



WILLIAMS VALVE

CAST GATE, GLOBE & CHECK VALVES

BOLTED BONNET HEAVY WALL



*“Our goal is to produce
high quality valves,
fully traceable, at prices
competitive in the global
marketplace.”*

A MESSAGE FROM THE PRESIDENT

Founded in 1918, William E. Williams Valve Corporation has continuously produced high quality valves for industrial and commercial applications including: oil refining, chemical processing, power generation, mining, paper, pharmaceutical processes, as well as, commercial and military shipbuilding.

Product improvements exceeding the latest environmental standards are constantly being implemented. Recently, we initiated a totally contained bonnet gasket design, which, with our standard stem packing, exceeds most fugitive emission requirements.

Williams' valves are designed, manufactured and tested to meet and exceed all applicable specifications to which they are constructed. Our goal is to produce high quality valves, fully traceable, at prices competitive in the global marketplace deliveries to match the “just in time” requirements of today's business world. In order to accomplish this goal, we maintain large inventories of finished products to support our distribution network.

All products are completely traceable to chemical, physical and pressure test records. Additional non-destructive testing is offered when specified.

We have years of experience working on special requirements: electric, hydraulic or pneumatic automation, gear operators emergency shut-off valves, soft seats and discs, by-pass valve installations and extended bonnets.

We believe that William E. Williams has a record of quality equal to or better than any in the valve industry. We are a privately owned company whose accomplishments have been achieved by the dedication and commitment of our employees to provide a standard of excellence in all our products for you, our present and future customers.

This condensed catalog is intended to provide an overview of our products. Detailed drawings are available in several formats. We appreciate your business and want to be your primary valve source.

Sincerely,



Nick Sherman
President



WILLIAMS PROFILE

Rugged Reliable Valves since 1918

LOCATIONS:

- HEAD OFFICE: Long Island City, NY
- TEXAS BRANCH: Houston, TX
- CARBON STEEL GGC & BALL: Dafeng, China
- STAINLESS & ALLOY GGC: Busan, Korea
- DOMESTIC & NAVY PRODUCTS: LIC, NY

PRODUCT LINE:

- Cast & Forged Steel Gate, Globe, & Check Valves
- Forged Trunnion Mounted Ball Valves
- Marine Valves for Commercial Vessels
- 100% made in the USA valves for US Navy
- API-6D Pipeline Slab and Expanding Gate Valves
- Cast & Forged Stainless and Alloy Steel Valves for corrosive service
- Pressure Seal Bonneted Valves for power and high-pressure applications
- Emergency Shutoff Valves for Tanks and Terminals
- Cryogenic Service Valves with extended bonnets

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MANUFACTURING SITE



BOLTED BONNET HEAVY WALL PRODUCT RANGE



CAST STEEL GATE, GLOBE, AND CHECK VALVES

VALVE TYPE	SIZE (NPS)																			
	ASME CLASS	2	4	5	6	8	10	12	14	16	18	20	24	26	28	30	32	36	42	48
GATE	150	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	300	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	600	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
	900	•	•	•	•	•	•	•	•	•	•	•								
	1500	•	•	•	•	•	•	•	•	•										
	2500	•	•	•	•	•	•	•	•	•										
GLOBE	150	•	•	•	•	•	•	•	•	•	•	•	•							
	300	•	•	•	•	•	•	•	•	•	•	•								
	600	•	•	•	•	•	•	•												
	900	•	•	•	•	•	•													
	1500	•	•	•	•	•	•													
	2500	•	•	•	•	•	•													
CHECK	150	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	300	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	600	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	900	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1500	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	2500	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•



Valves comply with API-600



Valves comply with API-623



Valves comply with API-594

GASKET MATERIALS

VALVE TYPE / ASME CLASS	CL150	CL300	CL600 & ABOVE
Gate	Oval Steel / Graphite	Spiral Wound Stainless Steel & Graphite	Ring Type Gasket
Globe	Spiral Wound Stainless Steel & Graphite	Spiral Wound Stainless Steel & Graphite	Ring Type Gasket
Check	Spiral Wound Stainless Steel & Graphite	Spiral Wound Stainless Steel & Graphite	Ring Type Gasket

BODY MATERIALS

ASTM GRADE	DESIGNATION	MIN. TEMP		MAX. TEMP	
		DEG °F	DEG °C	DEG °F	DEG °C
A216 WCB	Carbon Steel	-20	-29	800	427
A217 WC6	11/4Cr-1/2Mo	-20	29	1100	593
A217 WC9	21/4Cr-1Mo	-20	-29	1100	593
A217 C5	5Cr-1/2Mo	-20	-29	1200	649
A217 C12	9Cr-1Mo	-20	-29	1200	649
A352 LCB	Low Temp Carbon	-50	-46	650	343
A352 LCC	Low Temp Carbon	-50	-46	700	371
A351 CF8M	18Cr-9Ni-2Mo	-425	-254	1500	816
A351 CF3M	18Cr-9Ni-2Mo	-425	-254	850	454

DISCLAIMER:

These charts are for reference only, Williams Valve cannot be held liable for any damages incurred due to the use of these tables. Temperatures shown must be analysed in conjunction with ASTM P/T charts and manufacturers recommendations for each valve type.

HOW TO ORDER



WILLIAMS FIGURE NUMBERS

A	B					C		D		E		F		G		H		
SIZE	CLASS AND VALVE TYPE					ENDS		TRIM		NACE		BODY SUFFIX		BONNET		OPTIONS		
	15	CL150 Gate	301	CL300 Swing Check	902	CL900 T-PAT Globe	F	RF Flanged	0	RF Flanged	none	Non-NACE	none	ASTM A216 Grade WCB	none	Bolted Bonnet	none	Handwheel
	N15	CL150 NRS Gate	302	CL300 T-PAT Globe	902Y	CL900 Y Pattern Globe	FF	Flat Faced	2	API Trim 8	N	NACE MR 0175	LCC	ASTM A352 Grade LCC	PS	Pressure Seal	BP	Bypass
	30	CL300 Gate	N302	CL300 NRS Globe	905	CL900 Tilting Disc Check	W	Butt Weld	3	API Trim 5			LCB	ASTM A352 Grade LCB	EB	Extended Bonnet	BS	Bare Stem
	N30	CL300 NRS Gate	303	CL300 Angle Globe	1501	CL1500 Swing Check	R	RTJ	4AB	Aluminum Bronze Trim			WCC	ASTM A216 Grade WCC			CRY1	Cryogenic (w/o Cryogenic Test)
	60	CL600 Gate	305	CL300 Tilting Disc Check	1501L	CL1500 Piston Check			5	API Trim 9			WC6	ASTM A217 Grade WC6			CRY2	Cryogenic (With Cryogenic Test)
	90	CL900 Gate	601	CL600 Swing Check	1502	CL1500 T-PAT Globe			6	API Trim 10			WC9	ASTM A217 Grade WC9			DD	Double Disc
	150	CL1500 Gate	601L	CL600 Piston Check	1502Y	CL1500 Y Pattern Globe			7	API Trim 2			C5	ASTM A217 Grade C5			DTR	Cavity Relief
	151	CL150 Swing Check	602	CL600 T-PAT Globe	1505	CL1500 Tilting Disc Check			8	API Trim 13			C12	ASTM A217 Grade C12			GO	Gear Operator
	152	CL150 T-PAT Globe	602Y	CL600 Y Pattern Globe	2501	CL2500 Swing Check			83	API Trim 14			C12A	ASTM A217 Grade C12A			H0	Hydraulic Operator
	153	CL150 Angle Globe	605	CL600 Tilting Disc Check	2501L	CL2500 Piston Check			62	API Trim 12			CF8M	ASTM A351 Grade CF8M			M0	Motor Operated
	155	CL150 Tilting Disc Check	901	CL900 Swing Check	2502	CL2500 T-PAT Globe			63	API Trim 16			CF3M	ASTM A351 Grade CF3M			O2	Oxy Cleaned
	250	CL2500 Gate	901L	CL900 Piston Check	2505	CL2500 Tilting Disc Check			64	API Trim 17			CF3	ASTM A351 Grade CF3			PD	Parabolic Disc
									73	API Trim 15			B1480	ASTM B148 Grade D (UNS95500)			PLS	Parallel Slide
									95	API Trim 11							P0	Pneumatic Operator
									T900	Triballoy T900 (Seat & Disc)							S#	BW Weld Prep Schedule
																	SE	Stem Extension
																	SER-B	ASME B16.47 SER-B Flanges

CAST STEEL VALVE EXAMPLE

A	B	C	D	E	F	G	H
10"	15	F	62	N			GO

10" 150 RF Gate Valve, WCB Body and Trim 12 , Bolted Bonnet with Gear Operator, NACE:

10" 15F-62N GO

PRESSURE SEAL VALVE EXAMPLE

A	B	C	D	E	F	G	H
10"	90	W	3		WC6	PS	GO-S80

10" CL900 BW S80 Gate Valve, WC6 Body and Trim 5, Pressure Seal Bonnet, GO, Bypass:

10" 90W-3 WC6 PS GO-S80

API-600 BOLTED BONNET FLEXIBLE WEDGE



FEATURES

Size: 2"-48"
Class: ASME 150-2500
Cast Steel
Flexible Wedge Gate
Low Fugitive Emission
Fully Guided Disc
Welded in Renewable seat

SPECIFICATIONS

Design: API-600 / ASME B16.34
Face to Face: ASME B16.10
End Flange: ASME B16.5
BW End: ASME B16.25
NDE: API-598
NACE MR0175 / MR0103
Full Port to API-600
API-624 Certified Low Leak Technology

API-623 BOLTED BONNET T-PATTERN GLOBE



FEATURES

Size: 2"-24"
Class: ASME 150-2500
Cast Steel
T-Pattern
Low Fugitive Emission
Body Guided Disc
Welded in Renewable seat

SPECIFICATIONS

Design: API-623 / ASME B16.34
Face to Face: ASME B16.10
End Flange: ASME B16.5
BW End: ASME B16.25
NDE: API-598
NACE MR0175 / MR0103
API-624 Certified Low Leak Technology
Option: Stop Check

API-594 BOLTED BONNET SWING CHECK



FEATURES

Size: 2"-48"
Class: ASME 150-2500
Cast Steel
Swing Check
Dual Security Disc
Welded in Renewable seat

SPECIFICATIONS

Design: API-594 / ASME B16.34
Face to Face: ASME B16.10
End Flange: ASME B16.5
BW End: ASME B16.25
NDE: API-598
NACE MR0175 / MR0103
Options: ESOV, Lever & Weight

BOLTED BONNET PISTON CHECK



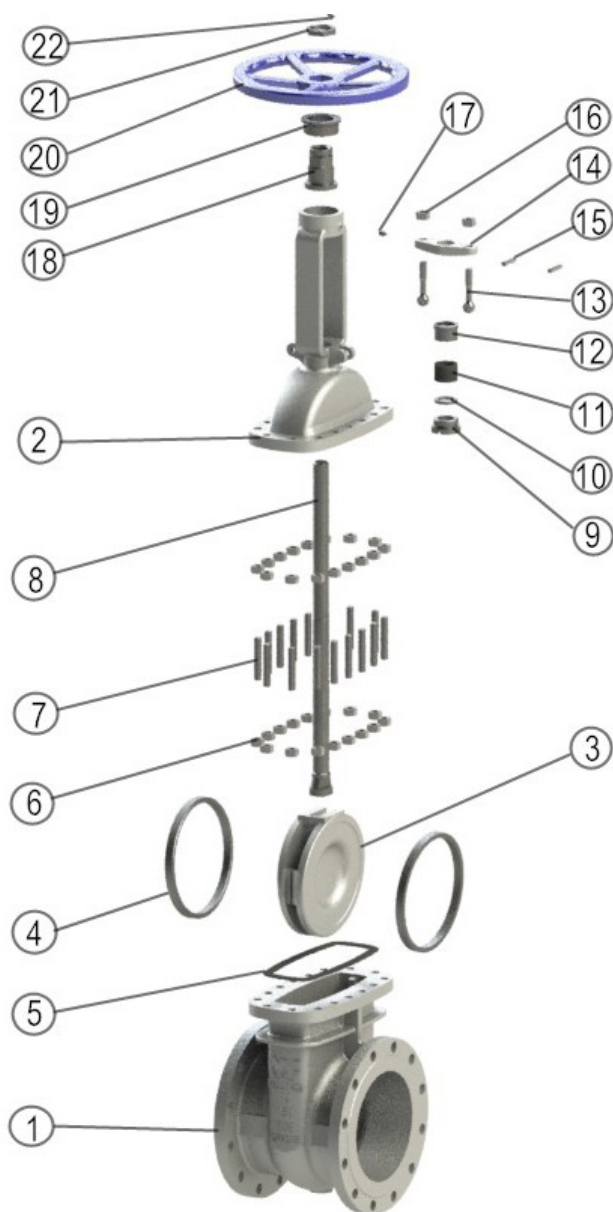
FEATURES

Size: 2"-12"
Class: ASME 150-1500
Cast Steel
Piston Check
Low Fugitive Emission
Spring Aided
Welded in Renewable seat

SPECIFICATIONS

Design: API-594 / ASME B16.34
Face to Face: ASME B16.10
End Flange: ASME B16.5
BW End: ASME B16.25
NDE: API-598
NACE MR0175 / MR0103
Options: Inconel or SST Spring

BOLTED BONNET HEAVY WALL API-600 WEDGE GATE COMPONENTS

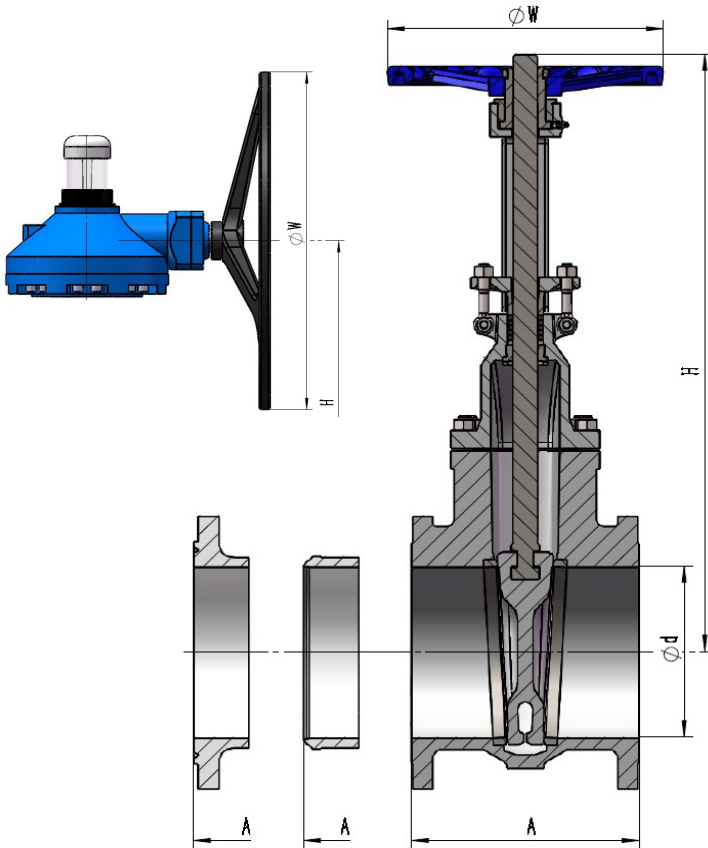


ITEM NO.	PART NAME
1	Body
2	Bonnet
3	Wedge
4	Seat Ring
5	Gasket
6	Nut
7	Stud
8	Stem
9	Back Seat
10	Spacer Ring
11	Packing
12	Gland
13	Eye Bolt
14	Gland Flange
15	Pin
16	Nut
17	Grease Fitting
18	Stem Nut
19	Yoke Cap
20	Handwheel
21	Handwheel Nut
22	Locking Screw

GATE VALVE API-600

FIG NO. 15F FLANGED
FIG NO. 15W BUTT WELD
FIG NO. 15R RTJ

BOLTED BONNET WEDGE GATE CL150



DESIGN: API-600, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-624 Certified, API-622 Packing

CONSTRUCTION: OS&Y rising stem
Flexible split wedge
Renewable seat ring
Bolted Bonnet
10" and above two-piece yoke
Handwheel, Gear op, or bare stem for actuation
Bidirectional sealing

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

OPTIONS: Extended bonnets
Cryogenic service
Bonnet vent and bypasses
Double split disc

ASME CLASS 150

DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)																
			2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	30	36
A	RF	mm	178	190	203	229	254	267	292	330	356	381	406	432	457	508	610	711
		in	7.01	7.48	7.99	9.02	10	10.51	11.5	12.99	14.02	15	15.98	17.01	17.99	20	24.02	27.99
	RTJ	mm	191	203	216	242	267	280	305	343	369	394	419	445	470	521		
		in	7.52	7.99	8.5	9.53	10.51	11.02	12.01	13.5	14.53	15.51	16.5	17.52	18.5	20.51		
	BW	mm	216	241	282	305	381	403	419	457	502	572	610	660	711	813	914	1016
		in	8.5	9.49	11.1	12.01	15	15.87	16.5	17.99	19.76	22.52	24.02	25.98	27.99	32.01	35.98	40
	d	mm	51	64	76	102	127	152	203	254	305	337	387	438	489	591	743	876
		in	2.01	2.52	2.99	4.02	5	5.98	7.99	10	12.01	13.27	15.24	17.24	19.25	23.27	29.25	34.49
H	Open	mm	388	434	483	585	678	768.5	958	1155	1343.5	1526	1722	1899	2124.5	2480.5		
		in	15.28	17.09	19.02	23.03	26.69	30.26	37.72	45.47	52.89	60.08	67.8	74.76	83.64	97.66		
	Closed	mm	328	359	399	472	538	600	740	883	1020	1157	1313	1441	1612	1867		
		in	12.91	14.13	15.71	18.58	21.18	23.62	29.13	34.76	40.16	45.55	51.69	56.73	63.46	73.5		
	Gearbox	mm						612	750	916	1035	1168	1303	1441	1598	1865	2325	2689
		in						24.09	29.53	36.06	40.75	45.98	51.3	56.73	62.91	73.43	91.54	105.87
W	Handwheel	mm	200	200	250	250	300	300	350	400	450	500	560	640	640	720		
		in	7.87	7.87	9.84	9.84	11.81	11.81	13.78	15.75	17.72	19.69	22.05	25.2	25.2	28.35		
	Gearbox	mm						310	310	310	460	460	460	610	610	610	710	800
		in						12.2	12.2	12.2	18.11	18.11	18.11	24.02	24.02	24.02	27.95	31.5
Weight	RF/RTJ	kg	20	26	34	50	68	80	116	180	254	405	540	638	800	1200	2035	3645
		lb	44	57.2	74.8	110	149.6	176	255.2	396	558.8	891	1188	1403.6	1760	2640	4477	8019

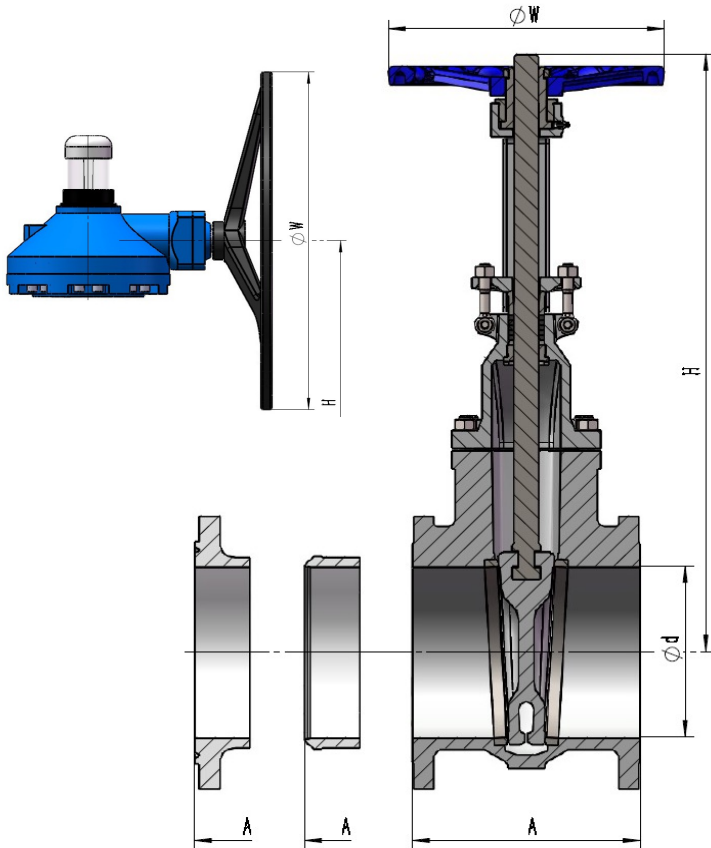
BOLTED BONNET HEAVY WALL API-600 WEDGE GATE DATA



GATE VALVE API-600

FIG NO. 30F FLANGED
FIG NO. 30W BUTT WELD
FIG NO. 30R RTJ

BOLTED BONNET WEDGE GATE CL300



DESIGN: API-600, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-624 Certified, API-622 Packing

CONSTRUCTION: OS&Y rising stem
Flexible split wedge
Renewable seat ring
Bolted Bonnet
10" and above two-piece yoke
Handwheel, Gear op, or bare stem for actuation
Bidirectional sealing

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

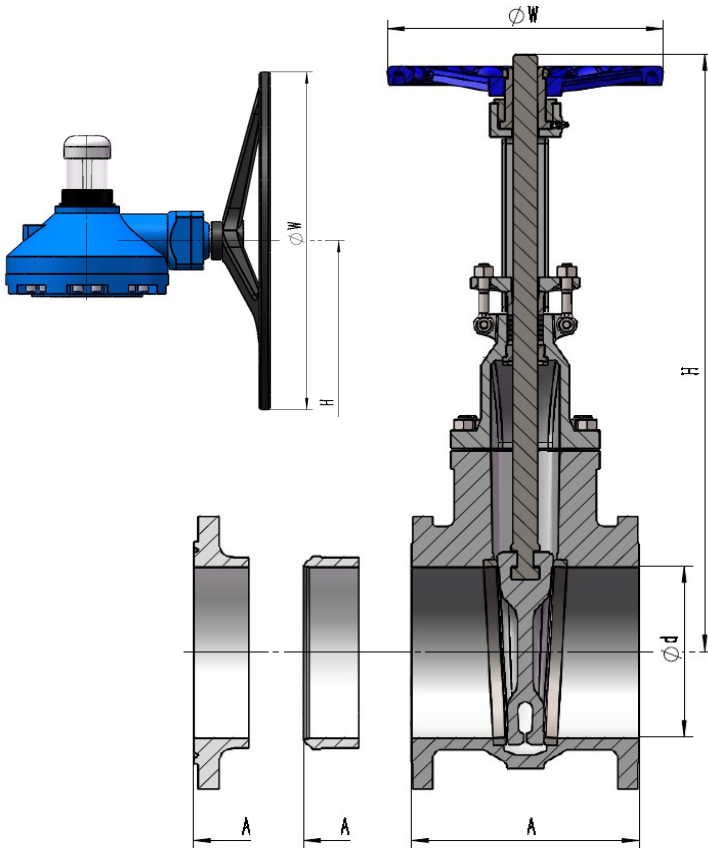
OPTIONS: Extended bonnets
Cryogenic service
Bonnet vent and bypasses
Double split disc

ASME CLASS 300															
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)													
			2	2 1/2	3	4	5	6	8	10	12	14	16	18	24
A	RF	mm	216	241	282	305	381	403	419	457	502	762	838	914	1143
		in	8.5	9.49	11.1	12.01	15	15.87	16.5	17.99	19.76	30	32.99	35.98	45
	RTJ	mm	232	257	298	321	397	419	435	473	518	778	854	930	1165
		in	9.13	10.12	11.73	12.64	15.63	16.5	17.13	18.62	20.39	30.63	33.62	36.61	45.87
d	BW	mm	216	241	282	305	381	403	419	457	502	762	838	914	1143
		in	8.5	9.49	11.1	12.01	15	15.87	16.5	17.99	19.76	30	32.99	35.98	45
		mm	51	64	76	102	127	152	203	254	305	337	387	432	584
		in	2.01	2.52	2.99	4.02	5	5.98	7.99	10	12.01	13.27	15.24	17.01	22.99
H	Open	mm	420	451	530	618	703	797.5	982.5	1193	1403	1546	1725.5	1938	
		in	16.54	17.76	20.87	24.33	27.68	31.4	38.68	46.97	55.24	60.87	67.93	76.3	
	Closed	mm	355	371	436	504	564	627	764	917	1080	1191	1309	1486	
		in	13.98	14.61	17.17	19.84	22.2	24.69	30.08	36.1	42.52	46.89	51.54	58.5	
W	Gearbox	mm						640	797	928	1082	1180	1320	1485	1620
		in						25.2	31.38	36.54	42.6	46.46	51.97	58.46	63.78
	Handwheel	mm	200	200	250	250	300	350	400	450	500	560	640	640	
		in	7.87	7.87	9.84	9.84	11.81	13.78	15.75	17.72	19.69	22.05	25.2	25.2	
Weight	Gearbox	mm						310	310	460	460	460	610	610	710
		in						12.2	12.2	18.11	18.11	18.11	24.02	24.02	27.95
	RF/RTJ	kg	26	35	52	74	102	125	210	350	459	683	950	1205	2660
		lb	57.2	77	114.4	162.8	224.4	275	462	770	1009.8	1502.6	2090	2651	5852

GATE VALVE API-600

FIG NO. 60F FLANGED
FIG NO. 60W BUTT WELD
FIG NO. 60R RTJ

BOLTED BONNET WEDGE GATE CL600



DESIGN: API-600, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-624 Certified, API-622 Packing

CONSTRUCTION: OS&Y rising stem
Flexible split wedge
Renewable seat ring
Bolted Bonnet
10" and above two-piece yoke
Handwheel, Gear op, or bare stem for actuation
Bidirectional sealing

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

OPTIONS: Extended bonnets
Cryogenic service
Bonnet vent and bypasses
Double split disc

ASME CLASS 600																	
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)															
			2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	
A	RF	mm	292	330	356	432	508	559	660	787	838	889	991	1092	1194	1397	
		in	11.5	12.99	14.02	17.01	20	22.01	25.98	30.98	32.99	35	39.02	42.99	47.01	55	
	RTJ	mm	295	333	359	435	511	562	663	790	841	892	994	1095	1200	1407	
		in	11.61	13.11	14.13	17.13	20.12	22.13	26.1	31.1	33.11	35.12	39.13	43.11	47.24	55.39	
	BW	mm	292	330	356	432	508	559	660	787	838	889	991	1092	1194	1397	
		in	11.5	12.99	14.02	17.01	20	22.01	25.98	30.98	32.99	35	39.02	42.99	47.01	55	
	H	d	mm	51	64	76	102	127	152	200	248	298	327	375	419	464	559
			in	2.01	2.52	2.99	4.02	5	5.98	7.87	9.76	11.73	12.87	14.76	16.5	18.27	22.01
Open		mm	437	504	542	652.5	748	883.5	1064	1249	1488						
		in	17.2	19.84	21.34	25.69	29.45	34.78	41.89	49.17	58.58						
Closed		mm	370	425	454	547	598	716	844	980	1162						
		in	14.57	16.73	17.87	21.54	23.54	28.19	33.23	38.58	45.75						
Gearbox		mm						681	845	980	1144	1297	1398	1493	1648	1957	
		in						26.81	33.27	38.58	45.04	51.06	55.04	58.78	64.88	77.05	
W	Handwheel	mm	200	250	250	300	400	450	500	640	640						
		in	7.87	9.84	9.84	11.81	15.75	17.72	19.69	25.2	25.2						
	Gearbox	mm						460	460	610	610	710	710	710	710	800	
		in						18.11	18.11	24.02	24.02	27.95	27.95	27.95	27.95	31.5	
Weight	RF/RTJ	kg	36	52	64	118	206	230	430	652	913	1230	1562	2150	2950	4160	
		lb	79.2	114.4	140.8	259.6	453.2	506	946	1434.4	2008.6	2706	3436.4	4730	6490	9152	

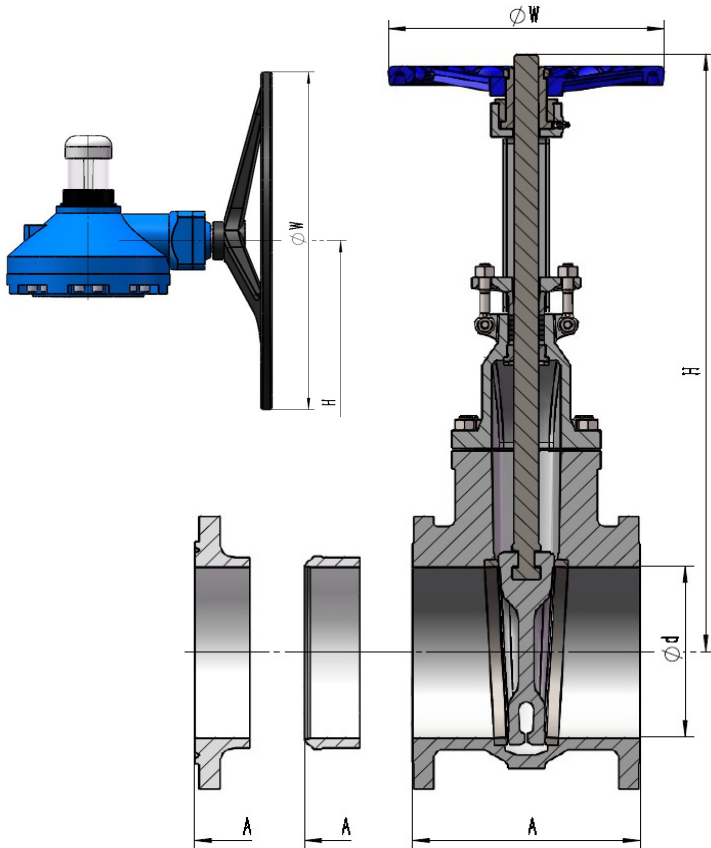
BOLTED BONNET HEAVY WALL API-600 WEDGE GATE DATA



GATE VALVE API-600

FIG NO. 90F FLANGED
FIG NO. 90W BUTT WELD
FIG NO. 90R RTJ

BOLTED BONNET WEDGE GATE CL900



DESIGN: API-600, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-624 Certified, API-622 Packing

CONSTRUCTION: OS&Y rising stem
Flexible split wedge
Renewable seat ring
Bolted Bonnet
10" and above two-piece yoke
Handwheel, Gear op, or bare stem for actuation
Bidirectional sealing

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

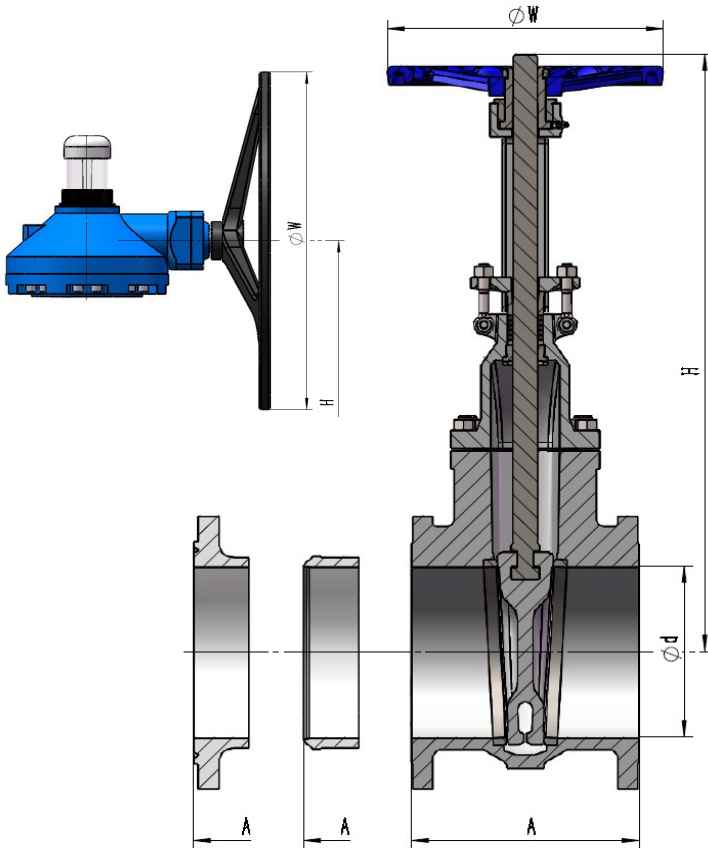
OPTIONS: Extended bonnets
Cryogenic service
Bonnet vent and bypasses
Double split disc

ASME CLASS 900																
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)														
			2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
A	RF	mm	368	419	381	457	559	610	737	838	965	1029	1130	1219	1321	1549
		in	14.49	16.5	15	17.99	22.01	24.02	29.02	32.99	37.99	40.51	44.49	47.99	52.01	60.98
	RTJ	mm	371	422	384	460	562	613	740	841	968	1039	1140	1232	1334	1568
		in	14.61	16.61	15.12	18.11	22.13	24.13	29.13	33.11	38.11	40.91	44.88	48.5	52.52	61.73
	BW	mm	368	419	381	457	559	610	737	838	965	1029	1130	1219	1321	1549
		in	14.49	16.5	15	17.99	22.01	24.02	29.02	32.99	37.99	40.51	44.49	47.99	52.01	60.98
d		mm	48	57	73	99	121	146	191	238	282	312	356	401	445	534
		in	1.89	2.24	2.87	3.9	4.76	5.75	7.52	9.37	11.1	12.28	14.02	15.79	17.52	21.02
	Open	mm	496	610	608	686.5	810.5	928	1104							
		in	19.53	24.02	23.94	27.03	31.91	36.54	43.46							
	Closed	mm	430	529	520	573	668	765	890							
		in	16.93	20.83	20.47	22.56	26.3	30.12	35.04							
	Gearbox	mm						771	894	1032	1169	1284	1386	1473	2417	2750
		in						30.35	35.2	40.63	46.02	50.55	54.57	57.99	95.16	108.27
W	Handwheel	mm	250	300	350	350	500	500	640							
		in	9.84	11.81	13.78	13.78	19.69	19.69	25.2							
	Gearbox	mm						460	610	610	710	710	800	800	1000	1000
		in						18.11	24.02	24.02	27.95	27.95	31.5	31.5	39.37	39.37
Weight	RF/RTJ	kg	79	116	98	155	245	355	620	1005	1360	2254	2850	3870	4860	6100
		lb	173.8	255.2	215.6	341	539	781	1364	2211	2992	4958.8	6270	8514	10692	13420

GATE VALVE API-600

FIG NO. 150F FLANGED
FIG NO. 150W BUTT WELD
FIG NO. 150R RTJ

BOLTED BONNET WEDGE GATE CL1500



DESIGN: API-600, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-624 Certified, API-622 Packing

CONSTRUCTION: OS&Y rising stem
Flexible split wedge
Renewable seat ring
Bolted Bonnet
10" and above two-piece yoke
Handwheel, Gear op, or bare stem for actuation
Bidirectional sealing

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

OPTIONS: Extended bonnets
Cryogenic service
Bonnet vent and bypasses
Double split disc

DIMENSIONS AND WEIGHTS		ASME CLASS 1500 VALVE SIZE (IN)													
			2	2 1/2	3	4	6	8	10	12	14	16	18	20	24
A	RF	mm	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	1943
		in	14.49	16.5	18.5	21.5	27.76	32.76	39.02	44.49	49.49	54.49	60.51	65.51	76.5
	RTJ	mm	371	422	473	549	711	842	1001	1146	1276	1406	1559	1686	1971
		in	14.61	16.61	18.62	21.61	27.99	33.15	39.41	45.12	50.24	55.35	61.38	66.38	77.6
	BW	mm	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	1943
		in	14.49	16.5	18.5	21.5	27.76	32.76	39.02	44.49	49.49	54.49	60.51	65.51	76.5
d		mm	48	57	70	92	136	178	222	263	289	331	372	416	499
		in	1.89	2.24	2.76	3.62	5.35	7.01	8.74	10.35	11.38	13.03	14.65	16.38	19.65
H	Open	mm	496	610	625	711	983	1121							
		in	19.53	24.02	24.61	27.99	38.7	44.13							
	Closed	mm	430	529	539	600	827	988							
		in	16.93	20.83	21.22	23.62	32.56	38.9							
	Gearbox	mm				621	822	919	1075	1165	1798	1963	2812	3078	3570
		in				24.45	32.36	36.18	42.32	45.87	70.79	77.28	110.71	121.18	140.55
W	Handwheel	mm	250	300	350	400	560	720							
		in	9.84	11.81	13.78	15.75	22.05	28.35							
	Gearbox	mm				310	610	610	710	710	800	800	1000	1000	1000
		in				12.2	24.02	24.02	27.95	27.95	31.5	31.5	39.37	39.37	39.37
Weight	RF/RTJ	kg	79	116	165	248	616	960	1910	2685	4100	6200	8100	11130	13300
		lb	173.8	255.2	363	545.6	1355.2	2112	4202	5907	9020	13640	17820	24486	29260

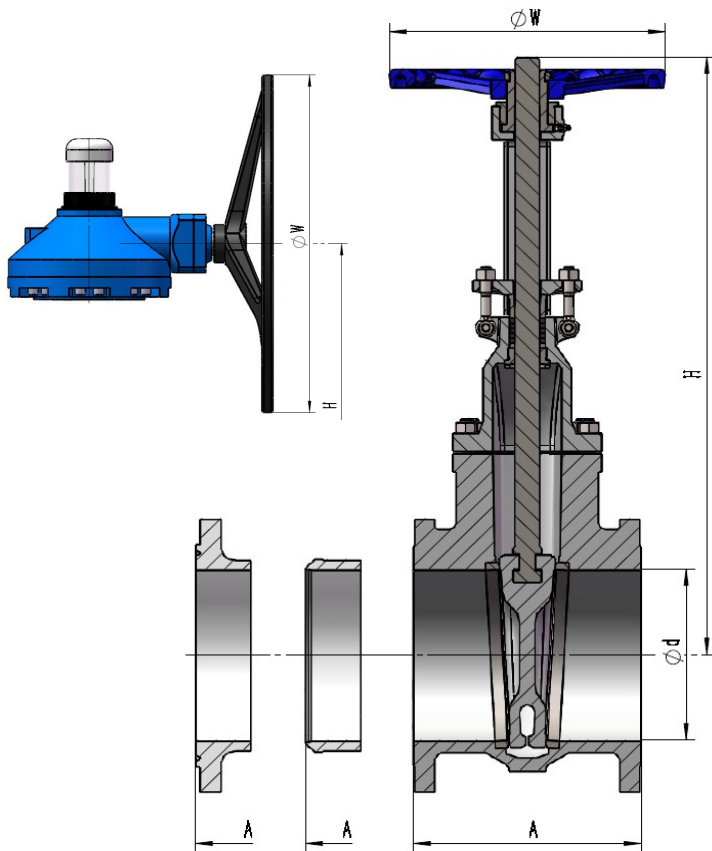
BOLTED BONNET HEAVY WALL API-600 WEDGE GATE DATA



GATE VALVE API-600

FIG NO. 250F FLANGED
FIG NO. 250W BUTT WELD
FIG NO. 250R RTJ

BOLTED BONNET WEDGE GATE CL2500



DESIGN: API-600, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-624 Certified, API-622 Packing

CONSTRUCTION: OS&Y rising stem
Flexible split wedge
Renewable seat ring
Bolted Bonnet
10" and above two-piece yoke
Handwheel, Gear op, or bare stem for actuation
Bidirectional sealing

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

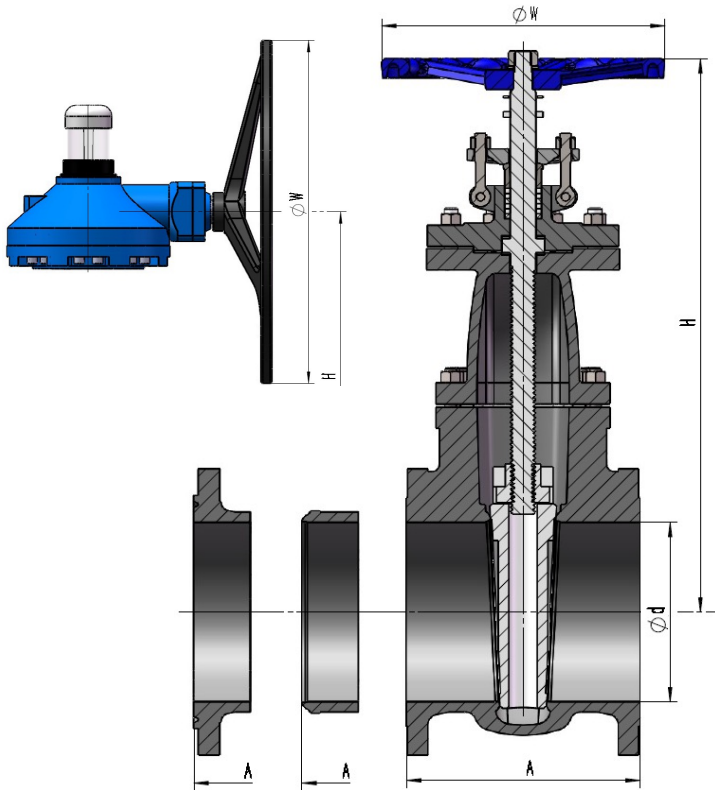
OPTIONS: Extended bonnets
Cryogenic service
Bonnet vent and bypasses
Double split disc

ASME CLASS 2500										
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)								
			2	2 1/2	3	4	6	8	10	12
A	RF	mm	451	508	578	673	914	1022	1270	1422
		in	17.76	20	22.76	26.5	35.98	40.24	50	55.98
	RTJ	mm	454	514	584	683	927	1038	1292	1444
		in	17.87	20.24	22.99	26.89	36.5	40.87	50.87	56.85
	BW	mm	451	508	578	673	914	1022	1270	1422
		in	17.76	20	22.76	26.5	35.98	40.24	50	55.98
d		mm	39	48	57	73	111	147	185	219
		in	1.54	1.89	2.24	2.87	4.37	5.79	7.28	8.62
H	Open	mm	525.5	623.5	738.5	735	997	1615		
		in	20.69	24.55	29.07	28.94	39.25	63.58		
	Closed	mm	468	563	610	643	870	1450		
		in	18.43	22.17	24.02	25.31	34.25	57.09		
	Gearbox	mm							1610	2076
		in							63.39	81.73
W	Handwheel	mm	400	450	450	560	560	610		
		in	15.75	17.72	17.72	22.05	22.05	24.02		
	Gearbox	mm							610	610
		in							24.02	24.02
Weight	RF/RTJ	kg	130	200	245	490	1600	2450	4570	6100
		lb	286	440	539	1078	3520	5390	10054	13420

GATE VALVE API-600

FIG NO. N15F FLANGED
FIG NO. N15W BUTT WELD

BOLTED BONNET NRS WEDGE GATE CL150



DESIGN: API-600, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-622 Packing

CONSTRUCTION: Non-Rising Stem (NRS)
Flexible split wedge
Renewable seat ring
Bolted Bonnet
14" and above two-piece yoke
Handwheel, Gear op, or bare stem for actuation
Bidirectional sealing
Calibrated position indicator

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Aluminum Bronze Trim
Other trims available upon request

OPTIONS: Extended bonnets
Cryogenic service
Bonnet vent and bypasses
Double split disc
Adaptable for reach-rod systems

ASME CLASS 150																
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)														
			2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
A	RF	mm	178	190	203	229	254	267	292	330	356	381	406	432	457	508
		in	7.01	7.48	7.99	9.02	10	10.51	11.5	12.99	14.02	15	15.98	17.01	17.99	20
	RTJ	mm	191	203	216	242	267	280	305	343	369	394	419	445	470	521
		in	7.52	7.99	8.5	9.53	10.51	11.02	12.01	13.5	14.53	15.51	16.5	17.52	18.5	20.51
	BW	mm	216	241	282	305	381	403	419	457	502	572	610	660	711	813
		in	8.5	9.49	11.1	12.01	15	15.87	16.5	17.99	19.76	22.52	24.02	25.98	27.99	32.01
d		mm	51	64	76	102	127	152	203	254	305	337	387	438	489	591
		in	2.01	2.52	2.99	4.02	5	5.98	7.99	10	12.01	13.27	15.24	17.24	19.25	23.27
H	Handwheel	mm	352	380	410	472	545	612	740	793	907	968	1313	1441	1612	1867
		in	13.86	14.96	16.14	18.58	21.46	24.09	29.13	31.22	35.71	38.11	51.69	56.73	63.46	73.5
	Gearbox	mm						612	749.5	915.5	1024.5	1158	1127	1404	1598	1894.5
		in						24.09	29.51	36.04	40.33	45.59	44.37	55.28	62.91	74.59
W	Handwheel	mm	200	200	250	250	300	300	350	400	450	500	560	640	640	720
		in	7.87	7.87	9.84	9.84	11.81	11.81	13.78	15.75	17.72	19.69	22.05	25.2	25.2	28.35
	Gearbox	mm						310	310	310	460	460	610	610	710	710
		in						12.2	12.2	12.2	18.11	18.11	24.02	24.02	27.95	27.95
Weight	RF/RTJ	kg	20	26	34	68	88	105	116	262	325	420	580	630	800	1108
		lb	44	57.2	74.8	149.6	193.6	231	255.2	576.4	715	924	1276	1386	1760	2437.6

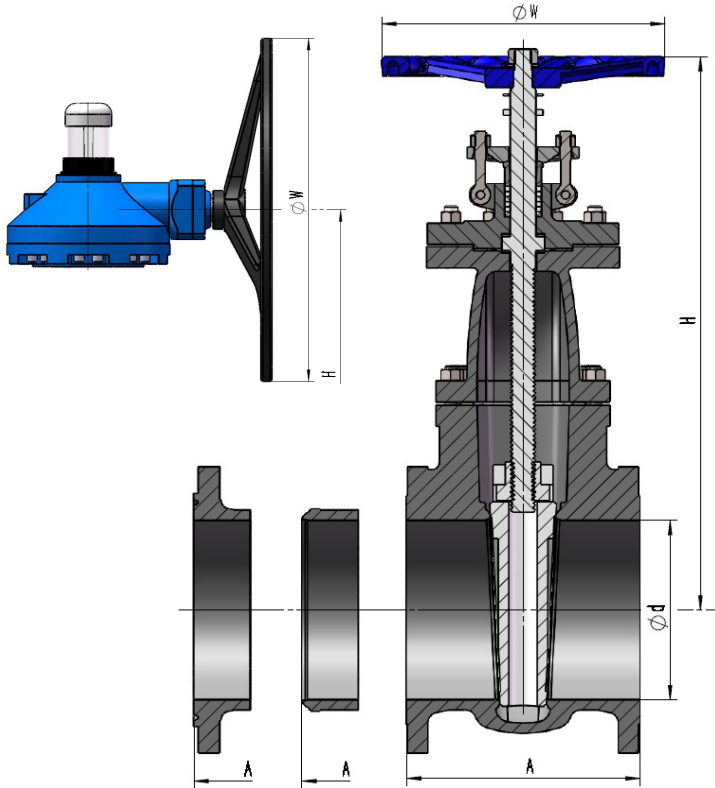
BOLTED BONNET HEAVY WALL API-600 NRS WEDGE GATE DATA



GATE VALVE API-600

FIG NO. N30F FLANGED
FIG NO. N30W BUTT WELD

BOLTED BONNET NRS WEDGE GATE CL300



DESIGN: API-600, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-622 Packing

CONSTRUCTION: Non-Rising Stem (NRS)
Flexible split wedge
Renewable seat ring
Bolted Bonnet
14" and above two-piece yoke
Handwheel, Gear op, or bare stem for actuation
Bidirectional sealing
Calibrated position indicator

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

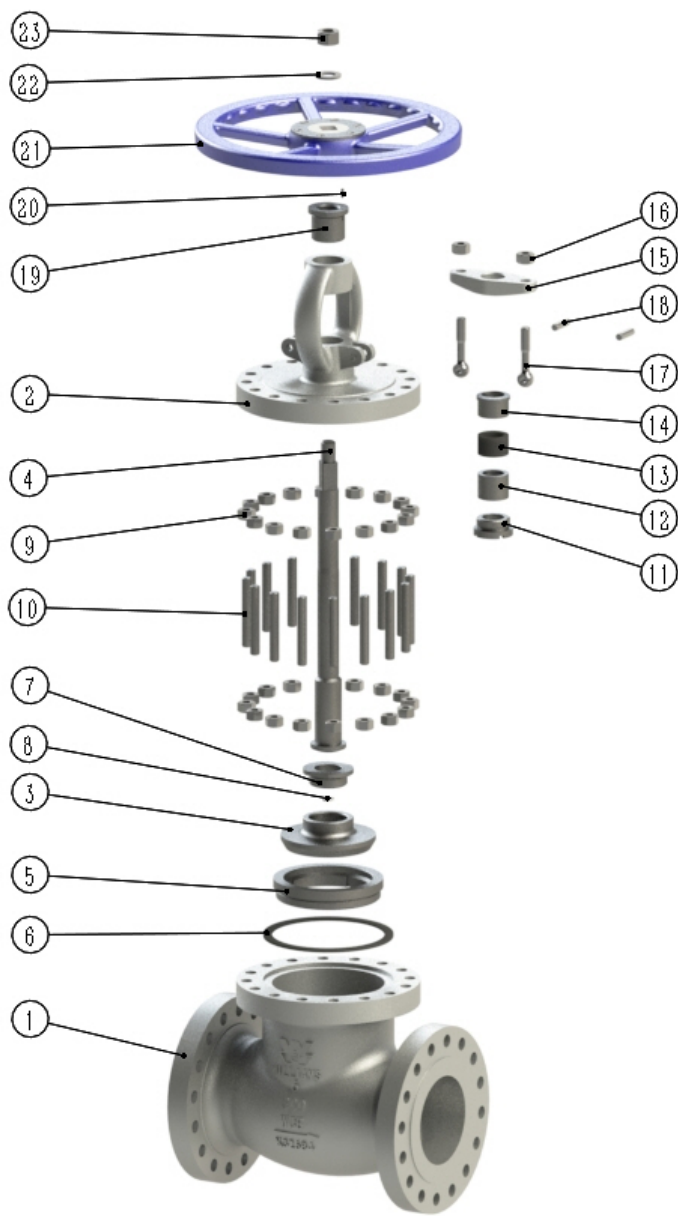
TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Aluminum Bronze Trim
Other trims available upon request

OPTIONS: Extended bonnets
Cryogenic service
Bonnet vent and bypasses
Double split disc
Adaptable for reach-rod systems

ASME CLASS 300																
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)														
			2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
A	RF	mm	216	241	282	305	381	403	419	457	502	762	838	914	991	1143
		in	8.5	9.49	11.1	12.01	15	15.87	16.5	17.99	19.76	30	32.99	35.98	39.02	45
	RTJ	mm	232	257	298	321	397	419	435	473	518	778	854	930	1010	1165
		in	9.13	10.12	11.73	12.64	15.63	16.5	17.13	18.62	20.39	30.63	33.62	36.61	39.76	45.87
	BW	mm	216	241	282	305	381	403	419	457	502	762	838	914	991	1143
		in	8.5	9.49	11.1	12.01	15	15.87	16.5	17.99	19.76	30	32.99	35.98	39.02	45
d		mm	51	64	76	102	127	152	203	254	305	337	387	432	483	584
		in	2.01	2.52	2.99	4.02	5	5.98	7.99	10	12.01	13.27	15.24	17.01	19.02	22.99
H	Handwheel	mm	355	371	436	504	564	627	764	917	1080	1191	1305	1486		
		in	13.98	14.61	17.17	19.84	22.2	24.69	30.08	36.1	42.52	46.89	51.38	58.5		
	Gearbox	mm						640	797	928	1082	1180	1320	1485	1620	1900
		in						25.2	31.38	36.54	42.6	46.46	51.97	58.46	63.78	74.8
W	Handwheel	mm	200	200	250	250	300	350	400	450	500	560	640	640		
		in	7.87	7.87	9.84	9.84	11.81	13.78	15.75	17.72	19.69	22.05	25.2	25.2		
	Gearbox	mm						310	310	460	460	460	610	610	610	710
		in						12.2	12.2	18.11	18.11	18.11	24.02	24.02	24.02	27.95
Weight	RF/RTJ	kg	26	35	52	74	102	125	210	350	459	683	950	1205	1480	2660
		lb	57.2	77	114.4	162.8	224.4	275	462	770	1009.8	1502.6	2090	2651	3256	5852

BOLTED BONNET HEAVY WALL API-623 T-PATTERN GLOBE COMPONENTS

WILLIAMS VALVE



ITEM NO.	PART NAME
1	Body
2	Bonnet
3	Disc
4	Stem
5	Seat Ring
6	Gasket
7	Disc Nut
8	Thrust Washer
9	Nut
10	Stud
11	Back Seat
12	Spacer Ring
13	Packing
14	Gland
15	Gland Flange
16	Nut
17	Eye Bolt
18	Pin
19	Stem
20	Locking Screw
21	Handwheel
22	Washer
23	Nut

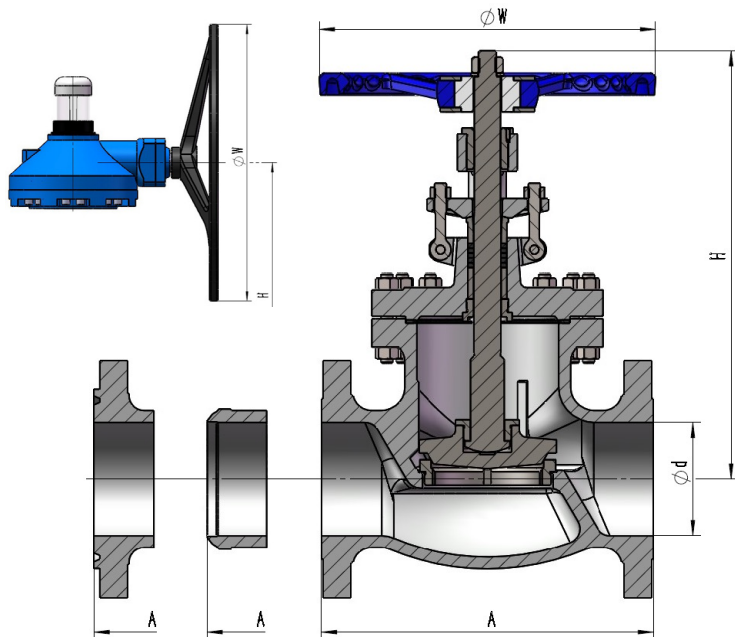
BOLTED BONNET HEAVY WALL API-623 T-PATTERN GLOBE DATA



GLOBE VALVE API-623

FIG NO. 152F FLANGED
FIG NO. 152W BUTT WELD
FIG NO. 152R RTJ

BOLTED BONNET T-PATTERN GLOBE CL150



DESIGN: API-623, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-624 Certified, API-622 Packing

CONSTRUCTION:
Welded in, Renewable seat ring
Bolted Bonnet
Ground and lapped seat surfaces
Line contact seal
Body Guided Disc

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

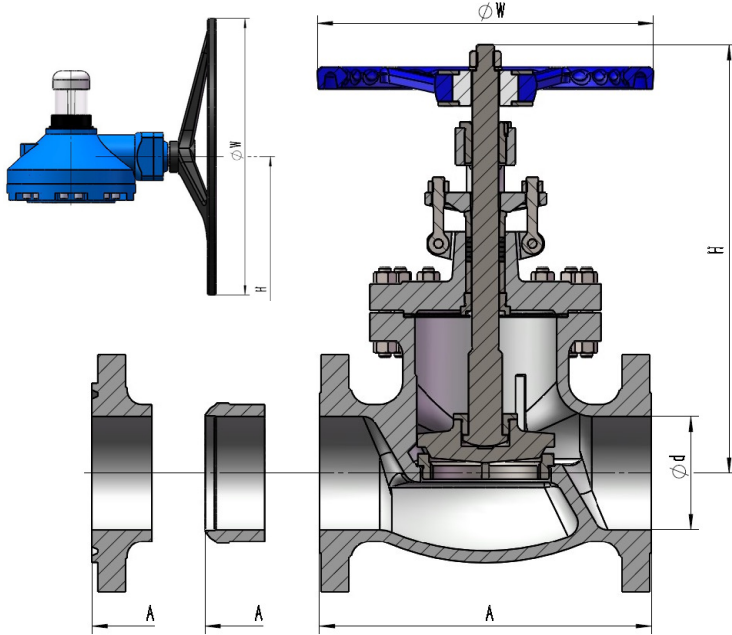
OPTIONS: Cryogenic service
Live Loaded Packing
Extended Bonnets
Y-Pattern
Stop Check
Hammer Blow Hand Wheel

ASME CLASS 150																
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)														
			2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
A	RF	mm	203	216	241	292	356	406	495	622	698	787	914	978	978	1295
		in	7.99	8.5	9.49	11.5	14.02	15.98	19.49	24.49	27.48	30.98	35.98	38.5	38.5	50.98
	RTJ	mm	216	229	254	305	369	419	508	635	711	800	927	991	991	1308
		in	8.5	9.02	10	12.01	14.53	16.5	20	25	27.99	31.5	36.5	39.02	39.02	51.5
d	BW	mm	203	216	241	292	356	406	495	622	698	787	914	978	978	1295
		in	7.99	8.5	9.49	11.5	14.02	15.98	19.49	24.49	27.48	30.98	35.98	38.5	38.5	50.98
		mm	51	64	76	102	127	152	203	254	305	337	387	438	489	591
		in	2.01	2.52	2.99	4.02	5	5.98	7.99	10	12.01	13.27	15.24	17.24	19.25	23.27
H	Open	mm	347	377	381	485	491.5	521	568	708.5	913	991.5				
		in	13.66	14.84	15	19.09	19.35	20.51	22.36	27.89	35.94	39.04				
	Closed	mm	328	340	351	440	451	468	519	630	822	873				
		in	12.91	13.39	13.82	17.32	17.76	18.43	20.43	24.8	32.36	34.37				
	Gearbox	mm							593	658	805	913	1007	1044	1130	1300
		in							23.35	25.91	31.69	35.94	39.65	41.1	44.49	51.18
W	Handwheel	mm	200	250	250	300	350	350	450	500	560	560				
		in	7.87	9.84	9.84	11.81	13.78	13.78	17.72	19.69	22.05	22.05				
	Gearbox	mm							460	610	610	710	710	710	710	800
		in							18.11	24.02	24.02	27.95	27.95	27.95	27.95	31.5
Weight	RF/RTJ	kg	25	29	46	58	90	104	158	276	507	617	824	1400	2600	3700
		lb	55	63.8	101.2	127.6	198	228.8	347.6	607.2	1115.4	1357.4	1812.8	3080	5720	8140

GLOBE VALVE API-623

FIG NO. 302F FLANGED
FIG NO. 302W BUTT WELD
FIG NO. 302R RTJ

BOLTED BONNET T-PATTERN GLOBE CL300



DESIGN: API-623, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-624 Certified, API-622 Packing

CONSTRUCTION:
Welded in, Renewable seat ring
Bolted Bonnet
Ground and lapped seat surfaces
Line contact seal
Body Guided Disc

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

OPTIONS:
Cryogenic service
Live Loaded Packing
Extended Bonnets
Y-Pattern
Stop Check
Hammer Blow Hand Wheel

ASME CLASS 300														
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)												
			2	2 1/2	3	4	5	6	8	10	12	14	16	20
A	RF	mm	267	292	318	356	400	444	559	622	711	838	864	1016
		in	10.51	11.5	12.52	14.02	15.75	17.48	22.01	24.49	27.99	32.99	34.02	40
	RTJ	mm	283	308	334	372	416	460	575	638	727	851	880	1035
		in	11.14	12.13	13.15	14.65	16.38	18.11	22.64	25.12	28.62	33.5	34.65	40.75
	BW	mm	267	292	318	356	400	444	559	622	711	838	864	1016
		in	10.51	11.5	12.52	14.02	15.75	17.48	22.01	24.49	27.99	32.99	34.02	40
d		mm	51	64	76	102	127	152	203	254	305	337	387	464
		in	2.01	2.52	2.99	4.02	5	5.98	7.99	10	12.01	13.27	15.24	18.27
H	Open	mm	357	414	428	533	553	630	858.5	907				
		in	14.06	16.3	16.85	20.98	21.77	24.8	33.8	35.71				
	Closed	mm	319	383	408	497	510	576	808	817				
		in	12.56	15.08	16.06	19.57	20.08	22.68	31.81	32.17				
	Gearbox	mm							825	785	901	928	1085	1130
		in							32.48	30.91	35.47	36.54	42.72	44.49
W	Handwheel	mm	200	250	250	350	350	450	560	560				
		in	7.87	9.84	9.84	13.78	13.78	17.72	22.05	22.05				
	Gearbox	mm							610	610	710	710	800	800
Weight	RF/RTJ	kg	31	38	51	76	125	154	297	455	724	1125	1050	2700
		lb	68.2	83.6	112.2	167.2	275	338.8	653.4	1001	1592.8	2475	2310	5940

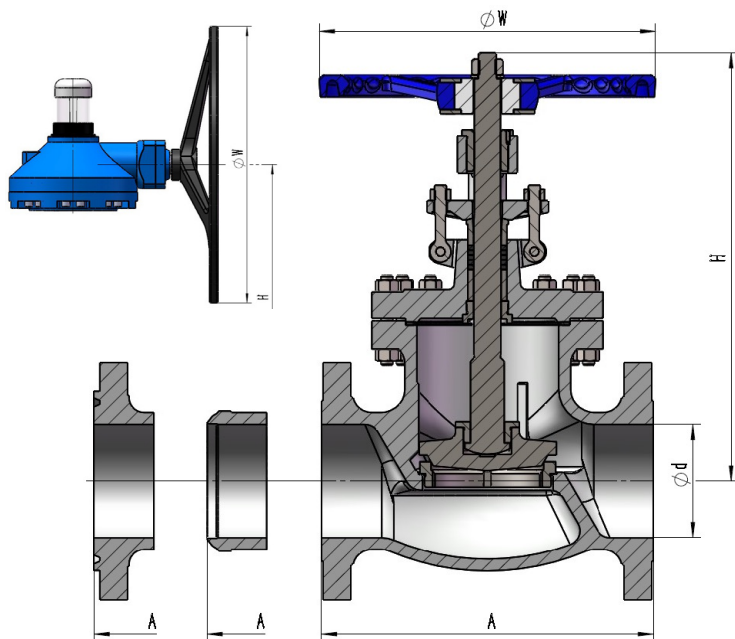
BOLTED BONNET HEAVY WALL API-623 T-PATTERN GLOBE DATA



GLOBE VALVE API-623

FIG NO. 602F FLANGED
FIG NO. 602W BUTT WELD
FIG NO. 602R RTJ

BOLTED BONNET T-PATTERN GLOBE CL600



DESIGN: API-623, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-624 Certified, API-622 Packing

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
Ground and lapped seat surfaces
Line contact seal
Body Guided Disc

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

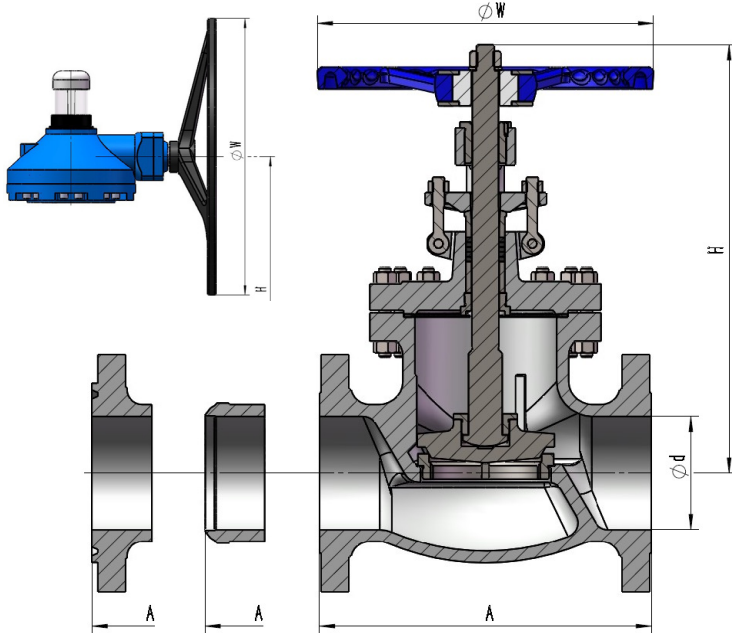
OPTIONS: Cryogenic service
Live Loaded Packing
Extended Bonnets
Y-Pattern
Stop Check
Hammer Blow Hand Wheel

ASME CLASS 600														
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)												
			2	2 1/2	3	4	6	8	10	12	14	16	18	
A	RF	mm	292	330	356	432	559	660	787	838	889	991	1092	
		in	11.5	12.99	14.02	17.01	22.01	25.98	30.98	32.99	35	39.02	42.99	
	RTJ	mm	295	333	359	435	562	663	790	841	892	994	1095	
		in	11.61	13.11	14.13	17.13	22.13	26.1	31.1	33.11	35.12	39.13	43.11	
	BW	mm	292	330	356	432	559	660	787	838	889	991	1092	
		in	11.5	12.99	14.02	17.01	22.01	25.98	30.98	32.99	35	39.02	42.99	
H	d	mm	51	64	76	102	152	200	248	298	327	375	420	
		in	2.01	2.52	2.99	4.02	5.98	7.87	9.76	11.73	12.87	14.76	16.54	
	Open	mm	402	498	495	583	790	957.5						
		in	15.83	19.61	19.49	22.95	31.1	37.7						
	Closed	mm	370	477	457	536	719	890						
		in	14.57	18.78	17.99	21.1	28.31	35.04						
	Gearbox	mm				535	747	835	914	1071	1113	1245	1801	
		in				21.06	29.41	32.87	35.98	42.17	43.82	49.02	70.91	
	W	Handwheel	mm	250	300	350	400	560	640					
			in	9.84	11.81	13.78	15.75	22.05	25.2					
Gearbox		mm				460	610	710	800	800	800	1000	1000	
		in				18.11	24.02	27.95	31.5	31.5	31.5	39.37	39.37	
Weight	RF/RTJ	kg	38	50	58	126	316	543	700	1140	1620	2160	3300	
		lb	83.6	110	127.6	277.2	695.2	1194.6	1540	2508	3564	4752	7260	

GLOBE VALVE API-623

FIG NO. 902F FLANGED
FIG NO. 902W BUTT WELD
FIG NO. 902R RTJ

BOLTED BONNET T-PATTERN GLOBE CL900



DESIGN: API-623, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-624 Certified, API-622 Packing

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
Ground and lapped seat surfaces
Line contact seal
Body Guided Disc

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

OPTIONS: Cryogenic service
Live Loaded Packing
Extended Bonnets
Y-Pattern
Stop Check
Hammer Blow Hand Wheel

ASME CLASS 900												
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)										
			2	2 1/2	3	4	6	8	10	12	14	16
A	RF	mm	368	419	381	457	610	737	838	965	1029	1130
		in	14.49	16.5	15	17.99	24.02	29.02	32.99	37.99	40.51	44.49
	RTJ	mm	371	422	384	460	613	740	841	968	1039	1140
		in	14.61	16.61	15.12	18.11	24.13	29.13	33.11	38.11	40.91	44.88
	BW	mm	368	419	381	457	610	737	838	965	1029	1130
		in	14.49	16.5	15	17.99	24.02	29.02	32.99	37.99	40.51	44.49
d		mm	48	57	73	99	146	190	238	283	312	356
		in	1.89	2.24	2.87	3.9	5.75	7.48	9.37	11.14	12.28	14.02
H	Open	mm	469	617.5	558	721	910	1088				
		in	18.46	24.31	21.97	28.39	35.83	42.83				
	Closed	mm	435	571	522	680	853	1018				
		in	17.13	22.48	20.55	26.77	33.58	40.08				
	Gearbox	mm					804	874	1050	1755	1934	2210
		in					31.65	34.41	41.34	69.09	76.14	87.01
W	Handwheel	mm	350	400	400	500	560	720				
		in	13.78	15.75	15.75	19.69	22.05	28.35				
	Gearbox	mm					710	710	800	1000	1000	1000
		in					27.95	27.95	31.5	39.37	39.37	39.37
Weight	RF/RTJ	kg	123	138	125	197	452	720	985	1920	2670	3520
		lb	270.6	303.6	275	433.4	994.4	1584	2167	4224	5874	7744

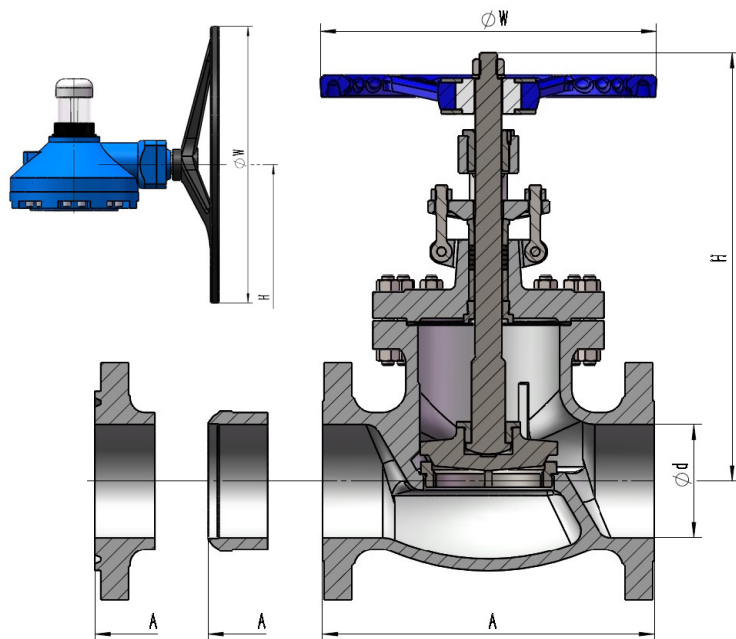
BOLTED BONNET HEAVY WALL API-623 T-PATTERN GLOBE DATA



GLOBE VALVE API-623

FIG NO. 1502F FLANGED
FIG NO. 1502W BUTT WELD
FIG NO. 1502R RTJ

BOLTED BONNET T-PATTERN GLOBE CL1500



DESIGN: API-623, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-624 Certified, API-622 Packing

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
Ground and lapped seat surfaces
Line contact seal
Body Guided Disc

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

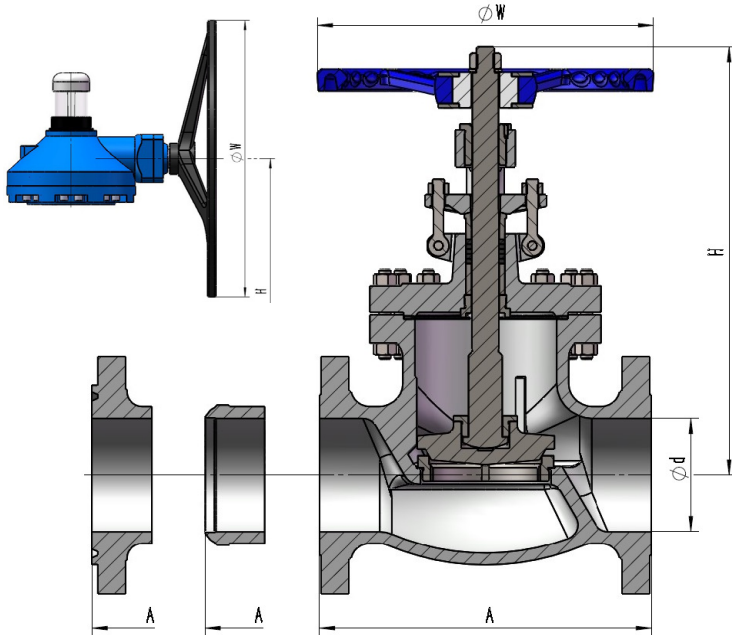
OPTIONS: Cryogenic service
Live Loaded Packing
Extended Bonnets
Y-Pattern
Stop Check
Hammer Blow Hand Wheel

ASME CLASS 1500										
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)								
			2	2 1/2	3	4	6	8	10	12
A	RF	mm	368	419	470	546	705	832	991	1130
		in	14.49	16.5	18.5	21.5	27.76	32.76	39.02	44.49
	RTJ	mm	371	422	473	549	711	842	1001	1146
		in	14.61	16.61	18.62	21.61	27.99	33.15	39.41	45.12
	BW	mm	368	419	470	546	705	832	991	1130
		in	14.49	16.5	18.5	21.5	27.76	32.76	39.02	44.49
d		mm	48	57	70	92	136	178	222	264
		in	1.89	2.24	2.76	3.62	5.35	7.01	8.74	10.39
H	Open	mm	469	617.5	620.5	716	1345	2050		
		in	18.46	24.31	24.43	28.19	52.95	80.71		
	Closed	mm	435	571	590	670	1278	1960		
		in	17.13	22.48	23.23	26.38	50.31	77.17		
	Gearbox	mm					910	1011	2450	2904
		in					35.83	39.8	96.46	114.33
W	Handwheel	mm	350	400	500	560	610	720		
		in	13.78	15.75	19.69	22.05	24.02	28.35		
	Gearbox	mm					710	710	710	710
		in					27.95	27.95	27.95	27.95
Weight	RF/RTJ	kg	123	138	215	394	560	990	1530	2570
		lb	270.6	303.6	473	866.8	1232	2178	3366	5654

GLOBE VALVE API-623

FIG NO. 2502F FLANGED
FIG NO. 2502W BUTT WELD
FIG NO. 2502R RTJ

BOLTED BONNET T-PATTERN GLOBE CL2500



DESIGN: API-623, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

FUGITIVE EMISSION: API-624 Certified, API-622 Packing

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
Ground and lapped seat surfaces
Line contact seal
Body Guided Disc

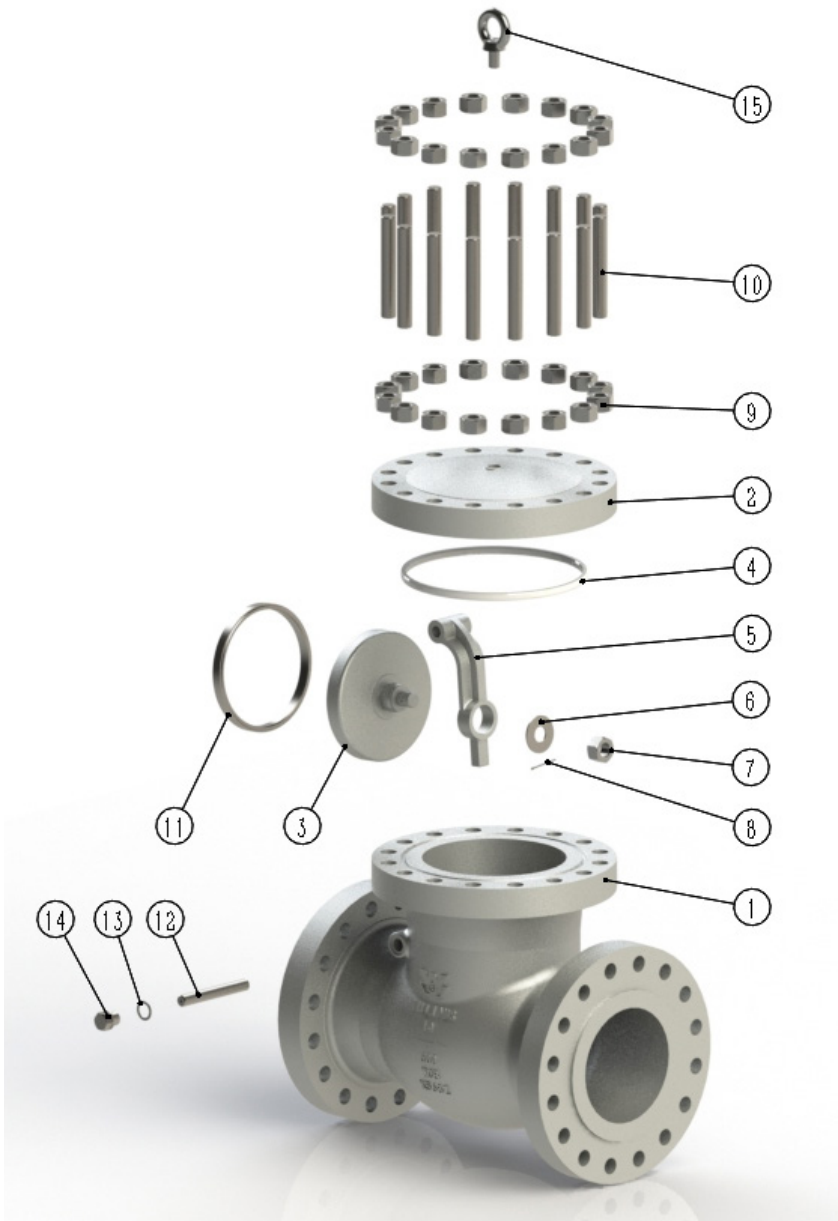
ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

OPTIONS: Cryogenic service
Live Loaded Packing
Extended Bonnets
Y-Pattern
Stop Check
Hammer Blow Hand Wheel

ASME CLASS 2500									
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)							
			2	2 1/2	3	4	6	8	10
A	RF	mm	451	508	578	673	914	1022	1270
		in	17.76	20	22.76	26.5	35.98	40.24	50
	RTJ	mm	454	514	584	683	927	1038	1292
		in	17.87	20.24	22.99	26.89	36.5	40.87	50.87
	BW	mm	451	508	578	673	914	1022	1270
		in	17.76	20	22.76	26.5	35.98	40.24	50
d		mm	39	48	57	73	111	147	185
		in	1.54	1.89	2.24	2.87	4.37	5.79	7.28
H	Open	mm	740	824	914	1297	1961	2538	
		in	29.13	32.44	35.98	51.06	77.2	99.92	
	Closed	mm	720	800	885	1260	1905	2465	
		in	28.35	31.5	34.84	49.61	75	97.05	
	Gearbox	mm						2124	3108
		in						83.62	122.36
W	Handwheel	mm	400	560	560	610	610	720	
		in	15.75	22.05	22.05	24.02	24.02	28.35	
	Gearbox	mm						710	800
		in						27.95	31.5
Weight	RF/RTJ	kg	176	264	308	759	1990	4390	5290
		lb	387.2	580.8	677.6	1669.8	4378	9658	11638

BOLTED BONNET HEAVY WALL API-594 SWING CHECK COMPONENTS

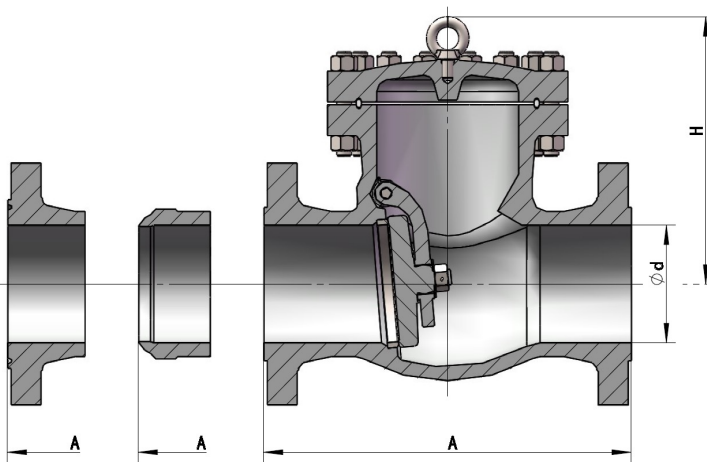


ITEM NO.	PART NAME
1	Body
2	Cover
3	Disc
4	Gasket
5	Hinge
6	Washer
7	Nut
8	Cotter Pin
9	Nut
10	Stud
11	Seat Ring
12	Hinge Pin
13	Washer
14	Plug
15	Lifting Bolt

CHECK VALVE API-594

FIG NO. 151F FLANGED
FIG NO. 151W BUTT WELD
FIG NO. 151R RTJ

BOLTED BONNET SWING CHECK CL150



DESIGN: API-594, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
Non-rotating disc
Dual security Disc Nut
Ground and lapped seat surface
Seal welded threaded plug which positively secures and locates the hinge shaft.

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

OPTIONS: Cryogenic service
Piston Check
Tilting Disc Check
Lever & Weight
Quick Closing

ASME CLASS 150

VALVE SIZE (IN)

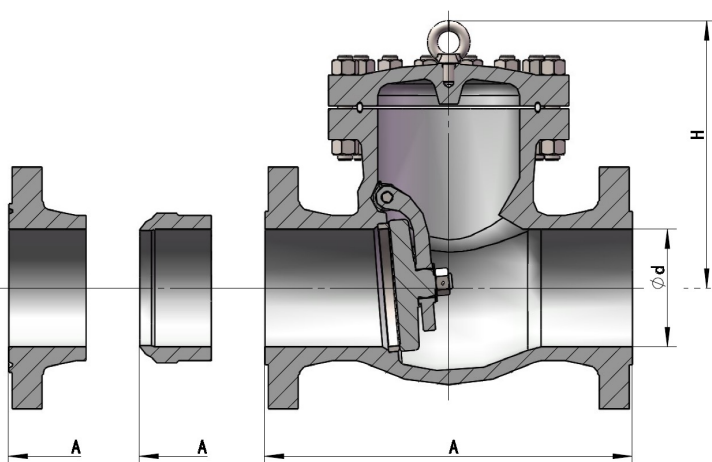
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)																
			2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	30	36
A	RF	mm	203	216	241	292	330	356	495	622	698	787	864	978	978	1295	1524	1956
		in	7.99	8.5	9.49	11.5	12.99	14.02	19.49	24.49	27.48	30.98	34.02	38.5	38.5	50.98	60	77.01
	RTJ	mm	216	229	254	305	343	369	508	635	711	800	877	991	991	1308		
		in	8.5	9.02	10	12.01	13.5	14.53	20	25	27.99	31.5	34.53	39.02	39.02	51.5		
	BW	mm	203	216	241	292	330	356	495	622	698	787	864	978	978	1295	1524	1956
		in	7.99	8.5	9.49	11.5	12.99	14.02	19.49	24.49	27.48	30.98	34.02	38.5	38.5	50.98	60	77.01
d		mm	51	64	76	102	127	152	203	254	305	337	387	438	489	591	743	876
		in	2.01	2.52	2.99	4.02	5	5.98	7.99	10	12.01	13.27	15.24	17.24	19.25	23.27	29.25	34.49
H		mm	130	155	170	229	269	271	341	403	471	510	578	604	630	744	975	1004
		in	5.12	6.1	6.69	9.02	10.59	10.67	13.43	15.87	18.54	20.08	22.76	23.78	24.8	29.29	38.39	39.53
Weight	RF/RTJ	kg	18	22	30	40	57	68	127	216	325	396	485	665	708	1359	2155	3130
		lb	39.6	48.4	66	88	125.4	149.6	279.4	475.2	715	871.2	1067	1463	1557.6	2989.8	4741	6886



CHECK VALVE API-594

FIG NO. 301F FLANGED
FIG NO. 301W BUTT WELD
FIG NO. 301R RTJ

BOLTED BONNET SWING CHECK CL300



DESIGN: API-594, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
Non-rotating disc
Dual security Disc Nut
Ground and lapped seat surface
Seal welded threaded plug which positively secures and locates the hinge shaft.

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

OPTIONS: Cryogenic service
Piston Check
Tilting Disc Check
Lever & Weight
Quick Closing

ASME CLASS 300

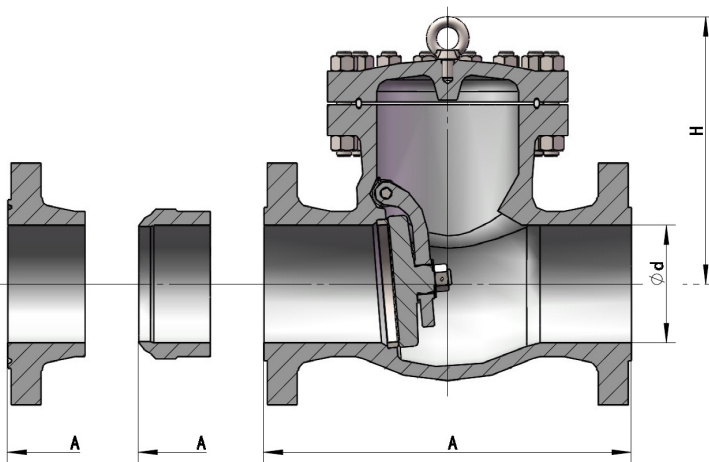
VALVE SIZE (IN)

DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)																
			2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	30	36
A	RF	mm	267	292	318	356	400	444	533	622	711	838	864	978	1016	1346	1594	2083
		in	10.51	11.5	12.52	14.02	15.75	17.48	20.98	24.49	27.99	32.99	34.02	38.5	40	52.99	62.76	82.01
	RTJ	mm	283	308	334	372	416	460	549	638	727	854	880	994	1035	1368	1619	2111
		in	11.14	12.13	13.15	14.65	16.38	18.11	21.61	25.12	28.62	33.62	34.65	39.13	40.75	53.86	63.74	83.11
	BW	mm	267	292	318	356	400	444	533	622	711	838	864	978	1016	1346	1594	2083
in		10.51	11.5	12.52	14.02	15.75	17.48	20.98	24.49	27.99	32.99	34.02	38.5	40	52.99	62.76	82.01	
d	H	mm	51	64	76	102	127	152	203	254	305	337	387	432	483	584	737	889
		in	2.01	2.52	2.99	4.02	5	5.98	7.99	10	12.01	13.27	15.24	17.01	19.02	22.99	29.02	35
		mm	146	158	174	254	285	302	360	444	497	562	621	675	720	780	1140	1319
		in	5.75	6.22	6.85	10	11.22	11.89	14.17	17.48	19.57	22.13	24.45	26.57	28.35	30.71	44.88	51.93
Weight	RF/RTJ	kg	22	30	40	65	84	112	200	310	450	569	775	924	1200	1970	3680	6280
		lb	48.4	66	88	143	184.8	246.4	440	682	990	1251.8	1705	2032.8	2640	4334	8096	13816

CHECK VALVE API-594

FIG NO. 601F FLANGED
FIG NO. 601W BUTT WELD
FIG NO. 601R RTJ

BOLTED BONNET SWING CHECK CL600



DESIGN: API-594, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
Non-rotating disc
Dual security Disc Nut
Ground and lapped seat surface
Seal welded threaded plug which positively secures and locates the hinge shaft.

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

OPTIONS: Cryogenic service
Piston Check
Tilting Disc Check
Lever & Weight
Quick Closing

ASME CLASS 600

VALVE SIZE (IN)

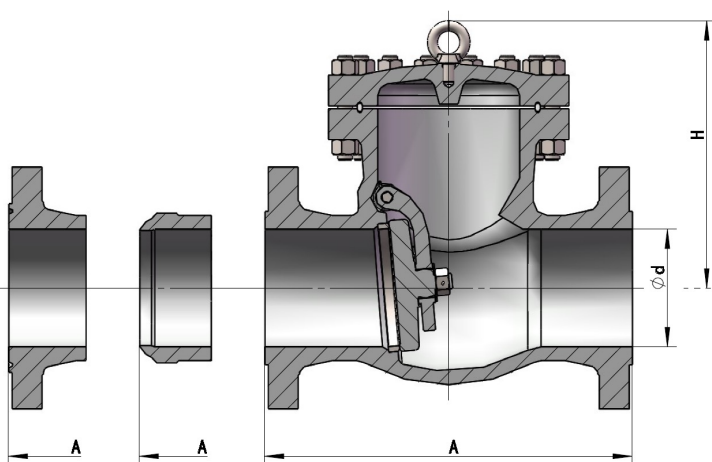
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)																
			2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	30	36
A	RF	mm	292	330	356	432	508	559	660	787	838	889	991	1092	1194	1397	1651	2083
		in	11.5	12.99	14.02	17.01	20	22.01	25.98	30.98	32.99	35	39.02	42.99	47.01	55	65	82.01
	RTJ	mm	295	333	359	435	511	562	663	790	841	892	994	1095	1200	1407	1664	2099
		in	11.61	13.11	14.13	17.13	20.12	22.13	26.1	31.1	33.11	35.12	39.13	43.11	47.24	55.39	65.51	82.64
	BW	mm	292	330	356	432	508	559	660	787	838	889	991	1092	1194	1397	1651	2083
		in	11.5	12.99	14.02	17.01	20	22.01	25.98	30.98	32.99	35	39.02	42.99	47.01	55	65	82.01
d	H	mm	51	64	76	102	127	152	200	248	298	327	375	419	464	559	695	828
		in	2.01	2.52	2.99	4.02	5	5.98	7.87	9.76	11.73	12.87	14.76	16.5	18.27	22.01	27.36	32.6
		mm	150	198	196	271	288	354	481	561	632	641	714	824	796	864	1030	1542
		in	5.91	7.8	7.72	10.67	11.34	13.94	18.94	22.09	24.88	25.24	28.11	32.44	31.34	34.02	40.55	60.71
Weight	RF/RTJ	kg	30	43	55	88	146	183	367	643	766	944	1015	1620	2120	3100	5500	9905
		lb	66	94.6	121	193.6	321.2	402.6	807.4	1414.6	1685.2	2076.8	2233	3564	4664	6820	12100	21791



CHECK VALVE API-594

FIG NO. 901F FLANGED
FIG NO. 901W BUTT WELD
FIG NO. 901R RTJ

BOLTED BONNET SWING CHECK CL900



DESIGN: API-594, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
Non-rotating disc
Dual security Disc Nut
Ground and lapped seat surface
Seal welded threaded plug which positively secures and locates the hinge shaft.

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

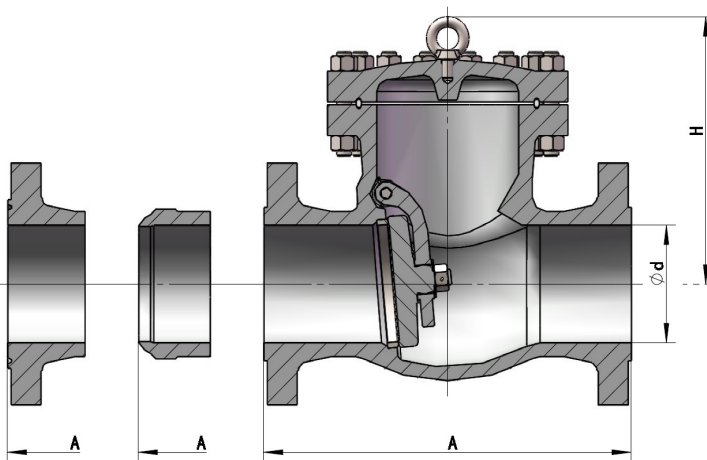
OPTIONS: Cryogenic service
Piston Check
Tilting Disc Check
Lever & Weight
Quick Closing

ASME CLASS 900																
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)														
			2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
A	RF	mm	368	419	381	457	559	610	737	838	965	1029	1130	1219	1321	1549
		in	14.49	16.5	15	17.99	22.01	24.02	29.02	32.99	37.99	40.51	44.49	47.99	52.01	60.98
	RTJ	mm	371	422	384	460	562	613	740	841	968	1039	1140	1232	1334	1568
		in	14.61	16.61	15.12	18.11	22.13	24.13	29.13	33.11	38.11	40.91	44.88	48.5	52.52	61.73
	BW	mm	368	419	381	457	559	610	737	838	965	1029	1130	1219	1321	1549
		in	14.49	16.5	15	17.99	22.01	24.02	29.02	32.99	37.99	40.51	44.49	47.99	52.01	60.98
d		mm	47	57	73	98	121	146	190	238	282	312	356	401	445	534
		in	1.85	2.24	2.87	3.86	4.76	5.75	7.48	9.37	11.1	12.28	14.02	15.79	17.52	21.02
H		mm	250	300	293	323	358	432	588	583	668	714	784	839	932	924
		in	9.84	11.81	11.54	12.72	14.09	17.01	23.15	22.95	26.3	28.11	30.87	33.03	36.69	36.38
Weight	RF/RTJ	kg	70	95	110	150	280	305	510	900	1120	1380	1900	3000	4000	5200
		lb	154	209	242	330	616	671	1122	1980	2464	3036	4180	6600	8800	11440

CHECK VALVE API-594

FIG NO. 1501F FLANGED
FIG NO. 1501W BUTT WELD
FIG NO. 1501R RTJ

BOLTED BONNET SWING CHECK CL1500



DESIGN: API-594, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
Non-rotating disc
Dual security Disc Nut
Ground and lapped seat surface
Seal welded threaded plug which positively secures and locates the hinge shaft.

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

OPTIONS: Cryogenic service
Piston Check
Tilting Disc Check
Lever & Weight
Quick Closing

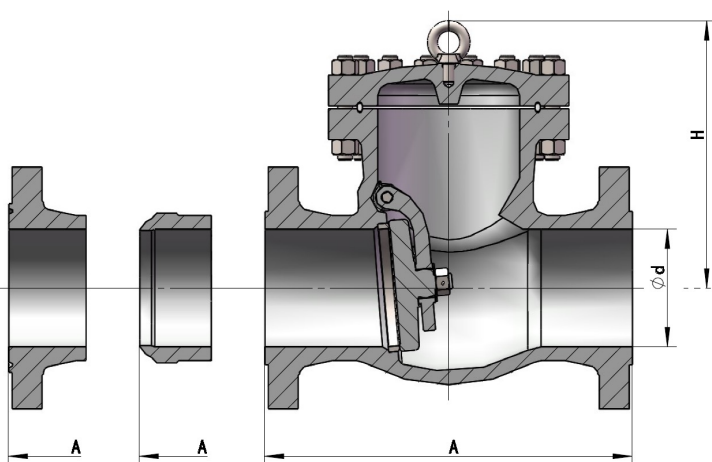
ASME CLASS 1500																
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)														
			2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
A	RF	mm	368	419	470	546	673	705	832	991	1130	1257	1384	1537	1664	1943
		in	14.49	16.5	18.5	21.5	26.5	27.76	32.76	39.02	44.49	49.49	54.49	60.51	65.51	76.5
	RTJ	mm	371	422	473	549	676	711	842	1001	1146	1276	1406	1559	1686	1971
		in	14.61	16.61	18.62	21.61	26.61	27.99	33.15	39.41	45.12	50.24	55.35	61.38	66.38	77.6
	BW	mm	368	419	470	546	673	705	832	991	1130	1257	1384	1537	1664	1943
		in	14.49	16.5	18.5	21.5	26.5	27.76	32.76	39.02	44.49	49.49	54.49	60.51	65.51	76.5
d		mm	47	57	70	92	111	136	178	222	264	289	331	372	416	499
		in	1.85	2.24	2.76	3.62	4.37	5.35	7.01	8.74	10.39	11.38	13.03	14.65	16.38	19.65
H		mm	250	300	324	405	425	467	620	651	875	950	1020	1147	1284	1539
		in	9.84	11.81	12.76	15.94	16.73	18.39	24.41	25.63	34.45	37.4	40.16	45.16	50.55	60.59
Weight	RF/RTJ	kg	70	95	150	246	490	550	1010	1330	2280	3060	4500	6100	8000	9800
		lb	154	209	330	541.2	1078	1210	2222	2926	5016	6732	9900	13420	17600	21560



CHECK VALVE API-594

FIG NO. 2501F FLANGED
FIG NO. 2501W BUTT WELD
FIG NO. 2501R RTJ

BOLTED BONNET SWING CHECK CL2500



DESIGN: API-594, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-45

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
Non-rotating disc
Dual security Disc Nut
Ground and lapped seat surface
Seal welded threaded plug which positively secures and locates the hinge shaft.

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Bronze, CK3MCUN, Duplex, Super Duplex

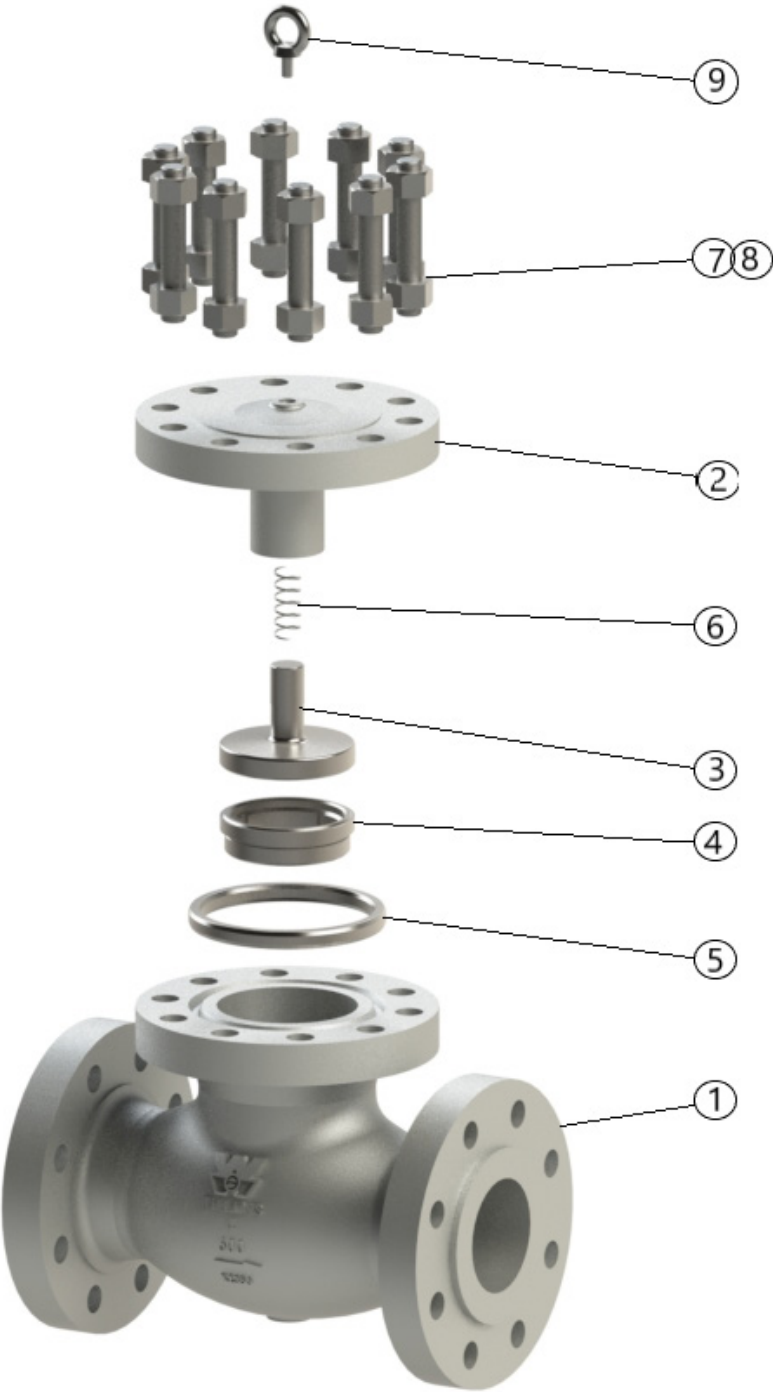
TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

OPTIONS: Cryogenic service
Piston Check
Tilting Disc Check
Lever & Weight
Quick Closing

ASME CLASS 2500											
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)									
			2	2 1/2	3	4	5	6	8	10	12
A	RF	mm	451	508	578	673	794	914	1022	1270	1422
		in	17.76	20	22.76	26.5	31.26	35.98	40.24	50	55.98
	RTJ	mm	454	514	584	683	807	927	1038	1292	1444
		in	17.87	20.24	22.99	26.89	31.77	36.5	40.87	50.87	56.85
	BW	mm	451	508	578	673	794	914	1022	1270	1422
		in	17.76	20	22.76	26.5	31.26	35.98	40.24	50	55.98
d		mm	39	48	58	73	92	111	147	185	219
		in	1.54	1.89	2.28	2.87	3.62	4.37	5.79	7.28	8.62
H		mm	416	419	441	479	498	511	711	851	1000
		in	16.38	16.5	17.36	18.86	19.61	20.12	27.99	33.5	39.37
Weight	RF/RTJ	kg	145	240	330	650	768	806	2420	3750	5500
		lb	319	528	726	1430	1689.6	1773.2	5324	8250	12100

**BOLTED BONNET HEAVY WALL
API-594 PISTON CHECK COMPONENTS**

WILLIAMS VALVE



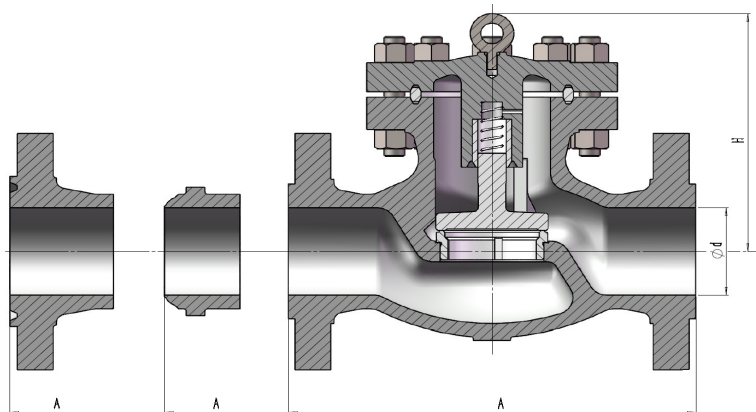
ITEM NO.	PART NAME
1	Body
2	Cover
3	Disc
4	Seat Ring
5	Gasket
6	Spring
7	Nut
8	Stud
9	Lifting Bolt



CHECK VALVE API-594

FIG NO. 151LF FLANGED
FIG NO. 151LW BUTT WELD
FIG NO. 151LR RTJ

BOLTED BONNET PISTON CHECK CL150



DESIGN: ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
SST or Inconel Spring
Ground and lapped seat surface

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC,
CF8, CF8M, CF3, CF3M, Duplex, Super Duplex

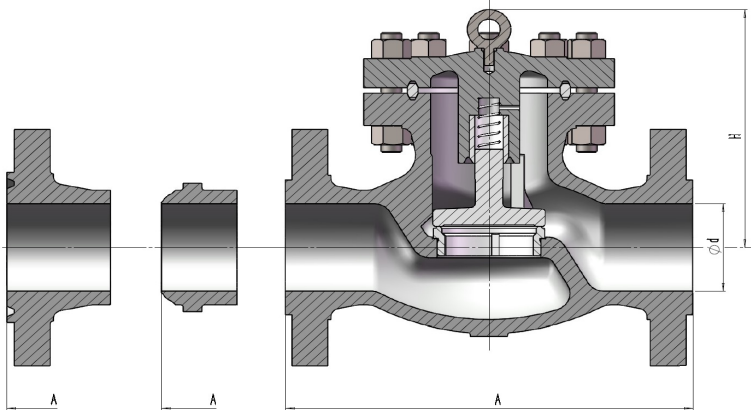
TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

DIMENSIONS AND WEIGHTS		ASME CLASS 150 VALVE SIZE (IN)									
			2	2 1/2	3	4	5	6	8	10	12
A	RF	mm	203	216	241	292	356	406	495	622	698
		in	7.99	8.5	9.49	11.5	14.02	15.98	19.49	24.49	27.48
	RTJ	mm	216	229	254	305	369	419	508	635	711
		in	8.5	9.02	10	12.01	14.53	16.5	20	25	27.99
	BW	mm	203	216	241	292	356	406	495	622	698
		in	7.99	8.5	9.49	11.5	14.02	15.98	19.49	24.49	27.48
d		mm	51	63.5	76	102	127	152	203	254	305
		in	2.01	2.5	2.99	4.02	5	5.98	7.99	10	12.01
H		mm	135	140	165	230	260	275	330	370	455
		in	5.31	5.51	6.5	9.06	10.24	10.83	12.99	14.57	17.91
Weight	RF/RTJ	kg	15	22	28	42	57	79	131	177	282
		lb	33	48.4	61.6	92.4	125.4	173.8	288.2	389.4	620.4

CHECK VALVE API-594

FIG NO. 301LF FLANGED
FIG NO. 301LW BUTT WELD
FIG NO. 301LR RTJ

BOLTED BONNET PISTON CHECK CL300



DESIGN: ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
SST or Inconel Spring
Ground and lapped seat surface

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

DIMENSIONS AND WEIGHTS		ASME CLASS 300									
		VALVE SIZE (IN)									
			2	2 1/2	3	4	5	6	8	10	12
A	RF	mm	267	292	318	356	400	444	559	622	711
		in	10.51	11.5	12.52	14.02	15.75	17.48	22.01	24.49	27.99
	RTJ	mm	283	308	334	372	416	460	575	638	727
		in	11.14	12.13	13.15	14.65	16.38	18.11	22.64	25.12	28.62
	BW	mm	267	292	318	356	400	444	559	622	711
		in	10.51	11.5	12.52	14.02	15.75	17.48	22.01	24.49	27.99
d		mm	51	63.5	76	102	127	152	203	254	305
		in	2.01	2.5	2.99	4.02	5	5.98	7.99	10	12.01
H		mm	135	175	185	270	300	320	350	415	470
		in	5.31	6.89	7.28	10.63	11.81	12.6	13.78	16.34	18.5
Weight	RF/RTJ	kg	20	30	40	65	84	118	193	310	450
		lb	44	66	88	143	184.8	259.6	424.6	682	990

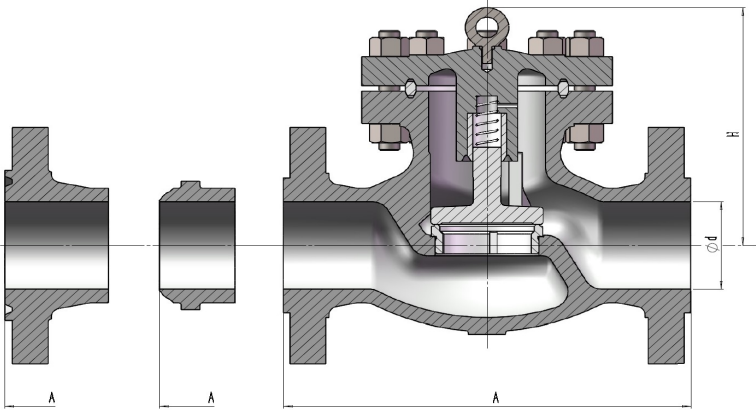
BOLTED BONNET HEAVY WALL
API-594 PISTON CHECK DATA



CHECK VALVE API-594

FIG NO. 601LF FLANGED
FIG NO. 601LW BUTT WELD
FIG NO. 601LR RTJ

BOLTED BONNET PISTON CHECK CL600



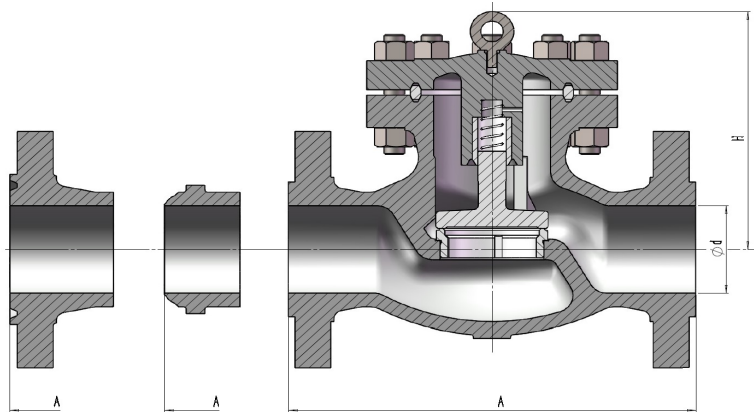
- DESIGN: ASME B16.34
- TEST: API-598
- SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25
- CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
SST or Inconel Spring
Ground and lapped seat surface
- ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC,
CF8, CF8M, CF3, CF3M, Duplex, Super Duplex
- TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

Table with dimensions and weights for ASME CLASS 600 VALVE SIZE (IN). Columns include dimensions (A, d, H, Weight) and valve sizes (2, 2 1/2, 3, 4, 5, 6, 8, 10, 12). Rows show measurements in mm and in, and weights in kg and lb.

CHECK VALVE API-594

FIG NO. 901LF FLANGED
FIG NO. 901LW BUTT WELD
FIG NO. 901LR RTJ

BOLTED BONNET PISTON CHECK CL900



DESIGN: ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
SST or Inconel Spring
Ground and lapped seat surface

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC, CF8, CF8M, CF3, CF3M, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

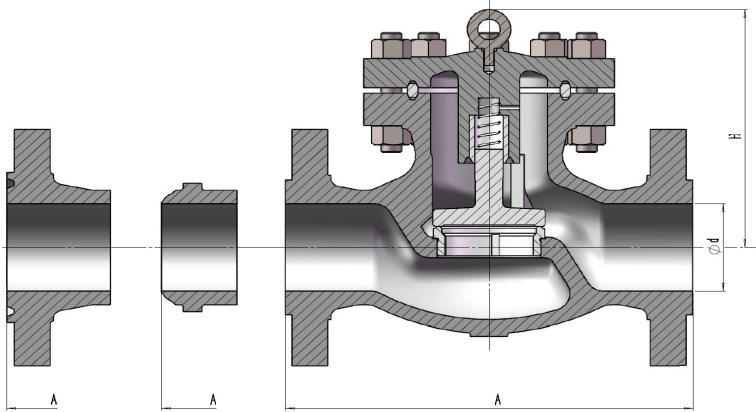
ASME CLASS 900											
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)									
			2	2 1/2	3	4	5	6	8	10	12
A	RF	mm	368	419	381	457	559	610	737	838	965
		in	14.49	16.5	15	17.99	22.01	24.02	29.02	32.99	37.99
	RTJ	mm	371	422	384	460	562	613	740	841	968
		in	14.61	16.61	15.12	18.11	22.13	24.13	29.13	33.11	38.11
	BW	mm	368	419	381	457	559	610	737	838	965
		in	14.49	16.5	15	17.99	22.01	24.02	29.02	32.99	37.99
d		mm	47.5	57	73	98	121	146	190	238	282
		in	1.87	2.24	2.87	3.86	4.76	5.75	7.48	9.37	11.1
H		mm	250	270	255	320	350	455	520	525	595
		in	9.84	10.63	10.04	12.6	13.78	17.91	20.47	20.67	23.43
Weight	RF/RTJ	kg	70	100	110	150	265	305	510	810	1120
		lb	154	220	242	330	583	671	1122	1782	2464



CHECK VALVE API-594

FIG NO. 1501LF FLANGED
FIG NO. 1501LW BUTT WELD
FIG NO. 1501LR RTJ

BOLTED BONNET PISTON CHECK CL1500



DESIGN: ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25

CONSTRUCTION: Welded in, Renewable seat ring
Bolted Bonnet
SST or Inconel Spring
Ground and lapped seat surface

ASTM BODY MATERIALS: WCB, WCC, WC6, WC9, C5, C12, LCB, LCC,
CF8, CF8M, CF3, CF3M, Duplex, Super Duplex

TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

ASME CLASS 1500											
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)									
			2	2 1/2	3	4	5	6	8	10	12
A	RF	mm	368	419	470	546	673	705	832	991	1130
		in	14.49	16.5	18.5	21.5	26.5	27.76	32.76	39.02	44.49
	RTJ	mm	371	422	473	549	676	711	842	1001	1146
		in	14.61	16.61	18.62	21.61	26.61	27.99	33.15	39.41	45.12
	BW	mm	368	419	470	546	673	705	832	991	1130
		in	14.49	16.5	18.5	21.5	26.5	27.76	32.76	39.02	44.49
d		mm	47.5	57	70	92	111	136	178	222	263.4
		in	1.87	2.24	2.76	3.62	4.37	5.35	7.01	8.74	10.37
H		mm	250	270	290	375	405	475	620	625	700
		in	9.84	10.63	11.42	14.76	15.94	18.7	24.41	24.61	27.56
Weight	RF/RTJ	kg	70	100	150	245	455	550	1010	1476	2280
		lb	154	220	330	539	1001	1210	2222	3247.2	5016

VALVE BODY MATERIALS						
MATERIAL GROUP	COMMON NAME	MATERIAL TYPE	FORGING SPEC	UNS	CASTING SPEC. EQUIVALENT	APPLICATION
Carbon Steel	CS	C-Mn-Fe	A105N	K03504	A216-WCB	*General non-corrosive service from -20°F (-29°C) to 800°F (427°C)*
Low Temperature Carbon Steel	LTCS	C-Mn-Fe	A350-LF2	K03011	A352-LC1	*General non-corrosive service from -50°F (-46°C) to 650°F (340°C), LF2 to 800°F (427°C)*
					A352-LCB	
					A352-LCC	
Low Alloy Steel	Alloy Steel Chrome Moly	1.1/4Cr-1/2Mo	A182-F11 cl2	K11572	A217-WC6	Up to 1100°F (593°C)
		2.1/4Cr-1Mo	A182-F22 cl3	K21590	A217-WC9	Up to 1100°F (593°C), HP steam
		5Cr-1/2Mo	A182-F5a	K41545	A217-C5	High temp. refinery service
		9Cr-1Mo	A182-F9	K90941	A217-C12	High temp. erosive refinery service
		9Cr-1Mo-V	A182-F91		A217-C12A	High pressure steam
Stainless Steel	Austentic S.Steel 300 series S.Steel	304 : 18Cr-8Ni	A182-F304	S30400	A351-CF8	0.04% min. carbon for temp. >1000°F (538°C)
		304L : 18Cr-8Ni	A182-F304L	S30403	A351-CF3	Up to 800°F (427°C)
		304H :	A182-F304H	S30409	A351-CF10	
		316 : 16Cr-12Ni-2Mo	A182-F316	S31600	A351-CF8M	0.04% min. carbon for temp. >1000°F (538°C)
		316L : 16Cr-12Ni-2Mo	A182-F316L	S31603	A351-CF3M	Up to 800°F (427°C)
		316H :	A182-F316H	S31609	A351-CF10M	
		316Ti :	A182-F316 Ti	S31635		Special grade
		321 : 18Cr-10Ni-Ti	A182-F321	S32100		0.04%min. carbon (grade F321H) and heat treat at 2000°F (1100°C) for service temps. >1000°F (538°C)
		321H	A182-F321H	S32109		
		347 : 18Cr-10Ni-Cb(Nb)	A182-F347	S34700	A351-CF8C	0.04%min. carbon (grade F347H) and heat treat at 200°F (1100°C) for service temps. >1000°F (538°C)
		347H	A182-F347H	S34709		
		317L	A182-F317L	S31703	A351-CG3M*	
	Alloy 20	28Ni-19Cr-Cu-Mo	A182-F20*	N08020	A351-CN7M†	Service to 600°F (316°C)*
	Duplex 2205	22Cr-5Ni-3Mo-N	A182-F51	S31803	A351-CD3MN	Service to 600°F (316°C) - The original S31803 UNS designation has been supplemented by S32205 which has higher minimum N,CR, and Mo
				S32205	A890-J92205*	
	Super Duplex 2507	25Cr-7Ni-4Mo-N	A182-F53	S32750	A351-CD4MCu*	Service to 600°F (316°C)
					A890 5A*	
	Super Duplex F55	25Cr-7Ni-3.5Mo-N-Cu-W	A182-F55	S32760	A995-CD3MWCuN	Service to 600°F (316°C)
	Super Austenitic 6Mo	20Cr-18Ni-6Mo	A182-F44	S31254	A351-CK3MCuN	Service to 600°F (316°C)
Nickel-Iron Alloy	Incoloy 800	33Ni-42Fe-21Cr	B564-N08800	N08800		Service to 1000°F (538°C)
	Incoloy 825	42Ni-21.5Cr-3Mo-2.3Cu	B564-N08825*	N08825	A494-CU5MCu*	Service to 600°F (316°C) for N02200, 1200°F (648°C) for N02201
Nickel	Nickel	99/95Ni	B160-N02200 (bar)	N02200	A494-CZ-100*	
Nickel-Copper	Monel 400	67Ni-30Cu	B564-N04400	N04400	A494-M35-1	
	Monel 500		B564-N05500*	N05500		
Nickel-Alloy	904L		904L*	N08904	n/a	
Nickel Superalloys	Inconel 600	72Ni-15Cr-8Fe	B564-N06600	N06600	A494-CY40*	
	Inconel 625	60Ni-22Cr-9Mo-3.5Cb	B564-N06625	N06625	A494-CW-6MC*	
	Hastelloy C-276	54Ni-15Cr-16Mo	B564-N10276	N10276	A494-CW-2M*	
Titanium	Titanium	98Ti	B381-Gr2	R50400	B367-C2*	Special grade

DISCLAIMER:

These charts are for reference only, Williams Valve cannot be held liable for any damages incurred due to the use of these tables. Temperatures shown must be analysed in conjunction with ASTM P/T charts and manufacturers recommendations for each valve type.

API TRIM CHART



TRIM	NOMINAL TRIM	SEATING SURFACE HARDNESS (HB) MINIMUM ^a	SEATING SURFACE MATERIAL TYPE ^b	SEATING SURFACE TYPICAL SPECIFICATIONS GRADE			STEM/BACKSEAT BUSHING ^p		STEM HARDNESS (HB)	BACKSEAT BUSHING HARDNESS (HB)
				CAST (INTEGRAL)	FORGED (INTEGRAL)	WELDED ^m	MATERIAL TYPE ^b	TYPICAL SPECIFICATIONS TYPE		
1	F6	TRIM NUMBER 1 IS OBSOLETE								
2	304	Note ^d	18Cr-8Ni	ASTM A351 (CF8)	ASTM A182 (F304)	AWS A5.9 ER308	18Cr-8Ni	ASTM A276-T304	Note ^d	Note ^d
3	F310	Note ^d	25Cr-20Ni	NA	ASTM A182 (F310)	AWS A5.9 ER310	25Cr-20Ni	ASTM A276-T310	Note ^d	Note ^d
4	Hard F6	750 ^e	Hard 13Cr	NA	Note ^f	NA	13Cr	ASTM A276-T410 or T420	200 min 275 max	250 min.
5	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A	13Cr	ASTM A276-T410 or T420	200 min 275 max	250 min.
5A	Hardfaced	350 ^e	Ni-Cr	NA	NA	Note ^h	13Cr	ASTM A276-T410 or T420	200 min 275 max	250 min.
5B	Hardfaced	350 ^e	UNS R31233	NA	NA	UNS R31233	13Cr	ASTM A276-T410 or T420	200 min 275 max	250 min.
6	F6 and Cu-Ni	250 ⁱ	13Cr	ASTM A217 (CA 15)	ASTM A182 (F6a)	AWS A5.9 ER410	13Cr	ASTM A276-T410 or T420	200 min 275 max	250 min.
		175 ⁱ	Cu-Ni	NA	Note ^k	NA				
7	F6 and Hard F6	250 ⁱ	13Cr	ASTM A217 (CA 15)	ASTM A182 (F6a)	AWS A5.9 ER410	13Cr	ASTM A276-T410 or T420	200 min 275 max	250 min.
		750 ⁱ	Hard 13Cr	NA	Note ^f	NA				
8	F6 and Hardfaced	250 ⁱ	13Cr	ASTM A217 (CA 15)	ASTM A182 (F6a)	AWS A5.9 ER410	13Cr	ASTM A276-T410 or T420	200 min 275 max	250 min.
		350 ⁱ	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A				
8A	F6 and Hardfaced	250 ⁱ	13Cr	ASTM A217 (CA 15)	ASTM A182 (F6a)	AWS A5.9 ER410	13Cr	ASTM A276-T410 or T420	200 min 275 max	250 min.
		350 ⁱ	Ni-Cr	NA	NA	Note ^h				
9	Monel TM *	Note ^d	Ni-Cu Alloy	NA	MFG Standard	NA	Ni-Cu Alloy	MFG Standard	Note ^d	Note ^d
10	316	Note ^d	18Cr-8Ni	ASTM A351 (CF8M)	ASTM A182 (F316)	AWS A5.9 ER316	18Cr-8Ni-Mo	ASTM A276-T316	Note ^d	Note ^d
11	Monel TM * and Hardfaced	Note ^d	Ni-Cu Alloy	NA	MFG Standard	NA	Ni-Cu Alloy	MFG Standard	Note ^d	Note ^d
		350 ⁱ	Trim 5 or 5A	NA	NA	See Trim 5 or 5A				
12	316 and Hardfaced	Note ^d	18Cr-8Ni-Mo	ASTM A351 (CF8M)	ASTM A182 (F316)	AWS A5.9 ER316	18Cr-8Ni-Mo	ASTM A276-T316	Note ^d	Note ^d
		350 ⁱ	Hardface per Trim 8 or 8A	NA	NA	Hardface per Trim 8 or 8A				
13	Alloy 20	Note ^d	19Cr-29Ni	ASTM A351 (CN7M)	ASTM B473	AWS A5.9 ER320	19Cr-29Ni	ASTM B473	Note ^d	Note ^d
14	Alloy 20 and Hardfaced	Note ^d	19Cr-29Ni	ASTM A351 (CN7M)	ASTM B473	AWS A5.9 ER320	19Cr-29Ni	ASTM B473	Note ^d	Note ^d
		350 ⁱ	Hardface per Trim 8 or 8A	NA	NA	Hardface per Trim 8 or 8A				
15	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A	18Cr-8Ni	ASTM A276-T304	Note ^d	Note ⁿ
16	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A	18Cr-8Ni-Mo	ASTM A276-T316	Note ^d	Note ⁿ
17	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A	18Cr-10Ni-Cb	ASTM A276-T347	Note ^d	Note ⁿ
18	Hardfaced	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A	19Cr-29Ni	ASTM B473	Note ^d	Note ⁿ
19	Nickel ^{**}	Note ^d	Ni Alloy	MFG Standard ^{**}	MFG Standard ^{**}	MFG Standard ^{**}	Ni Alloy ^{**}	MFG Standard	Note ^d	Note ⁿ
19A	Alloy 625	Note ^d	Alloy 625	ASTM A494 (CW6MC)	ASTM B564 UNS N06625	AWS A5.14 ERNiCrMo-3	Alloy 625	ASTM B564 UNS N06625	Note ^d	Note ⁿ
19B	Alloy C276	Note ^d	Alloy C276	ASTM A494 (CW2M)	ASTM B564 UNS N10276	AWS A5.14 ERNiCrMo-4	Alloy C276	ASTM B564 UNS N10276	Note ^d	Note ⁿ

TRIM	NOMINAL TRIM	SEATING SURFACE HARDNESS (HB) MINIMUM ^a	SEATING SURFACE MATERIAL TYPE ^b	SEATING SURFACE TYPICAL SPECIFICATIONS GRADE			STEM/BACKSEAT BUSHING ^p		STEM HARDNESS (HB)	BACKSEAT BUSHING HARDNESS (HB)
				CAST (INTEGRAL)	FORGED (INTEGRAL)	WELDED ^m	MATERIAL TYPE ^b	TYPICAL SPECIFICATIONS TYPE		
19C	Alloy 825	Note ^d	Alloy 825	ASTM A494 (CU5MCuC)	ASTM B564 UNS N08825	AWS A5.14 ERNiCrMo-3	Alloy 825	ASTM B564 UNS N08825	Note ^d	Note ⁿ
20	Nickel ^{**} and Hardfaced	Note ^d	Ni Alloy	MFG Standard ^{**}	MFG Standard ^{**}	MFG Standard ^{**}	Ni Alloy ^{**}	MFG Standard	Note ^d	Note ⁿ
		350 ⁱ	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A				
20A	Alloy 625 and Hardfaced	Note ^d	Alloy 625	ASTM A494 (CW6MC)	ASTM B564 UNS N06625	AWS A5.14 ERNiCrMo-3	Alloy 625	ASTM B564 UNS N06625	Note ^d	Note ⁿ
		350 ⁱ	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A				
20B	Alloy C276 and Hardfaced	Note ^d	Alloy C276	ASTM A494 (CW2M)	ASTM B564 UNS N10276	AWS A5.14 ERNiCrMo-4	Alloy C276	ASTM B564 UNS N10276	Note ^d	Note ⁿ
		350 ⁱ	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A				
20C	Alloy 825 and Hardfaced	Note ^d	Alloy 825	ASTM A494 (CU5MCuC)	ASTM B564 UNS N08825	AWS A5.14 ERNiCrMo-3	Alloy 825	ASTM B564 UNS N08825	Note ^d	Note ⁿ
		350 ⁱ	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A				
21	Hardfaced ^{**}	350 ^e	Co-Cr A ^g	NA	NA	AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A	Ni Alloy ^{**}	MFG Standard ^{**}	Note ^d	Note ⁿ

NOTE: Cr = Chromium; Ni = Nickel; Co = Cobalt; Cu = Copper; NA = Not Applicable.

* Monel is used strictly as an example of any nickel-copper alloy 400 matching UNS N04400 specifications. It does not constitute any endorsement of any specific product or company by API.

** Trim materials, including stem and base material for HF trim items, shall have a corrosion resistance and temperature limit at least equal to the valve body's corrosion resistance and pressure temperate rating.

^a HB (formerly BHN) is the symbol for the Brinell hardness per ASTM E10.

^b Free machining grades of 13Cr are prohibited.

^c Not used.

^d Manufacturer's standard hardness.

^e Differential hardness between the body and disc seating surfaces is not required.

^f Case hardness by nitriding to a thickness of 0.13mm (0.005in.) minimum.

^g AWS A5.13 ECoCr-A or AWS A5.21 ERCoCr-A: This classification includes such trademark materials as Stellite 6 TM*, Stoddy 6 TM*, and Wallex 6 TM*. For Plasma Transfer Arc Welding (PTAW) process powder with the metallurgy equivalent to UNS R30006 can also be used, CoCr-E (Stellite 21 TM* or equal) may be used only with purchaser approval and typical CoCr-E alloys include AWS A5.13 ECoCr-E or AWS A5.21 ERCoCr-E. * Trademarks are examples only and do not constitute an endorsement of this product by API.

^h Manufacturer's standard hardfacing with a maximum iron content of 25%.

ⁱ Hardness differential between the body and disc seating surfaces shall be the manufacturer's standard.

^j Not used.

^k Manufacturer's standard with 30 Ni minimum.

^l Not used.

^m Typical backseat seating surface hardfacing or overlay, when specified.

ⁿ Per manufacturer's standard if not hardfaced, 250 HB minimum if hardfaced.

^p For weld deposit on an integral backseat, the same nominal material and typical specification shall apply.



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