

#### Applicable standards:

Steel ball valves: API 6D/BS5351  
 Steel ball valves: ISO 14313  
 Fire durable: API 607  
 Anti static: API 6D  
 Steel valves: ASME B 16.34  
 Face to face: ASME B 16.10  
 End flanges: ASME B16.5  
 Butt welding ends: ASME B16.25  
 Inspection and test: API 598/API 6D

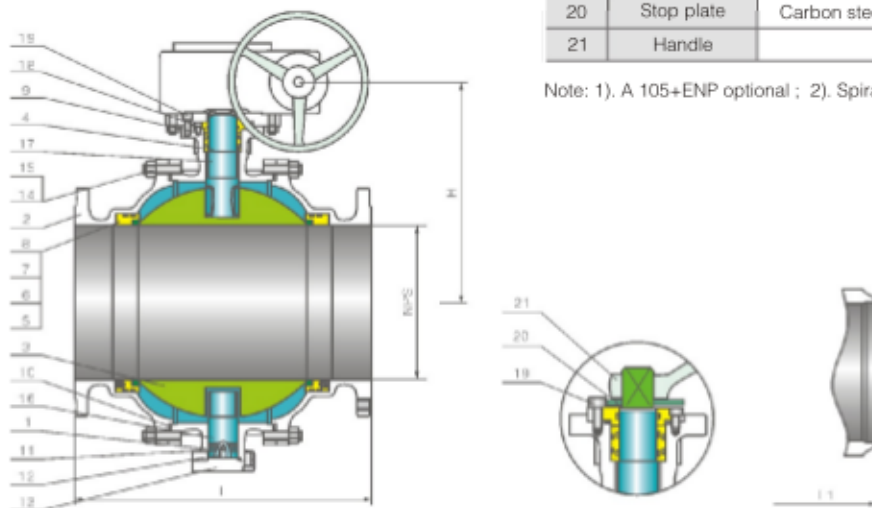
#### Design description

Full port design or reduce port design  
 BB, Bolted bonnet, split body  
 Three piece body for 12" & above  
 Trunnion mounted ball type  
 Blow-out proof stem  
 Fire durable construction  
 Anti static device  
 Stopper device  
 ISO 5211 Mounting pad  
 Flanged or butt welding ends  
 Available with wg operator

#### Materials of parts

NO	Part name	ASTM Material		
		Carbon steel	18Cr-9Ni-2Mo	Carbon steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	ball	A182-F304 <sup>1)</sup>	A182-F316	A182-F304 <sup>1)</sup>
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Stem insert	Class filled PTFE		
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304 <sup>2)</sup>	Graphite+316 <sup>2)</sup>	Graphite+304 <sup>2)</sup>
11	Bonnet O-ring	NBR	Viton	Viton
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon steel	Carbon steel+Zn	Carbon steel
21	Handle	Carbon steel		

Note: 1). A 105+ENP optional ; 2). Spiral wound construction.



#### Dimensions data

Size	in	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800
L (RF)	in	7.00	7.50	8.00	9.00	15.50	18.00	21.00	24.00	27.00	30.00	34.00	36.00	42.00	45.00	49.00	51.00	54.00	60.00
	mm	178	190	203	229	394	457	533	610	686	762	864	914	1067	1143	1245	1295	1372	1524
L1 (BW)	in	8.50	9.50	11.12	12.00	18.00	20.50	22.00	25.00	30.00	33.00	36.00	39.00	45.00	49.00	53.00	55.00	60.00	68.00
	mm	216	241	283	305	457	521	559	635	762	838	914	991	1143	1245	1346	1397	1524	1727
H	in	7.00	7.50	8.25	9.25	20.88	24.62	25.62	30.75	31.00	36.25	38.25	43.38	5.25	50.75	55.12	64.12	70.88	80.75
	mm	177	190	210	235	530	625	650	780	790	920	970	1100	1150	1290	1400	1630	1840	2050
W	in	14	16	20	20	24	24	24	24	32	32	32	32	32	32	32	32	32	32
	mm	350	400	500	500	600	600	600	600	800	800	800	800	800	800	800	800	800	800
WT (Kg)	RF	15	19	27	38	81	140	160	205	260	390	510	750	1200	1400	1860	2100	2530	2970
	BW	13.5	15.5	24.5	32.5	76	132	147	182	241	370	495	726	1125	1250	1640	1930	2390	2760

## Cast steel ball valve

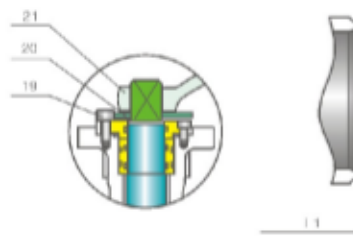
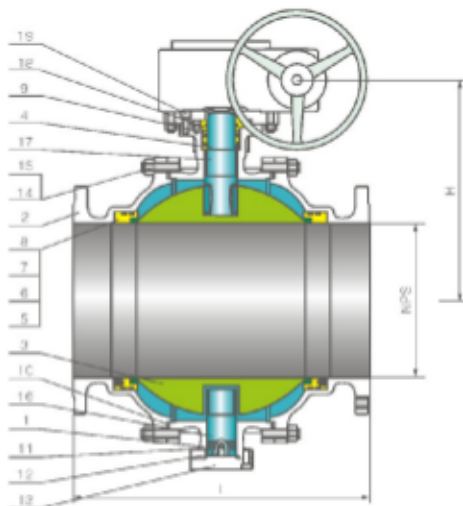
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Butt welding ends: ASME B16.25  
Inspection and test: API 598/API 6D

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Stopper device  
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### Materials of parts

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1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	ball	A182-F304 <sup>1)</sup>	A182-F316	A182-F304 <sup>1)</sup>
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Stem insert	Class filled PTFE		
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304 <sup>2)</sup>	Graphite+316 <sup>2)</sup>	Graphite+304 <sup>2)</sup>
11	Bonnet O-ring	NBR	Viton	Viton
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon steel	Carbon steel+Zn	Carbon steel
21	Handle	Carbon steel		

Note: 1). A 105+ENP optional ; 2). Spiral wound construction.

### Dimensions data

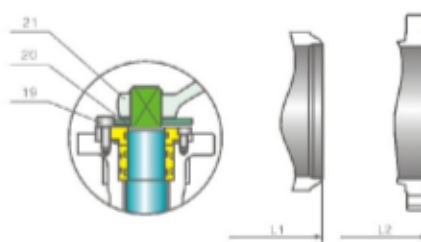
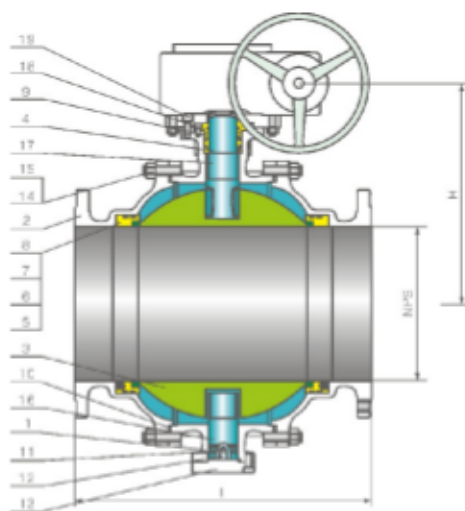
Size	in	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36
		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800
L (RF)	in	8.50	9.50	11.12	12.00	15.88	19.75	22.38	25.50	30.00	33.00	36.00	39.00	45.00	49.00	53.00	55.00	60.00	-
	mm	216	241	283	305	403	502	568	648	762	838	914	991	1143	1245	1346	1397	1524	-
L1 (BW)	in	8.50	9.50	11.12	12.00	18.00	20.50	22.00	25.00	30.00	33.00	36.00	39.00	45.00	49.00	53.00	55.00	60.00	-
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	mm	177	190	210	235	530	625	650	780	790	920	970	1100	1150	1290	1400	1630	1800	-
W	in	14	16	20	20	24	24	24	24	32	32	32	32	32	32	32	32	32	-
	mm	350	400	500	500	600	600	600	600	800	800	800	800	800	800	800	800	800	-
WT (Kg)	RF	19	24	34	48	101	175	200	255	325	485	635	935	1500	1750	2225	2450	2870	-
	BW	14	16	25	34	82	145	155	185	238	375	516	782	1280	1375	1825	2180	2260	-

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		mm	50	65	80	100	150	200	250	300	350	400	450	500	600	650
LL1 (RF/BW)	in	11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00	35.00	39.00	43.00	47.00	55.00	57.00	61.00
	mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1448	1549
L2 (RTJ)	in	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25	55.38	57.50	61.50
	mm	295	333	359	435	562	664	791	841	892	994	1095	1200	1407	1461	1562
H	in	7.12	7.62	8.50	9.50	21.52	25.00	26.12	31.12	31.88	36.38	38.75	44.50	46.62	52.50	57.00
	mm	180	193	215	241	540	635	665	790	810	925	985	1130	1185	1335	1450
W	in	14	16	20	20	24	24	24	24	32	32	32	32	32	32	32
	mm	350	400	500	500	600	600	600	600	800	800	800	800	800	800	800
WT (Kg)	RF/RTJ	26	35	58	81	142	287	540	780	1000	1300	1700	2100	3400	3800	4500
	BW	19	25	42	51	82	200	395	610	805	1010	1350	1656	2775	3125	3790