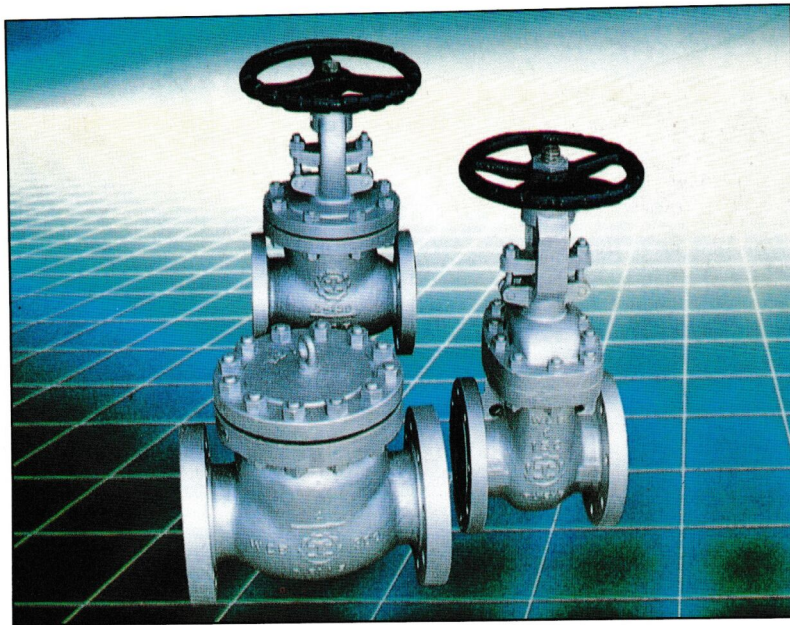


# CAST STEEL VALVES

Gate, Globe and Check



***ISUKA VALVE MFG. CO., LTD.***



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## General Design Specifications

Items	American Std.	British Std.
Shell wall thickness and general valve design specifications	API 600	BS1414 (Gate valve) BS1873 (Globe valve) BS1868 (Check valve)
Pressure-temperature ratings	ANSI B16.34	BS1560
Face-to-face dimensions End-to-end dimensions	ANSI B16.10	BS2080
End flange dimensions Gasket contact facing	ANSI B16.5*	BS1560
Welding end dimensions	ANSI B16.25	BS1414 (Gate valve) BS1873 (Globe valve) B1868 (Check valve)

\* MSS SP-44 for 22" and API 605 for 26" and larger, for end flange dimensions.

## Valve Shell Materials and Temperature

ASTM Specification	Material Designation	Working Temperature * °F (°C)
A216 WCB	Carbon steel	1000(538) Maximum
A217 WC1	C-½ MO	
A217 WC6	1¼ Cr - ½ Mo	
A217 WC9	2¼ Cr-1MO	1100(593) Maximum
A217 C5	5Cr - ½ Mo	1200(649) Maximum
A217 C12	9Cr-1MO	
A352 LCB	Carbon steel	- 50( - 46) Minimum
A352 LCC	Carbon steel	
A352 LC1	C-½ Mo	- 75( - 59) Minimum
A352 LC2	2½ Ni	- 100( - 73) Minimum
A352 LC3	3½ Ni	- 150( - 101) Minimum

## Trim Selection Guide

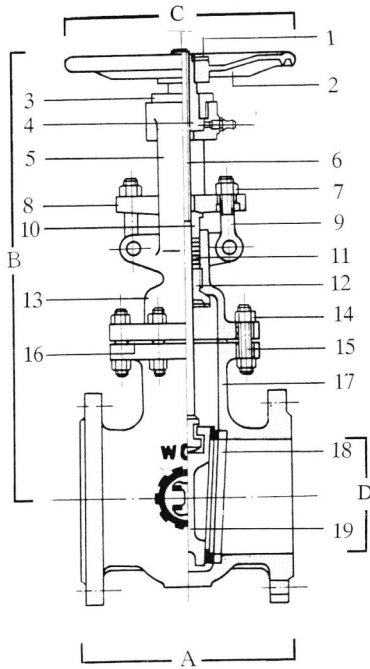
TRIM No.		1	2	3	4 (NACE)	5	6	7	8
GATE VALVE	Wedge	F6a	F6a	F6a-HF	F6a	F304	F316	F316	Monel
	Seat Ring	F6a	F6a-HF	F6a-HF	F6a-HF	F304	F316	F316-HF	Monel
	Back Seat	F6a	F6a	F6a	F6a	F304	F316	F316	Monel
	Stem	F6a	F6a	F6a	F6a	F304	F316	F316	Monel
GLOBE VALVE	Disc	F6a	F6a	F6a-HF	F6a	F304	F316	F316	Monel
	Seat Ring	F6a	F6a-HF	F6a-HF	F6a-HF	F304	F316	F316-HF	Monel
	Back Seat	F6a	F6a	F6a	F6a	F304	F316	F316	Monel
	Stem	F6a	F6a	F6a	F6a	F304	F316	F316	Monel
CHECK VALVE	Disc	F6a	F6a	F6a-HF	F6a	F304	F316	F316	Monel
	Seat Ring	F6a	F6a-HF	F6a-HF	F6a-HF	F304	F316	F316-HF	Monel
	Hinge	F6a	F6a	F6a	F6a	F304	F316	F316	Monel
	Hinge Pin	F6a	F6a	F6a	F6a	F304	F316	F316	Monel

HF-Hardfaced AWS 5.13 Class CoCr-Walloy (Stellite # 6)



# ISUKA VALVE MFG. CO., LTD.

## WEDGE GATE VALVES CAST STEEL BOLTED BONNET ANSI CLASS 150



NO.	PARTS	MAERIALS
1	Handwhell Nut	ASTM A105
2	Handwheel	Ductile iron
3	Yoke Sleeve Nut	ASTM A105
4	Yoke Sleeve	ASTM A439 7p. D2
5	Yoke	ASTM A216 Gr. WCB
6	Stem	ASTM A182 Gr. F6a
7	Gland Eyebolt Nut	ASTM A194 Gr. 2H
8	Gland Flange	ASTM A105
9	Gland Eyebolt	ASTM A307 Gr. A
10	Gland	ASTM A182 Gr. F6a
11	Stem Packing	J. C 187-i Graphoil
12	Back-Seat Bushing	ASTM A182 Gr. F6a
13	Bonnet	ASTM A216 Gr. WCB
14	Bonnet Stud Bolt Nut	ASTM A194 Gr. 2H
15	Bonnet Stud Bolt	ASTM A193 Gr. B7
16	Bonnet Gasket	Soft steel
17	Body	ASTM A216 Gr. WCB
18	Seat Ring	ASTM A105 + Stellite
19	Wedge	ASTM A216 Gr. WCB + CR13

APPLICABLE CLASS 150 STANDARDS:  
 Steel Gate Valves, API 600  
 Seal valves, ANSI B16.34  
 Face-to-Face, End-to-End, ANSI B16.10  
 End Flanges, ANSI B16.5  
 Weld Ends, ANSI B16.25

TESTS:  
 API 598  
 Shell: 450 PSIG Hydrostatic  
 Seat: 315 PSIG Hydrostatic  
 80 PSIG Air  
 Other testing available upon request.

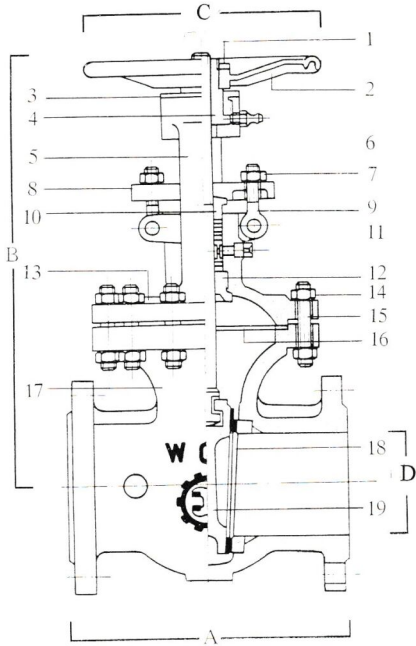
### DIMENSIONS IN INCHES & MILLIMETERS (Approx.):

SIZE	2" 50mm	2-1/2" 65mm	3" 80mm	4" 100mm	5" 130mm	6" 150mm	8" 200mm	10" 250mm	12" 300mm	14" 350mm	16" 400mm	18" 450mm	20" 500mm	24" 600mm
A Face to Face RF	7.0 178	7.5 190	8.0 203	9.0 229	10.0 254	10.5 267	11.5 292	13.0 330	14.0 356	15.0 381	16.0 406	17.0 432	18.0 457	20.0 508
A End to End BW	8.5 216	9.5 241	11.125 283	12.0 305	15.0 381	15.875 403	16.5 419	18.0 457	19.75 502	22.5 572	24.0 610	26.0 660	28.0 711	32.0 813
B Valve Closed	13.8 351	14.8 375	16.3 415	18.7 475	23.4 595	23.4 595	30.1 765	35.6 905	42.5 1080	51.1 1296	56.5 1435	74.6 1895	83.5 2120	99.0 2326
C Diameter Handwheel	7.9 200	7.9 200	9.8 250	9.8 250	11.8 300	11.8 300	13.8 350	15.7 400	17.7 450	19.7 500	23.6 600	23.6 600	26.8 680	29.9 760
D Valve Port	2.0 51	2.50 64	3.0 76	4.0 102	5.0 127	6.0 152	8.0 203	10.0 254	12.0 305	13.125 337	15.125 387	17.25 438	19.25 489	23.25 591
WEIGHT (Lbs) RF (kg)	46 21	62 28	80 36	117 53	132 60	185 84	306 139	442 201	704 320	990 450	1276 580	1810 821	2205 1080	3315 1504

# ISUKA VALVE MFG. CO., LTD.



## WEDGE GATE VALVES CAST STEEL BOLTED BONNET ANSI CLASS 300



NO.	PARTS	MAERIALS
1	Handwhell Nut	ASTM A105
2	Handwheel	Ductile iron
3	Yoke Sleeve Nut	ASTM A105
4	Yoke Sleeve	ASTM A439 7p. D2
5	Yoke	ASTM A216 Gr. WCB
6	Stem	ASTM A182 Gr. F6a
7	Gland Eyebolt Nut	ASTM A194 Gr. 2H
8	Gland Flange	ASTM A105
9	Gland Eyebolt	ASTM A307 Gr. A
10	Gland	ASTM A182 Gr. F6a
11	Stem Packing	J. C 187-i Graphoil
12	Back-Seat Bushing	ASTM A182 Gr. F6a
13	Bonnet	ASTM A216 Gr. WCB
14	Bonnet Stud Bolt Nut	ASTM A194 Gr. 2H
15	Bonnet Stud Bolt	ASTM A193 Gr. B7
16	Bonnet Gasket	Soft steel
17	Body	ASTM A216 Gr. WCB
18	Seat Ring	ASTM A105 + Stellite
19	Wedge	ASTM A216 Gr. WCB + CR13

APPLICABLE CLASS 300 STANDARDS:  
Steel Gate Valves, API 600  
Seel alves, ANSI B16.34  
Face-to-Face, End-to-End, ANSI B16.10  
End Flanges, ANSI B16.5  
Weld Ends, ANSI B16.25

TESTS:  
API 598  
Shell; 1125 PSIG Hydrostatic  
Seat; 815 PSIG Hydrostatic  
80 PSIG Air  
Other testing available upon request.

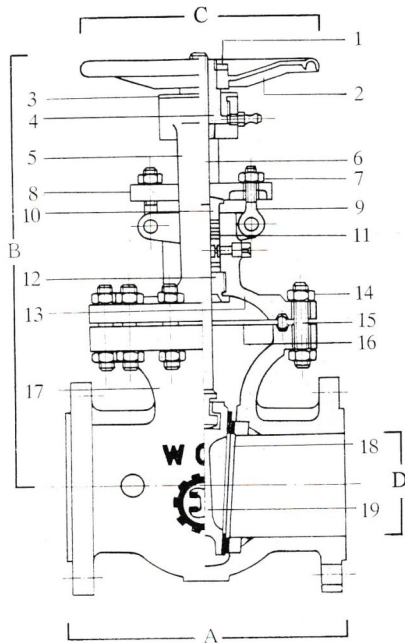
### DIMENSIONS IN INCHES & MILLIMETERS ( Approx. ):

SIZE	2" 50mm	2-1/2" 65mm	3" 80mm	4" 100mm	5" 130mm	6" 150mm	8" 200mm	10" 250mm	12" 300mm	14" 350mm	16" 400mm			
A Face to Face RF	8.5 216	9.5 241	11.125 283	12.0 305	15.0 381	15.875 403	16.5 419	18.0 457	19.75 502	30.0 762	33.0 838			
A End to End BW	8.5 216	9.5 241	11.125 283	12.0 305	15.0 381	15.875 403	16.5 419	18.0 457	19.75 502	30.0 762	33.0 838			
B Valve Closed	14.0 356	14.5 368	17.3 440	19.7 500	23.6 600	24.8 630	31.1 790	38.0 965	45.0 1145	58.75 1495	68.7 1744			
C Diameter Handwheel	7.9 200	7.9 200	9.8 250	9.8 250	13.8 350	13.8 350	15.7 400	17.7 450	19.7 500	23.6 600	23.6 600			
D Valve Port	2.0 51	2.50 64	3.0 76	4.0 102	5.0 127	6.0 152	8.0 203	10.0 254	12.0 305	13.25 337	15.25 387			
WEIGHT(lbs) RF (kg)	62 28	80 36	112 51	172 78	235 107	317 144	480 218	704 320	990 450	1747 794	2385 1084			



# ISUKA VALVE MFG. CO., LTD.

## WEDGE GATE VALVES CAST STEEL BOLTED BONNET ANSI CLASS 600



NO.	PARTS	MAERIALS
1	Handwhell Nut	ASTM A105
2	Handwheel	Ductile iron
3	Yoke Sleeve Nut	ASTM A105
4	Yoke Sleeve	ASTM A439 7p. D2
5	Yoke	ASTM A216 Gr. WCB
6	Stem	ASTM A182 Gr. F6a
7	Gland Eyebolt Nut	ASTM A194 Gr. 2H
8	Gland Flange	ASTM A105
9	Gland Eyebolt	ASTM A307 Gr. A
10	Gland	ASTM A182 Gr. F6a
11	Stem Packing	J. C 187-i Graphoil
12	Back-Seat Bushing	ASTM A182. Gr. F6a
13	Bonnet	ASTM A216 Gr. WCB
14	Bonnet Stud Bolt Nut	ASTM A194 Gr. 2H
15	Bonnet Stud Bolt	ASTM A193 Gr. B7
16	Bonnet Gasket	Oval ring
17	Body	ASTM A216 Gr. WCB
18	Seat Ring	ASTM A105 + Stellite
19	Wedge	ASTM A216 Gr. WCB + CR13

APPLICABLE CLASS 600 STANDARDS:  
Steel Gate Valves, API 600  
Seel alves, ANSI B16.34  
Face-to-Face, End-to-End, ANSI B16.10  
End Flanges, ANSI B16.5  
Weld Ends, ANSI B16.25

TESTS:  
API 598  
Shell: 2225 PSIG Hydrostatic  
Seat: 1630 PSIG Hydrostatic  
80 PSIG Air  
Other testing available upon request.

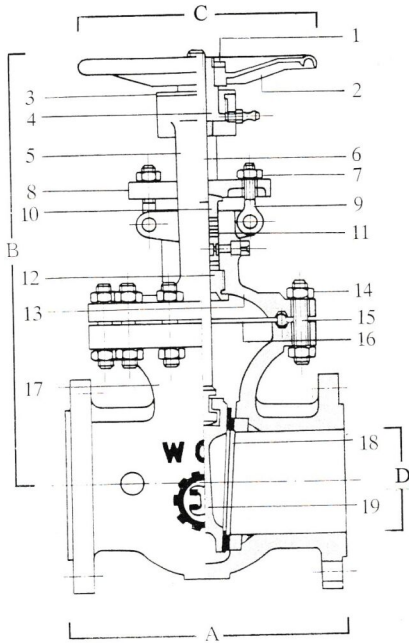
### DIMENSIONS IN INCHES & MILLIMETERS (Approx.):

SIZE	2"	2-1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"			
	50mm	65mm	80mm	100mm	130mm	150mm	200mm	250mm	300mm	350mm	400mm			
A Face to Face RF	11.5 292	13.0 330	14.0 356	17.0 432	20.0 508	22.0 559	26.0 660	31.0 787	33.0 838	35.0 889	39.0 991			
A End to End BW	11.5 292	13.0 330	14.0 356	17.0 432	20.0 508	22.0 559	26.0 660	31.0 787	33.0 838	35.0 889	39.0 991			
B Valve Closed	18.1 460	20.0 507	21.9 556	26.9 683	30.9 784	36.2 919	42.4 1078	50.2 1274	58.7 1492	63.5 1614	70.9 1800			
C Diameter Handwheel	9.8 250	9.8 250	9.8 250	13.8 350	15.7 400	17.7 450	19.7 500	23.6 600	26.8 680	26.9 760	26.9 760			
D Valve Port	2.0 51	2.50 64	3.0 76	4.0 102	5.0 127	6.0 152	7.875 200	9.75 248	11.75 298	12.875 327	14.75 375			
WEIGHT(Lbs) RF (kg)	91 41	126 57	159 72	282 128	440 200	585 266	935 425	1430 650	1938 881	2440 1107	3310 1501			

# ISUKA VALVE MFG. CO., LTD.



## WEDGE GATE VALVES CAST STEEL BOLTED BONNET ANSI CLASS 900



NO.	PARTS	MAERIALS
1	Handwhell Nut	ASTM A105
2	Handwheel	Ductile iron
3	Yoke Sleeve Nut	ASTM A105
4	Yoke Sleeve	ASTM A439 7p. D2
5	Yoke	ASTM A216 Gr. WCB
6	Stem	ASTM A182 Gr. F6a
7	Gland Eyebolt Nut	ASTM A194 Gr. 2H
8	Gland Flange	ASTM A105
9	Gland Eyebolt	ASTM A307 Gr. A
10	Gland	ASTM A182 Gr. F6a
11	Stem Packing	J. C 187-i Graphoil
12	Back-Seat Bushing	ASTM A182. Gr. F6a
13	Bonnet	ASTM A216 Gr. WCB
14	Bonnet Stud Bolt Nut	ASTM A194 Gr. 2H
15	Bonnet Stud Bolt	ASTM A193 Gr. B7
16	Bonnet Gasket	Oval ring
17	Body	ASTM A216 Gr. WCB
18	Seat Ring	ASTM A105 + Stellite
19	Wedge	ASTM A216 Gr. WCB + CR13

APPLICABLE CLASS 900 STANDARDS:  
Steel Gate Valves, API 600  
Seel alves, ANSI B16.34  
Face-to-Face, End-to-End, ANSI B16.10  
End Flanges, ANSI B16.5  
Weld Ends, ANSI B16.25

TESTS:  
API 598  
Shell: 3350 PSIG Hydrostatic  
Seat: 2440 PSIG Hydrostatic  
80 PSIG Air  
Other testing available upon request.

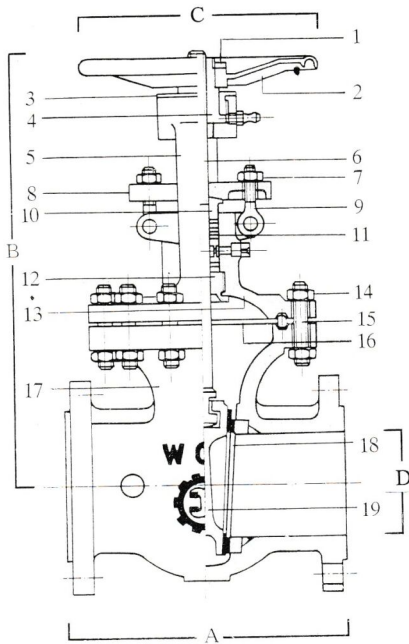
### DIMENSIONS IN INCHES & MILLIMETERS (Approx.):

SIZE	2" 50mm	3" 80mm	4" 100mm	6" 150mm	8" 200mm	10" 250mm	12" 300mm							
A Face to Face RF	14.5 368	15.0 381	18.0 457	24.0 610	29.0 737	33.0 838	38.0 965							
A End to End BW	14.5 368	15 381	18.0 457	24.0 610	29.0 737	33.0 838	38.0 965							
B Valve Closed	20.6 523	24.4 620	27.1 688	36.1 916	43.6 1107	51.7 1313	60.2 1528							
C Diameter Handwheel	11.8 300	15.75 400	17.7 450	23.6 600	26.8 680	26.8 680	29.9 760							
D Valve Port	1.875 48	2.875 73	3.875 98	5.75 146	7.5 191	9.375 238	11.125 283							
WEIGHT(Lbs) RF (kg)	176 80	260 118	396 180	770 350	1474 670	2222 1010	3401 1546							



# ISUKA VALVE MFG. CO., LTD.

## WEDGE GATE VALVES CAST STEEL BOLTED BONNET ANSI CLASS 1500



NO.	PARTS	MAERIALS
1	Handwhell Nut	ASTM A105
2	Handwheel	Ductile iron
3	Yoke Sleeve Nut	ASTM A105
4	Yoke Sleeve	ASTM A439 7p. D2
5	Yoke	ASTM A216 Gr. WCB
6	Stem	ASTM A182 Gr. F6a
7	Gland Eyebolt Nut	ASTM A194 Gr. 2H
8	Gland Flange	ASTM A105
9	Gland Eyebolt	ASTM A307 Gr. A
10	Gland	ASTM A182 Gr. F6a
11	Stem Packing	J. C 187-i Graphoil
12	Back-Seat Bushing	ASTM A182. Gr. F6a
13	Bonnet	ASTM A216 Gr. WCB
14	Bonnet Stud Bolt Nut	ASTM A194 Gr. 2H
15	Bonnet Stud Bolt	ASTM A193 Gr. B7
16	Bonnet Gasket	Oval ring
17	Body	ASTM A216 Gr. WCB
18	Seat Ring	ASTM A105 + Stellite
19	Wedge	ASTM A216 Gr. WCB + CR13

APPLICABLE CLASS 1500 STANDARDS:  
 Steel Gate Valves, API 600  
 Seel alves, ANSI B16.34  
 Face-to-Face, End-to-End, ANSI B16.10  
 End Flanges, ANSI B16.5  
 Weld Ends, ANSI B16.25

TESTS:  
 API 598  
 Shell: 5575 PSIG Hydrostatic  
 Seat: 4075 PSIG Hydrostatic  
 80 PSIG Air  
 Other testing available upon request.

### DIMENSIONS IN INCHES & MILLIMETERS ( Approx. ):

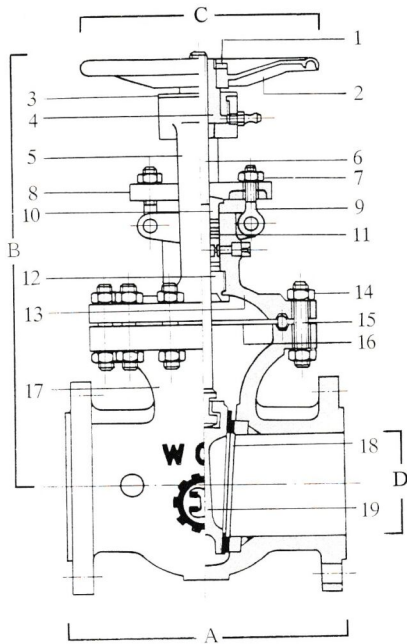
SIZE	2" 50mm	3" 80mm	4" 100mm	6" 150mm	8" 200mm	10" 250mm	12" 300mm						
A Face to Face RF	14.5 368	18.5 470	21.5 546	27.75 705	32.75 832	39 991	44.5 1130						
A End to End BW	14.5 368	18.5 470	21.5 546	27.75 705	32.75 832	39 991	44.5 1130						
B Valve Closed	22 559	26.4 670	29.9 759	41 1041	49.1 1246	58.2 1478	65.3 1658						
C Diameter Handwheel	9.8 250	13.8 350	15.7 400	23.6 600	26.8 680	35.8 910	35.8 910						
D Valve Port	1.875 48	2.75 70	3.625 92	5.375 137	7.0 178	8.75 222	10.375 264						
WEIGHT(Lbs) RF (kg)	205 93	375 170	615 279	1450 658	2670 1211	4450 2018	7250 3289						



# ISUKA VALVE MFG. CO., LTD.



## WEDGE GATE VALVES CAST STEEL BOLTED BONNET ANSI CLASS 2500



NO.	PARTS	MAERIALS
1	Handwheel Nut	ASTM A105
2	Handwheel	Ductile iron
3	Yoke Sleeve Nut	ASTM A105
4	Yoke Sleeve	ASTM A439 7p. D2
5	Yoke	ASTM A216 Gr. WCB
6	Stem	ASTM A182 Gr. F6a
7	Gland Eyebolt Nut	ASTM A194 Gr. 2H
8	Gland Flange	ASTM A105
9	Gland Eyebolt	ASTM A307 Gr. A
10	Gland	ASTM A182 Gr. F6a
11	Stem Packing	J. C 187-i Graphoil
12	Back-Seat Bushing	ASTM A182. Gr. F6a
13	Bonnet	ASTM A216 Gr. WCB
14	Bonnet Stud Bolt Nut	ASTM A194 Gr. 2H
15	Bonnet Stud Bolt	ASTM A193 Gr. B7
16	Bonnet Gasket	Oval ring
17	Body	ASTM A216 Gr. WCB
18	Seat Ring	ASTM A105 + Stellite
19	Wedge	ASTM A216 Gr. WCB + CR13

APPLICABLE CLASS 2500 STANDARDS:  
 Steel Gate Valves, API 600  
 Seel alves, ANSI B16.34  
 Face-to-Face, End-to-End, ANSI B16.10  
 End Flanges, ANSI B16.5  
 Weld Ends, ANSI B16.25

TESTS:  
 API 598  
 Shell: 9275 PSIG Hydrostatic  
 Seat: 6785 PSIG Hydrostatic  
 80 PSIG Air  
 Other testing available upon request.

DIMENSIONS IN INCHES & MILLIMETERS ( *Approx.* ) :

SIZE	2" 50mm	2-1/2" 65mm	3" 80mm	4" 100mm	6" 150mm								
A Face to Face RF	17.75 451	20.0 508	22.75 578	26.5 673	36.0 914								
A End to End BW	17.5 451	20.0 508	22.75 578	26.5 673	36.0 914								
B Valve Closed	24.9 633	29.0 737	30.0 762	34.8 885	48.9 1243								
C Diameter Handwheel	9.8 250	11.8 300	13.8 350	15.7 400	23.6 600								
D Valve Port	1.5 38	1.875 48	2.25 57	2.875 73	4.375 111								
WEIGHT(Lbs) RF (kg)	230 104	400 181	740 336	1840 835	3460 1569								