	14.88	18.11	20.47	23.90	31.61	38.39	46.38	55.71	60.37	69.56	77.32	83.82	100.98	117.16	125.19	130.31	148.08
	mm	378	460	520	607	803	975	1178	1415	1531	1767	1964	2129	2565	2976	3180	3310	3736
Handwheel Dia W	in	7.87	7.87	9.84	9.84	13.78	15.75	17.72	19.69	12.00	12.00	18.00	28.00	31.50	24.00	24.00	30.00	39.38
	mm	200	200	250	250	350	400	450	500	305	305	457	711	800	610	610	762	1000
Turns to Open		12.40	15.70	19.30	24.00	34.30	43.70	44.30	56.20	63.00	71.00	77.00	66.50	76.00	-	-	-	-
Weight	RF lb	40	57	75	115	187	298	419	573	947	1101	1608	1982	3194	3400	3950	4500	6850
	BW lb	34	47	65	95	176	268	377	516	909	991	1398	1724	2810	3150	3750	4200	6500



Class 150 NRS Gate Valve

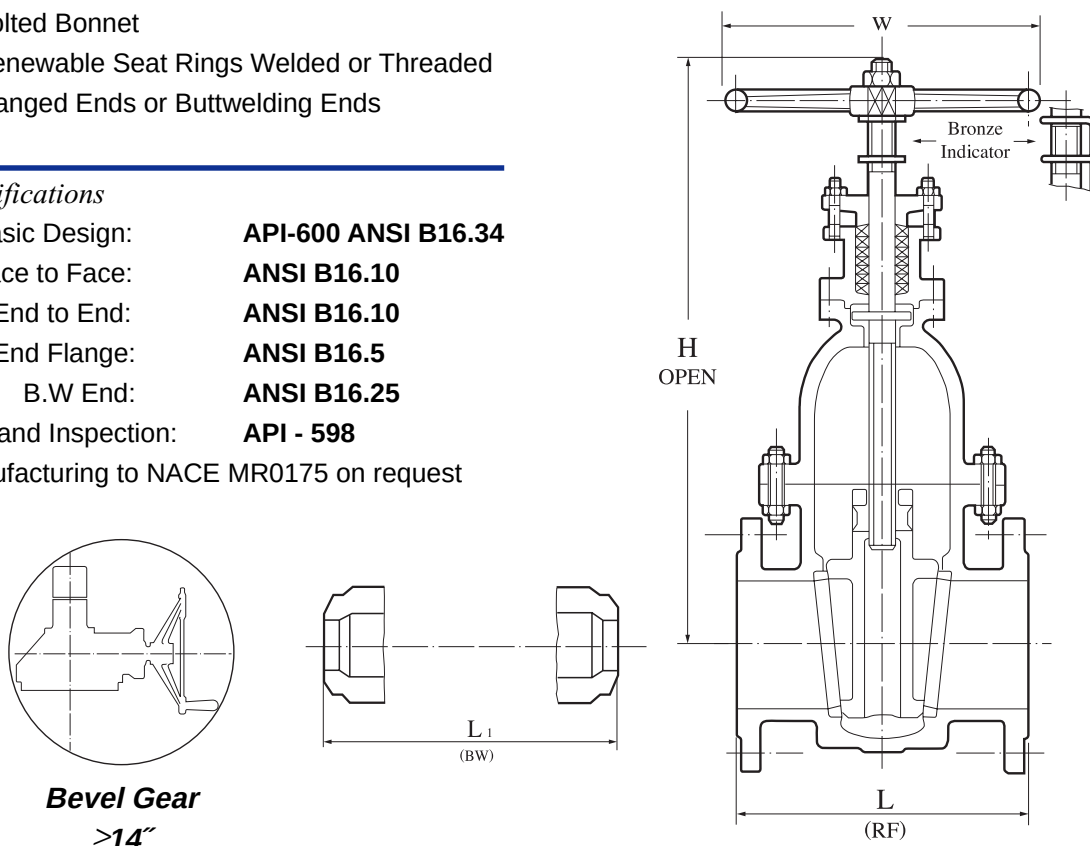
Features

- Non Rising Stem
- Flexible Wedge (2" Solid Wedge)
- Bolted Bonnet
- Renewable Seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends

Specifications

Basic Design: **API-600 ANSI B16.34**
 Face to Face: **ANSI B16.10**
 End to End: **ANSI B16.10**
 End Flange: **ANSI B16.5**
 B.W End: **ANSI B16.25**
 Test and Inspection: **API - 598**
 Manufacturing to NACE MR0175 on request

**Fig. C410F9
C410F3**



Dimensions and Weights

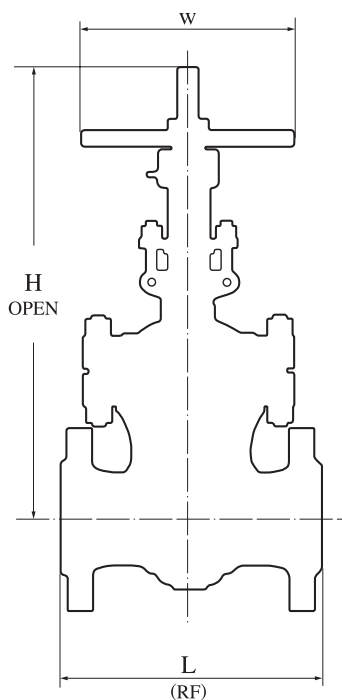
Description			Valve Size											
			2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
Flanged End L	in		7.00	7.50	8.00	9.00	10.50	11.50	13.00	14.00	15.00	16.00	17.00	18.00
	mm		178	190	203	229	267	292	330	356	381	406	432	457
Weld End L1	in		8.50	9.50	11.13	12.00	15.88	16.50	18.00	19.75	22.50	24.00	26.00	28.00
	mm		216	241	283	305	403	419	457	502	572	610	660	711
Height to Open H	in		12.68	13.66	15.15	17.68	22.00	27.68	31.46	36.97	41.14	46.46	51.02	54.41
	mm		322	347	385	449	559	703	799	939	1045	1180	1296	1382
Handwheel Dia W	in		7.87	9.84	9.84	11.81	15.75	17.72	17.22	19.69	17.72	23.60	23.60	23.60
	mm		200	250	250	300	400	450	450	500	450	600	600	600
Turns to Open			13.20	16.70	19.30	26.80	33.70	22.40	22.30	26.50	29.00	34.00	38.00	41.00
Weight	RF	lb	42	60	77	132	215	331	465	688	869	1195	1490	1840
	BW	lb	32	50	65	125	190	310	405	585	720	1015	1295	1604

Features

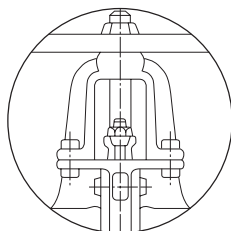
- OS &Y, Rising Stem
- Flexible Wedge (2" Solid Wedge)
- Bolted Bonnet
- Renewable Seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends

Specifications

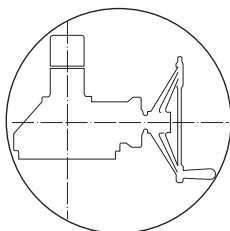
Basic Design:	API-600 ANSI B16.34
Face to Face:	ANSI B16.10
End to End:	ANSI B16.10
End Flange:	
2" - 24"	ANSI B16.5
26" - 36"	ANSI B16.47
B.W End:	ANSI B16.25
Test and Inspection:	API-598
Manufacturing to NACE MR0175 on request	



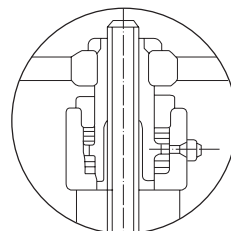
**Fig. C120F2
C120B2**



Separate Yoke
≥10"



Bevel Gear
≥16"



Bearing Yoke
≥16"

Dimensions and Weights

Description			Valve Size													
			2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"
RF/BW L / L1	in		8.50	9.50	11.12	12.00	15.88	16.50	18.00	19.75	30.00	33.00	36.00	39.00	45.00	55.00
	mm		178	241	282	305	403	419	457	502	762	838	914	991	1143	1397
Height to Open H	in		15.75	18.98	21.06	24.80	31.81	39.76	48.90	56.53	64.01	70.66	78.46	86.45	103.19	127.20
	mm		400	482	535	630	808	1010	1242	1436	1626	1795	1993	2196	2621	3231
Handwheel Dia W	in		7.87	9.84	9.84	11.81	15.75	17.72	17.72	19.69	23.60	18.00	18.00	24.00	35.40	39.40
	mm		200	250	250	300	400	450	450	500	599	457	457	610	899	1001
Turns to Open			12.2	15.7	19.1	24.0	33.5	35.0	45.0	52.0	59.6	67.0	75.0	82.0	75.0	-
Weight	RF	lb	49	79	115	172	330	507	837	1278	1630	2203	2863	3306	5441	10846
	BW	lb	39	64	95	137	282	420	705	1080	1520	1950	2650	2900	4701	9683



Class 600 Gate Valve

Features

- OS &Y, Rising Stem
- Flexible Wedge (2" Solid Wedge)
- Bolted Bonnet
- Renewable Seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends

Specifications

Basic Design: **API-600 ANSI B16.34**

Face to Face: **ANSI B16.10**

End to End: **ANSI B16.10**

End Flange:

2" - 24" **ANSI B16.5**

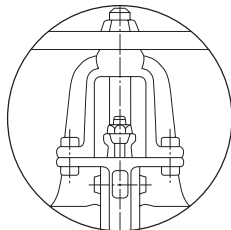
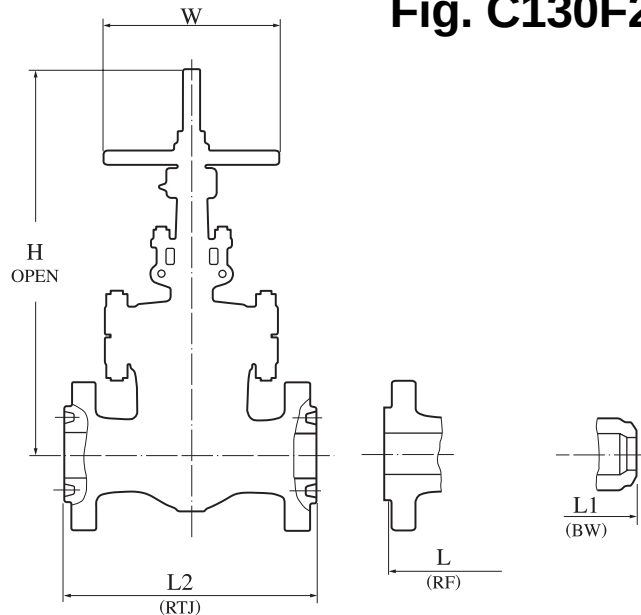
26" - 36" **ANSI B16.47**

B.W End: **ANSI B16.25**

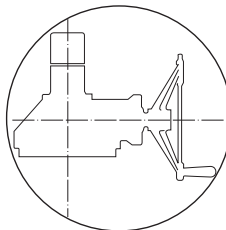
Test and Inspection: **API - 598**

Manufacturing to NACE MR0175 on request

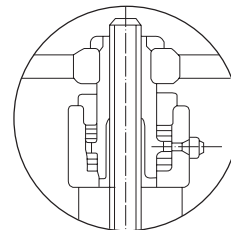
Fig. C130F2



Separate Yoke
≥ 6"



Bevel Gear
≥ 14"



Bearing Yoke
≥ 6"

Dimensions and Weights

Description			Valve Size													
			2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"
RF/BW L / L ₁	in		11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00	35.00	39.00	43.00	47.00	55.00	65.00
	mm		292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1651
RTJ L ₂	in		11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25	55.38	65.50
	mm		295	333	359	435	562	663	790	841	892	994	1095	1200	1407	1664
Height to Open H	in		18.19	21.75	21.89	26.38	35.61	42.72	50.27	59.29	65.43	74.05	80.47	87.79	103.70	127.20
	mm		462	553	556	670	904	1085	1277	1506	1662	1881	2044	2230	2634	3231
Handwheel Dia W	in		9.84	9.84	11.81	13.78	17.72	17.70	19.70	23.60	23.60	23.60	23.60	28.40	35.40	39.40
	mm		250	250	300	350	450	450	500	599	599	599	599	721	899	1001
Turns to Open			15.4	17.0	19.3	25.0	29.2	37.0	44.0	53.0	45.5	50.0	55.0	60.0	-	-
Weight	RF	lb	88	119	150	286	535	881	1432	1982	2963	3789	4432	5573	6863	13000
	BW	lb	74	97	124	215	435	750	1250	1700	2500	3235	3811	4819	5971	10500



Class 900 Gate Valve

Features

- OS &Y, Rising Stem
- Flexible Wedge (2" Solid Wedge)
- Bolted Bonnet
- Renewable Seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends

Specifications

Basic Design: **API-600 ANSI B16.34**

Face to Face: **ANSI B16.10**

End to End: **ANSI B16.10**

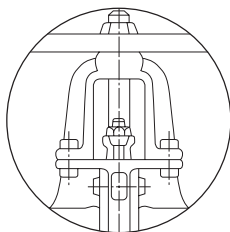
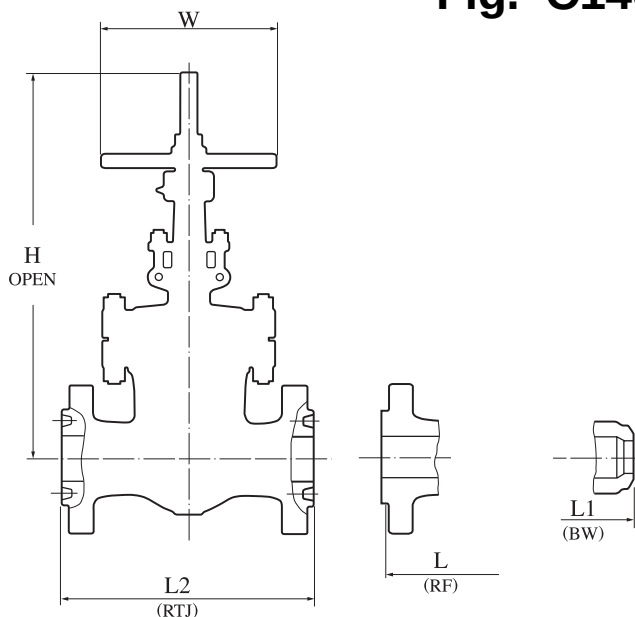
End Flange: **ANSI B16.5**

B.W End: **ANSI B16.25**

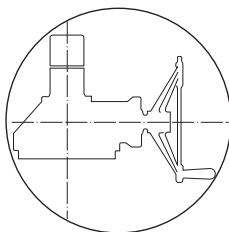
Test and Inspection: **API-598**

Manufacturing to NACE MR0175 on request

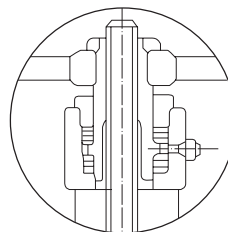
Fig. C140F2



Separate Yoke
 $\geq 10''$



Bevel Gear
 $\geq 10''$



Bearing Yoke
 $\geq 4''$

Dimensions and Weights

Description		Valve Size											
		2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
RF/BW L / L1	in	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00	40.50	44.50	48.00	52.00
	mm	368	419	381	457	610	734	838	965	1029	1130	1219	1321
RTJ L2	in	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.87	44.87	48.50	52.50
	mm	371	422	384	460	613	740	841	968	1038	1140	1232	1334
Height to Open H	in	19.37	29.70	24.49	28.68	41.00	49.62	52.01	70.68	79.75	85.43	100.75	108.80
	mm	492	754	622	728	1041	1260	1321	1795	2026	2170	2559	2764
Handwheel Dia W	in	14.00	15.75	14.00	26.62	26.75	26.75	24.00	24.00	24.00	30.00	30.00	30.00
	mm	356	400	356	676	679	679	610	610	610	762	762	762
Weight	RF	lb	198	242	271	326	924	1430	2552	3740	5060	6050	10000
	BW	lb	180	205	238	268	790	1245	2156	3190	4400	5258	8700



Class 1500 Gate Valve

Features

- OS &Y, Rising Stem
- Flexible Wedge (2" Solid Wedge)
- Bolted Bonnet
- Renewable Seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends

Specifications

Basic Design: **API-600 ANSI B16.34**

Face to Face: **ANSI B16.10**

End to End: **ANSI B16.10**

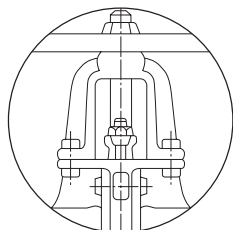
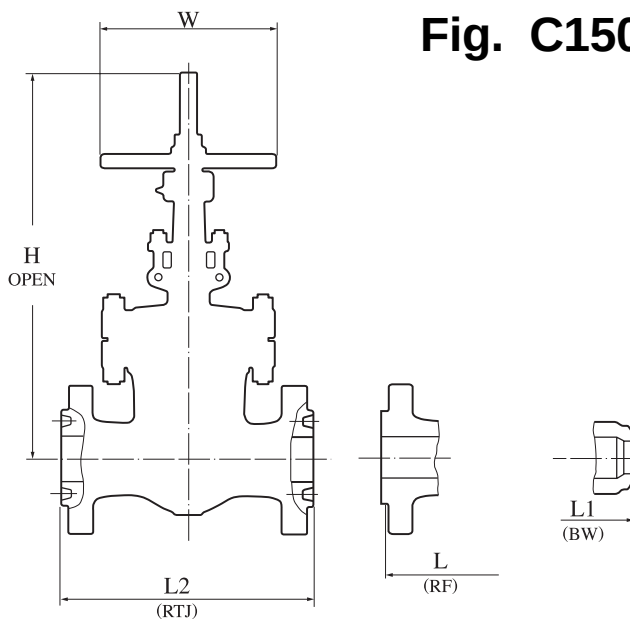
End Flange: **ANSI B16.5**

B.W End: **ANSI B16.25**

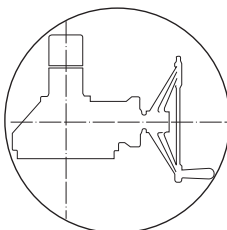
Test and Inspection: **API - 598**

Manufacturing to NACE MR0175 on request

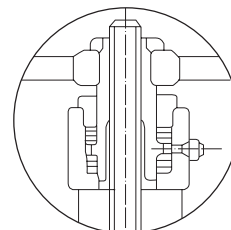
Fig. C150F2



Separate Yoke
≥ 10"



Bevel Gear
≥ 8"



Bearing Yoke
≥ 16"

Dimensions and Weights

Description			Valve Size							
			2"	2 1/2"	3"	4"	6"	8"	10"	12"
RF/BW L / L1	in		14.50	16.50	18.50	21.50	27.75	32.75	39.00	44.50
	mm		368	419	470	546	705	832	991	1130
RTJ L2	in		14.62	16.62	18.62	21.62	28.00	33.13	39.38	45.12
	mm		371	422	473	549	711	841	1000	1146
Height to Open H	in		21.69	27.56	26.37	30.51	42.50	53.94	59.81	65.00
	mm		551	700	670	775	1079	1370	1520	1651
Handwheel Dia W	in		13.75	15.75	17.75	26.06	12.00	24.00	30.00	30.00
	mm		350	400	450	560	305	610	760	760
Weight	RF	lb	257	385	528	741	1496	2702	5012	7172
	BW	lb	205	317	407	627	1285	2171	4378	6270

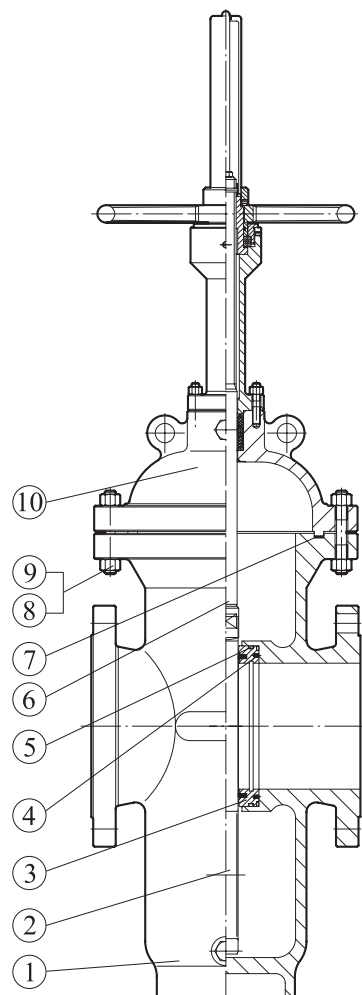


Slab Conduit Gate Valve

Standard Material Specifications (Metal Seat)

Part Name	Carbon Steel to ASTM	Stainless Steel to ASTM
1 Body	A216 WCB	A351 CF8M
2 Disc	A105+STL6	A182 F316+STL6
3 Seat	A105+STL6	A182 F316+STL6
6 Stem	A182 F6A	A182 F316
8 Bolts	A193 B7M	A193 B8M
9 Nuts	A194 2HM	A194 8M
10 Bonnet	A216 WCB	A351 CF8M
5 O-Ring	Viton	
4 Spring (Option)	Inconel X-750	
7 Gasket	See Gasket Materials Chart	

Example: 10"-CA20FX-SG-S-GO 10" slab conduit gate valve . class 300, A216 WCB body & bonnet, raised face. flanged end, soft seat seal, gear operated.



Standard Material Specifications (Soft Seat)

Part Name		Carbon Steel to ASTM			Stainless Steel to ASTM	
1	Body	A216 WCB	A352 LCB	A352 LCC	A351 CF8	A351 CF8M
2	Disc	A105+ENP	A350 LF2	A350 LF2	A182 F304	A182 F316
3	Seat	A105+ENP	A350 LF2+ENP	A350 LF2+ENP	A182 F304	A182 F316
		+PTFE/ R-PTFE	+PTFE/ R-PTFE	+PTFE/ R-PTFE	+PTFE/ R-PTFE	+PTFE/ R-PTFE
6	Stem	A182 F6A	A182 F6A	A182 F6A	A182 F304	A182 F316
8	Bolts	A193 B7M	A320 L7M	A320 L7M	A193 B8M	A193 B8M
9	Nuts	A194 2HM	A194 7M	A194 7M	A194 8M	A194 8M
10	Bonnet	A216 WCB	A352 LCB	A352 LCC	A351 CF8	A351 CF8M
5	O-Ring	Viton	Viton-GLT		Viton	
4	Spring (Option)	Inconel X-750				
7	Gasket	See Gasket Materials Chart				

• Lantern ring shall be furnished only if specified in purchase order.



Slab Conduit Gate Valve Class 150/300/600

Features

- OS & Y, Rising Stem
- Flat-Plate Disc
- Flanged Ends or Buttwelding Ends
- Low Flow Coefficient
- Soft Seal or Metal to Metal Seal

Specifications

Basic Design: **API 6D ANSI B16.34**

Face to Face: **API 6D ANSI B16.10**

End to End: **API 6D ANSI B16.10**

End Flange: **ANSI B16.5**

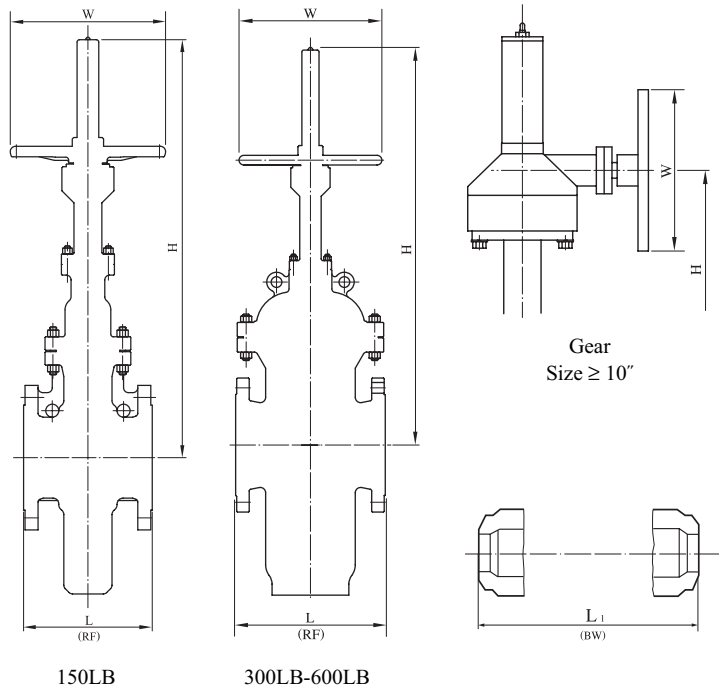
2"-24" **ANSI B16.5**

26"-40" **ANSI B16.47**

B.W End: **ANSI B16.25**

Test and Inspection: **API 6D & API 598**

Manufacturing to NACE MR0175 on request



150LB

300LB-600LB

Dimensions		150LB																			
Description		Valve Size																			
		1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"	36"	40"
RF L	in	5.0	5.5	6.5	7.0	7.5	8.0	9.0	10.5	11.5	13.0	14.0	15.0	16.0	17.0	18.0	20.0	24.0	26.0	28.0	32.0
	mm	127	140	165	178	190	203	229	267	292	330	356	381	406	432	457	508	610	660	711	811
BW L ₁	in	5.0	5.5	6.5	8.5	9.5	11.1	12.0	15.9	16.5	18.0	19.8	23.0	24.0	26.0	28.0	32.0	36.0	38.0	40.0	-
	mm	127	140	165	216	241	283	305	403	419	457	502	572	610	660	711	813	914	965	1016	-
H	in	14.2	14.8	16.1	17.7	21.7	24.0	27.6	35.2	44.5	47.2	53.2	59.1	66.1	72.8	83.5	96.5	110.2	121.3	133.9	
	mm	360	375	410	450	550	610	700	895	1130	1080	1200	1350	1500	1680	1850	2120	2450	2800	3080	3400
W	in	7.1	7.1	9.8	9.8	11.8	11.8	11.8	13.8	13.8	12.2	12.2	18.1	18.1	18.1	18.1	18.1	18.1	18.1	23.6	23.6
	mm	180	180	250	250	300	300	300	350	350	310	310	460	460	460	460	460	460	460	600	600

Dimensions		300LB																		
Description		Valve Size																		
		1"	1¼"	1½"	2"	2½"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"	36"
RF L	in	6.5	7.0	7.5	8.5	9.5	11.1	12.0	15.9	16.5	18.0	19.8	30.0	33.0	36.0	39.0	45.0	53.0	60.0	68.0
	mm	165	178	190	216	241	283	305	403	419	457	502	762	838	914	991	1143	1346	1524	1727
BW L1	in	6.5	7.0	7.5	8.5	9.5	11.1	12.0	15.9	16.5	18.0	19.8	30.0	33.0	36.0	39.0	45.0	53.0	60.0	68.0
	mm	165	178	190	216	241	283	305	403	419	457	502	762	838	914	991	1143	1346	1524	1727
H	in	14.6	15.2	16.5	18.0	21.9	24.2	28.0	35.4	44.7	42.9	47.2	53.2	60.6	66.9	72.8	83.5	96.9	110.2	121.3
	mm	370	385	420	458	555	615	710	900	1135	1090	1200	1350	1540	1700	1850	2120	2460	2800	3080
W	in	7.1	7.1	9.8	9.8	11.8	11.8	11.8	13.8	13.8	12.2	12.2	18.1	18.1	18.1	18.1	18.1	18.1	18.1	23.6
	mm	180	180	250	250	300	300	300	350	350	310	310	460	460	460	460	460	460	460	600

Dimensions											600LB							
Description		Valve Size																
		2"	2½"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	26"	28"	30"	36"
RF L	in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0	57.0	61.0	65.0	82.0
	mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1448	1549	1651	2083
BW L1	in	11.50	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0	43.0	47.0	55.0	57.0	61.0	65.0	82.0
	mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1448	1549	1651	2083
H	in	18.4	22.2	24.6	28.4	35.8	45.1	42.9	47.2	53.2	60.6	66.9	72.8	83.5	90.4	102.0	106.5	120.7
	mm	468	565	625	720	910	1145	1090	1200	1350	1540	1700	1850	2120	2295	2590	2706	3065
W	in	11.8	11.8	13.8	13.8	15.8	19.7	18.1	18.1	18.1	18.1	18.1	18.1	18.1	23.6	23.6	23.6	23.6
	mm	300	300	350	350	400	500	460	460	460	460	460	460	460	600	600	600	600

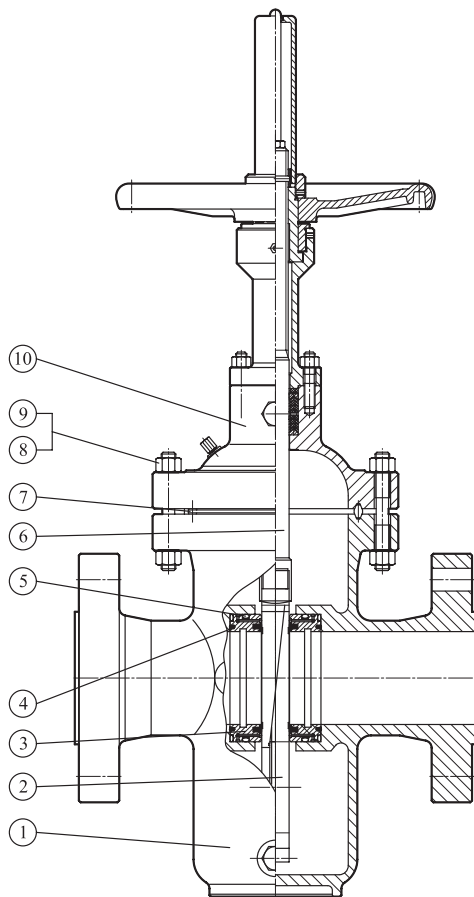


Expanding Conduit Gate Valve

Standard Material Specifications (Metal Seat)

Part Name		Carbon Steel to ASTM	Stainless Steel to ASTM
1	Body	A216 WCB	A351 CF8M
2	Disc	A105+STL6	A182 F316+STL6
3	Seat	A105+STL6	A182 F316+STL6
6	Stem	A182 F6A	A182 F316
8	Bolts	A193 B7M	A193 B8M
9	Nuts	A194 2HM	A194 8M
10	Bonnet	A216 WCB	A351 CF8M
5	O-Ring	Viton	
4	Spring (Option)	Inconel X-750	
7	Gasket	See Gasket Materials Chart	

Example: 10"-CA20FX-EG-M-GO 10" Expanding conduit gate valve, class 300, A216 WCB body & bonnet, raise face flanged end, metal seat seal, gear operated.



Standard Material Specifications (Soft Seat)

Part Name		Carbon Steel to ASTM			Stainless Steel to ASTM	
1	Body	A216 WCB	A352 LCB	A352 LCC	A351 CF8	A351 CF8M
2	Disc	A105+ENP	A350 LF2	A350 LF2	A182 F304	A182 F316
3	Seat	A105+ENP +PTFE	A350 LF2+ENP +PTFE	A350 LF2+ENP +PTFE	A182 F304+PTFE	A182 F316+PTFE
6	Stem	A182 F6A	A182 F6A	A182 F6A	A182 F304	A182 F316
8	Bolts	A193 B7M	A320 L7M	A320 L7M	A193 B8M	A193 B8M
9	Nuts	A194 2HM	A194 7M	A194 7M	A194 8M	A194 8M
10	Bonnet	A216 WCB	A352 LCB	A352 LCC	A351 CF8	A351 CF8M
5	O-Ring	Viton	Viton-GLT		Viton	
4	Spring(Optional)	Inconel X-750				
7	Gasket	See Gasket Materials Chart				



Expanding Conduit Gate Valve Class 150 / 300

Features

- OS & Y, Rising Stem
- Flat-Plate Disc
- Flanged Ends or Buttwelding Ends
- Low Flow Coefficient
- Soft Seal or Metal to Metal Seal
- By-Pass relief system upon request

Specifications

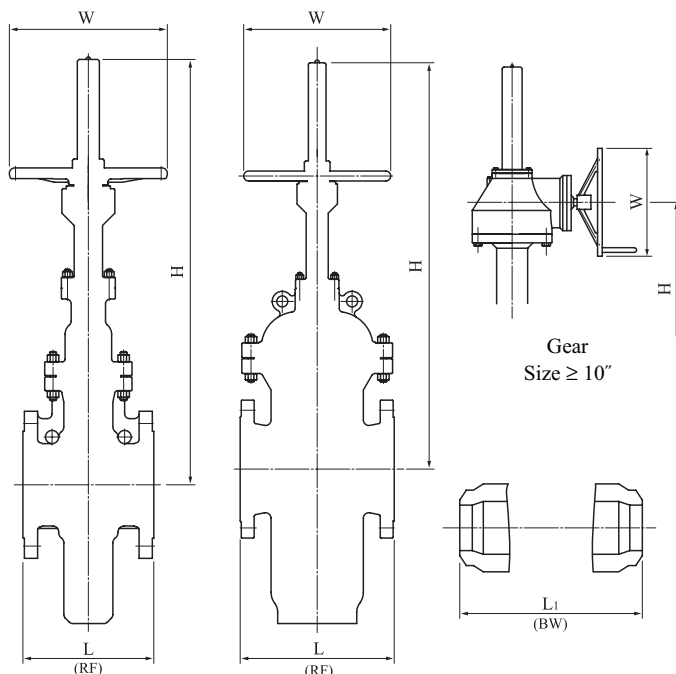
Basic Design: **API 6D, ANSI B16.34**
 Face to Face: **API 6D, ANSI B16.10**
 End to End: **API 6D, ANSI B16.10**

End Flange:
 2"-24" **ANSI B16.5**
 26"-40" **ANSI B16.47**

B.W End: **ANSI B16.25**

Test and Inspection: **API 6D & API 598**

Manufacturing to NACE MR0175 on request



Dimensions

150LB

Description		Valve Size														
		2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"	36"
RF L	in	7.0	8.0	9.0	10.5	11.5	13.0	14.0	15.0	16.0	17.0	18.0	20.0	24.0	26.0	28.0
	mm	178	203	229	267	292	330	356	381	406	432	457	508	610	660	711
BW L ₁	in	8.5	11.1	12.0	15.9	16.5	18.0	19.8	22.5	24.0	26.0	28.0	32.0	36.0	38.0	40.0
	mm	216	283	305	403	419	457	502	572	610	660	711	813	914	965	1016
H	in	19.29	23.43	29.33	36.81	42.91	50.2	58.98	67.72	75.59	83.27	91.73	109.6	125.4	136.1	154.1
	mm	490	595	745	935	1090	1275	1498	1720	1920	2115	2330	2785	3185	3458	3915
W	in	9.8	11.8	11.8	13.8	13.8	15.7	15.7	18.1	23.6	23.6	18.1	31.5	35.4	35.4	39.4
	mm	250	300	300	350	350	400	400	460	600	600	460	800	900	900	1000

Dimensions

300LB

Description		Valve Size														
		2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"	36"
RF L	in	8.5	11.1	12.0	15.9	16.5	18.0	19.8	30	33.0	36.0	39.0	45	53.0	60	68.0
	mm	216	283	305	403	419	457	502	762	838	914	991	1143	1346	1524	1727
BW L ₂	in	8.5	11.1	12.01	15.87	16.5	18.0	19.8	30	33.0	36.0	39.0	45	53.0	60	68.0
	mm	216	283	305	403	419	457	502	762	838	914	991	1143	1346	1524	1727
H	in	17.5	25.4	30.9	36.6	42.7	55.5	61.2	66.5	78.0	85.0	93.5	113.8	95.08	108.1	118.5
	mm	445	645	785	930	1085	1410	1555	1690	1980	2160	2375	2890	2415	2745	3010
W	in	9.8	9.8	13.8	15.8	15.8	17.7	17.7	18.1	18.1	25.6	18.1	23.6	23.6	23.6	23.6
	mm	250	250	350	400	400	450	450	460	460	650	460	600	600	600	600



Expanding Conduit Gate Valve

Class 600 / 900 / 1500

Features

- OS & Y, Rising Stem
- Flat-Plate Disc
- Flanged Ends or Buttwelding Ends
- Low Flow Coefficient
- Soft Seal or Metal to Metal Seal
- By-Pass relief system upon request

Specifications

Basic Design: **API 6D, ANSI B16.34**
 Face to Face: **API 6D, ANSI B16.10**
 End to End: **API 6D, ANSI B16.10**

End Flange:

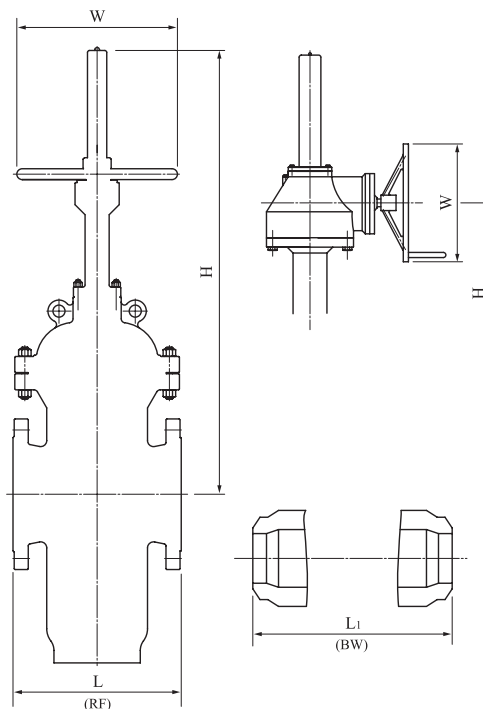
2"-24" **ANSI B16.5**

26"-40" **ANSI B16.47**

B.W End: **ANSI B16.25**

Test and Inspection: **API 6D & API 598**

Manufacturing to NACE MR0175 on request



Dimensions

600LB

Description		Valve Size														
		2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"	36"
RF L	in	11.5	14	17	22	26	31	33	35	39	43	47	55	61	65	82
	mm	292	356	432	559	660	787	838	889	991	1092	1194	1397	1549	1651	2083
BW L1	in	11.5	14	17	22	26	31	33	35	39	43	47	55	61	65	82
	mm	292	356	432	559	660	787	838	889	991	1092	1194	1397	1549	1651	2083
H	in	18.43	24.61	28.35	37.99	46.46	54.72	65.35	54.33	82.09	95.47	72.83	90.94	133.9	109	120.7
	mm	468	625	720	965	1180	1390	1660	1380	2085	2425	1850	2310	3400	2768	3065
W	in	11.02	11.81	13.78	15.78	18.11	18.11	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62
	mm	280	300	350	400	460	460	600	600	600	600	600	600	600	600	600

Dimensions

900LB

Description		Valve Size							
		2"	3"	4"	6"	8"	10"	12"	16"
RF L	in	14.5	15	18	24	29	33	38	44.5
	mm	368	381	457	610	737	838	965	1130
BW L1	in	14.5	15	18	24	29	33	38	44.5
	mm	368	381	457	610	737	838	965	1130
H	in	20.9	22.1	28.9	41.7	47.6	57.1	69.3	85
	mm	530	560	735	1060	1210	1450	1760	2159
W	in	11.8	13.8	15.8	18.1	18.1	18.1	18.1	23.6
	mm	300	350	400	460	460	460	460	600

Dimensions

1500LB

Description		Valve Size							
		2"	3"	4"	6"	8"	10"	12"	
RF L	in	14.5	18.5	21.5	27.8	32.8	39	44.5	
	mm	368	470	546	705	832	991	1130	
BW L1	in	14.5	18.5	21.5	27.8	32.8	39	44.5	
	mm	368	470	546	705	832	991	1130	
H	in	20.9	22.8	30.7	42.5	48.6	58.3	70.9	
	mm	530	580	780	1080	1235	1480	1800	
W	in	11.8	13.8	12.2	12.2	18.1	18.1	23.6	
	mm	300	350	310	310	460	460	600	



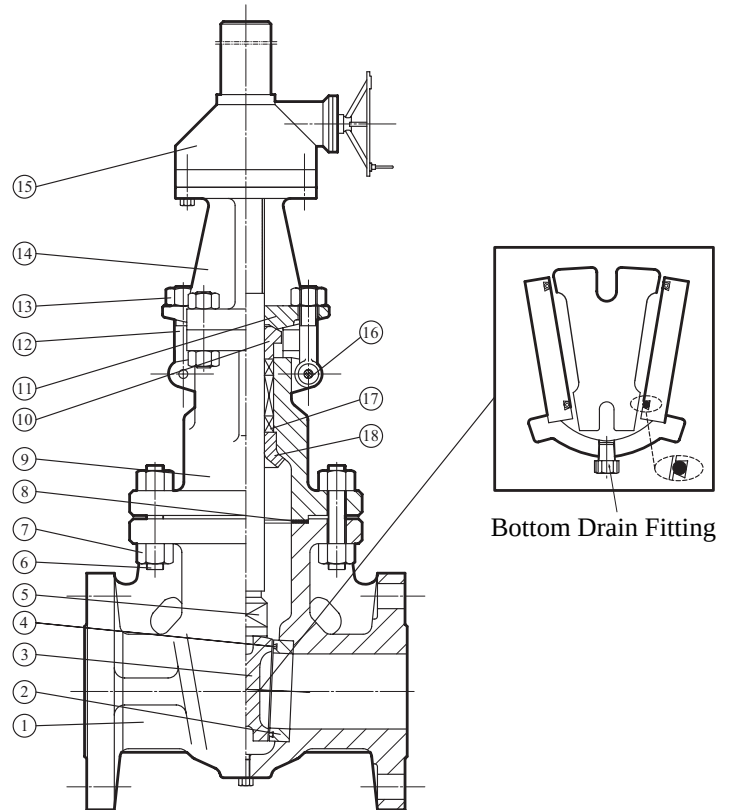
Soft Seat Block & Bleed Gate Valve

Features

- OS & Y, Rising Stem or Non Rising
- Flexible Wedge (2" Solid Wedge)
- Bolted Bonnet
- Renewable Seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends
- Firesafe Design
- Dual Seat
- Double Block & Bleed

Specifications

Size:	2"-24"
Class:	150-300LB
Basic Design:	API-600 ANSI B16.34
Face to Face:	ANSI B16.10
End to End:	ANSI B16.10
End Flange:	ANSI B16.5
B.W End:	ANSI B16.25
Test and Inspection:	API-598 / API 6D
Manufacturing to NACE MR0175 on request	



Standard Material Specifications

Part Name		Carbon Steel to ASTM					Alloy Steel to ASTM			Stainless Steel to ASTM	
1	Body	A216 WCB	A352 LCB	A352 LC1	A352 LC3	A352 LCC	A217 WC6	A217 C5	A217 C12	A351 CF8	A351 CF8
9	Bonnet	A216 WCB	A352 LCB	A352 LC1	A352 LC3	A352 LCC	A217 WC6	A217 C5	A217 C12	A351 CF8	A351 CF8
6	Bolts	A193 B7	A320 L7	A320 L7	A320 L7	A320 L7	A193 B16	A193 B16	A193 B16	A193 B8	A193 B8
7	Nuts	A194 2H	A194 7	A194 7	A194 7	A194 7	A194 4	A194 4	A194 4	A194 8	A194 8
10	Gland	A182 F6	A182 F6	A182 F6	A182 F6	A182 F6	A182 F6	A182 F6	A182 F6	304	316
11	Gland Flange	A105	A350 LF2	A350 LF2	A350 LF2	A350 LF2	A105	A105	A105	304	316
16	Pins	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	S.S.	S.S.
12	Gland Eyebolts	A193 B7	A320 L7	A320 L7	A320 L7	A320 L7	A193 B7	A193 B7	A193 B7	A193 B8	A193 B8
13	Nuts	A194 2H	A194 7	A194 7	A194 7	A194 7	A194 2H	A194 2H	A194 2H	A194 8	A194 8
2	Seat Ring	See Page 6 Trim Material to API 600 Chart									
3	Disc	See Page 6 Trim Material to API 600 Chart									
5	Stem	See Page 6 Trim Material to API 600 Chart									
18	Backseat	See Page 6 Trim Material to API 600 Chart									
4	O-Ring Seal	PTFE / R-PTFE / VITON / BUNA-N									
8	Gasket	See Gasket Material Chart									
14	Yoke	Steel									
15	Gear	Assembly									
17	Packing	See Packing Material Chart									

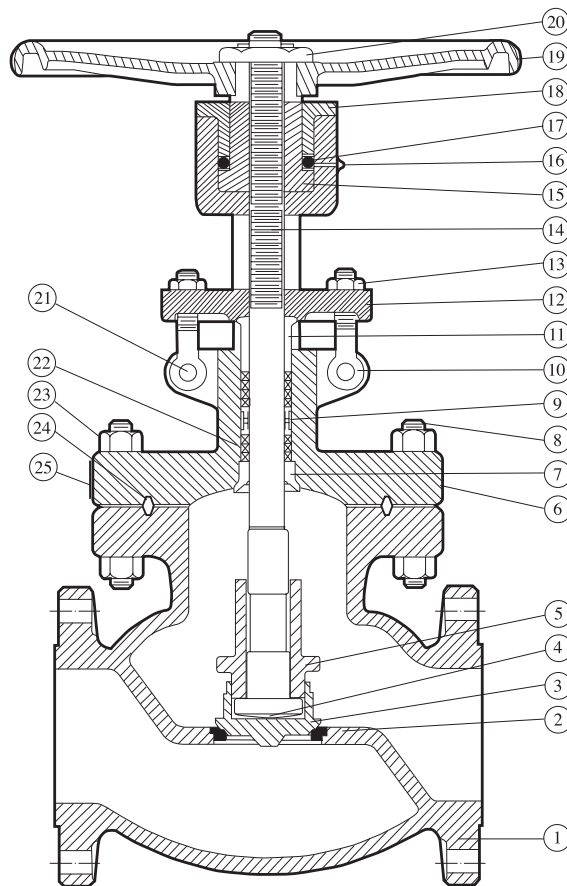
* Outline dimension in page 7-9



Globe Valve

Trim Material to API 600

DHV Trim Code	Seat Ring Surface Part No.2	Wedge Seat Surface Part No.3	Stem Part No.14	Backseat Part No.7
1	13CR	13CR	F6A	F6A
2	HF	HF	F6A	F6A
3	HF	13CR	F6A	F6A
4	Monel	Monel	Monel	Monel
5	316	316	F316	F316
6	HF	316	F316	F316
7	304	304	F304	F304
8	HF	304	F304	F304
9	INCONEL	INCONEL	INCONEL	INCONEL
0	SPECIAL	SPECIAL	SPECIAL	SPECIAL



Standard Material Specifications

Part Name		Carbon Steel to ASTM					Alloy Steel to ASTM			Stainless Steel to ASTM	
1	Body	A216 WCB	A352 LCB	A352 LC1	A352 LC3	A352 LCC	A217 WC6	A217 C5	A217 C12	A351 CF8	A351 CF8M
5	Disc Nut	A182 F6	A182 F304	A182 F6	A182 F6	A182 F6	A182 F6	A182 F304	A182 F304	A182 F304	A182 F304
6	Bonnet	A216 WCB	A352 LCB	A352 LC1	A352 LC3	A352 LCC	A217 WC6	A217 C5	A217 C12	A351 CF8	A351 CF8M
8	Bolts	A193 B7M	A320 L7M	A320 L7M	A320 L7M	A320 L7M	A193 B16	A193 B16	A193 B16	A194 B8M	A193 B8M
9	Lantern	410	410	410	410	410	410	410	410	304	316
10	Eyebolts	A193 B7M	A320 L7M	A320 L7M	A320 L7M	A320 L7M	A193 B7M	A193 B7M	A193 B7M	A193 B8M	A193 B8M
11	Gland	A182 F6	A182 F6	A182 F6	A182 F6	A182 F6	A182 F6	A182 F6	A182 F6	304	316
12	Gland Flange	A105	A350 LF2	A350 LF2	A350 LF2	A350 LF2	A105	A105	A105	304	316
13	Nuts	A194 2HM	A194 7M	A194 7M	A194 7M	A194 7M	A194 2HM	A194 2HM	A194 2HM	A194 8M	A194 8M
21	Pins	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	S.S.	S.S.
23	Stud Nut	A194 2HM	A194 7M	A194 7M	A194 7M	A194 7M	A194 4	A194 4	A194 4	A194 8M	A194 8M
15	Stem Nut	A439 D2 or A276 410									
16	Lubricator	Steel									
17	Bearing	Commercial									
18	Retainer Nut	Carbon Steel									
19	Handwheel	Ductile iron									
20	Handwheel Nut	Steel									
22	Packing	See Packing Materials Chart									
24	Gasket	See Gasket Materials Chart									
25	Nameplate	Stainless Steel									
4	Thrust Washer	A182 F6									

* Lantern ring shall be furnished only if specified in purchase order.



Class 150 Globe Valve

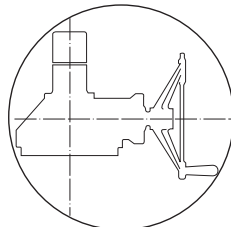
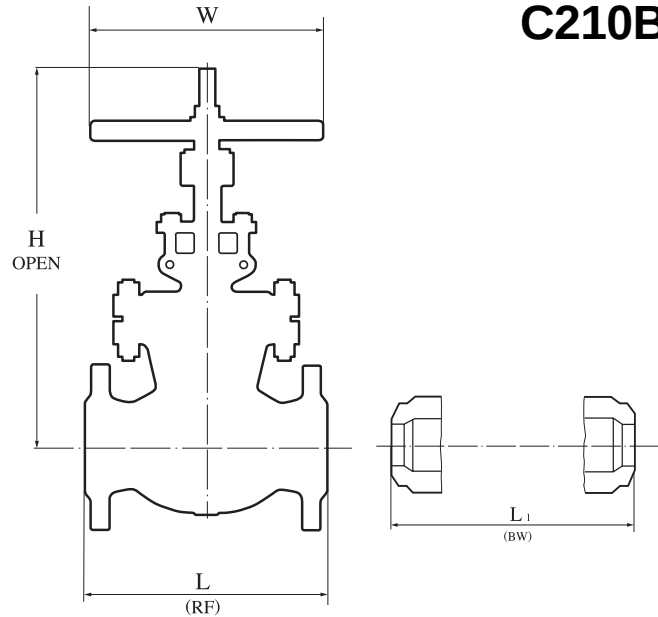
Features

- OS & Y, Rising Stem
- Plug Disc
- Bolted Bonnet
- Renewable seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends

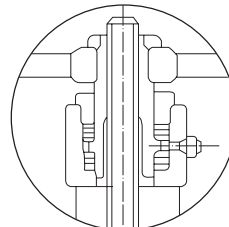
Specifications

Basic Design:	BS1873 ANSI B16.34
Face to Face:	ANSI B16.10
End to End:	ANSI B16.10
End Flange:	ANSI B16.5
B.W End:	ANSI B16.25
Test and Inspection:	API-598
Manufacturing to NACE MR0175 on request	

**Fig. C210F3
C210B3**



Bevel Gear
≥ 12"



Bearing Yoke
≥ 12"

Dimensions and Weights

Description			Valve Size											
			2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
RF/BW L / L1	in		8.00	8.50	9.50	11.50	16.00	19.50	24.50	27.50	31.00	36.00	38.50	38.50
	mm		203	216	241	292	406	495	622	698	787	914	978	978
Height to Open H	in		13.93	15.16	16.61	18.38	23.62	25.63	33.58	38.53	57.00	64.76	69.75	82.12
	mm		354	385	422	467	600	651	853	928	1450	1645	1772	2086
Handwheel Dia W	in		7.87	7.87	9.84	11.81	15.75	17.72	17.72	19.69	23.62	23.62	30.00	39.38
	mm		200	200	250	300	400	450	450	500	600	600	762	1000
Turns to Open			5.3	5.9	8.3	11.4	7.9	13.0	17.0	18.0	19.0	19.0	20.0	22.0
Weight	RF	lb	51	70	88	132	231	396	639	771	1100	1500	1850	2600
	BW	lb	43	51	65	110	202	351	520	687	950	1300	1630	2340

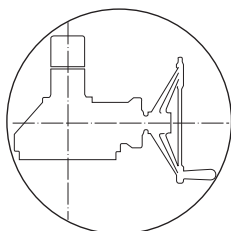
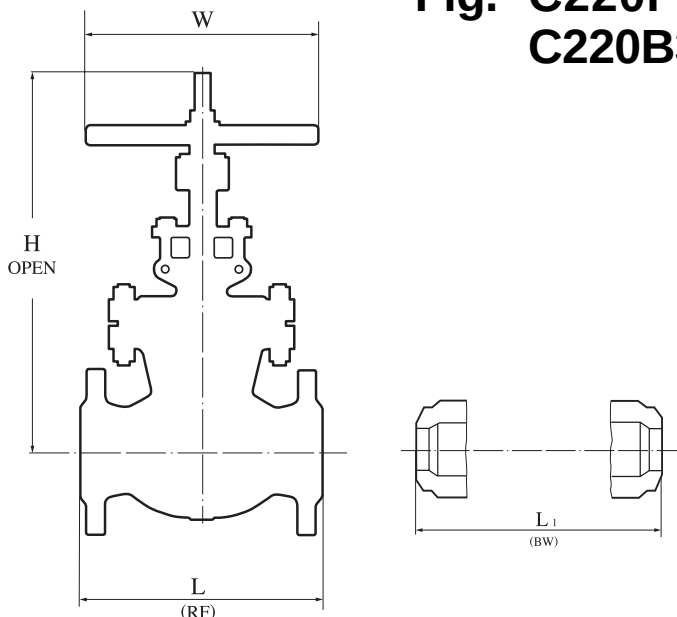
Features

- OS & Y, Rising Stem
- Plug Disc
- Bolted Bonnet
- Renewable seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends

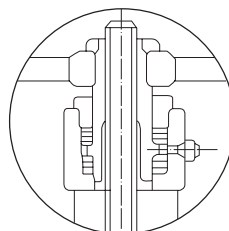
Specifications

Basic Design:	BS1873 ANSI 16.34
Face to Face:	ANSI B16.10
End to End:	ANSI B16.10
End Flange:	ANSI B16.5
B.W End:	ANSI B16.25
Test and Inspection:	API-598
Manufacturing to NACE MR0175 on request	

**Fig. C220F3
C220B3**



Bevel Gear
 $\geq 10''$



Bearing Yoke
 $\geq 10''$

Dimensions and Weights

Description			Valve Size									
			2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"
RF/BW L / L ₁	in		10.50	11.50	12.50	14.00	17.50	22.00	24.50	28.00	30.00	34.00
	mm		267	292	318	356	445	559	622	711	762	864
Height to Open H	in		14.84	17.83	20.31	22.91	25.91	35.75	49.62	55.75	59.50	65.75
	mm		377	453	516	582	658	908	1260	1416	1511	1670
Handwheel Dia W	in		7.87	9.84	9.84	13.78	17.72	19.69	19.69	19.69	24.00	30.00
	mm		200	250	250	350	450	500	500	500	610	762
Turns to Open			7.68	7.50	13.00	15.00	9.00	13.0	19.0	20.0	22.0	24.0
Weight	RF	lb	66	95	128	192	317	463	639	1650	2250	2950
	BW	lb	50	83	108	157	266	389	556	1430	1950	2570

Features

- OS & Y, Rising Stem
- Plug Disc
- Bolted Bonnet- Renewable seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends

Specifications

Basic Design: **BS1873 ANSI B16.34**

Face to Face: **ANSI B16.10**

End to End: **ANSI B16.10**

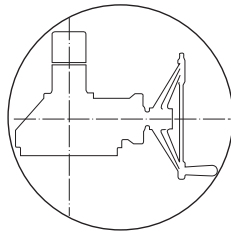
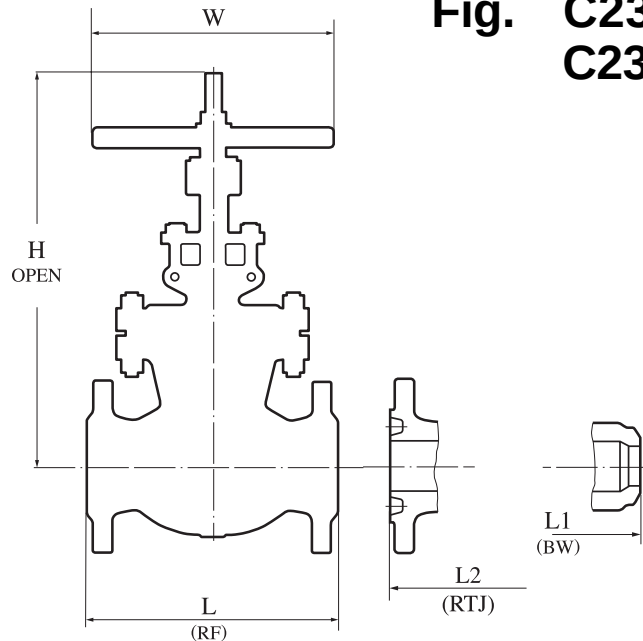
End Flange: **ANSI B16.5**

B.W End: **ANSI B16.25**

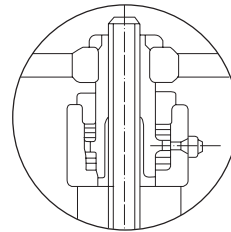
Test and Inspection: **API-598**

Manufacturing to NACE MR0175 on request

**Fig. C230F3
C230B3**



Bevel Gear
≥ 8"



Bearing Yoke
≥ 8"

Dimensions and Weights

Description		Valve Size							
		2"	2½"	3"	4"	6"	8"	10"	12"
RF/BW L / L1	in	11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00
	mm	292	330	356	432	559	660	787	838
RTJ L2	in	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12
	mm	295	333	359	435	562	663.00	790.00	841.00
Height to Open H	in	17.52	19.95	21.65	25.59	28.50	34.50	39.80	43.50
	mm	445	507	550	650	724	876	1011	1105
Handwheel Dia W	in	9.84	9.84	13.78	17.72	18.12	24.00	24.00	30.00
	mm	250	250	350	450	460	610	610	762
Turns to Open		10.40	11.00	11.90	10.50	10.00	10.50	11.00	11.00
Weight	RF lb	88	110	165	275	529	900	1608	2203
	BW lb	68	84	124	227	405	710	1313	1850

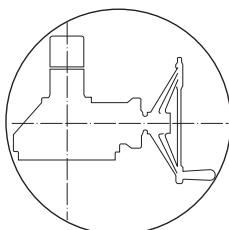
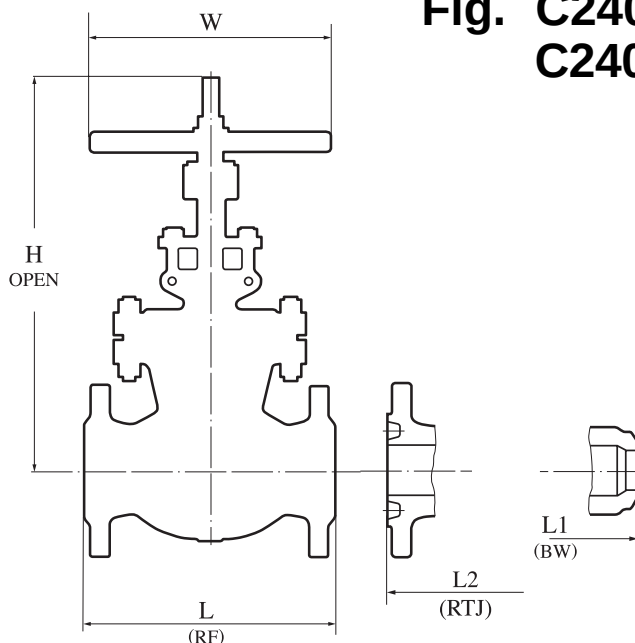
Features

- OS & Y, Rising Stem
- Plug Disc
- Bolted Bonnet- Renewable seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends

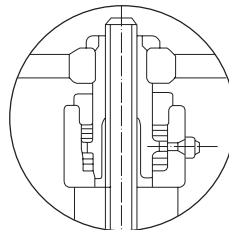
Specifications

Basic Design:	BS1873 ANSI B16.34
Face to Face:	ANSI B16.10
End to End:	ANSI B16.10
End Flange:	ANSI B16.5
B.W End:	ANSI B16.25
Test and Inspection:	API-598
Manufacturing to NACE MR0175 on request	

**Fig. C240F3
C240B3**



Bevel Gear
≥ 6"



Bearing Yoke
≥ 6"

Dimensions and Weights

Description			Valve Size							
			2"	2 1/2"	3"	4"	6"	8"	10"	12"
RF/BW L / L1	in		14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00
	mm		368	419	381	457	610	737	838	965
RTJ L2	in		14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12
	mm		371	422	384	460	613	740	841	968
Height to Open H	in		9.44	10.25	10.25	12.62	15.00	20.87	48.60	53.00
	mm		240	260	260	320	382	530	1155	1255
Handwheel Dia W	in		13.75	15.75	17.75	22.06	18.12	24.00	28.00	31.00
	mm		350	400	450	560	460	610	710	800
Weight	RF	lb	220	260	288	480	944	1562	2790	3150
	BW	lb	165	207	231	407	748	1386	2214	2500



Class 1500 Globe Valve

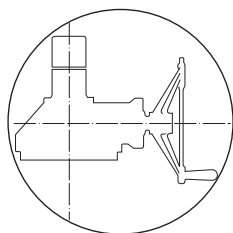
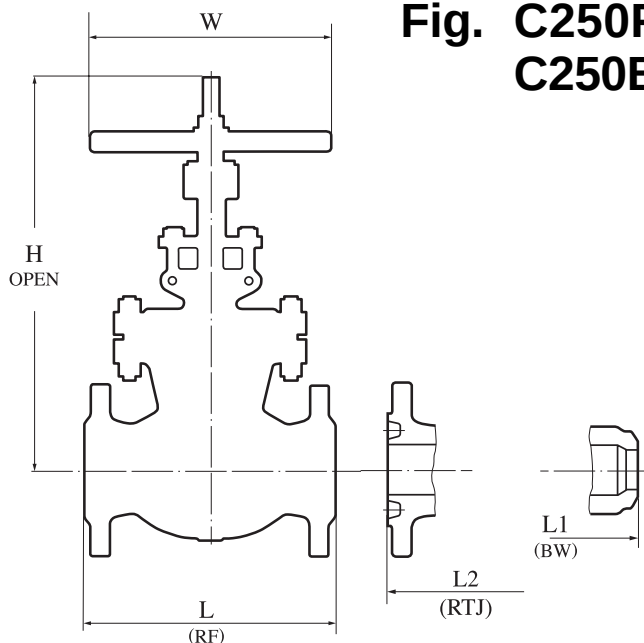
Features

- OS & Y, Rising Stem
- Plug Disc
- Bolted Bonnet
- Renewable seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends

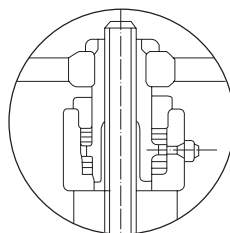
Specifications

Basic Design:	BS1873 ANSI B16.34
Face to Face:	ANSI B16.10
End to End:	ANSI B16.10
End Flange:	ANSI B16.5
B.W End:	ANSI B16.25
Test and Inspection:	API-598
Manufacturing to NACE MR0175 on request	

**Fig. C250F3
C250B3**



Bevel Gear
 $\geq 4''$



Bearing Yoke
 $\geq 4''$

Dimensions and Weights

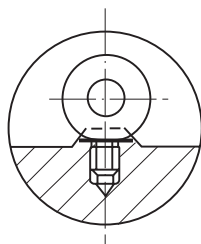
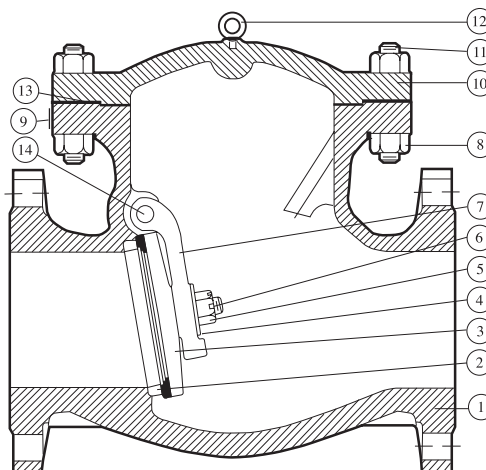
Description			Valve Size							
			2"	2 1/2"	3"	4"	6"	8"	10"	12"
RF/BW L / L1	in		14.50	16.50	18.50	21.50	27.75	32.75	39.00	44.50
	mm		368	419	470	546	705	832	990	1130
RTJ L2	in		14.62	16.62	18.62	21.62	28.00	33.13	39.38	45.12
	mm		371	422	473	549	711	841	1000	1046
Height to Open H	in		23.31	26.00	27.25	35.68	40.00	45.06	55.40	65.80
	mm		592	660	692	907	1015	1145	1407	1671
Handwheel Dia W	in		13.75	15.75	17.75	18.12	24.00	28.00	31.00	31.00
	mm		350	400	450	460	610	710	800	800
Weight	RF	lb	246	310	501	739	1740	2080	3295	5423
	BW	lb	184	253	402	609	1450	1650	2512	4273



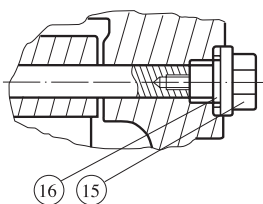
Check Valve

Trim Material to API 600

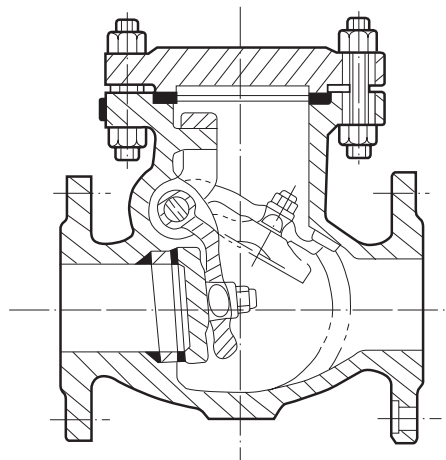
DHV Trim Code	Seat Ring Surface Part No.2	Disc Seat Surface Part No.3	Hinge Pin Part No.14
1	13CR	13CR	F6A
2	HF	HF	F6A
3	HF	13CR	F6A
4	Monel	Monel	Monel
5	316	316	F316
6	HF	316	F316
7	304	304	F304
8	HF	304	F304
9	INCONEL	INCONEL	INCONEL
0	SPECIAL	SPECIAL	SPECIAL



Size ≥ 6"



Size ≥ 8" (150/300LB)
All Size (600-1500LB)



Other Construction

Standard Material Specifications

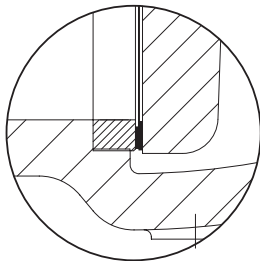
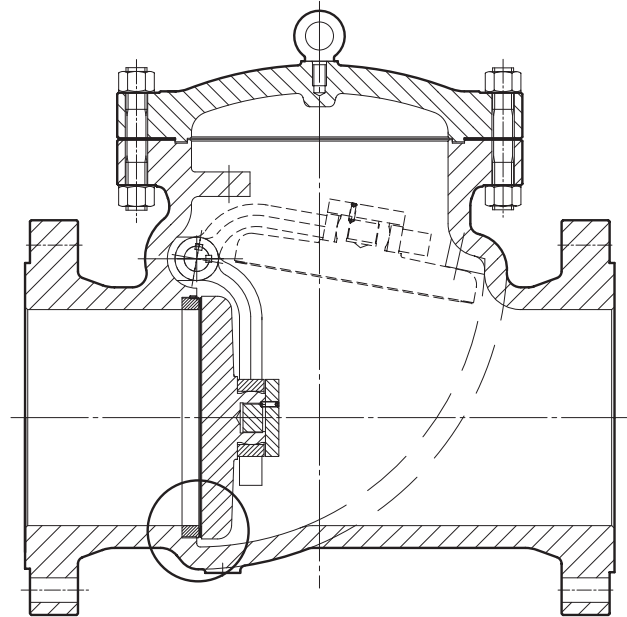
Part Name	Carbon Steel to ASTM				Alloy Steel to ASTM			Stainless Steel to ASTM	
1 Body	A216 WCB	A352 LC1	A352 LC3	A352-LCC	A217 WC6	A217 C5	A217 C12	A351 CF8	A351 CF8M
6 Disc Nut	A194 2H	A194 2H	A194 2H	A194 2H	A194-4	A194-4	A194-4	A194 8	A194 8
7 Hinge	A216 WCB	A352 LC1	A352 LC3	A352-LCC	A217 WC6	A217 C5	A217 C12	A351 CF8	A351 CF8M
8 Nuts	A194 2HM	A194-7M	A194-7M	A194-7M	A194-4	A194-4	A194-4	A194 8M	A194 8M
10 Cover	A216 WCB	A352 LC1	A352 LC3	A352-LCC	A217 WC6	A217 C5	A217 C12	A351 CF8	A351 CF8M
11 Bolts	A193 B7M	A320 L7M	A320 L7M	A320 L7M	A193 B16	A193 B16	A193 B16	A193 B8M	A193 B8M
15 Side Plug	Steel	Steel	Steel	Steel	Steel	Steel	Steel	S.S	S.S
4 Disc Washer	Stainless Steel								
5 Split Pin	Stainless Steel								
9 Nameplate	Stainless Steel								
12 Hook Screw	Steel								
13 Gasket	See Gasket Materials Chart								
16 Seal Ring	Stainless Steel								

Features

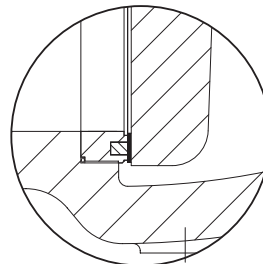
- Bolted Cover
- Swing Type Disc
- Renewable Seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends
- API 6D Standard Bore, Pigable
- Metal Seat & Soft Seat Seal

Specifications

Size:	2"-30"
Class:	150-1500LB
Basic Design:	API-6D
Face to Face:	API-6D
End to End:	API-6D
End Flange:	
2"-24"	ANSI B16.5
26"-30"	ANSI B16.47
B.W End:	ANSI B16.25
Test and Inspection:	API-6D
Manufacturing to NACE MR0175 on request	



Metal Seat Seal

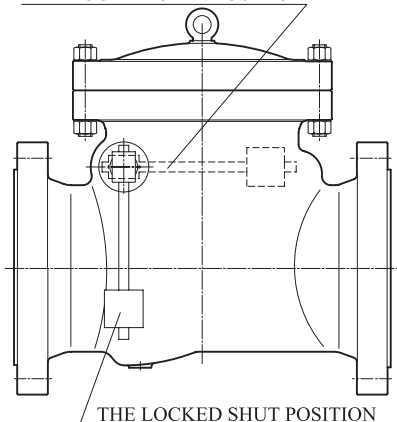


Soft Seat Seal

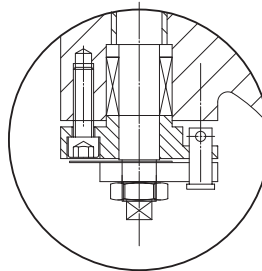
API 6D Swing Check Valve with locking device

The locking device can easily be used to manually open the check valve disc and lock the disc in the full-open position, when pressure difference is zero (balanced pressure).

THE LOCKED OPEN POSITION



THE LOCKED SHUT POSITION



Extended Shaft



Locking Hole With Opening

Locking Device



Class 150/300 Check Valve

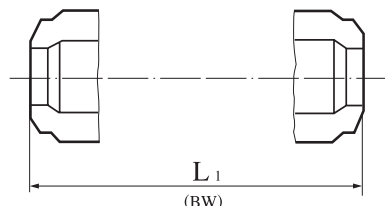
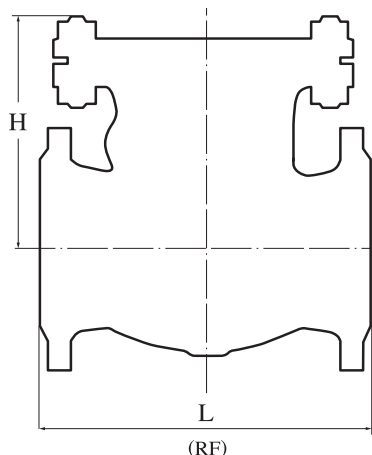
Features

- Bolted Cover
- Swing Type Disc
- Renewable Seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends

Specifications

Basic Design:	BS1868 API-6D
Face to Face:	ANSI B16.10
End to End:	ANSI B16.10
End Flange:	
2" - 24"	ANSI B16.5
26" - 30"	ANSI B16.47
B.W End:	ANSI B16.25
Test and Inspection:	API - 598
Manufacturing to NACE MR0175 on request	

**Fig. C310F3
C310B3
C320F3
C320B3**



Dimensions and Weights														Class 150
Description			Valve Size											
			2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
RF/BW L / L1	in		8.00	8.50	9.50	11.50	14.00	19.50	24.50	27.50	31.00	34.00	38.50	51.00
	mm		203	216	241	292	356	495	622	699	787	863	978	1295
Center to Top H	in		5.75	6.50	7.60	8.50	12.36	13.98	15.16	20.39	19.11	20.28	21.76	23.62
	mm		146	165	193	216	314	355	385	518	485	515	553	600
Weight	RF	lb	35	48	65	86	148	308	529	771	965	1238	1650	1808
	BW	lb	30	38	55	86	120	275	470	681	742	968	1422	1647

Dimensions and Weights												Class 300
Description			Valve Size									
			2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"
RF/BW L / L1	in		10.50	11.50	12.50	14.00	17.50	21.00	24.50	28.00	33.00	34.00
	mm		267	292	318	356	445	533	622	711	838	864
Center to Top H	in		6.89	7.28	8.39	10.63	13.03	14.39	17.91	21.73	21.42	23.62
	mm		175	185	213	270	331	366	455	522	544	600
Weight	RF	lb	50	66	95	106	330	507	656	1145	1489	1839
	BW	lb	40	52	75	82	260	274	514	880	1145	1420



Class 600 / 900 / 1500 Check Valve

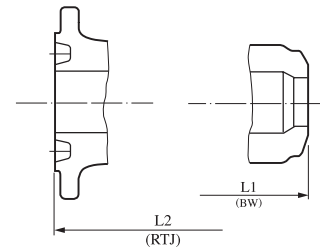
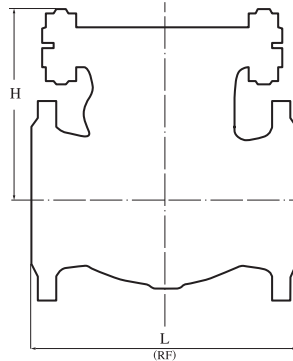
Features

- Bolted Cover
- Swing Type Disc
- Renewable Seat Rings Welded or Threaded
- Flanged Ends or Buttwelding Ends

Specifications

Basic Design: **BS1868 API-6D**
 Face to Face: **ANSI B16.10**
 End to End: **ANSI B16.10**
 End Flange: **ANSI B16.5**
 B.W End: **ANSI B16.25**
 Test and Inspection: **API-598**
 Manufacturing to NACE MR0175 on request

**Fig. C330F3 C340B2
C330B3 C350F2
C340F2 C350B2**



Dimensions and Weights

Class 600

Description			Valve Size											
			2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
RF/BW L / L1	in		11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00	35.00	39.00	43.00	47.00
	mm		292	330	356	432	559	660	787	838	889	991	1092	1194
RTJ L2	in		11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25
	mm		295	333	359	435	562	663	790	841	892	994	1095	1200
Center to Top H	in		7.28	8.12	10.94	12.48	15.74	18.11	19.13	20.75	22.50	26.00	28.37	29.37
	mm		185	207	278	317	400	460	490	528	572	660	720	746
Weight	RF	lb	81	86	126	231	485	888	1364	1804	2024	2684	3024	5238
	BW	lb	64	74	100	171	400	761	1124	1454	1630	1904	2350	3950

Dimensions and Weights

Class 900

Description			Valve Size							
			2"	2 1/2"	3"	4"	6"	8"	10"	12"
RF/BW L / L1	in		14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00
	mm		368	419	381	457	610	737	838	965
RTJ L2	in		14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12
	mm		372	422	384	460	613	740	841	968
Center to Top H	in		9.44	10.25	10.25	12.63	15.00	20.88	22.06	23.25
	mm		240	260	260	320	381	530	560	590
Weight	RF	lb	130	170	200	319	570	1243	1980	2640
	BW	lb	80	120	154	246	480	986	1613	2145

Dimensions and Weights

Class 1500

Description			Valve Size							
			2"	2 1/2"	3"	4"	6"	8"	10"	12"
RF/BW L / L1	in		14.50	16.50	18.50	21.50	27.75	32.75	39.00	44.50
	mm		368	419	470	546	705	832	991	1130
RTJ L2	in		14.62	16.62	18.62	21.62	28.00	33.13	39.38	45.12
	mm		371	422	473	549	711	841	1000	1146
Center to Top H	in		12.25	12.25	13.00	14.00	15.37	20.87	22.06	25.62
	mm		310	310	330	355	400	530	560	650
Weight	RF	lb	152	205	308	510	1078	2178	3278	4334
	BW	lb	108	163	244	407	825	1766	2750	3575

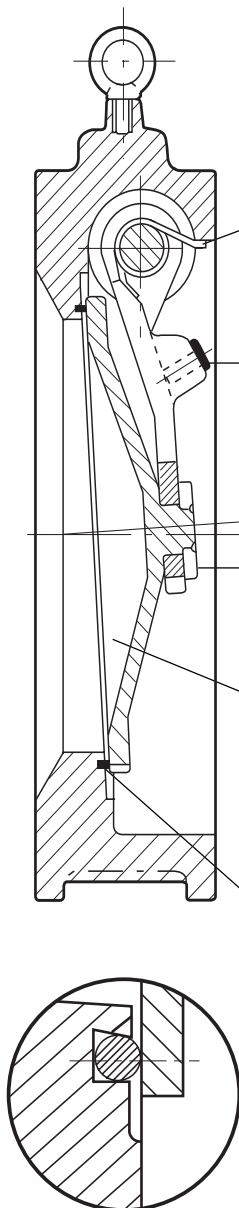


Wafer Check Valves

Class 150 / 300 / 600

Design Features

- Small in size, light in weight, compact in structure, easy in maintenance.
- The quick-close action prevents the medium from flowing back and eliminates water-hammer effect.
- This valve is short in length, so that it is rigid and easy to mount.
- Out water check valve offers a tight seal with zero leakage under test pressure to assure a long dependable service life.



Features

Long-life inconel torsion springs assist closure before flow reversal, thus preventing water hammer.

Nitrile rubber captive stopper positions the valve disc in the open position and prevents damage to the disc due to slamming.

The valve disc is locked to the hinge by a shoulder washer, securely welded. This prevents accidental loss of the valve disc in service.

Seal faces offset 3 degrees to ensure positive seating of the disc under spring tension.

The primary seal is effected by the pressure of the valve disc on the resilient 'O' ring which distorts into its retaining groove. Secondary sealing is provided by the metal faces of the valve body and disc.



Single-Plate Wafer Check Valves

Class 150 / 300 / 600 (2"-24")

Standards Compliance:

- Class 150 300 600
- NPS 2"-24"
- Basic Design:
- Face to Face Dimensions:
- End Flange Dimensions:
- Inspection and Testing:
- Type: Wafer, Wafer-Lug, and Double Flange

API 594
API 594
ANSI B16.5
API 598

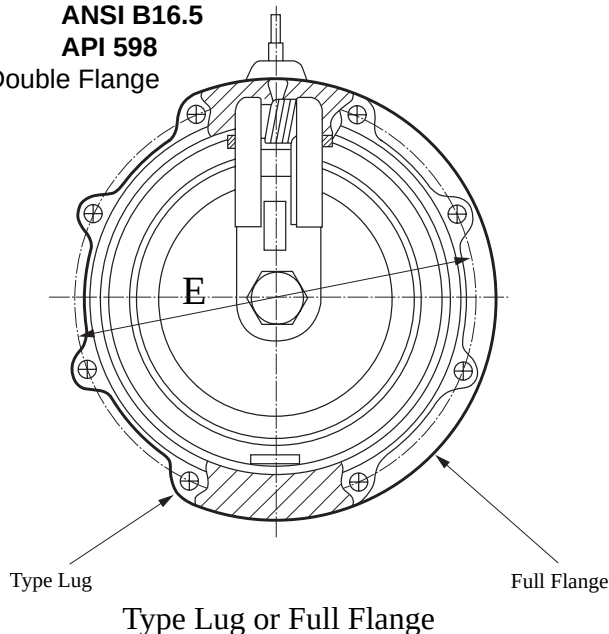
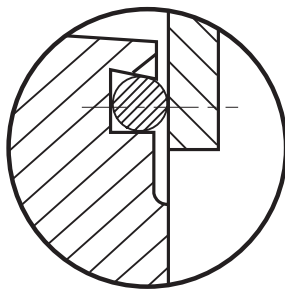
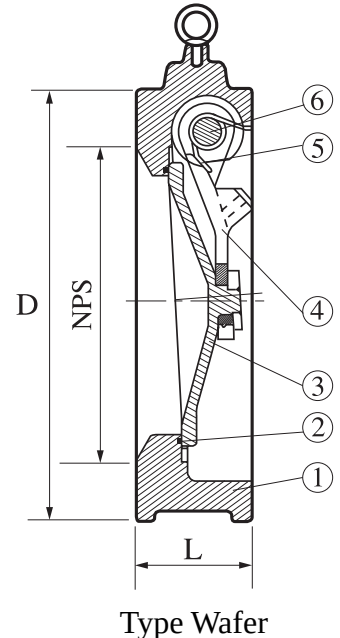


Fig. WC110W7
WC125D7
WC134W5



Dimensions and Weights

NPS	CLASS 150				CLASS 300				CLASS 600			
	L	E	D	W(kg)	L	E	D	W(kg)	L	E	D	W(kg)
2"	2.38	4.75	3.62	1.2	2.38	5.00	3.62	2.0	2.38	5.00	3.62	2.5
2½"	2.62	5.50	4.13	2.3	2.62	5.88	4.13	2.9	2.62	5.88	4.13	3.4
3"	2.88	6.00	5.00	3.0	2.88	6.63	5.00	5.5	2.88	6.63	5.00	6.3
4"	2.88	7.50	6.18	7.0	2.88	7.88	6.18	9.2	3.12	8.50	6.18	10.2
6"	3.88	9.50	8.50	15	3.88	10.63	8.50	20	5.38	11.50	8.50	22
8"	5.00	11.75	10.63	23	5.00	13.00	10.63	25	6.50	13.75	10.63	35
10"	5.75	14.25	12.76	30	5.75	15.25	12.76	32	8.38	17.00	12.76	41
12"	7.12	17.00	15.00	37	7.12	17.75	15.00	39	9.00	19.25	15.00	57
14"	7.25	18.75	16.26	49	8.75	20.25	16.26	52	10.75	20.75	16.26	72
16"	7.50	21.25	18.50	62	9.12	22.50	18.50	67	12.00	23.75	18.50	83
18"	8.00	22.75	20.98	78	10.38	24.75	20.98	82	14.25	25.75	20.98	100
20"	8.62	25.00	22.99	97	11.50	27.00	22.99	102	14.50	28.50	22.99	140
24"	8.75	29.50	27.24	125	12.50	32.00	27.24	135	17.25	33.00	27.24	350

STANDARD MATERIAL SPECIFICATIONS

No	Part Name	Carbon Steel		Alloy Steel			Stainless Steel			
		WCB	LCB	WC6	WC9	C5	CF8	CF8M	A890 4A(F51)	Inconel 625
1	Body	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A351 CF8	A351 CF8M	A890 4A	Inconel 625
2	Sealing face overlay	BUNA-N (NBR) / PTFE / 13Cr / 18Cr-8Ni / HF (Co-CrA) / DSS / Inconel 625								
3	Disc	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A351 CF8	A351 CF8M	A890 4A	Inconel 625
4	Hinge	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A351 CF8	A351 CF8M	A182 F51	Inconel 625
5	Spring	AISI 6150								
6	Hinge Pin	A182 F6	A182 F6	A182 F304	A182 F304	A182 F304	A182 F304	A182 F316	A182 F51	Inconel 625

The materials according to ASTM standard.



Dual-Plate Wafer Check Valves

Class 150 / 300 / 600 (2"-24")

Standards Compliance:

- Class 150 300 600
- NPS 2"-24"
- Basic Design:
- Face to Face Dimensions:
- End Flange Dimensions:
- Inspection and Testing:
- Type: Wafer, Wafer-Lug, and Double Flange

API 594
API 594
ANSI B16.5
API 598

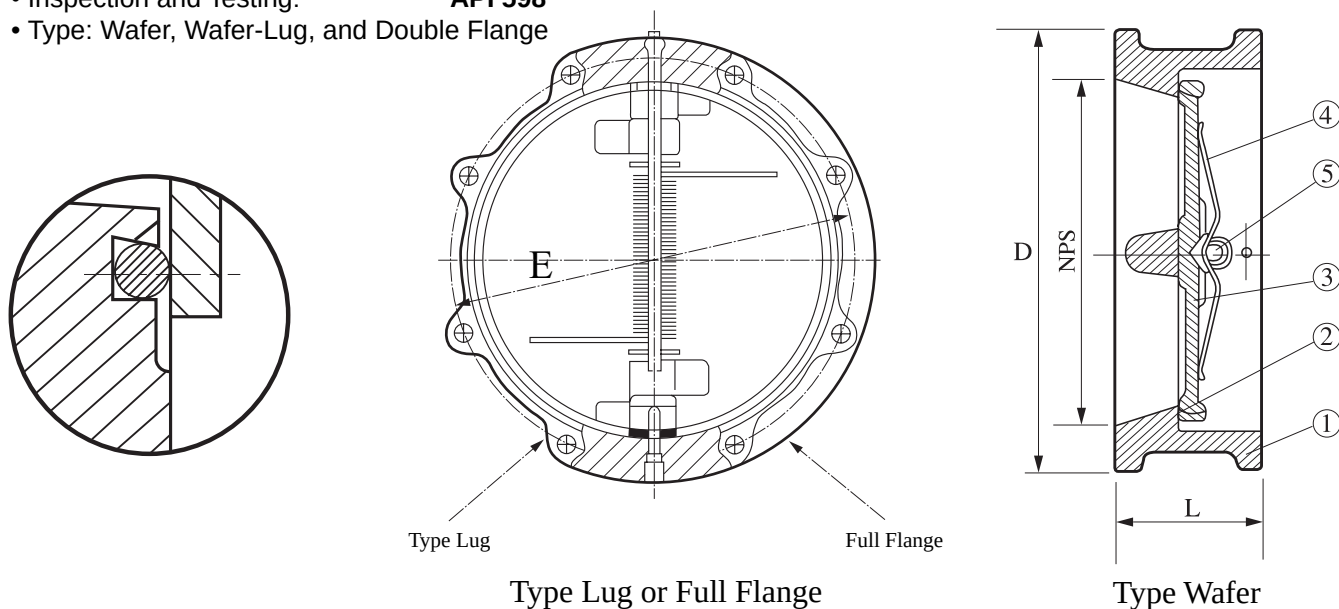


Fig. WC210W7
WC225D7
WC234W5

Dimensions and Weights

NPS	CLASS 150				CLASS 300				CLASS 600			
	L	E	D	W(kg)	L	E	D	W(kg)	L	E	D	W(kg)
2"	2.38	4.75	3.62	1.2	2.38	5.00	3.62	2.0	2.38	5.00	3.62	2.5
2 1/2"	2.62	5.50	4.13	2.3	2.62	5.88	4.13	2.9	2.62	5.88	4.13	3.4
3"	2.88	6.00	5.00	3.0	2.88	6.63	5.00	5.5	2.88	6.63	5.00	6.3
4"	2.88	7.50	6.18	7.0	2.88	7.88	6.18	9.2	3.12	8.50	6.18	10.2
6"	3.88	9.50	8.50	15	3.88	10.63	8.50	20	5.38	11.50	8.50	22
8"	5.00	11.75	10.63	23	5.00	13.00	10.63	25	6.50	13.75	10.63	35
10"	5.75	14.25	12.76	30	5.75	15.25	12.76	32	8.38	17.00	12.76	41
12"	7.12	17.00	15.00	37	7.12	17.75	15.00	39	9.00	19.25	15.00	57
14"	7.25	18.75	16.26	49	8.75	20.25	16.26	52	10.75	20.75	16.26	72
16"	7.50	21.25	18.50	62	9.12	22.50	18.50	67	12.00	23.75	18.50	83
18"	8.00	22.75	20.98	78	10.38	24.75	20.98	82	14.25	25.75	20.98	100
20"	8.62	25.00	22.99	97	11.50	27.00	22.99	102	14.50	28.50	22.99	140
24"	8.75	29.50	27.24	125	12.50	32.00	27.24	135	17.25	33.00	27.24	350

STANDARD MATERIAL SPECIFICATIONS

No	Part Name	Carbon Steel		Alloy Steel			Stainless Steel			
		WCB	LCB	WC6	WC9	C5	CF8	CF8M	A890 4A(F51)	Inconel 625
1	Body	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A351 CF8	A351 CF8M	A890 4A	Inconel 625
2	Sealing face overlay	BUNA-N (NBR) / PTFE / 13Cr / 18Cr-8Ni / HF (Co-CrA) / DSS / Inconel 625								
3	Disc	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A351 CF8	A351 CF8M	A890 4A	Inconel 625
4	Spring	AISI 6150		17-7PH Stainless Steel(inconel for NACE standard)Ni-CrAlloy						
5	Pin	A182 F6	A182 F6	A182 F304	A182 F304	A182 F304	A182 F304	A182 F316	A182 F51	Inconel 625

The materials according to ASTM standard.



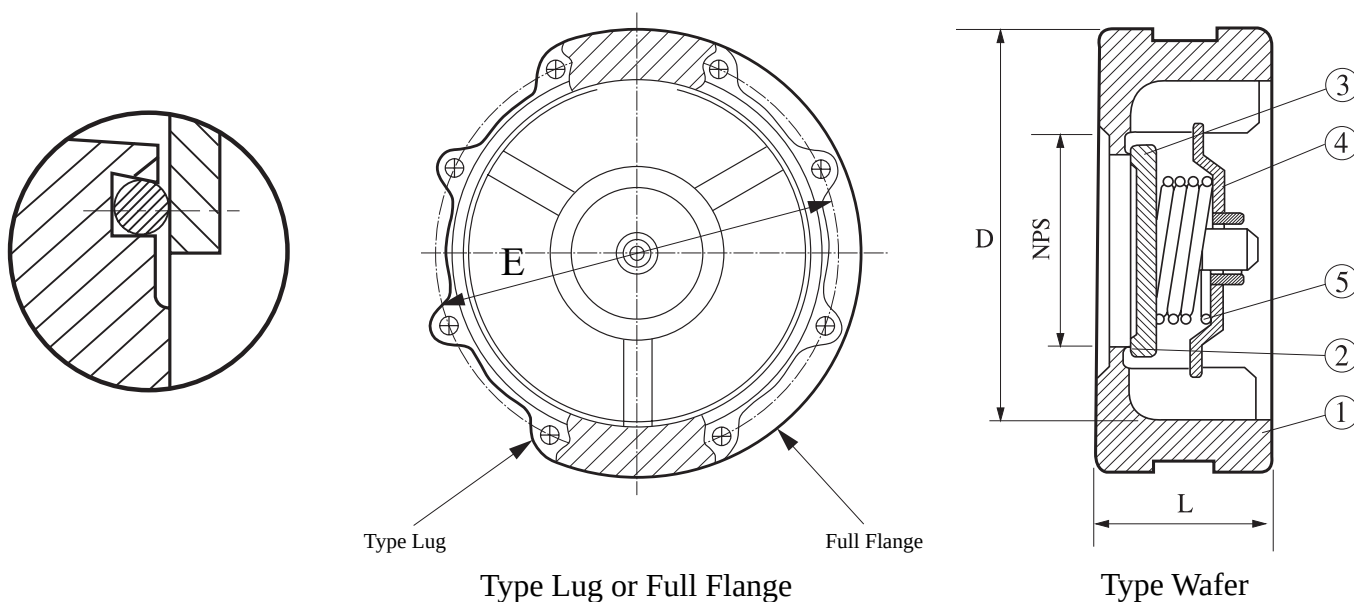
Lift Wafer Check Valves

Class 150 / 300 / 600 (2"-12")

Standards Compliance:

- Class 150 300 600
- NPS 2"-24"
- Basic Design: **API 594**
- Face to Face Dimensions: **API 594**
- End Flange Dimensions: **ANSI B16.5**
- Inspection and Testing: **API 598**
- Type: Wafer, Wafer-Lug, and Double Flange

**Fig. WC310W7
WC325D7
WC334W5**



Dimensions and Weights

NPS	CLASS 150				CLASS 300				CLASS 600			
	L	E	D	W(kg)	L	E	D	W(kg)	L	E	D	W(kg)
2	2.38	4.75	3.62	1.2	2.38	5.00	3.62	2.0	2.38	5.00	3.62	2.5
2 1/2	2.62	5.50	4.13	2.3	2.62	5.88	4.13	2.9	2.62	5.88	4.13	3.4
3	2.88	6.00	5.00	3.0	2.88	6.63	5.00	5.5	2.88	6.63	5.00	6.3
4	2.88	7.50	6.18	7.0	2.88	7.88	6.18	9.2	3.12	8.50	6.18	10.2
6	3.88	9.50	8.50	15	3.88	10.63	8.50	20	5.38	11.50	8.50	22
8	5.00	11.75	10.63	23	5.00	13.00	10.63	25	6.50	13.75	10.63	35
10	5.75	14.25	12.76	30	5.75	15.25	12.76	32	8.38	17.00	12.76	41
12	7.12	17.00	15.00	37	7.12	17.75	15.00	39	9.00	19.25	15.00	57

STANDARD MATERIAL SPECIFICATIONS

No	Part Name	Carbon Steel		Alloy Steel			Stainless Steel			
		WCB	LCB	WC6	WC9	C5	CF8	CF8M	A890 4A(F51)	Inconel 625
1	Body	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A351 CF8	A351 CF8M	A890 4A	Inconel 625
2	Sealing face overlay	BUNA-N (NBR) / PTFE / 13Cr / 18Cr-8Ni / HF (Co-CrA) / DSS / Inconel 625								
3	Disc	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A351 CF8	A351 CF8M	A890 4A	Inconel 625
4	Retainer	A216 WCB	A352 LCB	A217 WC6	A217 WC9	A217 C5	A351 CF8	A351 CF8M	A890 4A	Inconel 625
5	Spring	AISI 6150 17-7PH Stainless Steel(inconel for NACE standard)Ni-CrAlloy								

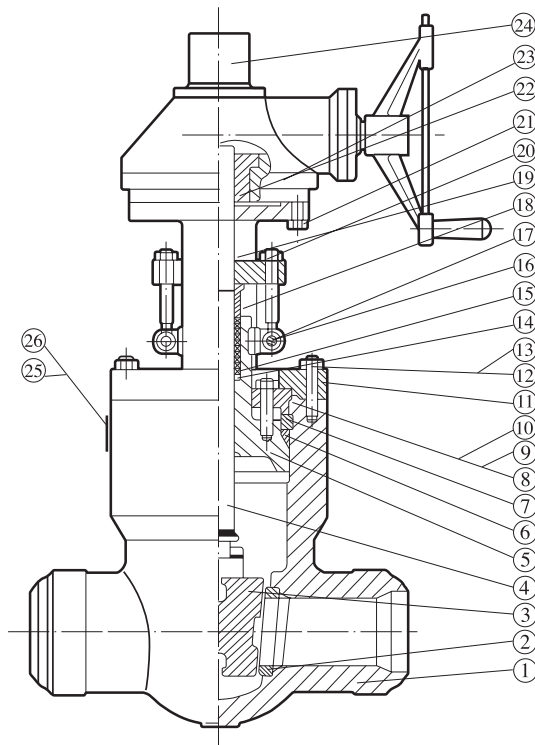
The materials according to ASTM standard.



Pressure Seal Bonnet Gate Valve Class 900-2500

Trim Material to API 600

DHV Trim Code	Body Seat Surface Part No.2	Wedge Seat Surface Part No.3	Stem Part No.4
1	13CR	13CR	F6A
2	HF	HF	F6A
3	HF	13CR	F6A
4	Monel	Monel	Monel
5	316	316	F316
6	HF	316	F316
7	304	304	F304
8	HF	304	F304
9	INCONEL	INCONEL	INCONEL
0	SPECIAL	SPECIAL	SPECIAL



Standard Material Specifications

Part Name	Carbon Steel	Alloy Steel				Stainless Steel	
1 Body	A216 WCB	A217 WC6	A217 C12	A217 C5	A351 CF8	A351 CF8M	
5 Stuffing	A216 WCB	A217 WC6	A217 C12	A217 C5	A351 CF8	A351 CF8M	
6 Seal Ring	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L	
7 Split Ring	Steel	Steel	Steel	Steel	S.S	S.S	
8 Back Ring	Steel	Steel	Steel	Steel	S.S	S.S	
9 Bolt	A193 B7M	A193 B16	A193 B16	A193 B16	A193 B8M	A193 B8M	
10 Nut	A194 2HM	A194 4	A194 4	A194 4	A194 Gr.8M	A194 Gr.8M	
11 Yoke	A216 WCB	A217 WC6	A217 C12	A217 C5	A351 CF8	A351 CF8M	
12 Bolt	A193 B7M	A193 B16	A193 B16	A193 B16	A193 B8M	A193 B8M	
13 Nut	A194 2HM	A194 4	A194 4	A194 4	A194 Gr.8M	A194 Gr.8M	
14 Packing Plate	AISI 410	AISI 410	AISI 410	AISI 410	AISI 304	AISI 316L	
15 Packing	Flexible Graphite (Braided and Die-formed Ring) or PTFE						
16 Split Pin	Steel	Steel	Steel	Steel	Steel	Steel	
17 Eyebolt	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B8M	A193 B8M	
18 Gland	A182 F6	A182 F6	A182 F6	A182 F6	A182 F304	A182 F316	
19 Gland Flange	A105	A105	A105	A105	A182 F304	A182 F316	
20 Nut	A194 2HM	A194 2HM	A194 2HM	A194 2HM	A194 Gr.8M	A194 Gr.8M	
21 Stud	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B7M	
22 Stem Nut	A439-D2						
23 Gear Box	Commercial						
24 Protector	Steel						
25 Nameplate	AISI 304						
26 Rivet	AISI 304						



Pressure Seal Bonnet Gate Valve Class 900-2500

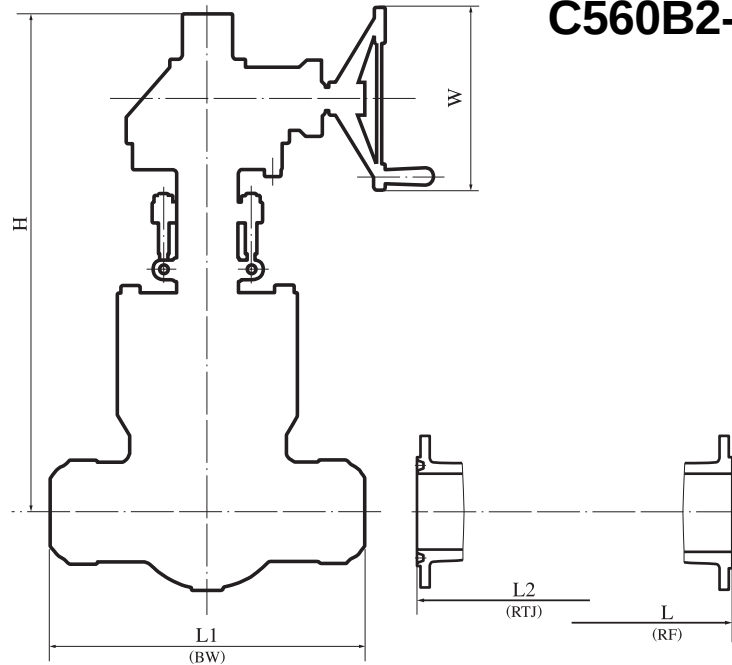
Features

- OS & Y, Rising Stem
- Flexible Wedge
- Seat surfaces of body and disc in all sizes are hard faced with stellite
- Body seat rings in all sizes are seal-welded into the body
- Design with pressure seal bonnet self tightening gasket
- Hard faced backseat on bonnet
- Class 900 $\geq 10"$, Class 1500 $\geq 8"$, Class 2500 $\geq 8"$ are available with gear operated.
- Anti-Friction Bearings are used on Class 900, 1500 $\geq 3"$, Class 2500 all sizes.

Specifications

Basic Design:	ANSI B16.34
Face to Face:	ANSI B16.10
End to End:	ANSI B16.10
End Flange:	ANSI B16.5
B.W End:	ANSI B16.25
Test and Inspection:	API-598
Manufacturing to NACE MR0175 on request	

**Fig. C540B2-Go
C550B2-Go
C560B2-Go**



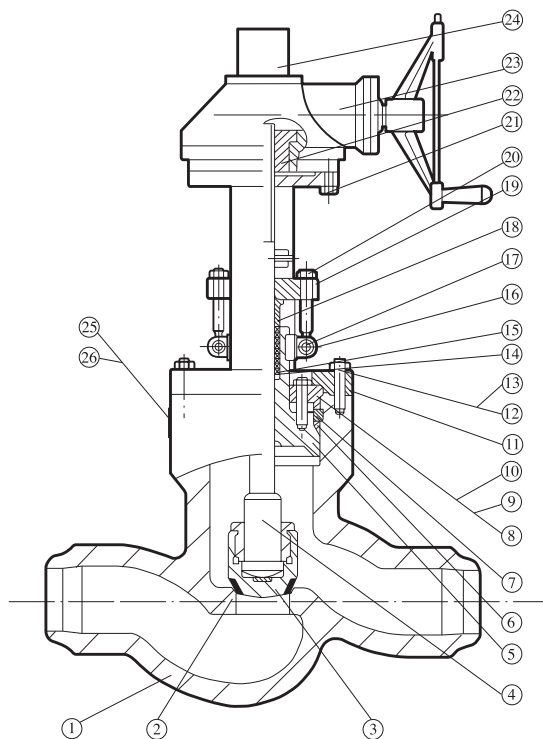
Dimensions (in) and Weights (lb)											
NPS	CLASS	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"
L (RF)	900 LB	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00	40.50	44.50
	1500 LB	14.50	16.50	18.50	21.50	27.75	32.75	39.00	44.50	49.50	54.50
	2500 LB	17.75	20.00	22.75	26.50	36.00	40.25	50.00	56.00	-	-
L1 (BW)	900 LB	8.50	10.00	12.00	14.00	20.00	26.00	31.00	36.00	39.00	43.00
	1500 LB	8.50	10.00	12.00	16.00	22.00	28.00	34.00	39.00	42.00	47.00
	2500 LB	11.00	13.00	14.50	18.00	24.00	30.00	36.00	41.00	-	-
L2 (RTJ)	900 LB	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.88	44.88
	1500 LB	14.62	16.62	18.62	18.62	28.00	33.11	39.38	45.12	50.25	55.38
	2500 LB	17.87	20.25	23.00	26.88	36.50	40.87	50.88	56.88	-	-
H (Open)	900 LB	7.40	8.27	8.27	8.50	14.49	20.12	24.17	27.76	29.00	29.76
	1500 LB	10.43	10.43	10.63	14.57	18.70	22.44	24.80	30.31	31.30	32.44
	2500 LB	11.02	12.00	12.20	14.57	19.09	21.42	27.95	31.50	35.63	37.17
W	900 LB	11.81	13.78	13.78	15.75	22.05	18.11	24.00	24.00	24.00	29.92
	1500 LB	11.81	17.72	17.72	22.05	12.00	18.11	24.00	24.00	29.92	29.92
	2500 LB	19.69	19.69	23.62	23.62	18.11	18.11	24.00	-	-	-
Weight	RF lb	900 LB	110	185	202	339	750	1368	2090	2849	3784
		1500 LB	132	200	282	400	867	1749	3014	4664	6160
		2500 LB	266	385	429	504	1584	2849	4950	-	-
	BW lb	900 LB	86	141	108	264	585	1153	1672	2486	3190
		1500 LB	101	257	187	286	642	1291	2143	3553	4422
		2500 LB	194	297	207	348	1100	1962	3410	-	-



Pressure Seal Globe Valve Class 900-2500

Trim Material to API 600

DHV Trim Code	Body Seat Surface Part No.2	Disc Seat Surface Part No.3	Stem Part No.4
1	13CR	13CR	F6A
2	HF	HF	F6A
3	HF	13CR	F6A
4	Monel	Monel	Monel
5	316	316	F316
6	HF	316	F316
7	304	304	F304
8	HF	304	F304
9	INCONEL	INCONEL	INCONEL
0	SPECIAL	SPECIAL	SPECIAL



Standard Material Specifications

Part Name		Carbon Steel		Alloy Steel		Stainless Steel	
1	Body	A216 WCB	A217 WC6	A217 C12	A217 C5	A351 CF8	A351 CF8M
5	Stuffing	A216 WCB	A217 WC6	A217 C12	A217 C5	A351 CF8	A351 CF8M
6	Seal Ring	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L
7	Split Ring	Steel	Steel	Steel	Steel	S.S	S.S
8	Back Ring	Steel	Steel	Steel	Steel	S.S	S.S
9	Bolt	A193 B7M	A193 B16	A193 B16	A193 B16	A193 B8M	A193 B8M
10	Nut	A194 2HM	A194 4	A194 4	A194 4	A194 Gr.8M	A194 Gr.8M
11	Yoke	A216 WCB	A216 WC6	A216 C12	A216 C5	A351 CF8	A351 CF8M
12	Bolt	A193 B7M	A193 B16	A193 B16	A193 B16	A193 B8M	A193 B8M
13	Nut	A194 2HM	A194 4	A194 4	A194 4	A194 Gr.8M	A194 Gr.8M
14	Packing Plate	AISI 410	AISI 410	AISI 410	AISI 410	AISI 304	AISI 316L
15	Packing	Flexible Graphite (Braided and Die-formed Ring) or PTFE					
16	Split Pin	Steel	Steel	Steel	Steel	Steel	Steel
17	Eyebolt	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B8M	A193 B8M
18	Gland	A182 F6	A182 F6	A182 F6	A182 F6	A182 F304	A182 F316
19	Gland Flange	A105	A105	A105	A105	A182 F304	A182 F316
20	Nut	A194 2HM	A194 2HM	A194 2HM	A194 2HM	A194 Gr.8M	A194 Gr.8M
21	Stud	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B7M
22	Stem Nut	A439-D2					
23	Gear Box	Commercial					
24	Protector	Steel					
25	Nameplate	AISI 304					
26	Rivet	AISI 304					



Pressure Seal Bonnet Globe Valve Class 900-2500

Features

- OS & Y, Rising Stem
- Plug Type Disc
- Seat surfaces of body and disc in all size are hard faced with stellite
- Stem nut with anti-friction bearings are generally furnished on size 3" and larger
- Class 900≥6", Class 1500≥6", Class 2500≥6" are available with gear operated.

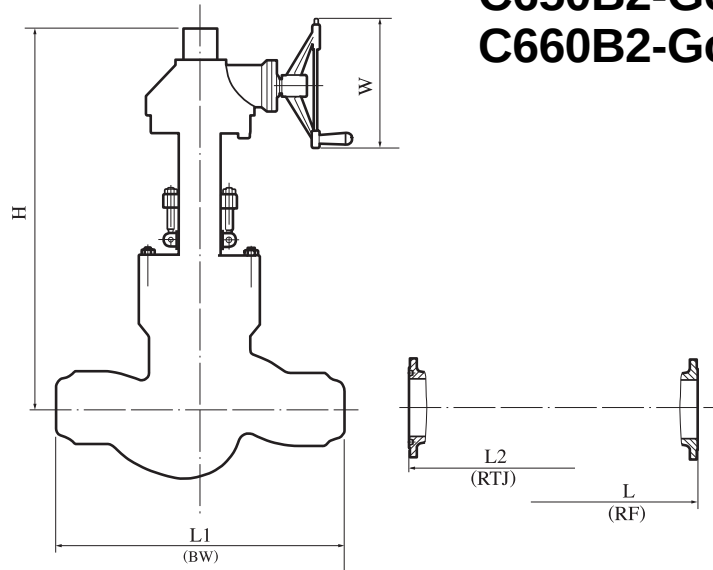
Specifications

Basic Design: **ANSI B16.34**
 Face to Face: **ANSI B16.10**
 End to End: **ANSI B16.10**
 End Flange: **ANSI B16.5**
 B.W End: **ANSI B16.25**

Test and Inspection: **API - 598**

Manufacturing to NACE MR0175 on request

**Fig. C640B2-Go
C650B2-Go
C660B2-Go**



Dimensions (in) and Weights (lb)

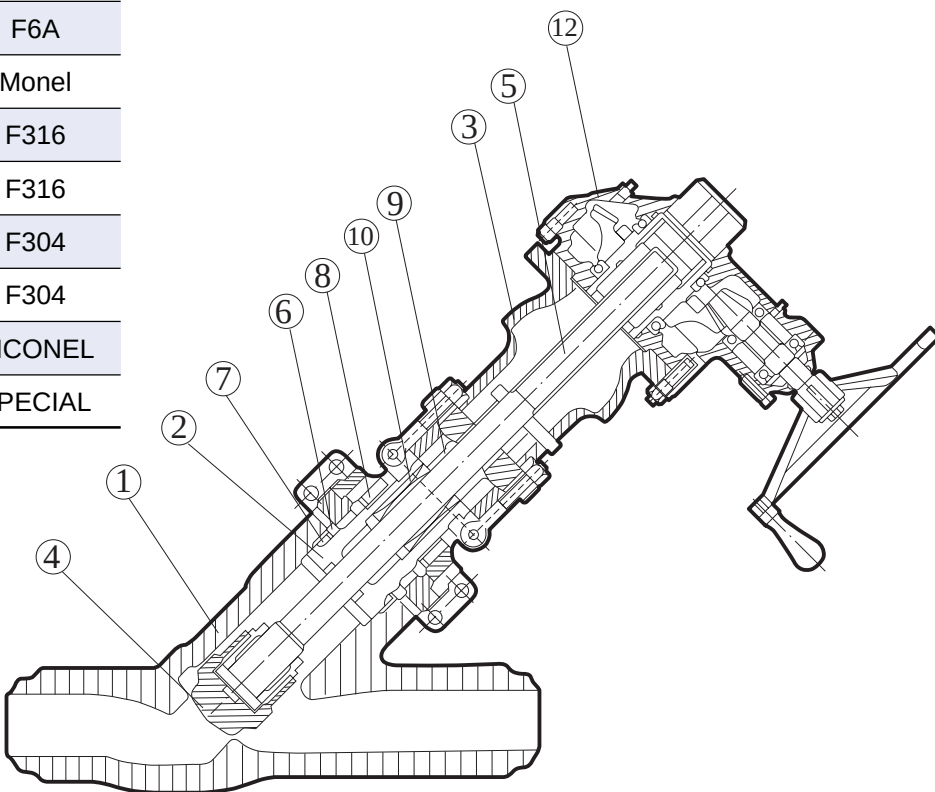
NPS		CLASS	2"	2 1/2"	3"	4"	6"	8"
L (RF)		900 LB	14.50	16.50	15.00	18.00	24.00	29.00
		1500 LB	14.50	16.50	18.50	21.50	27.75	32.75
		2500 LB	17.75	20.00	22.75	26.50	36.00	40.25
L1 (BW)		900 LB	8.50	10.00	12.00	14.00	20.00	26.00
		1500 LB	8.50	10.00	12.00	16.00	22.00	28.00
		2500 LB	11.00	13.00	14.50	18.00	24.00	30.00
L2 (RTJ)		900 LB	14.62	16.62	15.12	18.12	24.12	29.12
		1500 LB	14.62	16.62	18.62	21.62	28.00	33.13
		2500 LB	17.87	20.25	23.00	26.88	36.50	40.87
H (Open)		900 LB	21.65	23.82	26.00	31.42	36.61	49.60
		1500 LB	21.65	23.82	27.20	37.64	49.60	49.72
		2500 LB	22.04	28.35	28.30	48.43	70.51	82.12
W		900 LB	13.78	13.78	15.75	17.72	18.00	24.00
		1500 LB	15.75	15.75	17.72	22.05	24.00	24.00
		2500 LB	15.75	17.72	22.05	12.20	24.00	29.92
Weight	RF	900 LB	172	238	224	312	880	2112
		1500 LB	187	242	297	506	1452	3498
		2500 LB	308	370	543	1364	3300	7040
	BW	900 LB	145	200	191	282	781	1910
		1500 LB	169	222	268	460	1309	3168
		2500 LB	220	260	396	964	2525	5707



Pressure Seal Bonnet Y-Pattern Globe Valve Class 900-2500

Trim Material to API 600

DHV Trim Code	Body Seat Surface Part No.1	Disc Seat Surface Part No.4	Stem Part No.5
1	13CR	13CR	F6A
2	HF	HF	F6A
3	HF	13CR	F6A
4	Monel	Monel	Monel
5	316	316	F316
6	HF	316	F316
7	304	304	F304
8	HF	304	F304
9	INCONEL	INCONEL	INCONEL
0	SPECIAL	SPECIAL	SPECIAL



Standard Material Specifications

Part Name	Carbon Steel	Alloy Steel				Stainless Steel	
2 Bonnet	A216 WCB	A217 WC6	A217 C12	A217 C5		A351 CF8	A351 CF8M
3 Yoke	A216 WCB	A217 WC6	A217 C12	A217 C5		A351 CF8	A351 CF8M
6 Gasket	AISI 316L	AISI 316L	AISI 316L	AISI 316L		AISI 316L	AISI 316L
7 Gasket Retainer	Steel	Steel	Steel	Steel		S.S	S.S
8 Bonnet Nut	A194 2HM	A194 4	A194 4	A194 4		A194 Gr.8M	A194 Gr.8M
9 Gland	A182 F6	A182 F6	A182 F6	A182 F6		A182 F304	A182 F304
10 Gland Packing	Flexible Graphite (Braided and Die-formed Ring) or PTFE						
12 Bevel Gear	Commercial						



Pressure Seal Bonnet Y-Pattern Globe Valves Class 900-2500

Features

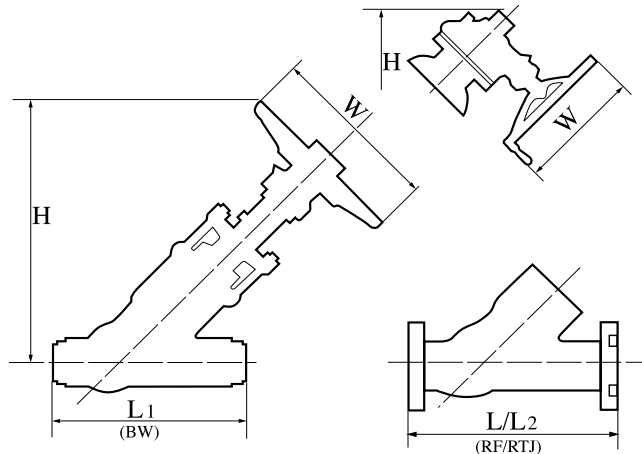
- OS & Y, Rising Stem
- Seat surfaces of body and disc in all size are hard faced with stellite
- Swivel Plug Type Disc
- Class 900 $\geq 6''$, Class 1500 $\geq 4''$, Class 2500 $\geq 3''$ are available with gear operated.
- Anti-Friction Bearings are used on all Valves

Specifications

Basic Design:	ANSI B16.34
Face to Face:	Manufacture standard
End to End:	Manufacture standard
End Flange:	ANSI B16.5
B.W End:	ANSI B16.25
Test and Inspection:	API-598

Manufacturing to NACE MR0175 on request

**Fig. C840B2
C850B2
C860B2**



Dimension (in) and Weights (lb)

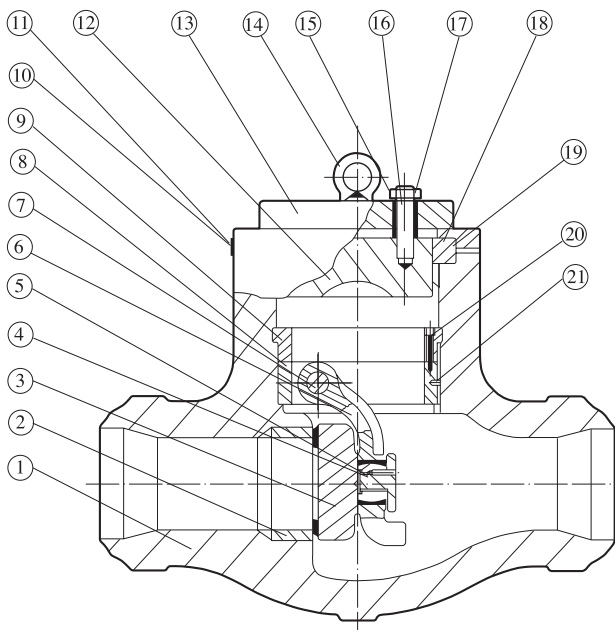
NPS			CLASS	2"	3"	4"	6"	8"	10"	12"
L (RF)			900 LB	18.88	22.88	26.50	32.00	36.50	42.00	47.25
			1500 LB	18.88	22.88	26.50	32.75	40.12	48.12	53.00
			2500 LB	17.75	22.75	26.50	36.00	40.25	50.00	-
L2 (RTJ)			900 LB	19.00	23.00	26.62	32.12	36.62	42.12	47.38
			1500 LB	19.00	23.00	26.62	33.00	40.50	48.50	53.62
			2500 LB	17.88	23.00	26.88	36.50	40.88	50.88	-
L1 (BW)			900 LB	18.88	22.88	26.50	32.00	36.50	42.00	47.25
			1500 LB	18.88	22.88	26.50	32.75	40.12	48.12	53.00
			2500 LB	17.75	22.75	26.50	36.00	40.25	50.00	-
H (Open)			900 LB	22.25	25.62	29.25	34.50	43.50	54.38	66.50
			1500 LB	22.25	25.62	27.25	38.00	54.50	61.75	70.12
			2500 LB	25.75	28.75	32.50	42.62	53.38	63.38	-
W			900 LB	13.75	15.75	17.75	24.00	24.00	30.00	30.00
			1500 LB	13.75	15.75	24.00	24.00	30.00	30.00	30.00
			2500 LB	15.75	19.62	18.12	30.00	24.00	30.00	-
Weight	RF	lb	900 LB	200	275	440	1235	2250	3500	5950
			1500 LB	230	310	575	1520	2845	4320	8400
			2500 LB	285	440	880	1875	3130	5620	-
	BW	lb	900 LB	145	200	340	1060	1930	3050	5070
			1500 LB	165	220	440	1235	2380	3525	7165
			2500 LB	200	310	670	1500	2665	4500	-



Pressure Seal Swing Check Valve Class 900-2500

Trim Material to API 600

DHV Trim Code	Seat Ring Surface Part No.2	Wedge Seat Surface Part No.3	Hinge Pin Part No.7
1	13CR	13CR	F6A
2	HF	HF	F6A
3	HF	13CR	F6A
4	Monel	Monel	Monel
5	316	316	F316
6	HF	316	F316
7	304	304	F304
8	HF	304	F304
9	INCONEL	INCONEL	INCONEL
0	SPECIAL	SPECIAL	SPECIAL



Standard Material Specifications

Part Name	Carbon Steel	Alloy Steel				Stainless Steel	
1 Body	A216 WCB	A217 WC6	A217 C12	A217 C5	A351 CF8	A351 CF8M	
4 Disc Nut	AISI 410	AISI 410	AISI 410	AISI 410	AISI 304	AISI 316L	
5 Set Screw	AISI 410	AISI 410	AISI 410	AISI 410	AISI 304	AISI 316L	
6 Hinge	A216 WCB	A217 WC6	A217 C12	A217C5	A351 CF8	A351CF8M	
8 Holder	AISI 410	AISI 410	AISI 410	AISI 410	AISI 304	AISI 316	
9 Back Ring	AISI 410	AISI 410	AISI 410	AISI 410	AISI 304	AISI 316	
10 Nameplate	AISI 304						
11 Rivet	AISI 304						
12 Supporter	Steel	Steel	Steel	Steel	S.S	S.S	
13 Cover	A216 WCB	A217 WC6	A217WC9	A217C5	A351 CF8	A351CF8M	
14 Hook Screw	Steel	Steel	Steel	Steel	Steel	Steel	
15 Nut	A194 2HM	A194 4	A194 4	A194 4	A194 Gr.8M	A194 Gr.8M	
16 Bolt	A193 B7M	A193 B16	A193 B16	A193 B16	A193 B8M	A193 B8M	
17 Washer	Steel	Steel	Steel	Steel	Steel	Steel	
18 Split Ring	Steel	Steel	Steel	Steel	S.S	S.S	
19 Seal Ring	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L	
20 Set Screw	Steel	Steel	Steel	Steel	S.S	S.S	
21 Screw	Steel	Steel	Steel	Steel	S.S	S.S	



Pressure Seal Swing Check Valve Class 900-2500

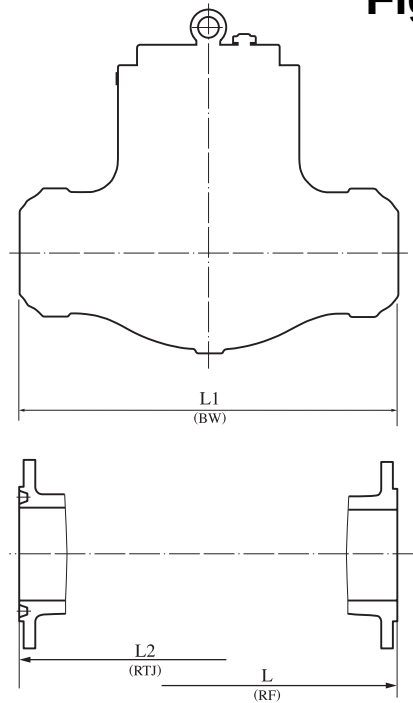
Features:

- Pressure seal cover.
- Seat Surfaces of body and disc in all size are hard faced with stellite.
- Body seat ring in all sizes is seal-welded on its body

Specifications

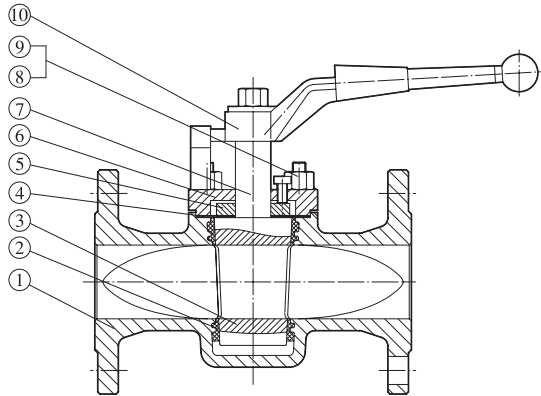
Basic Design:	ANSI B16.34
Face to Face:	ANSI B16.10
End to End:	ANSI B16.10
End Flange:	ANSI B16.5
B.W End:	ANSI B16.25
Test and Inspection:	API-598
Manufacturing to NACE MR0175 on request	

**Fig. C740B2-Go
C750B2-Go
C760B2-Go**

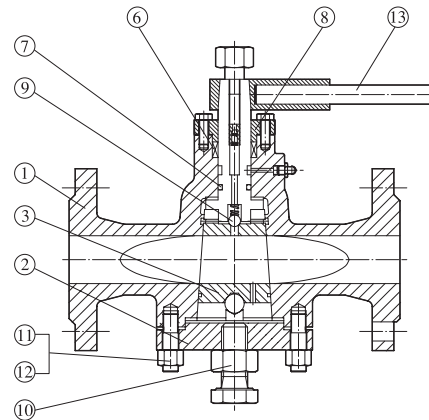


Dimensions (in) and Weights (lb)

NPS	CLASS	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"
L (RF)	900 LB	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00	40.50	44.50
	1500 LB	14.50	16.50	18.50	21.50	27.75	32.75	39.00	44.50	49.50	54.50
	2500 LB	17.75	20.00	22.75	26.50	36.00	40.25	50.00	56.00	-	-
L1 (BW)	900 LB	8.50	10.00	12.00	14.00	20.00	26.00	31.00	36.00	39.00	43.00
	1500 LB	8.50	10.00	12.00	16.00	22.00	28.00	34.00	39.00	42.00	47.00
	2500 LB	11.00	13.00	14.50	18.00	24.00	30.00	36.00	41.00	-	-
L2 (RTJ)	900 LB	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.88	44.88
	1500 LB	14.62	16.62	18.62	21.61	28.00	33.11	39.37	45.12	50.24	55.39
	2500 LB	17.87	20.25	22.99	26.89	36.50	40.87	50.87	56.89	-	-
H	900 LB	7.40	8.27	8.27	8.50	14.49	20.12	24.17	27.76	29.00	29.76
	1500 LB	10.43	10.43	10.63	14.57	18.70	22.44	24.80	30.31	31.30	32.44
	2500 LB	11.02	12.00	12.20	14.57	19.09	21.42	27.95	31.50	35.63	37.17
Weight	RF	900 LB	110	143	136	273	563	1129	2068	3190	4035
		1500 LB	132	165	161	286	735	1298	2255	3360	4079
		2500 LB	194	253	297	473	1210	1980	3520	5060	-
	BW	900 LB	77	101	97	172	394	847	1551	2486	3223
		1500 LB	92	117	112	189	506	1012	1573	2530	3058
		2500 LB	194	198	209	352	847	1408	2640	3795	-



Soft Seat Plug Valve



Metal Seat Plug Valve

Standard Material Specifications (Soft Seat)

NO.	Part Name	Carbon Steel to ASTM	Stainless Steel to ASTM	Low Temp Carbon Steel to ASTM	Low Temp Stainless Steel to ASTM
1	Body	A216 WCB	A351 CF8 / CF8M	A352 LCB /LCC	A351 CF3 / CF3M
2	Sleeve (seat)	PTFE / R-PTFE			
3	Plug	A351 CF8	A351 CF8 / CF8M	A351 CF8	A351 CF3 / CF3M
4	Gasket	Flexible Graphite+Stainless Steel PTFE			
5	Plate	A182 F6a	A182 F304 / F316	A351 CF8	A182 F304L / F316L
6	Cover	A216 WCB	A351CF8 / CF8M	A352 LCB /LCC	A351 CF3 / CF3M
7	Bolt	A193 B7 /B7M	A193 B8 /B8M	A320 L7 /L7M	A193 B8 /B8M
8	Bolt	A193 B7 /B7M	A193 B8 /B8M	A320 L7 /L7M	A193 B8 /B8M
9	Nut	A194 2H/2HM	A194 8 / 8M	A194 7 / 7M	A194 8 / 8M
10	Lever	Carbon Steel			

Standard Material Specifications (Metal Seat)

NO.	Part Name	Carbon Steel to ASTM	Stainless Steel to ASTM	Low Temp Carbon Steel to ASTM	Low Temp Stainless Steel to ASTM
1	Body	A216 WCB	A351 CF8 / CF8M	A352 LCB /LCC	A351 CF3 / CF3M
2	Cover	A216 WCB	A351 CF8 / CF8M	A352 LCB / LCC	A351 CF3 / CF3M
3	Plug	A182 F6a	A351 CF8 / CF8M	A351 CF8	A351 CF3 / CF3M
4	Gasket	Flexible Graphite+Stainless Steel PTFE			
5	Stem	A182 F6a	A182 F304 / F316	A351 CF8	A182 F304L / F316L
6	Packing	Flexible Graphite / PTFE			
7	O-Ring	NBR / Viton			
8	Gland	A216 WCB	A351 CF8 / CF8M	A216 WCB	A351 CF8 / CF8M
9	Check Ball	A182 F6a	A182 F304 / F316	A182 F6a	A182 F304L / F316L
10	Adjusting Bolt	A193 B7 /B7M	A193 B8 /B8M	A320 L7 /L7M	A193 B8 /B8M
11	Bolt	A193 B7 / B7M	A193 B8 / B8M	A320 L7 / L7M	A193 B8 / B8M
12	Nut	A194 2H / 2HM	A194 8 / 8M	A194 7 / 7M	A194 8 / 8M
13	Lever	Carbon Steel			

• Lantern ring shall be furnished only if specified in purchase order.



Class 150-600 Soft Seat Plug Valve

Sleeve type soft sealing

Features

- Bolted Cover
- Flanged Ends or Buttwelding Ends
- Soft Seat

Specifications

Basic Design: **API 6D, ANSI B 16.34**

Face to Face: **API 6D, ANSI B 16.10**

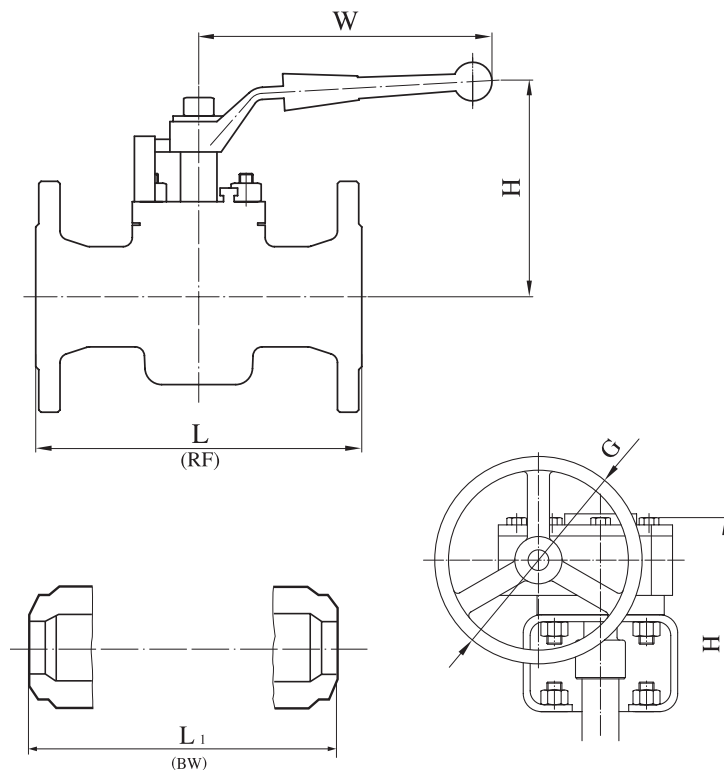
End to End: **API 6D, ANSI B 16.10**

End Flange: **ANSI B 16.5**

B.W End: **ANSI B 16.25**

Test and Inspection: **API 6D, API 598**

Manufacturing to NACE MR0175 on request



Dimensions (in)

NPS	CLASS	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
L (RF)	150LB	4.25	4.61	5.00	5.51	6.50	7.01	7.48	7.99	9.02	10.00	10.51	11.50	12.99	14.02	15.00	30.00	34.02	35.98	42.01
	300LB	5.51	5.98	6.50	7.01	7.48	8.50	9.49	11.14	12.01	15.00	15.87	16.50	17.99	19.76	30.00	32.99	36.98	39.02	45.00
	600LB	6.50	7.48	8.50	9.02	9.49	11.50	12.99	14.02	17.01	20.00	22.01	25.98	30.98	32.99	35.00	39.02	42.99	47.01	55.00
L1 (BW)	150LB	4.33	4.53	4.53	5.31	5.51	5.91	6.50	7.09	14.96	18.11	20.47	22.83	24.41	26.77	29.92	34.65	41.34	53.15	62.99
	300LB	5.98	7.01	7.99	8.50	9.02	10.51	12.01	12.99	14.02	15.00	17.99	20.51	22.01	25.00	30.00	32.99	35.98	39.02	45.00
	600LB	6.50	7.48	8.50	9.02	9.49	11.50	12.99	14.02	17.01	20.00	22.01	25.98	30.98	32.99	35.00	39.02	42.99	47.01	55.00
H	150LB	4.33	4.53	4.53	5.31	5.51	5.91	6.50	7.09	14.96	18.11	20.47	22.83	24.41	26.77	29.92	34.65	41.34	53.15	62.99
	300LB	4.33	4.53	4.53	5.31	5.51	5.91	6.50	7.09	14.96	18.11	20.47	22.83	24.41	26.77	29.92	34.65	41.34	53.15	62.99
	600LB	4.33	4.53	4.53	5.31	5.51	5.91	6.50	7.09	14.96	18.11	20.47	22.83	24.41	26.77	29.92	34.65	41.34	53.15	62.99
W	150LB	6.89	6.89	6.89	8.66	11.02	12.01	13.78	15.94	-	-	-	-	-	-	-	-	-	-	-
	300LB	6.89	6.89	6.89	8.66	11.02	12.01	13.78	15.94	-	-	-	-	-	-	-	-	-	-	-
	600LB	6.89	6.89	6.89	8.66	11.02	12.01	13.78	15.94	-	-	-	-	-	-	-	-	-	-	-
G	150LB	-	-	-	-	-	-	-	-	11.81	11.81	12.60	12.60	13.78	14.96	17.72	19.69	23.62	29.53	29.53
	300LB	-	-	-	-	-	-	-	-	11.81	11.81	12.60	12.60	13.78	14.96	17.72	19.69	23.62	29.53	29.53
	600LB	-	-	-	-	-	-	-	-	11.81	11.81	12.60	12.60	13.78	14.96	17.72	19.69	23.62	29.53	29.53



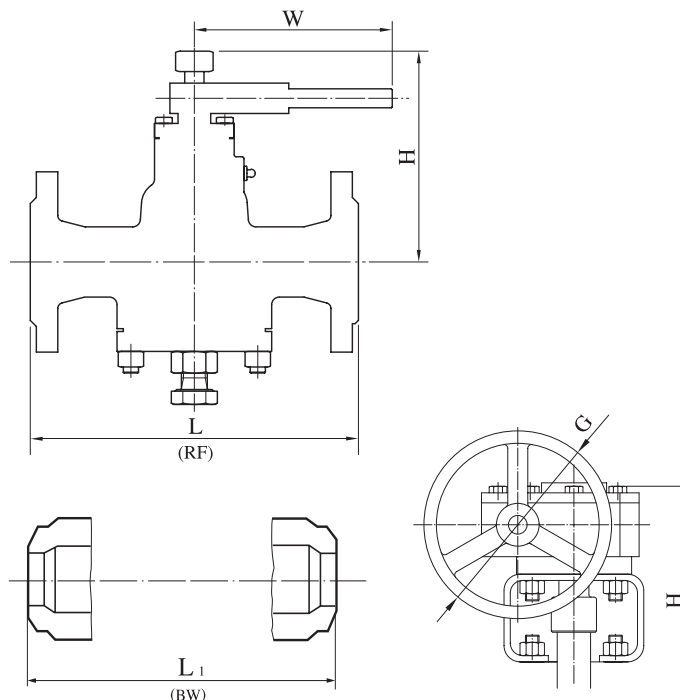
Class 150-900 Metal Seat Plug Valve Inverted pressure balance lubricated

Features

- Bolted Cover
- Flanged Ends or Buttwelding Ends
- Metal Seat

Specifications

Basic Design:	API 6D, ANSI B 16.34
Face to Face:	API 6D, ANSI B 16.10
End to End:	API 6D, ANSI B 16.10
End Flange:	ANSI B 16.5
B.W End:	ANSI B 16.25
Test and Inspection:	API 6D, API 598
Manufacturing to NACE MR0175 on request	



Dimensions (in)

NPS	CLASS	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
L (RF)	150LB	4.25	4.61	5.00	5.51	6.50	7.01	7.48	7.99	9.02	10.00	10.51	11.50	12.99	14.02	15.00	30.00	34.02	35.98	42.01
	300LB	5.51	5.98	6.50	7.01	7.48	8.50	9.49	11.14	12.01	15.00	15.87	16.50	17.99	19.76	30.00	32.99	35.98	39.02	45.00
	600LB	6.50	7.48	8.50	9.02	9.49	11.50	12.99	14.02	17.01	20.00	22.01	25.98	30.98	32.99	35.00	38.98	42.99	47.01	55.00
	900LB	9.02	9.02	10.00	10.98	12.01	14.49	16.50	15.00	17.99	22.01	24.02	29.02	32.99	37.99	40.51	44.49	47.99	52.01	60.98
L1 (BW)	150LB	5.98	7.01	7.99	8.50	9.02	10.51	12.01	12.99	14.02	15.00	15.51	17.99	20.98	24.02	27.01	30.00	34.02	35.98	42.01
	300LB	5.98	7.01	7.99	8.50	9.02	10.51	12.01	12.99	14.02	15.00	17.99	20.51	22.01	25.00	30.00	32.99	35.98	39.02	45.00
	600LB	6.50	7.48	8.50	9.02	9.49	11.50	12.99	14.02	17.01	20.00	22.01	25.98	30.98	32.99	35.00	38.98	42.99	47.01	55.00
	900LB	9.02	9.02	10.00	10.98	12.01	14.49	16.50	15.00	17.99	22.01	24.02	29.02	32.99	37.99	40.51	44.49	47.99	52.01	60.98
H	150LB	7.09	7.09	7.28	7.87	8.27	8.46	9.84	10.63	11.81	13.39	14.37	15.75	17.72	20.08	23.23	27.56	32.28	37.40	43.31
	300LB	7.09	7.09	7.28	7.87	8.27	8.46	9.84	10.63	11.81	13.39	14.37	15.75	17.72	20.08	23.23	27.56	32.28	37.40	43.31
	600LB	7.09	7.09	7.28	7.87	8.27	8.46	9.84	10.63	11.81	13.39	14.37	15.75	17.72	20.08	23.23	27.56	32.28	37.40	43.31
	900LB	7.09	7.09	7.28	7.87	8.27	8.46	9.84	10.63	11.81	13.39	14.37	15.75	17.72	20.08	23.23	27.56	32.28	37.40	43.31
W	150LB	15.75	15.75	19.69	19.69	23.62	23.62	32.28	32.28	-	-	-	-	-	-	-	-	-	-	-
	300LB	15.75	15.75	19.69	19.69	23.62	23.62	33.46	32.28	-	-	-	-	-	-	-	-	-	-	-
	600LB	15.75	15.75	19.69	19.69	23.62	23.62	32.28	32.28	-	-	-	-	-	-	-	-	-	-	-
	900LB	15.75	15.75	19.69	19.69	23.62	23.62	32.28	32.28	-	-	-	-	-	-	-	-	-	-	-
G	150LB	-	-	-	-	-	-	-	-	11.81	11.81	12.60	12.60	13.78	14.96	14.96	19.69	23.62	29.53	29.53
	300LB	-	-	-	-	-	-	-	-	11.81	11.81	12.60	12.60	13.78	14.96	14.96	19.69	23.62	29.53	29.53
	600LB	-	-	-	-	-	-	-	-	11.81	11.81	12.60	12.60	13.78	14.96	14.96	19.69	23.62	29.53	29.53
	900LB	-	-	-	-	-	-	-	-	11.81	11.81	12.60	12.60	13.78	14.96	14.96	19.69	23.62	29.53	29.53



Twin Seal Plug Valve

Features

DHV Twin Seal Valve is a non-lubricated, resilient seal, plug-type valve which has a mechanical means of freeing the plug before it is rotated from the closed to the open position. In opening the valve, the plug is raised, thus retracting the seating segments or slips through their tapered dovetail connections. Only after the slips are fully retracted perpendicularly from the body seat is the plug rotated to the open position.

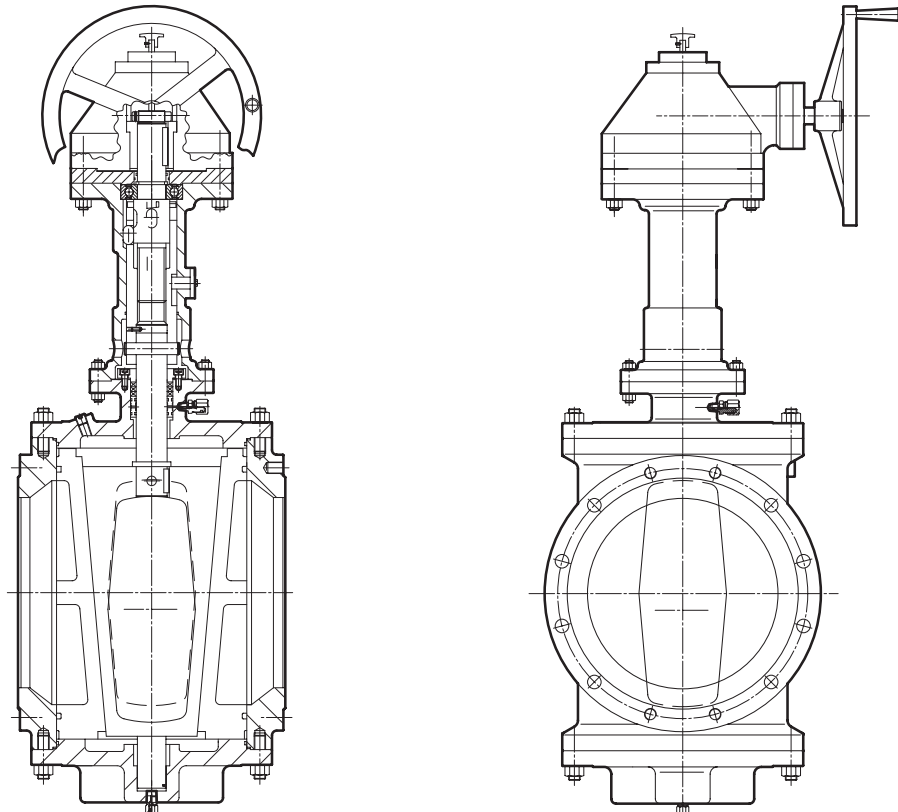
DHV Twin Seal valves hold bubble-tight in liquid service, it is important to prevent trapped body pressure from exceeding the working pressure of the valve. Automatic bleed valve system or thermal relief systems are recommended to prevent pressure build up in the body cavity.

Specifications

Size: **2"-24"**
Class: **150-300LB**
Basic Design: **API-6D**
Face to Face: **API-6D, ANSI B16.10**
End Flange: **ANSI B16.5**
Test and Inspection: **API-598**
Manufacturing to NACE MR0175 on request

Material for main parts

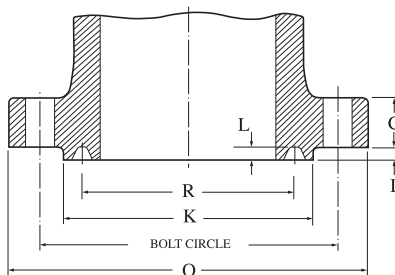
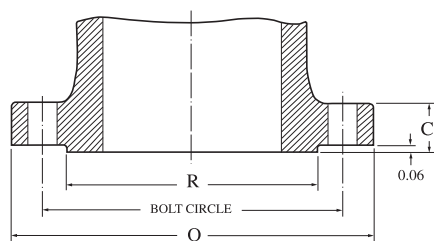
1	Body	A216 WCB	A352 LCB	A352 LCC	A351 CF8	A351 CF8M
2	Plug	A216 WCB	A352 LCB	A352 LCC	A351 CF8	A351 CF8M
3	Stem	13CR	13CR	13CR	304SS	316SS
4	O-ring	VITON/NBR/FPM				



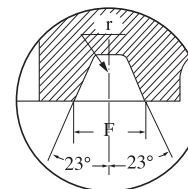


Dimension of Steel Flanges

ANSI B16.5 B16.47



DETAIL OF GROOVE



Dimensions in inches

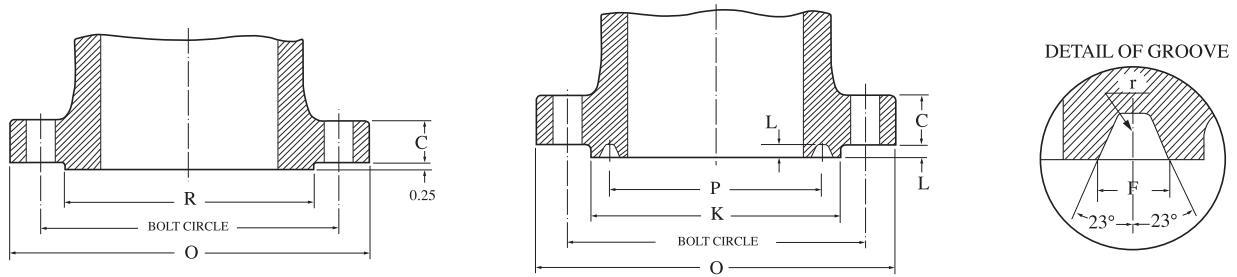
Class	Nominal Size	Outside Diameter of Flange O	Thickness of Flange C	Diameter of Raised Circle R	Drilling			Ring-Joint					
					Diameter of Bolt Circle	Number of Bolts	Diameter of Bolt Holes	Facing Diameter K	Pitch Diameter P	Depth of Groove L	Width of Groove F	Radius at Bottom r	Ring No.
Class 150	2	6.00	0.75	3.62	4.75	4	0.75	4.00	3.250	0.250	0.344	0.03	R22
	2 1/2	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	-	-	-	-	-	-
	28	36.50	2.81	31.50	34.00	28	1.38	-	-	-	-	-	-
	30	38.75	2.94	33.75	36.00	28	1.38	-	-	-	-	-	-
	32	41.75	3.19	36.00	38.50	28	1.62	-	-	-	-	-	-
	34	43.75	3.25	38.00	40.50	32	1.62	-	-	-	-	-	-
	36	46.00	3.56	40.25	42.75	32	1.62	-	-	-	-	-	-
Class 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 1/2	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

- Figure for size 24-inch, 20-inch and smaller conform to ANSI B16.5
- Figure for size 22-inch, 26-inch and larger conform to ANSI B16.47



Dimension of Steel Flanges

ANSI B16.5 B16.47



Dimensions in inches

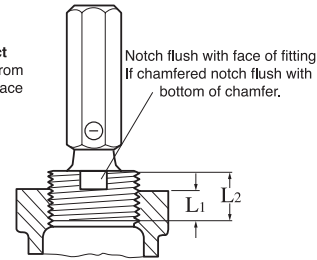
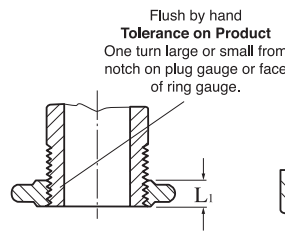
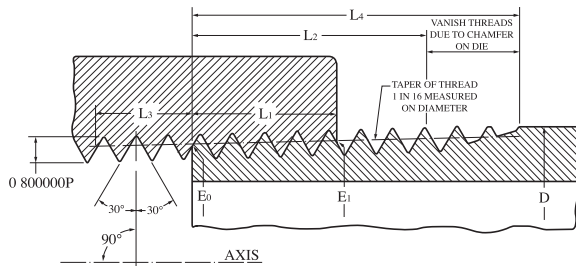
Class	Nominal Size	Outside Diameter of Flange O	Thickness of Flange C	Diameter of Raised Circle R	Drilling			Facing Diameter K	Pitch Diameter P	Ring-Joint			
					Diameter of Bolt Circle	Number of Bolts	Diameter of Bolt Holes			Depth of Groove L	Width of Groove F	Radius at Bottom r	Ring No.
Class 600	2	6.50	1.00	3.62	5.00	8	0.75	4.25	3.250	0.312	0.469	0.03	R23
	2½	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	0.656	0.06	R77
Class 900	2	8.50	1.50	3.62	6.50	8	1.00	4.88	3.750	0.312	0.469	0.03	R24
	2½	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	21.000	0.500	0.781	0.06	R70
	20	33.75	4.25	23.00	29.50	20	2.12	25.5	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
Class 1500	2	8.50	1.50	3.62	6.50	8	1.00	4.88	3.750	0.312	0.469	0.03	R24
	2½	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	26.50	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

- Figure for size 24-inch, 20-inch and smaller conform to ANSI B16.5
- Figure for size 22-inch, 26-inch and larger conform to ANSI B16.47



Pipe Threads (NPT)

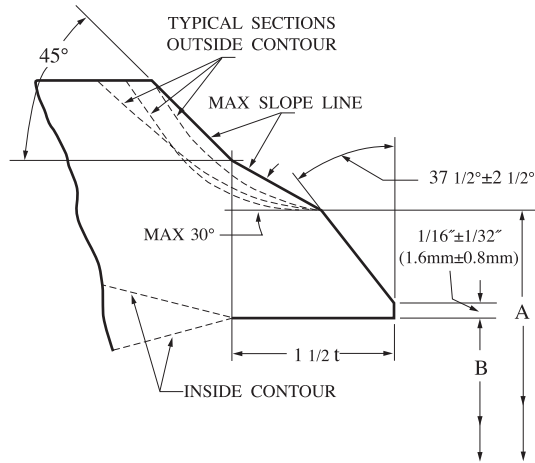
ANSI B1.20.1



Basic Dimensions of USA Standard Taper Pipe Thread, NPT

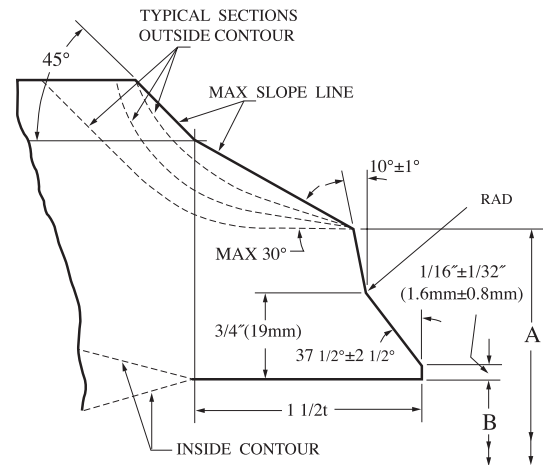
Nominal Pipe Size	Outside Diameter		Threads Per inch n	Pitch of Thread		Pith Diameter,at Beginning of External Thread		Handtight Engagement			
	of Pipe D			P		E		Length,L,		Diametar,E,	
	inches	mm		inches	mm	inches	mm	inches	mm	inches	mm
1/2	0.840	21.336	14	0.07143	1.81429	0.75843	19.264	0.320	8.128	0.77843	19.772
1	1.315	33.401	11.5	0.08696	2.20870	1.21363	30.826	0.400	10.160	1.23863	31.461
1¼	1.660	42.164	11.5	0.08696	2.20870	1.55713	39.551	0.420	10.668	1.58338	40.218
1½	1.900	48.260	11.5	0.08696	2.20870	1.79609	45.621	0.420	10.668	1.82234	46.287
2	2.375	60.325	11.5	0.08696	2.20870	2.26902	57.633	0.436	11.074	2.29627	58.325
2½	2.875	73.025	8	0.12500	3.17500	2.71953	69.076	0.682	17.323	2.76216	70.159
3	3.500	88.900	8	0.12500	3.17500	3.34062	84.852	0.766	19.456	3.38850	86.068
3½	4.000	101.600	8	0.12500	3.17500	3.83750	97.473	0.821	20.853	3.88881	98.776
4	4.500	114.300	8	0.12500	3.17500	4.33438	110.093	0.844	21.438	4.38712	111.433
5	5.563	141.300	8	0.12500	3.17500	5.39073	136.925	0.937	23.800	5.44929	138.412
6	6.625	168.275	8	0.12500	3.17500	6.44609	163.731	0.958	24.333	6.50597	165.252
8	8.625	219.075	8	0.12500	3.17500	8.43359	214.213	1.063	27.000	8.50003	215.901
10	10.750	273.050	8	0.12500	3.17500	10.54531	267.851	1.210	30.734	10.62094	269.772
12	12.750	323.850	8	0.12500	3.17500	12.53281	318.333	1.360	34.544	12.61781	320.492
14	14.000	355.600	8	0.12500	3.17500	13.77500	349.885	1.562	39.675	13.87262	352.365
16	16.000	406.400	8	0.12500	3.17500	15.76250	400.368	1.812	46.025	15.87575	403.244
18	18.000	457.200	8	0.12500	3.17500	17.75000	450.850	2.000	50.800	17.87500	454.025
20	20.000	508.000	8	0.12500	3.17500	19.73750	501.333	2.125	53.975	19.87031	504.706
24	24.000	609.600	8	0.12500	3.17500	23.71250	602.298	2.375	60.325	23.86094	606.068

Nominal Pipe size	Length of Effective External Thread L ₂		Wrench makeup length For Internal Thread L ₃		Overall Length for External Threads L ₄		Height of Thread h		Basic Minor Diameter at Small End of Pipe k	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
1/2	0.5337	13.556	0.2143	5.443	0.7815	19.850	0.05714	1.451	0.7013	17.813
1	0.6828	17.343	0.2609	6.627	0.9845	25.006	0.06957	1.767	1.1441	29.060
1 1/4	0.7068	17.953	0.2609	6.627	1.0085	25.616	0.06957	1.767	1.4876	37.785
1 1/2	0.7235	18.377	0.2609	6.627	1.0252	26.040	0.06957	1.767	1.7265	43.853
2	0.7565	19.215	0.2609	6.627	1.0582	26.878	0.06957	1.767	2.1995	55.867
2 1/2	1.1375	28.893	0.2500	6.350	1.5712	39.908	0.10000	2.540	2.6195	66.535
3	1.2000	30.480	0.2500	6.350	1.6337	41.496	0.10000	2.540	3.2406	82.311
3 1/2	1.2500	31.750	0.2500	6.350	1.6837	42.766	0.10000	2.540	3.7375	94.933
4	1.3000	33.020	0.2500	6.350	1.7337	44.036	0.10000	2.540	4.2344	107.554
5	1.4063	35.720	0.2500	6.350	1.8400	46.736	0.10000	2.540	5.2907	134.384
6	1.5125	38.418	0.2500	6.350	1.9462	49.433	0.10000	2.540	6.3461	161.191
8	1.7125	43.498	0.2500	6.350	2.1462	54.513	0.10000	2.540	8.3336	21.673
10	1.9250	48.895	0.2500	6.350	2.3587	59.911	0.10000	2.540	10.4453	265.311
12	2.1250	53.975	0.2500	6.350	2.5587	64.991	0.10000	2.540	12.4328	315.793
14	2.2500	57.150	0.2500	6.350	2.6837	68.166	0.10000	2.540	13.6750	347.345
16	2.4500	62.230	0.2500	6.350	2.8837	73.246	0.10000	2.540	15.6625	397.828
18	2.6500	67.310	0.2500	6.350	3.0837	78.326	0.10000	2.540	17.6500	448.310
20	2.8500	72.390	0.2500	6.350	3.2837	83.406	0.10000	2.540	19.6375	498.793
24	3.2500	82.550	0.2500	6.350	3.6837	93.566	0.10000	2.540	23.6125	599.758



Plain Bevel

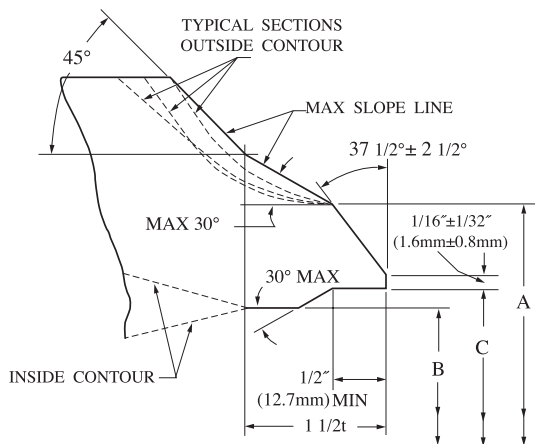
Used when nominal pipe wall thickness is $7/8$ " (22.23mm) or less.



Compound Bevel

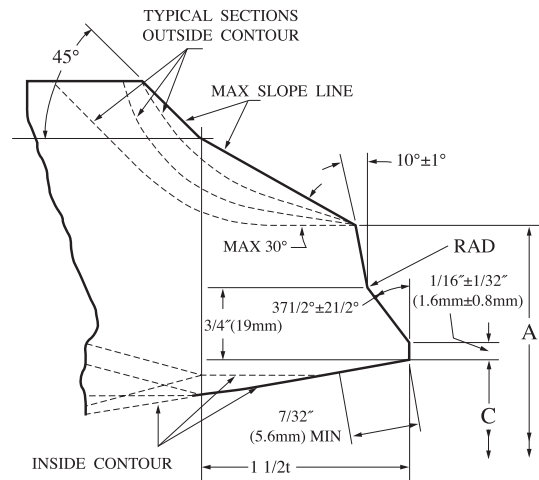
Used when nominal pipe wall thickness is greater than $7/8$ " (22.23mm)

WELDING END DETAILS FOR CAST COMPONENTS FOR USE WITHOUT BACKING RING OR WITH SPLIT BACKING RING



Plain Bevel

Used when nominal pipe wall thickness is $7/8$ " (22.23mm) or less.



Compound Bevel

Used when nominal pipe wall thickness is greater than $7/8$ " (22.23mm)

WELDING END DETAILS FOR CAST COMPONENTS FOR USE WITH CONTINUOUS RECTANGULAR OR TAPERED BACKING RING



Butt-Welding Ends

ANSI B16.25

Dimensions of Butt-Welding Ends

Nominal Pipe Size	Schedule Number or Wall	Outside Diameter (Cast Steel Valves)		Nominal Inside Diameter		Machined Inside Diameter		Nominal Wall Thickness	
		A		B		C		t	
		inches	mm	inches	mm	inches	mm	inches	mm
3	xxs	3 19/32	91.28	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	139.73	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 25/32	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	80	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	285.34	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	325.48	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	404.77	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



Terms & Conditions

Quotation

All prices are F.O.B. shipping point unless otherwise agreed or specified in the quotation. Prices are valid only for the duration indicated in the quotation and are subject to change without notice. Prices also do not include any federal, state or local taxes or other government charges.

Design changes

We reserve the right to institute changes in material ,design and specification without notice.

Cancellation or changes

Orders placed with us are not subject to cancellation or changes without our prior consent. A cancellation charge or a price adjustment will be applicable unless otherwise agreed.

Delivery

We will not be responsible for delays or failure to deliver due to causes beyond our control. Delivery of material to a common carrier shall be considered delivery to the Buyer .Claims for loss or any damage to material in transit shall be filed by the Buyer direct with the carrier. Claims for any shortage, corrections or deductions must be made in writing within 10 days after receipt of goods.

Return of goods

Any return of goods will not be accepted without our prior authorization. Return goods should be of our manufacture, in clean and salable condition. A minimum charge of 35 percent of the invoice price will be made to cover the cost of handling and reconditioning. The freight for return goods shall be prepaid by Buyer.

Limited warranty

DHV Industries, Inc. warrants to the original Buyer, not any third party, for products of our manufacture, for a period of one year after date of shipment, that its products will be free from defects in materials and workmanship under proper and normal use.

Any claim for defect goods should be by written notice to DHV Industries, Inc. immediately upon discovery. NO warranty shall apply to our product which has been modified or changed in design or function, misused, or improperly maintained. DHV Industries, Inc. shall be able to inspect claimed defects at original buyer's facility to determine its obligation. Without authorization of DHV Industries, Inc. any repair labor or material is not allowed. No goods may be returned without permission from DHV Industries, Inc.

This warranty does not extend beyond original sale price and does not extend to any claim for labor. Consequential damages, losses, whether directly or indirectly suffered or in any other manner relating to the defects.

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