



WILLIAMS VALVE

CAST GATE, GLOBE & CHECK VALVES

PRESSURE SEAL BONNET



*“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





CAST PSB 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
WEDGE GATE	600	•	•	•	•	•	•	•	•	•	•	•	•			
	900	•	•	•	•	•	•	•	•	•	•	•	•			•
	1500	•	•	•	•	•	•	•	•	•	•	•	•			
	2500	•	•	•	•	•	•	•	•	•	•					
PARALLEL SLIDE	600	•	•	•	•	•	•	•	•	•	•	•	•			
	900	•	•	•	•	•	•	•	•	•	•	•	•			
	1500	•	•	•	•	•	•	•	•	•	•	•	•			
	2500	•	•	•	•	•	•	•	•	•	•					
T-PAT GLOBE	600	•	•	•	•	•	•	•	•	•						
	900	•	•	•	•	•	•	•	•	•						
	1500	•	•	•	•	•	•	•								
	2500	•	•	•	•	•	•									
Y-PAT GLOBE	600	•	•	•	•	•	•	•	•	•						
	900	•	•	•	•	•	•	•								
	1500	•	•	•	•	•	•	•								
	2500	•	•	•	•	•	•									
SWING CHECK	600	•	•	•	•	•	•	•	•	•	•	•	•			
	900	•	•	•	•	•	•	•	•	•	•	•	•			
	1500	•	•	•	•	•	•	•	•	•	•	•	•			
	2500	•	•	•	•	•	•	•								
TILTING DISC CHECK	600	•	•	•	•	•	•	•	•	•	•	•	•			
	900	•	•	•	•	•	•	•	•	•	•	•	•			
	1500	•	•	•	•	•	•	•	•	•	•	•	•			
	2500	•	•	•	•	•	•	•								



Valves comply with MSS-SP144



Valves comply with MSS-SP144



Valves comply with MSS-SP144

GASKET MATERIALS

VALVE TYPE / ASME CLASS	CL600 & ABOVE
Gate	SST + Graphite
Globe	SST + Graphite
Check	SST + Graphite

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			HO	Hydraulic Operator
	153	CL150 Angle Globe	605	CL600 Tilting Disc Check	2501L	CL2500 Piston Check			62	API Trim 12			CF8M	ASTM A351 Grade CF8M			MO	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							PO	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

PRESSURE SEAL FLEXIBLE WEDGE GATE



FEATURES

Size: 2"-30"
Class: ASME 600-2500
Cast Steel
Flexible Wedge Gate
Fully Guided Disc
Welded in Renewable seat
Knockout holes

SPECIFICATIONS

Design: MSS-SP144
Face to Face: ASME B16.10
End Flange: ASME B16.5
BW End: ASME B16.25
NDE: API-598
API-622 Packing
Options: NACE MR0175; Cryogenic

PRESSURE SEAL PARALLEL SLIDE



FEATURES

Size: 2"-24"
Class: ASME 600-2500
Cast Steel
Parallel Slide
Position Seated
Fully Guided Disc
Welded in Renewable seat

SPECIFICATIONS

Design: MSS-SP144
Face to Face: ASME B16.10
End Flange: ASME B16.5
BW End: ASME B16.25
NDE: API-598
API-622 Packing
Option: Cryogenic

PRESSURE SEAL T-PATTERN GLOBE



FEATURES

Size: 2"-24"
Class: ASME 600-2500
Cast Steel
T-Pattern Design
Low Fugitive Emission
Body Guided Disc
Welded in Renewable seat

SPECIFICATIONS

Design: MSS-SP144
Face to Face: ASME B16.10
End Flange: ASME B16.5
BW End: ASME B16.25
NDE: API-598
API-622 Packing
Option: Stop Check; Cryogenic

PRESSURE SEAL Y-PATTERN GLOBE



FEATURES

Size: 2"-16"
Class: ASME 600-2500
Cast Steel
Y-Pattern
Low Fugitive Emission
Body 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
API-622 Packing
Option: Stop Check; Lift Check; Cryogenic



PRESSURE SEAL SWING CHECK



FEATURES

Size: 2"-24"
Class: ASME 600-2500
Cast Steel
Swing Check
Welded in Renewable seat
Dual Security Disc

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
Option: Cryogenic

PRESSURE SEAL TILTING DISC CHECK



FEATURES

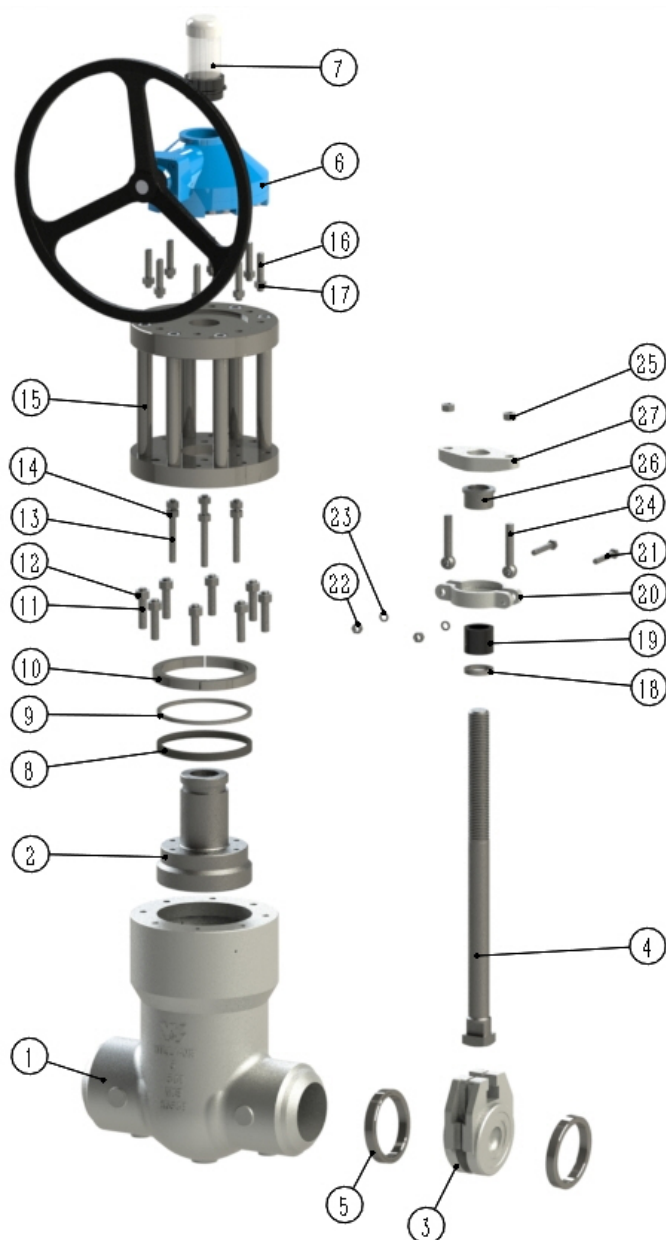
Size: 2"-24"
Class: ASME 900-2500
Cast Steel
Tilting Disc
Welded in Renewable seat
Dual Security Disc

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
Option: Cryogenic

PRESSURE SEAL BONNET MSS-SP144 WEDGE GATE COMPONENTS

WILLIAMS VALVE



ITEM NO.	PART NAME
1	Body
2	Bonnet
3	Gate
4	Stem
5	Seat Ring
6	Gearbox
7	Stem Cover
8	Gasket
9	Thrust Ring
10	Segmented Ring
11	Stud
12	Nut
13	Stud
14	Nut
15	Yoke Assembly
16	Stud
17	Nut
18	Spacer Ring
19	Packing
20	Clipping Ring
21	Bolt
22	Nut
23	Spring Washer
24	Eye bolt
25	Nut
26	Gland
27	Gland Flange

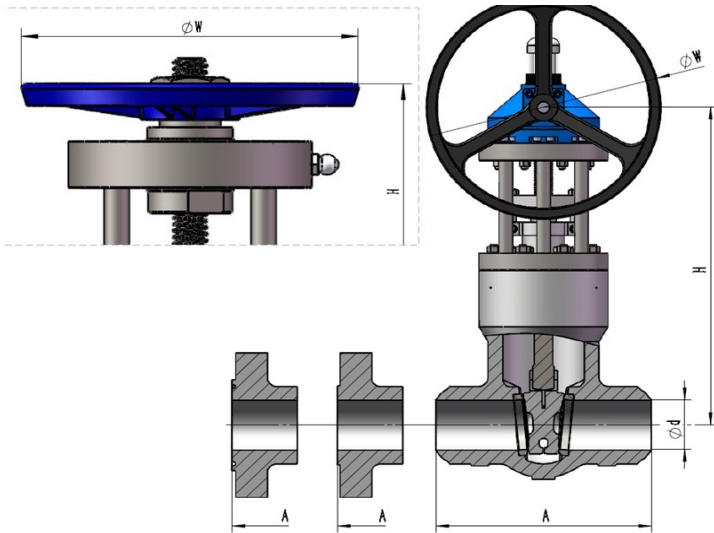
PRESSURE SEAL BONNET MSS-SP144 WEDGE GATE DATA



GATE VALVE MSS-SP144

FIG NO. 60F-PS FLANGED
FIG NO. 60W-PS BUTT WELD

PSB WEDGE GATE CL600



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

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

FUGITIVE EMISSION: API-622 Packing

CONSTRUCTION: OS&Y rising stem
Flexible split wedge
Renewable seat ring
Pressure Seal Bonnet
Handwheel, Gear op, or bare stem for actuation
Bidirectional sealing
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface

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

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

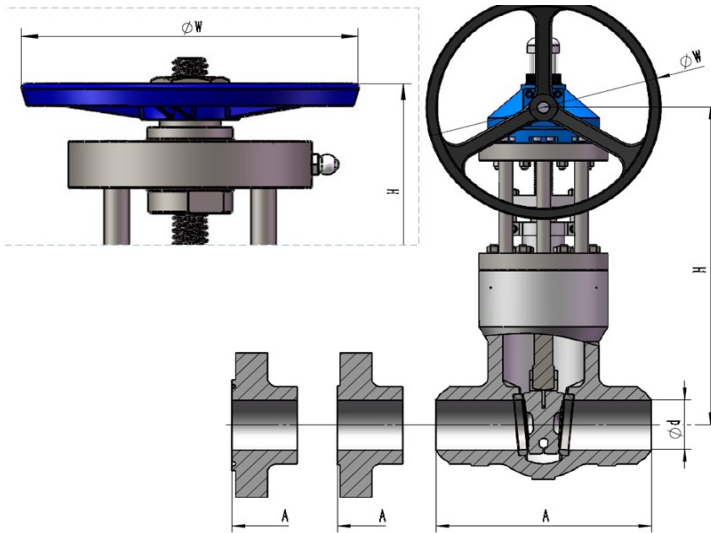
OPTIONS: Live loaded Packing
Live loaded Draw Bolts
Bonnet vent and bypasses

ASME CLASS 600														
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)												
			2	2 1/2	3	4	6	8	10	12	14	16	18	24
A	RF	mm	292	330	356	432	559	660	787	838	889	991	1092	1397
		in	11.5	12.99	14.02	17.01	22.01	25.98	30.98	32.99	35	39.02	42.99	55
	RTJ	mm	295	333	359	435	562	663	790	841	892	994	1095	1407
		in	11.61	13.11	14.13	17.13	22.13	26.1	31.1	33.11	35.12	39.13	43.11	55.39
	BW	mm	178	216	254	305	457	584	711	813	889	991	1092	1397
		in	7.01	8.5	10	12.01	17.99	22.99	27.99	32.01	35	39.02	42.99	55
d		mm	51	64	76	102	152	200	248	298	327	375	419	559
		in	2.01	2.52	2.99	4.02	5.98	7.87	9.76	11.73	12.87	14.76	16.5	22.01
H	Open	mm	462	573	602	736	865	1047	1245	1445				
		in	18.19	22.56	23.7	28.98	34.06	41.22	49.02	56.89				
	Closed	mm	399	498	506	584	760	920	975	1129				
		in	15.71	19.61	19.92	22.99	29.92	36.22	38.39	44.45				
	Gearbox	mm					760	830	985	1190	1791	1850	2180	2850
		in					29.92	32.68	38.78	46.85	70.51	72.83	85.83	112.2
W	Handwheel	mm	200	250	250	300	450	500	640	640	TBD	TBD	TBD	TBD
		in	7.87	9.84	9.84	11.81	17.72	19.69	25.2	25.2				
	Gearbox	mm					460	460	610	610	710	710	710	800
		in					18.11	18.11	24.02	24.02	27.95	27.95	27.95	31.5
	BW	kg	62	56	100	148	245	323	495	733	1007	1314	1654	2826
		lb	136.4	123.2	220	325.6	539	710.6	1089	1612.6	2215.4	2890.8	3638.8	6217.2
Weight	RF/RTJ	kg	68.4	65.2	112.6	174.4	296.2	402.8	626.2	887.2	1192.6	1573	1978	3423.8
		lb	150.48	143.44	247.72	383.68	651.64	886.16	1377.64	1951.84	2623.72	3460.6	4351.6	7530.6

GATE VALVE MSS-SP144

FIG NO. 90F-PS FLANGED
FIG NO. 90W-PS BUTT WELD

PSB WEDGE GATE CL900



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

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

FUGITIVE EMISSION: API-622 Packing

CONSTRUCTION: OS&Y rising stem
Flexible split wedge
Renewable seat ring
Pressure Seal Bonnet
Handwheel, Gear op, or bare stem for actuation
Bidirectional sealing
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface

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

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

OPTIONS: Live loaded Packing
Live loaded Draw Bolts
Bonnet vent and bypasses

ASME CLASS 900															
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)													
			2	2 1/2	3	4	6	8	10	12	14	16	18	20	24
A	RF	mm	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549
		in	14.49	16.5	15	17.99	24.02	29.02	32.99	37.99	40.51	44.49	47.99	52.01	60.98
	RTJ	mm	371	422	384	460	613	740	841	968	1039	1140	1232	1334	1568
		in	14.61	16.61	15.12	18.11	24.13	29.13	33.11	38.11	40.91	44.88	48.5	52.52	61.73
	BW	mm	216	254	305	356	508	660	787	914	991	1092	1219	1321	1549
		in	8.5	10	12.01	14.02	20	25.98	30.98	35.98	39.02	42.99	47.99	52.01	60.98
d		mm	48	57	73	98	146	191	238	282		356	400	445	534
		in	1.89	2.24	2.87	3.86	5.75	7.52	9.37	11.1	0	14.02	15.75	17.52	21.02
H	Open	mm	528	676	707	780	1016	1235							
		in	20.79	26.61	27.83	30.71	40	48.62							
	Closed	mm	455	590	589	635	850	1025							
		in	17.91	23.23	23.19	25	33.46	40.35							
	Gearbox	mm				670	840	1015	1174	1333	1350	1693	2024	2344	2480
		in				26.38	33.07	39.96	46.22	52.48	53.15	66.65	79.69	92.28	97.64
W	Handwheel	mm	250	300	350	350	500	640							
		in	9.84	11.81	13.78	13.78	19.69	25.2							
	Gearbox	mm				310	460	610	610	710	710	800	800	1000	1000
		in				12.2	18.11	24.02	24.02	27.95	27.95	31.5	31.5	39.37	39.37
Weight	BW	kg	50	90	100	122	320	520	802	1205	1552	2554	3215	3685	5430
		lb	110	198	220	268.4	704	1144	1764.4	2651	3414.4	5618.8	7073	8107	11946
	RF/RTJ	kg	68.6	115.8	122.2	158.2	393.8	646.2	981.2	1451.2	1833	2899.4	3696.2	4285.6	6584.8
		lb	150.92	254.76	268.84	348.04	866.36	1421.64	2158.64	3192.64	4032.6	6378.68	8131.64	9428.32	14486.56

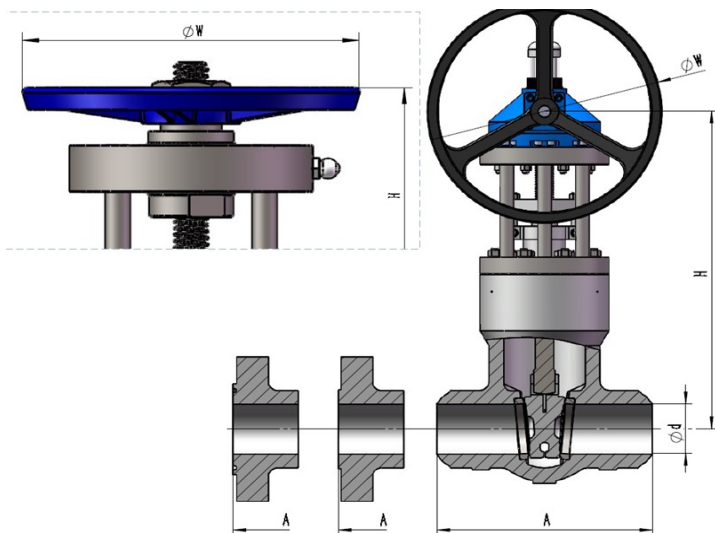
PRESSURE SEAL BONNET MSS-SP144 WEDGE GATE DATA



GATE VALVE MSS-SP144

FIG NO. 150F-PS FLANGED
FIG NO. 150W-PS BUTT WELD

PSB WEDGE GATE CL1500



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

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

FUGITIVE EMISSION: API-622 Packing

CONSTRUCTION:

- OS&Y rising stem
- Flexible split wedge
- Renewable seat ring
- Pressure Seal Bonnet
- Handwheel, Gear op, or bare stem for actuation
- Bidirectional sealing
- 316SS + Graphite PS Gasket
- 309SS overlay on PS Gasket surface

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

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

OPTIONS:

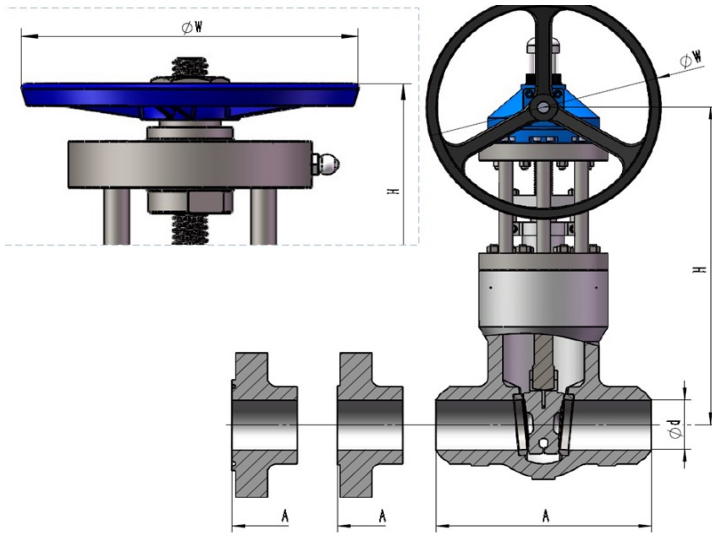
- Live loaded Packing
- Live loaded Draw Bolts
- Bonnet vent and bypasses

ASME CLASS 1500															
DIMENSIONS AND WEIGHTS		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	216	254	305	406	559	711	864	991	1067	1194	1346	1473	1676
		in	8.5	10	12.01	15.98	22.01	27.99	34.02	39.02	42.01	47.01	52.99	57.99	65.98
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	528	676	745	850	1085								
		in	20.79	26.61	29.33	33.46	42.72								
	Closed	mm	455	590	660	770	876								
		in	17.91	23.23	25.98	30.31	34.49								
	Gearbox	mm			628	716	868	1085	1111	1535	1870	2200	2350	2545	2800
		in			24.72	28.19	34.17	42.72	43.74	60.43	73.62	86.61	92.52	100.2	110.24
W	Handwheel	mm	250	300	350	400	560								
		in	9.84	11.81	13.78	15.75	22.05								
	Gearbox	mm			310	310	610	610	710	610	610	610	1000	1000	1000
		in			12.2	12.2	24.02	24.02	27.95	24.02	24.02	24.02	39.37	39.37	39.37
Weight	BW	kg	50	90	100	155	367	718	1481	1467	1850	2280	3680	4265	5750
		lb	110	198	220	341	807.4	1579.6	3258.2	3227.4	4070	5016	8096	9383	12650
	RF/RTJ	kg	68.6	115.8	134	206.4	486.4	915.4	1815.8	1963.2	2509.8	3137.4	4845	5715.2	8085.8
		lb	150.92	254.76	294.8	454.08	1070.08	2013.88	3994.76	4319.04	5521.56	6902.28	10659	12573.44	17788.76

GATE VALVE MSS-SP144

FIG NO. 250F-PS FLANGED
FIG NO. 250W-PS BUTT WELD

PSB WEDGE GATE CL2500



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

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

FUGITIVE EMISSION: API-622 Packing

CONSTRUCTION: OS&Y rising stem
Flexible split wedge
Renewable seat ring
Pressure Seal Bonnet
Handwheel, Gear op, or bare stem for actuation
Bidirectional sealing
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface

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

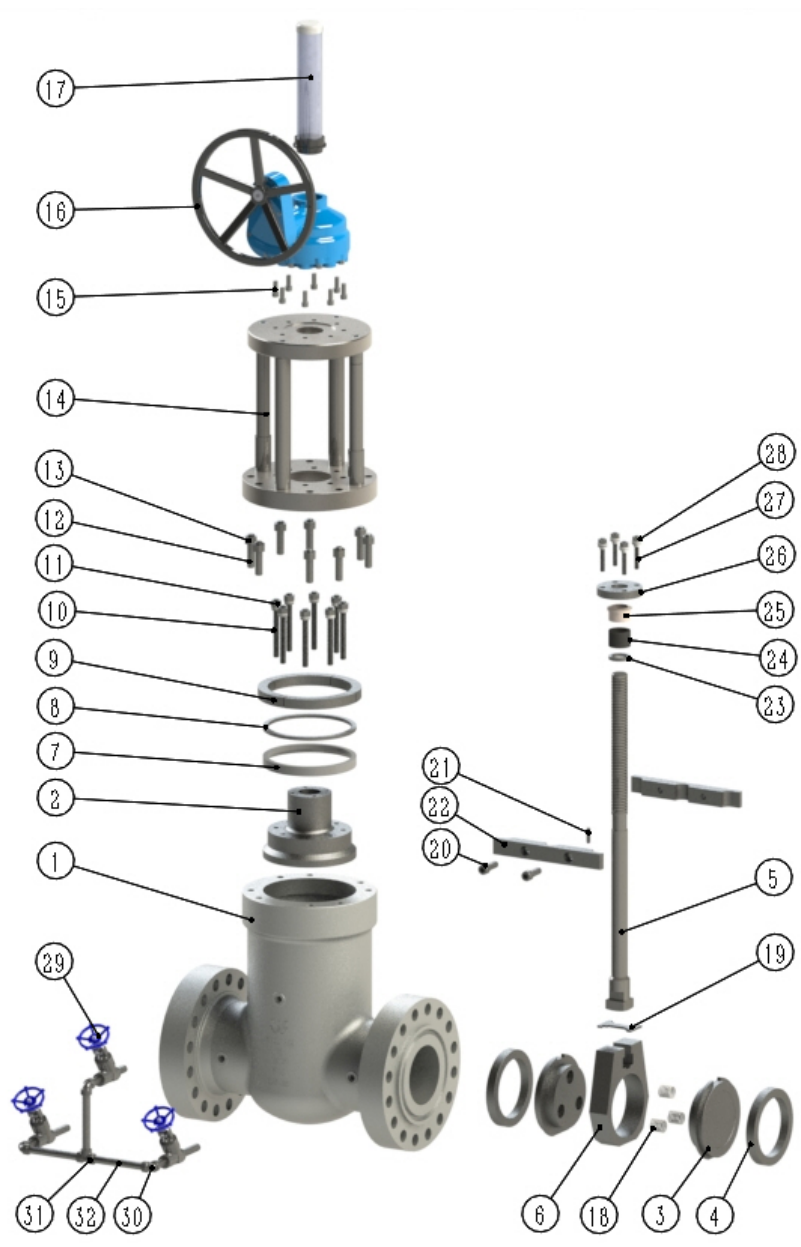
TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

OPTIONS: Live loaded Packing
Live loaded Draw Bolts
Bonnet vent and bypasses

ASME CLASS 2500													
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)											
			2	2 1/2	3	4	6	8	10	12	14	16	18
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	279	330	368	457	610	762	914	1041	1118	1245	1397
		in	10.98	12.99	14.49	17.99	24.02	30	35.98	40.98	44.02	49.02	55
d		mm	39	48	57	72	111	147	185	219	241	276	311
		in	1.54	1.89	2.24	2.83	4.37	5.79	7.28	8.62	9.49	10.87	12.24
H	Open	mm	521	662	662	812	928						
		in	20.51	26.06	26.06	31.97	36.54						
	Closed	mm	475	558	570	726	798						
		in	18.7	21.97	22.44	28.58	31.42						
	Gearbox	mm				725	880	1040	1400	1480	1750	1875	2290
		in				28.54	34.65	40.94	55.12	58.27	68.9	73.82	90.16
W	Handwheel	mm	400	450	450	560	560						
		in	15.75	17.72	17.72	22.05	22.05						
	Gearbox	mm				460	460	610	610	610	610	610	610
		in				18.11	18.11	24.02	24.02	24.02	24.02	24.02	24.02
Weight	BW	kg	60	118	127	188	381	840	1589	2458	3260	4250	
		lb	132	259.6	279.4	413.6	838.2	1848	3495.8	5407.6	7172	9350	
	RF/RTJ	kg	90	160.4	192.2	287	638.6	1211	2308	3469.4			
		lb	198	352.88	422.84	631.4	1404.92	2664.2	5077.6	7632.68			

PRESSURE SEAL BONNET

MSS-SP144 PARALLEL SLIDE COMPONENTS

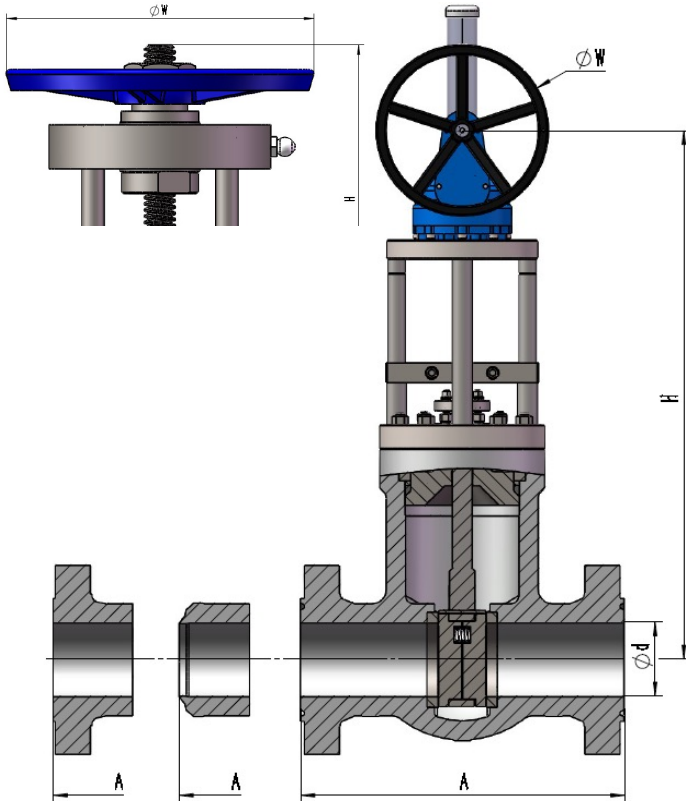


ITEM NO.	PART NAME
1	Body
2	Bonnet
3	Disc
4	Seat Ring
5	Stem
6	Carrier
7	Gasket
8	Thrust Ring
9	Segmented Ring
10	Stud
11	Nut
12	Stud
13	Nut
14	Yoke Assembly
15	Cap Screw
16	Gearbox
17	Stem Cover
18	Spring
19	Holding Plate
20	Cap Screw
21	Key
22	Guide Arm
23	Spacer Ring
24	Packing
25	Gland
26	Gland Flange
27	Stud
28	Nut
29	Y Type Globe Valve
30	Tee
31	Pipe

GATE VALVE MSS-SP144

FIG NO. 60F-PS-PLS FLANGED
FIG NO. 60W-PS-PLS BUTT WELD

PSB PARALLEL SLIDE GATE CL600



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

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

FUGITIVE EMISSION: API-622 Packing

CONSTRUCTION:

- OS&Y rising stem
- Parallel Slide Disc
- Renewable seat ring
- Pressure Seal Bonnet
- Handwheel, Gear op, or bare stem for actuation
- Bidirectional sealing
- 316SS + Graphite PS Gasket
- 309SS overlay on PS Gasket surface
- Segment ring Knockout holes
- Non-rotating Stem

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

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

OPTIONS:

- Live loaded Packing
- Live loaded Draw Bolts
- Bonnet vent and bypasses

ASME CLASS 600														
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)												
			2	2 1/2	3	4	6	8	10	12	14	16	18	24
A	RF	mm	292	330	356	432	559	660	787	838	889	991	1092	1397
		in	11.5	12.99	14.02	17.01	22.01	25.98	30.98	32.99	35	39.02	42.99	55
	RTJ	mm	295	333	359	435	562	663	790	841	892	994	1095	1407
		in	11.61	13.11	14.13	17.13	22.13	26.1	31.1	33.11	35.12	39.13	43.11	55.39
	BW	mm	292	330	356	432	559	660	787	838	889	991	1092	1397
		in	11.5	12.99	14.02	17.01	22.01	25.98	30.98	32.99	35	39.02	42.99	55
d		mm	51	64	76	102	152	200	248	298	327	375	419	559
		in	2.01	2.52	2.99	4.02	5.98	7.87	9.76	11.73	12.87	14.76	16.5	22.01
H	Open	mm	462	573	602	736	865	1047	1245	1445				
		in	18.19	22.56	23.7	28.98	34.06	41.22	49.02	56.89				
	Closed	mm	399	498	516	620	700	828	975	1129				
		in	15.71	19.61	20.31	24.41	27.56	32.6	38.39	44.45				
W	Gearbox	mm					760	830	985	1190	1791	1850	2180	2850
		in					29.92	32.68	38.78	46.85	70.51	72.83	85.83	112.2
	Handwheel	mm	200	250	250	300	450	500	640	640				
		in	7.87	9.84	9.84	11.81	17.72	19.69	25.2	25.2				
Weight	BW	kg	43	56	65	82	165	323	495	733	1007	1314	1654	2826
		lb	94.6	123.2	143	180.4	363	710.6	1089	1612.6	2215.4	2890.8	3638.8	6217.2
	RF/RTJ	kg	49.4	65.2	77.6	108.4	216.2	402.8	626.2	887.2	1192.6	1573	1978	3423
		lb	108.68	143.44	170.72	238.48	475.64	886.16	1377.64	1951.84	2623.72	3460.6	4351.6	7530.6

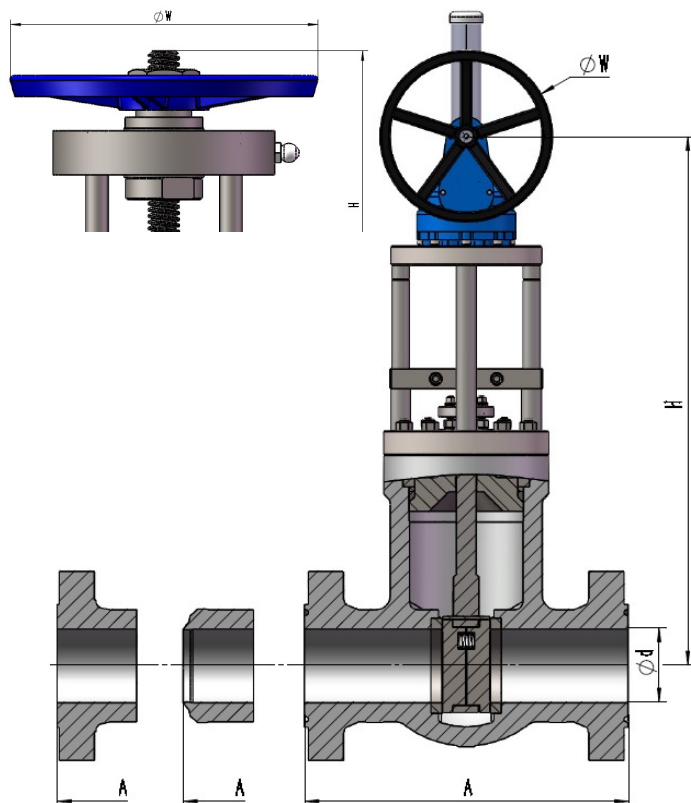
PRESSURE SEAL BONNET MSS-SP144 PARALLEL SLIDE DATA



GATE VALVE MSS-SP144

FIG NO. 90F-PS-PLS FLANGED
FIG NO. 90W-PS-PLS BUTT WELD

PSB PARALLEL SLIDE GATE CL900



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

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

FUGITIVE EMISSION: API-622 Packing

CONSTRUCTION: OS&Y rising stem
Parallel Slide Disc
Renewable seat ring
Pressure Seal Bonnet
Handwheel, Gear op, or bare stem for actuation
Bidirectional sealing
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface
Segment ring Knockout holes
Non-rotating Stem

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

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

OPTIONS: Live loaded Packing
Live loaded Draw Bolts
Bonnet vent and bypasses

ASME CLASS 900															
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)													
			2	2 1/2	3	4	6	8	10	12	14	16	18	20	24
A	RF	mm	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549
		in	14.49	16.5	15	17.99	24.02	29.02	32.99	37.99	40.51	44.49	47.99	52.01	60.98
	RTJ	mm	371	422	384	460	613	740	841	968	1039	1140	1232	1334	1568
		in	14.61	16.61	15.12	18.11	24.13	29.13	33.11	38.11	40.91	44.88	48.5	52.52	61.73
	BW	mm	216	254	305	356	508	660	787	914	991	1092	1219	1321	1549
		in	8.5	10	12.01	14.02	20	25.98	30.98	35.98	39.02	42.99	47.99	52.01	60.98
d	mm	48	57	73	98	146	190	238	282	312	356	401	445	534	
	in	1.89	2.24	2.87	3.86	5.75	7.48	9.37	11.1	12.28	14.02	15.79	17.52	21.02	
H	Open	mm	528	676	707	780	1016	1235							
		in	20.79	26.61	27.83	30.71	40	48.62							
	Closed	mm	466	590	620	635	850	1025							
		in	18.35	23.23	24.41	25	33.46	40.35							
	Gearbox	mm				670	840	1015	1040	1205	1350	1525	1650	1760	2170
		in				26.38	33.07	39.96	40.94	47.44	53.15	60.04	64.96	69.29	85.43
W	Handwheel	mm	250	300	350	350	500	640							
		in	9.84	11.81	13.78	13.78	19.69	25.2							
	Gearbox	mm				310	460	610	610	710	710	710	710	800	800
		in				12.2	18.11	24.02	24.02	27.95	27.95	27.95	27.95	31.5	31.5
Weight	BW	kg	45	90	100	122	320	520	802	1167	1552	2554	2950	3410	5430
		lb	99	198	220	268.4	704	1144	1764.4	2567.4	3414.4	5618.8	6490	7502	11946
	RF/RTJ	kg	63.6	115.8	122.2	158.2	393.8	646.2	981.2	1413.2	1833	2899.4	3431.2	4010.6	6584.8
		lb	139.92	254.76	268.84	348.04	866.36	1421.64	2158.64	3109.04	4032.6	6378.68	7548.64	8823.32	14486.56

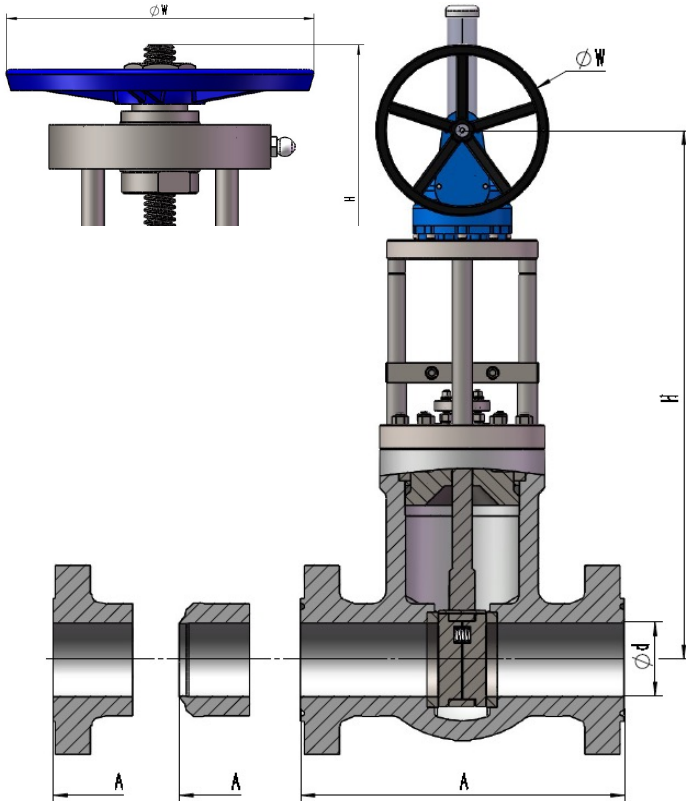
PRESSURE SEAL BONNET MSS-SP144 PARALLEL SLIDE DATA

WILLIAMS VALVE

GATE VALVE MSS-SP144

FIG NO. 150F-PS-PLS FLANGED
FIG NO. 150W-PS-PLS BUTT WELD

PSB PARALLEL SLIDE GATE CL1500



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

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

FUGITIVE EMISSION: API-622 Packing

CONSTRUCTION: OS&Y rising stem
Parallel Slide Disc
Renewable seat ring
Pressure Seal Bonnet
Handwheel, Gear op, or bare stem for actuation
Bidirectional sealing
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface
Segment ring Knockout holes
Non-rotating Stem

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

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

OPTIONS: Live loaded Packing
Live loaded Draw Bolts
Bonnet vent and bypasses

ASME CLASS 1500														
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)												
			2	2 1/2	3	4	6	8	10	12	14	16	18	24
A	RF	mm	368	419	470	546	705	832	991	1130	1257	1384	1537	1664
		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
	RTJ	mm	371	422	473	549	711	842	1001	1146	1276	1406	1559	1686
		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
	BW	mm	216	254	305	406	559	711	864	991	1067	1194	1346	1473
		in	8.5	10	12.01	15.98	22.01	27.99	34.02	39.02	42.01	47.01	52.99	57.99
d		mm	48	57	70	92	136	178	222	263	289	331	372	416
		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
H	Open	mm	528	676	745	850	1085							
		in	20.79	26.61	29.33	33.46	42.72							
	Closed	mm	466	590	655	770	930							
		in	18.35	23.23	25.79	30.31	36.61							
W	Gearbox	mm			640	750	925	1085	1353	1535	1870	2200	2350	2545
		in			25.2	29.53	36.42	42.72	53.27	60.43	73.62	86.61	92.52	100.2
	Handwheel	mm	250	300	350	400	560							
		in	9.84	11.81	13.78	15.75	22.05							
Weight	BW	kg	45	90	100	155	367	718	1264	1467	1850	2280	3680	4265
		lb	99	198	220	341	807.4	1579.6	2780.8	3227.4	4070	5016	8096	9383
	RF/RTJ	kg	63.6	115.8	134	206.4	486.4	915.4	1598.8	1963.2	2509.8	3137.4	4845	5715.2
		lb	139.92	254.76	294.8	454.08	1070.08	2013.88	3517.36	4319.04	5521.56	6902.28	10659	12573.44

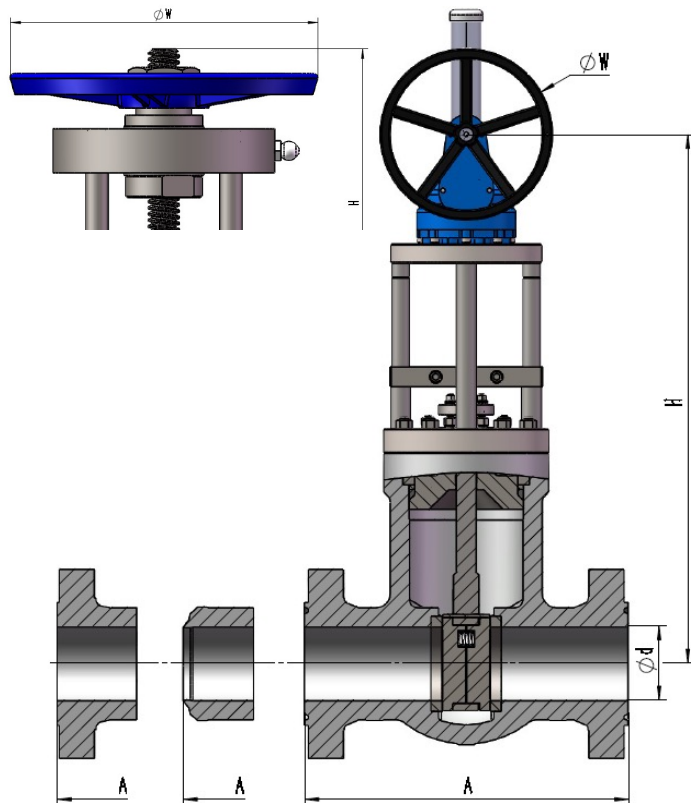
PRESSURE SEAL BONNET MSS-SP144 PARALLEL SLIDE DATA



GATE VALVE MSS-SP144

FIG NO. 250F-PS-PLS FLANGED
FIG NO. 250W-PS-PLS BUTT WELD

PSB PARALLEL SLIDE GATE CL2500



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

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

FUGITIVE EMISSION: API-622 Packing

CONSTRUCTION:

- OS&Y rising stem
- Parallel Slide Disc
- Renewable seat ring
- Pressure Seal Bonnet
- Handwheel, Gear op, or bare stem for actuation
- Bidirectional sealing
- 316SS + Graphite PS Gasket
- 309SS overlay on PS Gasket surface
- Segment ring Knockout holes
- Non-rotating Stem

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

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

OPTIONS:

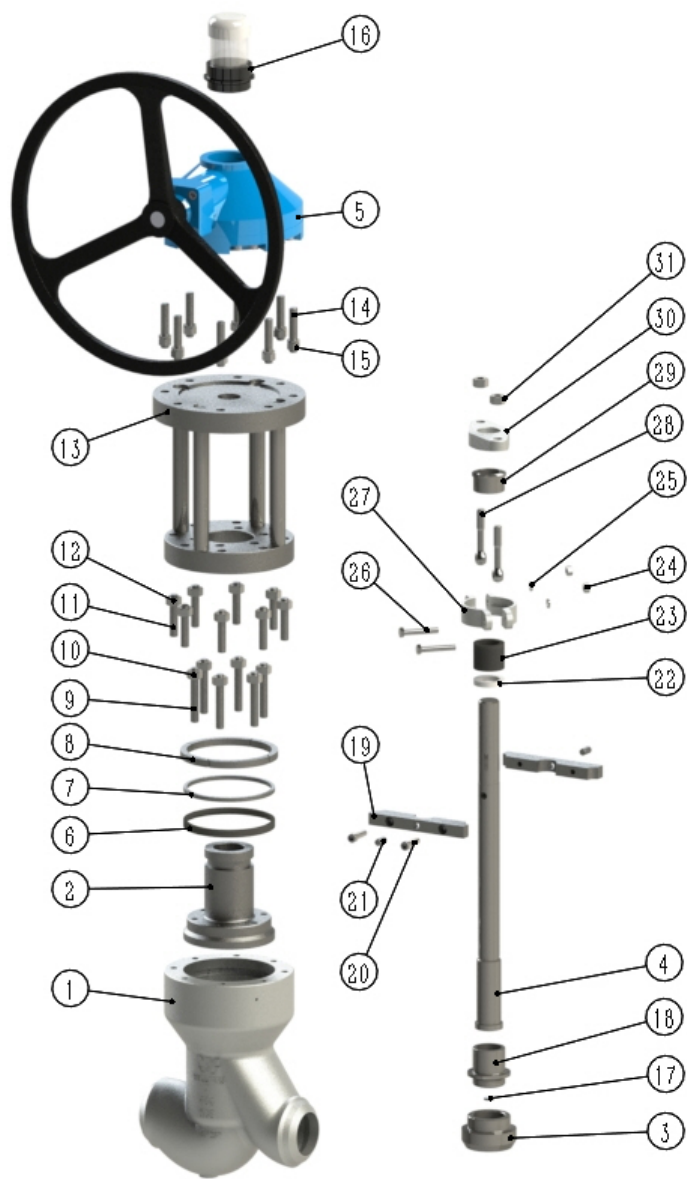
- Live loaded Packing
- Live loaded Draw Bolts
- Bonnet vent and bypasses

ASME CLASS 2500													
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)											
			2	2 1/2	3	4	6	8	10	12	14	16	18
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	279	330	368	457	610	762	914	1041	1118	1245	1397
		in	10.98	12.99	14.49	17.99	24.02	30	35.98	40.98	44.02	49.02	55
d		mm	39	48	57	73	111	147	185	219	241	276	311
		in	1.54	1.89	2.24	2.87	4.37	5.79	7.28	8.62	9.49	10.87	12.24
H	Open	mm	521	662	662	812	928						
		in	20.51	26.06	26.06	31.97	36.54						
	Closed	mm	473	558	558	717	798						
		in	18.62	21.97	21.97	28.23	31.42						
	Gearbox	mm					880	1040	1400	1480	1750	1875	2290
		in					34.65	40.94	55.12	58.27	68.9	73.82	90.16
W	Handwheel	mm	400	450	450	560	560						
		in	15.75	17.72	17.72	22.05	22.05						
	Gearbox	mm					460	610	610	610	610	610	610
		in					18.11	24.02	24.02	24.02	24.02	24.02	24.02
Weight	BW	kg	80	158	178	237	381	840	1589	2458	3260	4250	
		lb	176	347.6	391.6	521.4	838.2	1848	3495.8	5407.6	7172	9350	
	RF/RTJ	kg	110	200.4	243.2	336	638.6	1211	2308	3469.4			
		lb	242	440.88	535.04	739.2	1404.92	2664.2	5077.6	7632.68			

PRESSURE SEAL BONNET

MSS-SP144 T-PATTERN GLOBE COMPONENTS

WILLIAMS VALVE



ITEM NO.	PART NAME
1	Body
2	Bonnet
3	Disc
4	Stem
5	Gearbox
6	Gasket
7	Thrust Ring
8	Segmented Ring
9	Stud
10	Nut
11	Stud
12	Nut
13	Yoke Assembly
14	Stud
15	Nut
16	Stem Cover
17	Stem Washer
18	Disc Cover
19	Guide Arm
20	Cap Screw
21	Pin
22	Spacer Ring
23	Packing
24	Nut
25	Spring Washer
26	Bolt
27	Clipping Ring
28	Eye Bolt
29	Gland
30	Gland Flange
31	Nut

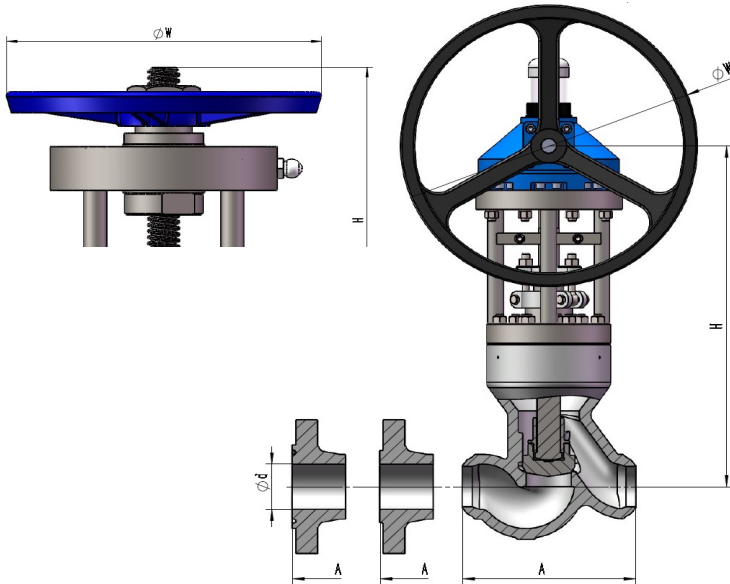
PRESSURE SEAL BONNET MSS-SP144 T-PATTERN GLOBE DATA



GLOBE VALVE MSS-SP144

FIG NO. 902F-PS FLANGED
FIG NO. 902W-PS BUTT WELD

PSB T-PATTERN GLOBE CL900



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25,
MSS SP-144

FUGITIVE EMISSION: API-622 Packing

CONSTRUCTION: OS&Y rising non-rotating Stem
Body Guided Disc
Renewable seat ring
Pressure Seal Bonnet
Handwheel, Gear op, Hammer blow, or bare stem for actuation
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface
Segment ring Knockout holes

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

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

OPTIONS: Live loaded Packing
Live loaded Draw Bolts
Stop Check

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	216	254	305	356	508	660	787	914	991	1092
		in	8.5	10	12.01	14.02	20	25.98	30.98	35.98	39.02	42.99
d		mm	48	57	73	98	146	190	238	283	312	356
		in	1.89	2.24	2.87	3.86	5.75	7.48	9.37	11.14	12.28	14.02
H	Open	mm	489	525	611	746	1005					
		in	19.25	20.67	24.06	29.37	39.57					
	Closed	mm	455	478.5	575	705	948					
		in	17.91	18.84	22.64	27.76	37.32					
	Gearbox	mm					900	920	1050	1755	1934	2210
		in					35.43	36.22	41.34	69.09	76.14	87.01
W	Handwheel	mm	350	400	450	500	560					
		in	13.78	15.75	17.72	19.69	22.05					
	Gearbox	mm					710	710	800	1000	1000	1000
		in					27.95	27.95	31.5	39.37	39.37	39.37
Weight	BW	kg	58	75	84	137	378	925	1270	1700	2390	2650
		lb	127.6	165	184.8	301.4	831.6	2035	2794	3740	5258	5830
	RF/RTJ	kg	76.6	100.8	106.2	173.2	451.8	1051.2	1449.2	1946.2	2671	2995.4
		lb	168.52	221.76	233.64	381.04	993.96	2312.64	3188.24	4281.64	5876.2	6589.88

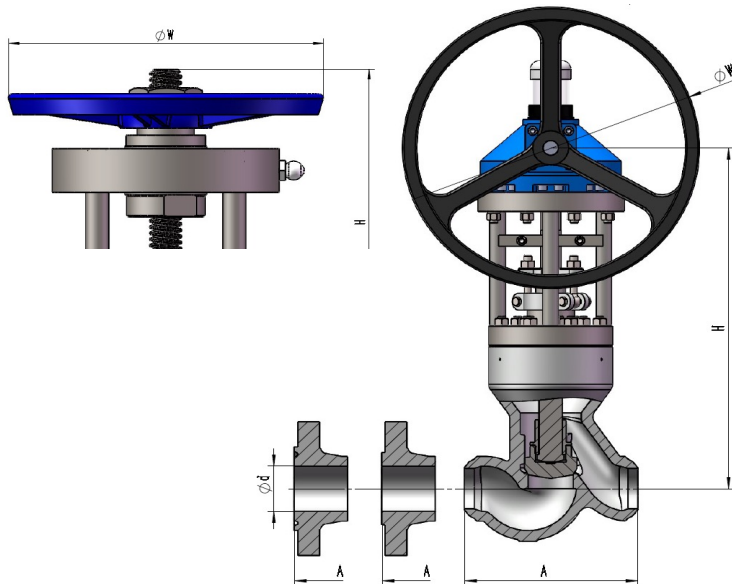
PRESSURE SEAL BONNET MSS-SP144 T-PATTERN GLOBE DATA

WILLIAMS VALVE

GLOBE VALVE MSS-SP144

FIG NO. 1502F-PS FLANGED
FIG NO. 1502W-PS BUTT WELD

PSB T-PATTERN GLOBE CL1500



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25, MSS SP-144

FUGITIVE EMISSION: API-622 Packing

CONSTRUCTION: OS&Y rising non-rotating Stem
Body Guided Disc
Renewable seat ring
Pressure Seal Bonnet
Handwheel, Gear op, Hammer blow, or bare stem for actuation
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface
Segment ring Knockout holes

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

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

OPTIONS: Live loaded Packing
Live loaded Draw Bolts
Stop Check

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	216	254	305	406	559	711	864	991
		in	8.5	10	12.01	15.98	22.01	27.99	34.02	39.02
	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	489	500	626	776				
		in	19.25	19.69	24.65	30.55				
	Closed	mm	455	453.5	595	730				
		in	17.91	17.85	23.43	28.74				
	Gearbox	mm			624	763	876	1011	2450	2904
		in			24.57	30.04	34.49	39.8	96.46	114.33
W	Handwheel	mm	350	350	610	610				
		in	13.78	13.78	24.02	24.02				
	Gearbox	mm			460	610	710	710	1000	1000
		in			18.11	24.02	27.95	27.95	39.37	39.37
Weight	BW	kg	58	98	128	168	780	800	1550	2650
		lb	127.6	215.6	281.6	369.6	1716	1760	3410	5830
	RF/RTJ	kg	76.6	123.8	162	219.4	899.4	997.4	1884.8	3146.2
		lb	168.52	272.36	356.4	482.68	1978.68	2194.28	4146.56	6921.64

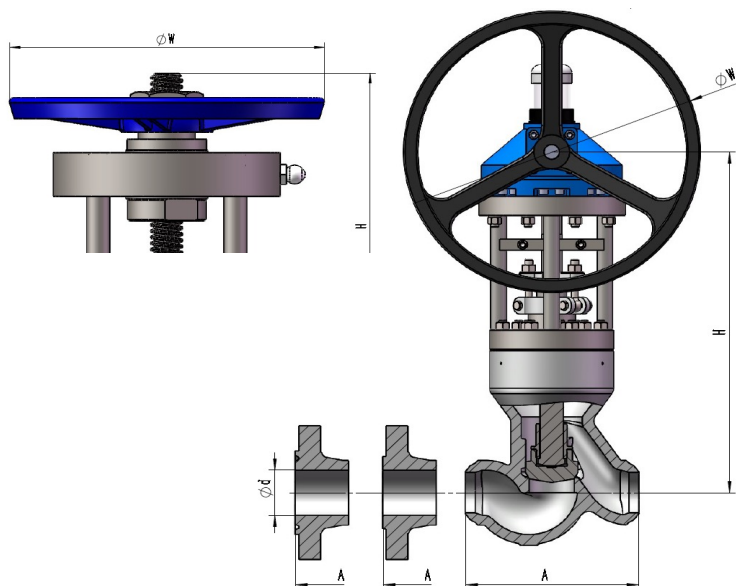
PRESSURE SEAL BONNET MSS-SP144 T-PATTERN GLOBE DATA



GLOBE VALVE MSS-SP144

FIG NO. 2502F-PS FLANGED
FIG NO. 2502W-PS BUTT WELD

PSB T-PATTERN GLOBE CL2500



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25,
MSS SP-144

FUGITIVE EMISSION: API-622 Packing

CONSTRUCTION: OS&Y rising non-rotating Stem
Body Guided Disc
Renewable seat ring
Pressure Seal Bonnet
Handwheel, Gear op, Hammer blow, or bare stem for actuation
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface
Segment ring Knockout holes

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

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

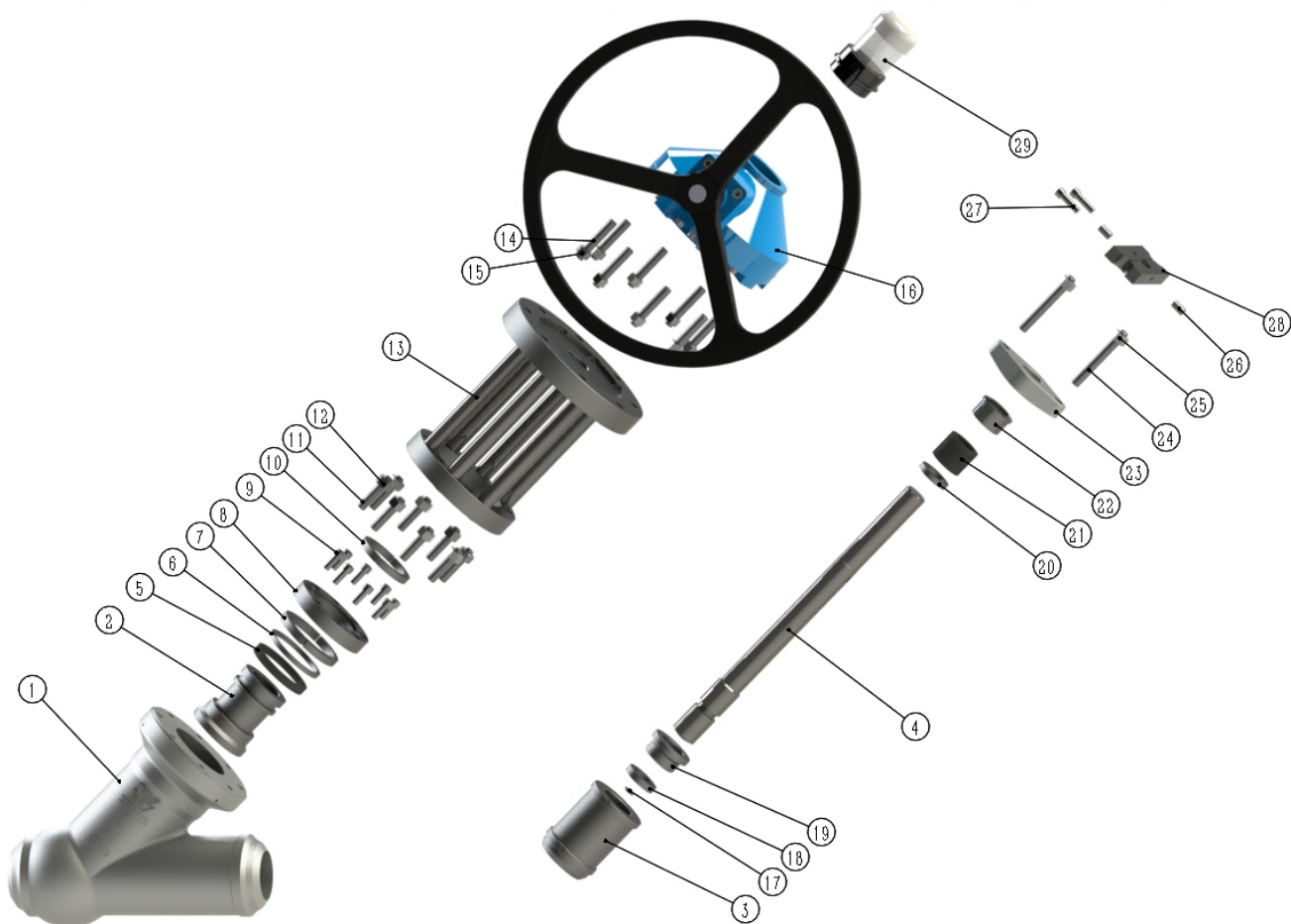
OPTIONS: Live loaded Packing
Live loaded Draw Bolts
Stop Check

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	279	330	368	457	610	762	914
		in	10.98	12.99	14.49	17.99	24.02	30	35.98
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	615	780	798	1290	1380		
		in	24.21	30.71	31.42	50.79	54.33		
	Closed	mm	560	715	735	1220	1310		
		in	22.05	28.15	28.94	48.03	51.57		
	Gearbox	mm						2150	2520
		in						84.65	99.21
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	BW	kg	92	118	157	335	950	1800	2010
		lb	202.4	259.6	345.4	737	2090	3960	4422
	RF/RTJ	kg	122	160.4	222.2	434	1207.6	2171	2729
		lb	268.4	352.88	488.84	954.8	2656.72	4776.2	6003.8

PRESSURE SEAL BONNET

MSS-SP144 Y-PATTERN GLOBE COMPONENTS

WILLIAMS VALVE



ITEM NO.	PART NAME	ITEM NO.	PART NAME
1	Body	16	Gearbox
2	Bonnet	17	Stem Washer
3	Disc	18	Split Collar
4	Stem	19	Disc Cover
5	Gasket	20	Spacer Ring
6	Thrust Ring	21	Packing
7	Segmented Ring	22	Gland
8	Supported Plate	23	Gland Flange
9	Cap Screw	24	Stud
10	Split Collar	25	Nut
11	Stud	26	Pin
12	Nut	27	Cap Screw
13	Yoke Assembly	28	Guide Arm
14	Stud	29	Stem Cover
15	Nut		

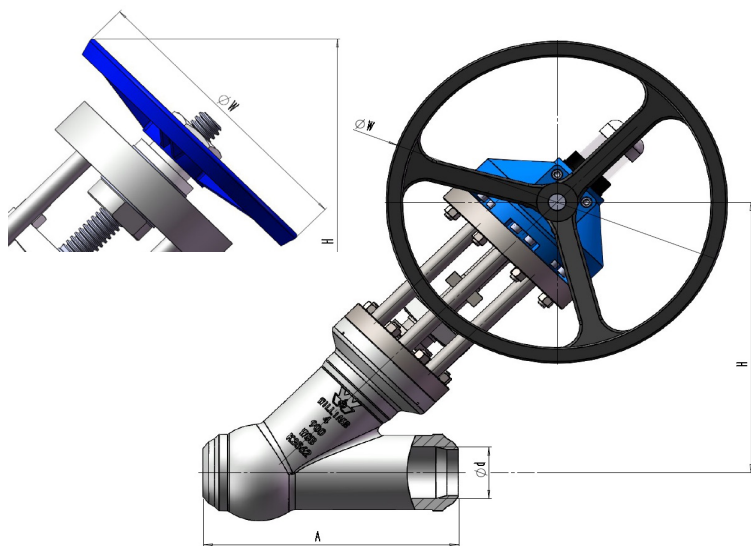
PRESSURE SEAL BONNET MSS-SP144 Y-PATTERN GLOBE DATA



GLOBE VALVE MSS-SP144

FIG NO. 902YF-PS FLANGED
FIG NO. 902YW-PS BUTT WELD

PSB Y-PATTERN GLOBE CL900



DESIGN: MSS SP-144

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25, MSS SP-144

CONSTRUCTION: Y-Pattern Design
OS&Y rising non-rotating Stem
Body Guided Disc
Renewable seat ring
Pressure Seal Bonnet
Handwheel, Gear op, Hammer blow, or bare stem for actuation
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface
Segment ring Knockout holes

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

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

OPTIONS: Live loaded Packing
Live loaded Draw Bolts
Stop Check

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	613	737	838	965	1029	1130
		in	14.49	16.5	15	17.99	24.13	29.02	32.99	37.99	40.51	44.49
d		mm	47.5	57	73	98	146	190	238	283	312	356
		in	1.87	2.24	2.87	3.86	5.75	7.48	9.37	11.14	12.28	14.02
H	Open	mm	500	530	590	680						
		in	19.69	20.87	23.23	26.77						
	Closed	mm	485	550	565	645						
		in	19.09	21.65	22.24	25.39						
	Gearbox	mm			435	505	815	835	960	1650	1830	2100
		in			17.13	19.88	32.09	32.87	37.8	64.96	72.05	82.68
W	Handwheel	mm	350	400	450	500	560					
		in	13.78	15.75	17.72	19.69	22.05					
	Gearbox	mm			460	610	710	710	800	1000	1000	1000
		in					27.95	27.95	31.5	39.37	39.37	39.37
Weight	BW	kg	70	75	83	125	367	870	1205	1620	2270	2510
		lb	154	165	182.6	275	807.4	1914	2651	3564	4994	5522

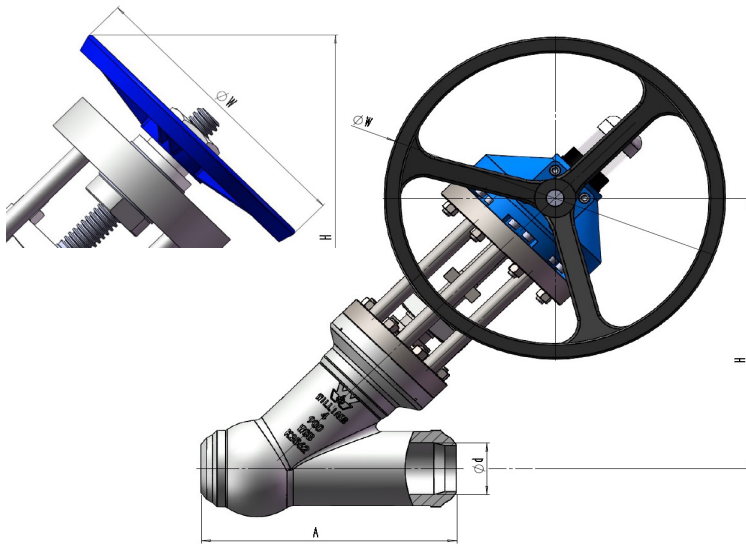
PRESSURE SEAL BONNET MSS-SP144 Y-PATTERN GLOBE DATA

WILLIAMS VALVE

GLOBE VALVE MSS-SP144

FIG NO. 1502YF-PS FLANGED
FIG NO. 1502YW-PS BUTT WELD

PSB Y-PATTERN GLOBE CL1500



DESIGN: MSS SP-144

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25, MSS SP-144

CONSTRUCTION: Y-Pattern Design
OS&Y rising non-rotating Stem
Body Guided Disc
Renewable seat ring
Pressure Seal Bonnet
Handwheel, Gear op, Hammer blow, or bare stem for actuation
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface
Segment ring Knockout holes

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

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

OPTIONS: Live loaded Packing
Live loaded Draw Bolts
Stop Check

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	47.5	57	70	92	136.4	178	222.3	263.4
		in	1.87	2.24	2.76	3.62	5.37	7.01	8.75	10.37
H	Open	mm	500	530	620	715				
		in	19.69	20.87	24.41	28.15				
	Closed	mm	485	512	600	690				
		in	19.09	20.16	23.62	27.17				
	Gearbox	mm			385	525	820	950	2030	2300
		in			15.16	20.67	32.28	37.4	79.92	90.55
W	Handwheel	mm	350	350	500	560				
		in	13.78	13.78	19.69	22.05				
	Gearbox	mm			460	610	710	710	1000	1000
		in			18.11	24.02	27.95	27.95	39.37	39.37
Weight	BW	kg	70	75	102	235	710	1050	1470	2450
		lb	154	165	224.4	517	1562	2310	3234	5390

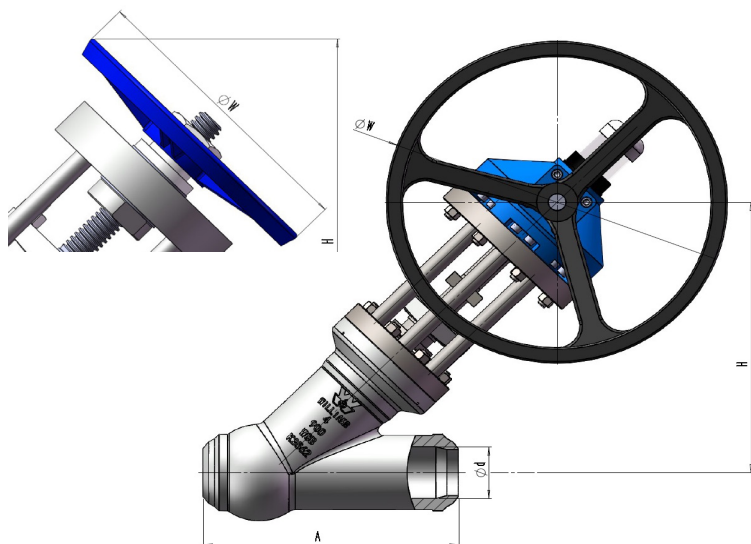
PRESSURE SEAL BONNET MSS-SP144 Y-PATTERN GLOBE DATA



GLOBE VALVE MSS-SP144

FIG NO. 2502YF-PS FLANGED
FIG NO. 2502YW-PS BUTT WELD

PSB Y-PATTERN GLOBE CL2500



DESIGN: MSS SP-144

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25, MSS SP-144

CONSTRUCTION: Y-Pattern Design
OS&Y rising non-rotating Stem
Body Guided Disc
Renewable seat ring
Pressure Seal Bonnet
Handwheel, Gear op, Hammer blow, or bare stem for actuation
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface
Segment ring Knockout holes

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

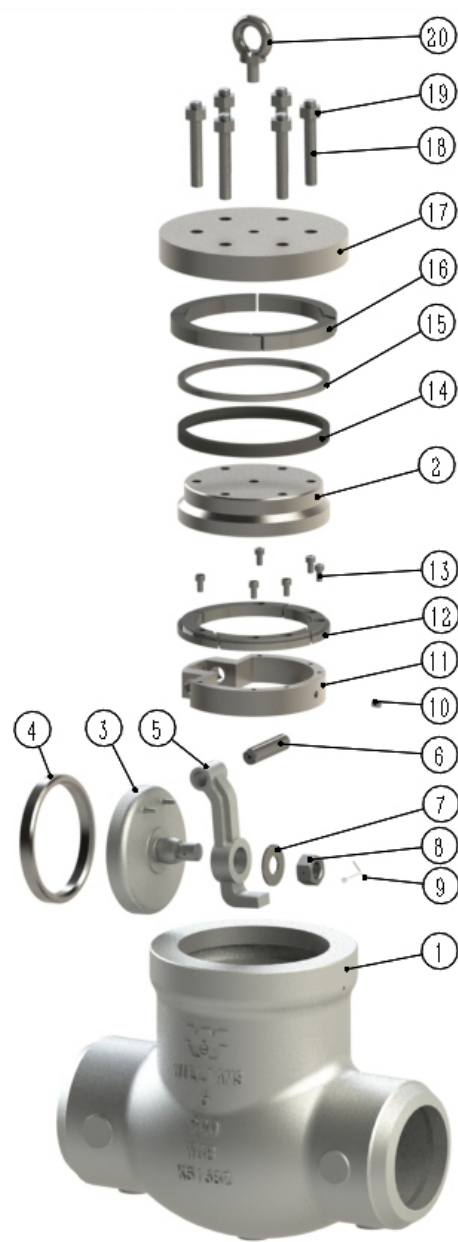
TRIMS: Standard API trim Nos. 5, 8, 9, 11, 12, 16.
Other trims available upon request

OPTIONS: Live loaded Packing
Live loaded Draw Bolts
Stop Check

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	615	780	798	1290	1380		
		in	24.21	30.71	31.42	50.79	54.33		
	Closed	mm	560	715	735	1220	1310		
		in	22.05	28.15	28.94	48.03	51.57		
	Gearbox	mm						2150	2520
		in						84.65	99.21
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	BW	kg	85	102	102	125	425	816	1361
		lb	187	224.4	224.4	275	935	1795.2	2994.2

PRESSURE SEAL BONNET
MSS-SP144 SWING CHECK COMPONENTS

WILLIAMS VALVE



ITEM NO.	PART NAME
1	Body
2	Bonnet
3	Disc
4	Seat Ring
5	Hinge
6	Hinge Pin
7	Washer
8	Nut
9	Cotter Pin
10	Pin
11	Hinge Seat
12	Retainer Ring
13	Screw
14	Gasket
15	Thrust Ring
16	Segmented Ring
17	Cover Retainer
18	Stud
19	Nut
20	Lifting Bolt

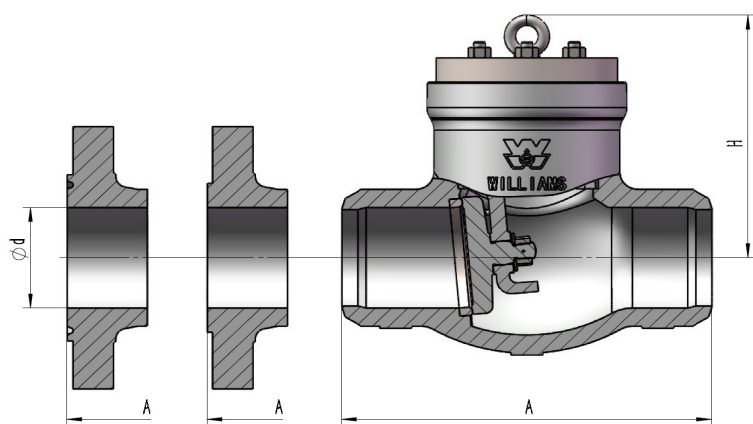
PRESSURE SEAL BONNET MSS-SP144 SWING CHECK DATA



CHECK VALVE MSS-SP144 / ASME B16.34

FIG NO. 901F-PS FLANGED
FIG NO. 901W-PS BUTT WELD

PSB SWING CHECK CL900



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25, MSS SP-144

CONSTRUCTION:

- Pressure Seal Bonnet
- Welded-in renewable seat ring
- Non-rotating disc
- Dual security Disc Nut
- Ground and lapped seat surfaces
- 316SS + Graphite PS Gasket
- 309SS overlay on PS Gasket surface
- Segment ring Knockout holes

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

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

OPTIONS:

- Tilting Disc Check
- Cryogenic Service
- Piston Check

ASME CLASS 900															
DIMENSIONS AND WEIGHTS		VALVE SIZE (IN)													
			2	2 1/2	3	4	6	8	10	12	14	16	18	20	24
A	RF	mm	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549
		in	14.49	16.5	15	17.99	24.02	29.02	32.99	37.99	40.51	44.49	47.99	52.01	60.98
	RTJ	mm	371	422	384	460	613	740	841	968	1039	1140	1232	1334	1568
		in	14.61	16.61	15.12	18.11	24.13	29.13	33.11	38.11	40.91	44.88	48.5	52.52	61.73
	BW	mm	216	254	305	356	508	660	787	914	991	1092	1219	1321	1549
		in	8.5	10	12.01	14.02	20	25.98	30.98	35.98	39.02	42.99	47.99	52.01	60.98
d		mm	48	57	73	98	146	190	238	282	312	356	401	445	534
		in	1.89	2.24	2.87	3.86	5.75	7.48	9.37	11.1	12.28	14.02	15.79	17.52	21.02
H		mm	216	217	217	267	321	395	568	600	685	730	850	860	935
		in	8.5	8.54	8.54	10.51	12.64	15.55	22.36	23.62	26.97	28.74	33.46	33.86	36.81
Weight	BW	kg	24	32	34	78	168	310	715	865	1250	1400	1825	2400	3120
		lb	52.8	70.4	74.8	171.6	369.6	682	1573	1903	2750	3080	4015	5280	6864
	RF/RTJ	kg	42.6	57.8	56.2	114.2	241.8	436.2	894.2	1111.2	1531	1745.4	2306.2	3000.6	4274.8
		lb	93.72	127.16	123.64	251.24	531.96	959.64	1967.24	2444.64	3368.2	3839.88	5073.64	6601.32	9404.56

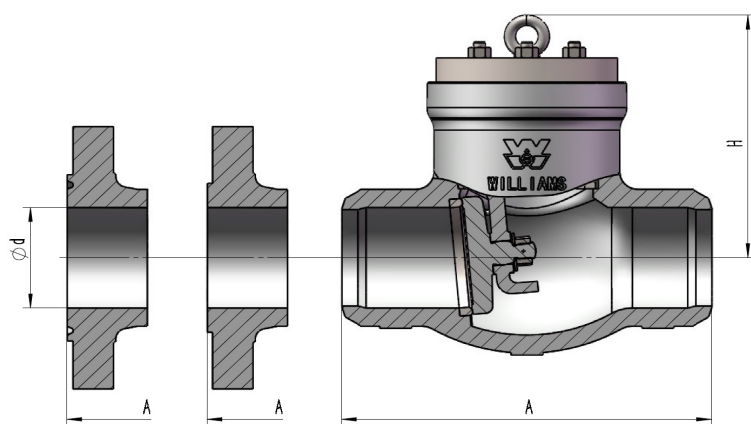
PRESSURE SEAL BONNET MSS-SP144 SWING CHECK DATA

WILLIAMS VALVE

CHECK VALVE MSS-SP144 / ASME B16.34

FIG NO. 1501F-PS FLANGED
FIG NO. 1501W-PS BUTT WELD

PSB SWING CHECK CL1500



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25, MSS SP-144

CONSTRUCTION:

- Pressure Seal Bonnet
- Welded-in renewable seat ring
- Non-rotating disc
- Dual security Disc Nut
- Ground and lapped seat surfaces
- 316SS + Graphite PS Gasket
- 309SS overlay on PS Gasket surface
- Segment ring Knockout holes

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

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

OPTIONS: Tilting Disc Check
Cryogenic Service
Piston Check

ASME CLASS 1500															
DIMENSIONS AND WEIGHTS		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	216	254	305	406	559	711	864	991	1067	1194	1346	1473	1943
		in	8.5	10	12.01	15.98	22.01	27.99	34.02	39.02	42.01	47.01	52.99	57.99	76.5
d		mm	48	57	70	92	136	178	222	264	289	331	372	416	499
		in	1.89	2.24	2.76	3.62	5.35	7.01	8.74	10.39	11.38	13.03	14.65	16.38	19.65
H		mm	216	216	216	267	310	450	575	615	695	705	850	910	1050
		in	8.5	8.5	8.5	10.51	12.2	17.72	22.64	24.21	27.36	27.76	33.46	35.83	41.34
Weight	BW	kg	24	32	42	74	233	410	675	1105	1435	2050	3150	3600	4508
		lb	52.8	70.4	92.4	162.8	512.6	902	1485	2431	3157	4510	6930	7920	9917.6
	RF/RTJ	kg	42.6	57.8	76	125.4	352.4	607.4	1009.8	1601.2	2094.8	2907.4	4315	5050.2	6843.8
		lb	93.72	127.16	167.2	275.88	775.28	1336.28	2221.56	3522.64	4608.56	6396.28	9493	11110.44	15056.36

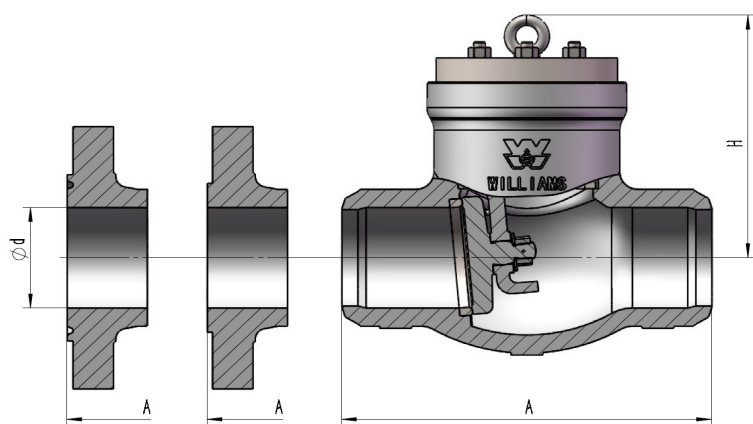
PRESSURE SEAL BONNET MSS-SP144 SWING CHECK DATA



CHECK VALVE MSS-SP144 / ASME B16.34

FIG NO. 2501F-PS FLANGED
FIG NO. 2501W-PS BUTT WELD

PSB SWING CHECK CL2500



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25, MSS SP-144

CONSTRUCTION:

- Pressure Seal Bonnet
- Welded-in renewable seat ring
- Non-rotating disc
- Dual security Disc Nut
- Ground and lapped seat surfaces
- 316SS + Graphite PS Gasket
- 309SS overlay on PS Gasket surface
- Segment ring Knockout holes

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

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

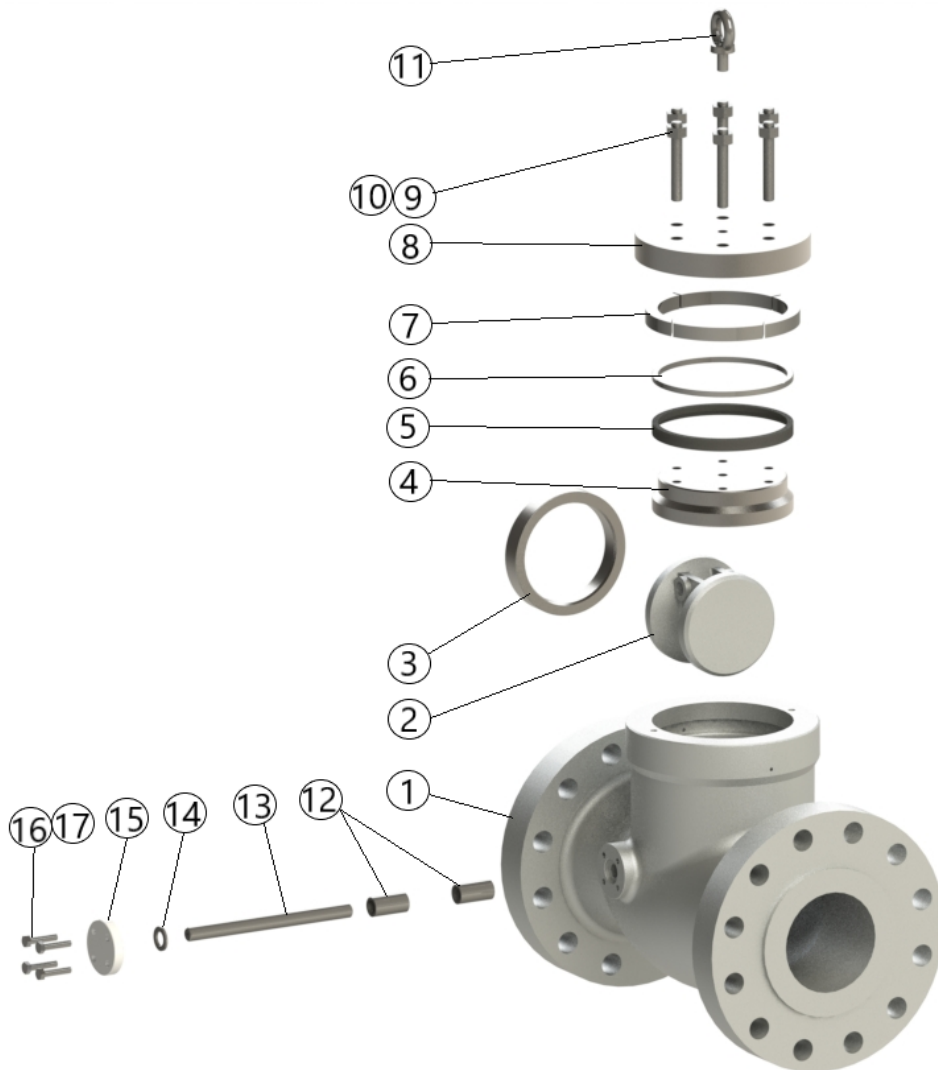
OPTIONS:

- Tilting Disc Check
- Cryogenic Service
- Piston Check

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	279	330	368	457	610	762	914	1041
		in	10.98	12.99	14.49	17.99	24.02	30	35.98	40.98
d		mm	39	48	58	73	111	147	185	219
		in	1.54	1.89	2.28	2.87	4.37	5.79	7.28	8.62
H		mm	240	265	270	315	455	560	580	658
		in	9.45	10.43	10.63	12.4	17.91	22.05	22.83	25.91
Weight	BW	kg	30	75	90	145	289	535	815	1470
		lb	66	165	198	319	635.8	1177	1793	3234
	RF/RTJ	kg	60	117.4	155.2	244	546.6	906	1534	2481.4
		lb	132	258.28	341.44	536.8	1202.52	1993.2	3374.8	5459.08

PRESSURE SEAL BONNET MSS-SP144 TILTING DISC CHECK COMPONENTS

WILLIAMS VALVE



ITEM NO.	PART NAME
1	Body
2	Disc
3	Seat Ring
4	Bonnet
5	Gasket
6	Thrust Ring
7	Segmented Ring
8	Cover
9	Stud
10	But
11	Lifting Screw
12	Sleeve
13	Hinge Pin
14	Gasket
15	Blind Cover
16	Stud
17	But

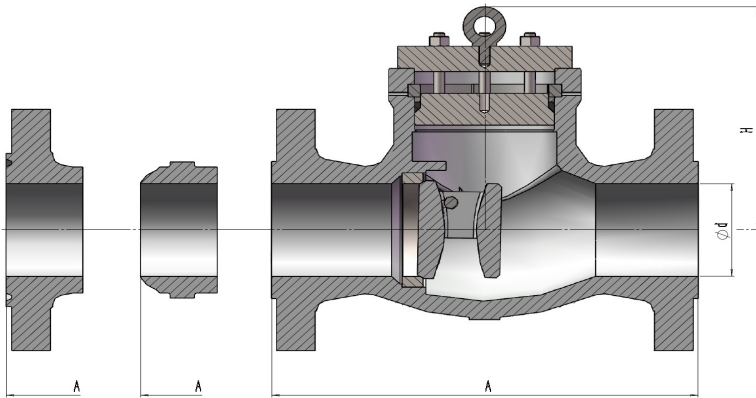
PRESSURE SEAL BONNET MSS-SP144 TILTING DISC CHECK DATA



CHECK VALVE MSS-SP144 / ASME B16.34

FIG NO. 905F-PS FLANGED
FIG NO. 905W-PS BUTT WELD

PSB TILTING DISC CHECK CL900



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25, MSS SP-144

CONSTRUCTION: Pressure Seal Bonnet
Welded-in renewable seat ring
Dual security Disc Nut
Ground and lapped seat surfaces
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface
Segment ring Knockout holes

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

DIMENSIONS AND WEIGHTS		ASME CLASS 900													
		VALVE SIZE (IN)													
A	RF	mm	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549
		in	14.49	16.5	15	17.99	24.02	29.02	32.99	37.99	40.51	44.49	47.99	52.01	60.98
	RTJ	mm	371	422	384	460	613	740	841	968	1039	1140	1232	1334	1568
		in	14.61	16.61	15.12	18.11	24.13	29.13	33.11	38.11	40.91	44.88	48.5	52.52	61.73
	BW	mm	216	254	305	356	508	660	787	914	991	1092	1219	1321	1549
		in	8.5	10	12.01	14.02	20	25.98	30.98	35.98	39.02	42.99	47.99	52.01	60.98
d		mm	47.5	57	73	98	146	190.5	238	282.4	311	355.6	400.1	444.5	533.4
		in	1.87	2.24	2.87	3.86	5.75	7.5	9.37	11.12	12.24	14	15.75	17.5	21
H		mm	216	225	235	285	321	395	460	600	685	730	850	860	935
		in	8.5	8.86	9.25	11.22	12.64	15.55	18.11	23.62	26.97	28.74	33.46	33.86	36.81
Weight	BW	kg	24	32	34	78	168	310	715	865	1250	1400	1825	2400	3120
		lb	52.8	70.4	74.8	171.6	369.6	682	1573	1903	2750	3080	4015	5280	6864
	RF/RTJ	kg	42.6	57.8	56.2	114.2	241.8	436.2	894.2	1111.2	1531	1745.4	2306.2	3000.6	4274.8
		lb	93.72	127.16	123.64	251.24	531.96	959.64	1967.24	2444.64	3368.2	3839.88	5073.64	6601.32	9404.56

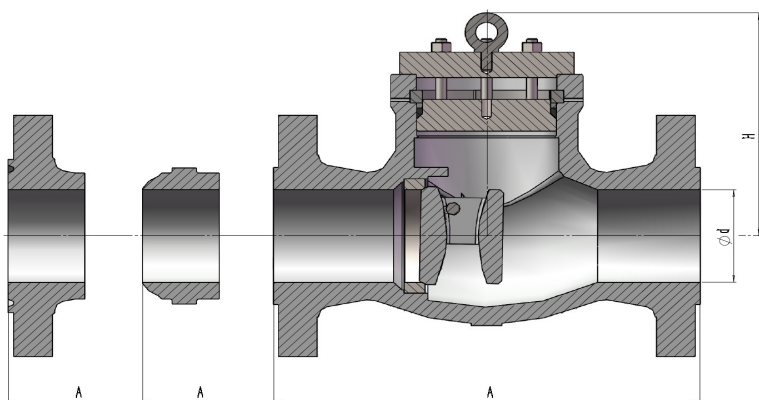
PRESSURE SEAL BONNET MSS-SP144 TILTING DISC CHECK DATA

WILLIAMS VALVE

CHECK VALVE MSS-SP144 / ASME B16.34

FIG NO. 1505F-PS FLANGED
FIG NO. 1505W-PS BUTT WELD

PSB TILTING DISC CHECK CL1500



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25, MSS SP-144

CONSTRUCTION: Pressure Seal Bonnet
Welded-in renewable seat ring
Dual security Disc Nut
Ground and lapped seat surfaces
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface
Segment ring Knockout holes

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

ASME CLASS 1500															
DIMENSIONS AND WEIGHTS		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	216	254	305	406	559	711	864	991	1067	1194	1537	1664	1943
		in	8.5	10	12.01	15.98	22.01	27.99	34.02	39.02	42.01	47.01	60.51	65.51	76.5
d		mm	47.5	57	70	92	136.4	178	222.3	263.4	289	330.2	371.3	416	498.3
		in	1.87	2.24	2.76	3.62	5.37	7.01	8.75	10.37	11.38	13	14.62	16.38	19.62
H		mm	216	225	235	285	321	395	460	615	695	705	850	910	1050
		in	8.5	8.86	9.25	11.22	12.64	15.55	18.11	24.21	27.36	27.76	33.46	35.83	41.34
Weight	BW	kg	24	32	42	74	233	410	675	1105	1435	2050	3150	3600	4508
		lb	52.8	70.4	92.4	162.8	512.6	902	1485	2431	3157	4510	6930	7920	9917.6
	RF/RTJ	kg	42.6	57.8	76	125.4	352.4	607.4	1009.8	1601.2	2094.8	2907.4	4315	5050.2	6843.8
		lb	93.72	127.16	167.2	275.88	775.28	1336.28	2221.56	3522.64	4608.56	6396.28	9493	11110.44	15056.36

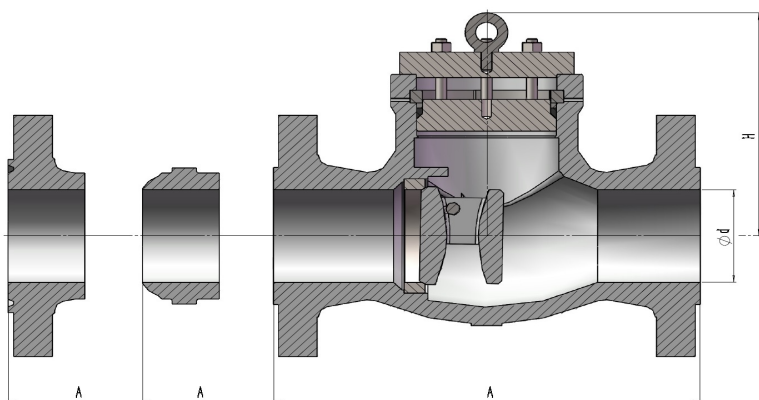
PRESSURE SEAL BONNET MSS-SP144 TILTING DISC CHECK DATA



CHECK VALVE MSS-SP144 / ASME B16.34

FIG NO. 2505F-PS FLANGED
FIG NO. 2505W-PS BUTT WELD

PSB TILTING DISC CHECK CL2500



DESIGN: MSS-SP144, ASME B16.34

TEST: API-598

SPECIFICATIONS: ASME B16.5, B16.25, B16.10, MSS SP-25, MSS SP-144

CONSTRUCTION: Pressure Seal Bonnet
Welded-in renewable seat ring
Dual security Disc Nut
Ground and lapped seat surfaces
316SS + Graphite PS Gasket
309SS overlay on PS Gasket surface
Segment ring Knockout holes

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

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	279	330	368	457	610	762	914	1041
		in	10.98	12.99	14.49	17.99	24.02	30	35.98	40.98
d		mm	38.1	47.5	57.2	73	111	146.1	184.2	219
		in	1.5	1.87	2.25	2.87	4.37	5.75	7.25	8.62
H		mm	240	265	270	315	455	560	580	658
		in	9.45	10.43	10.63	12.4	17.91	22.05	22.83	25.91
Weight	BW	kg	30	75	90	145	289	535	815	1470
		lb	66	165	198	319	635.8	1177	1793	3234
	RF/RTJ	kg	60	117.4	155.2	244	546.6	906	1534	2481.4
		lb	132	258.28	341.44	536.8	1202.52	1993.2	3374.8	5459.08

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 temperature 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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