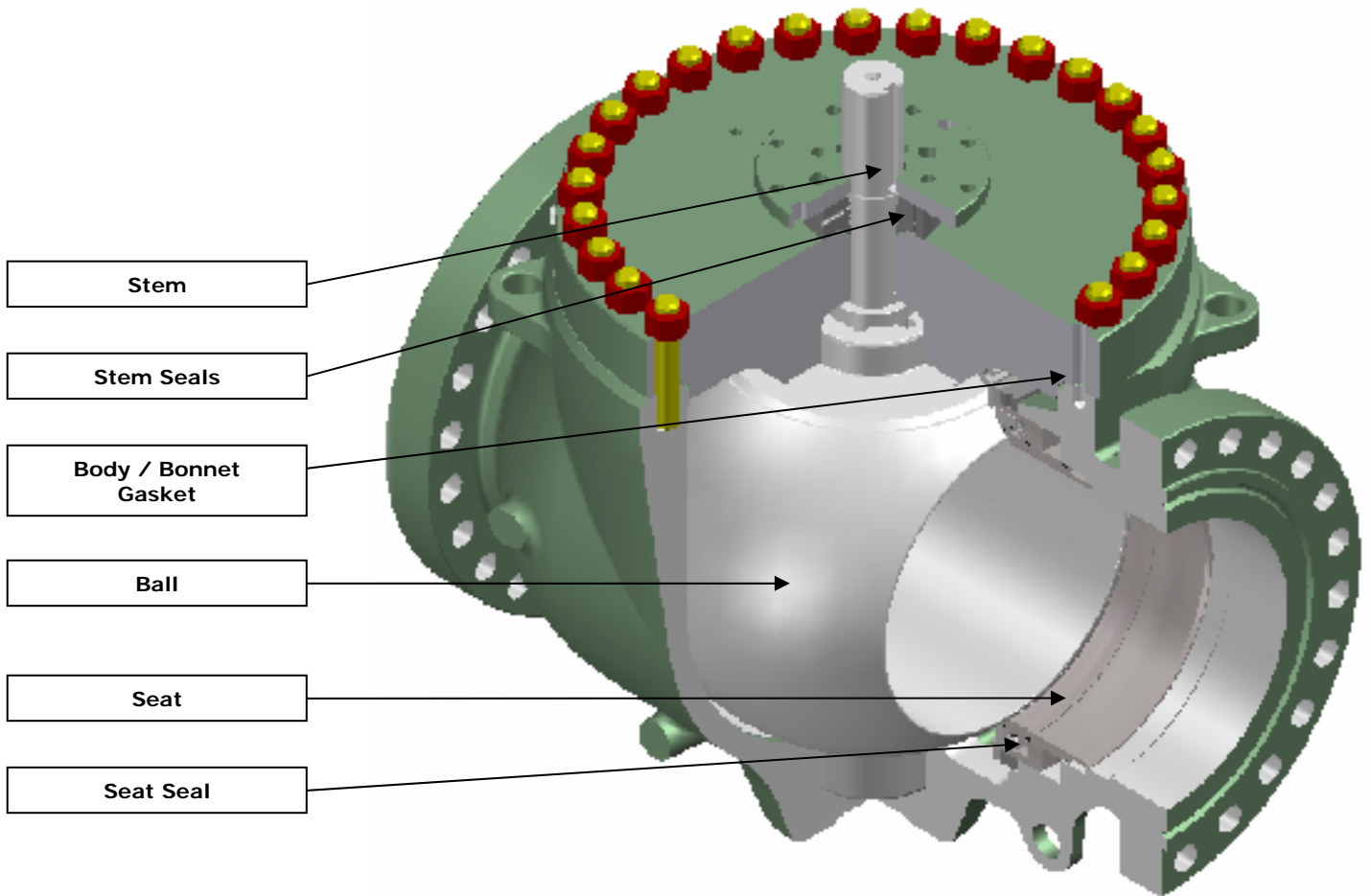




TRUNNION MOUNTED BALL VALVES

**API 6D
&
API 6A**

**Top_Entry Ball Valve
TE type**



**Top_Entry Ball Valve
TE type**



TECHNICAL DESCRIPTION

Description:

ON/OFF service valve, Trunnion mounted-supported, Top-Entry, cast body, one piece bolted-bonnet constructions, floating seats energized by springs, Full or Reduced bore, Bi-Directional.

Standard Construction :

According to API 6A & API 6D (for ASME 150/300 classes the **End to End** dimensions is the same used for ASME 600 class)
Double Block & Bleed design

Standard features:

Primary Soft seats & Secondary Metal seats design
Self relieving seats
Emergency Sealant Grease injection on stem
Emergency Sealant Grease injection on seats (on 6" & larger)
Fire safe design according to API 6FA – API 607 – BS 6755 Part.2
Double Body seals & Triple stem seals
Antistatic device
Anti-blowout stem

Option features:

Double piston effect design
Metal to Metal design
Overlay on wet parts design
Stem extension for buried installation design

Remarks:

On request, Breda Energia S.p.a. will supply various solutions not listed in this catalogue as pup piece connections, reduction ports, etc., moreover years experience in products for distribution oil & gas allow Breda Energia S.p.a. to build products on special client specifications.



- API 6D -

Product Range

Service	Pressure Range API 6D					
Standard Range (Inch)	ANSI 150 (19 bar)	ANSI 300 (50 bar)	ANSI 600 (99 bar)	ANSI 900 (149 bar)	ANSI 1500 (248 bar)	ANSI 2500 (414 bar)
	2 up to 60			2 up to 48	2 up to 30	2 up to 20

Material requirements

Service Conditions	Body and Bonnet Materials	Trim Materials Stem-Ball-Seat	Material selection general list
General & Sour Service	Carbon Steel	Carbon Steel	<ul style="list-style-type: none"> - Carbon Steel - Low temperature Carbon Steel - Low Alloy Steel - Martensitic Stainless Steel - Austenitic Stainless Steel - Duplex Stainless Steel - Nickel Alloys
General & Sour Service	Carbon Steel	Stainless Steel	
General & Sour Service	Stainless Steel	Stainless Steel	
Materials selection will be performed in accordance with Client data sheet / Specification			

Temperature ratings

Temperature Classification	Operating Range	
	°C from min. up to Max.	
	min.	Max.
Standard	-29	121
Low temperature	-46	121
Cryogenic	-196	121
High Temperature	-29	350



- API 6A -

Product Range

Service	Pressure Range API 6A (Psi)		
Standard Range (Inch)	API 2000	API 3000	API 5000
	1.13/16 up to 7.1/16	2.1/16 up to 9	2.1/16 up to 9
	Pressure Range API 6A (Psi)		
	API 10000	API 15000	API 20000
	1.13/16 up to 7.1/16	1.13/16 up to 5.1/8	1.13/16 up to 3.1/16

Material requirements

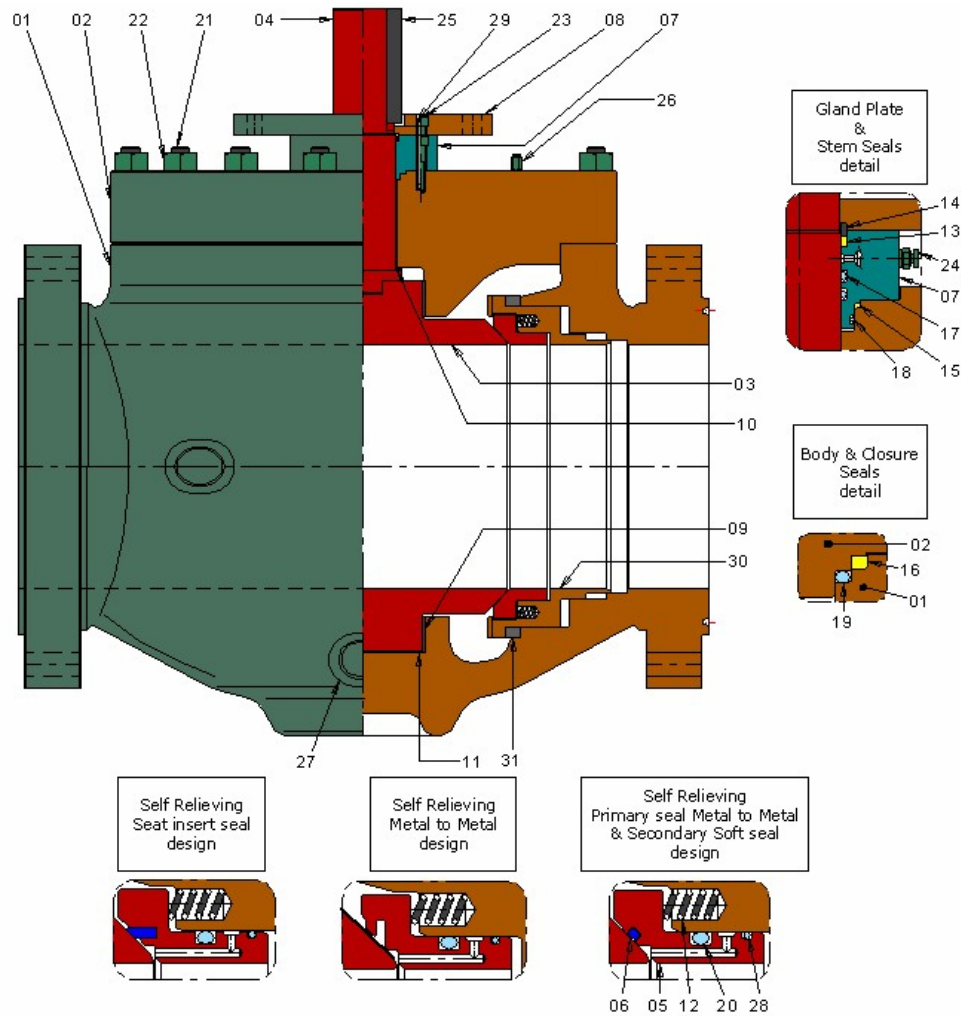
Service Conditions	Trim	Body and Bonnet Materials	Stem Materials	Ball Materials	Seat Materials
API 6A Classification					
General Service	AA	Alloy Steel	Alloy Steel	Alloy Steel	Alloy Steel
General Service	BB	Alloy Steel	AISI 410	AISI 410	AISI 410
General Service	CC	Stainless Steel 13% Cr.	AISI 410	AISI 410	AISI 410
Sour Service	DD	Alloy Steel	Alloy Steel	Alloy Steel	Alloy Steel
Sour Service	EE	Alloy Steel	AISI 410	AISI 410	AISI 410
Sour Service	FF	Stainless Steel 13% Cr.	AISI 410	AISI 410	AISI 410
Sour Service	HH	Alloy Steel clad *	Inconel 718	Inconel 718	Inconel 718
* Clad with Inconel 625					

Temperature ratings

Temperature Classification	Operating Range			
	°F from min. up to Max.		°C from min. up to Max.	
	min.	Max.	min.	Max.
K	-75	180	-60	82
L	-50	180	-46	82
P	-20	180	-29	82
R	Room temperature		Room temperature	
S	0	150	-18	66
T	0	180	-18	82
U	0	250	-18	121
V	35	250	2	121



Part List & Spare Parts



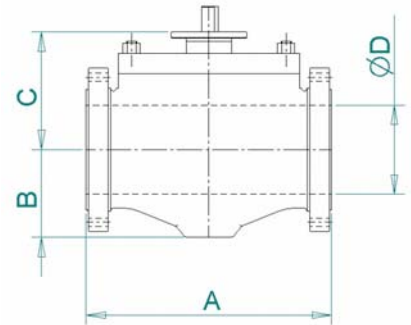
Part N°	Description	Recommended Spare Parts	Part N°	Description	Recommended Spare Parts
01	Body	n.a.	17	Stem O-Ring	Yes
02	Bonnet	n.a.	18	Glande Plate O-Ring	Yes
03	Ball	n.a.	19	Body O-Ring	Yes
04	Stem	n.a.	20	Seat O-Ring	Yes
05	Seat Ring	n.a.	21	Body Studs	n.a.
06	Seat Seal	Yes	22	Body Stud Nuts	n.a.
07	Gland plate	n.a.	23	Capscrew	n.a.
08	Adapter Plate	n.a.	24	Stem Grease Fitting	n.a.
09	Bearing	n.a.	25	Stem Key	n.a.
10	Upper thrust washer	n.a.	26	Vent (Bleeder Fitting)	n.a.
11	Lower thrust washer	n.a.	27	Drain Plug	n.a.
12	Seat Spring	n.a.	28	Grease Sealing	Yes
13	Stem Packing Fire Safe	Yes	29	Pins	n.a.
14	Stem Packing Ring	n.a.	30	Spring Holder	n.a.
15	Gland Plate Fire Safe Gasket	Yes	31	Spring Holder Ring	n.a.
16	Body Fire Safe Gasket	Yes	-	-	-



- API 6D -

Overall Dimensions

ASME 150							
Nominal Size (inch)	D	A			B	C	Weight (Kg.)
		RF	RTJ	WE			
2	51	292	295	292	80	150	39
3	76	356	359	356	100	195	70
4	102	432	435	432	120	205	110
6	153	559	562	559	250	200	215
8	203	660	664	660	290	237	340
10	254	787	791	787	330	265	500
12	305	838	841	838	372	308	740
14	337	889	893	889	378	410	819
16	387	991	994	991	430	490	1195
18	438	1092	1096	1092	460	550	1617
20	489	1194	1201	1194	500	610	2060
22	540	1296	1305	1296	520	650	1915
24	591	1397	1407	1397	550	680	3400
26	635	1448	T.B.A.	1448	580	710	4089
28	686	1550		1550	610	740	4898
30	736	1651		1651	620	740	5995
32	781	1778		1778	670	800	7457
34	832	1930		1930	710	830	8199
36	876	2083		2083	740	850	9580
40	978	2337		2337	780	1040	13339
42	1022	2439		2439	860	1100	15656
48	1168	2700		2700	980	1150	23433
56	1361	3150		3150	1150	1400	40000
60	1464	3700		3700	1350	1550	50000



Note :
 - Dimensions in mm.
 - Dimensions and weights are subject to change without notice
 - T.B.A. : to be advise



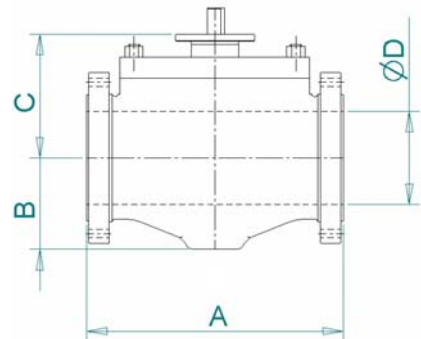
- API 6D -

Overall Dimensions

ASME 300							
Nominal Size (inch)	D	A			B	C	Weight (Kg.)
		RF	RTJ	WE			
2	51	292	295	292	80	150	45
3	76	356	359	356	100	195	65
4	102	432	435	432	120	205	115
6	153	559	562	559	250	200	230
8	203	660	664	660	290	237	360
10	254	787	791	787	330	265	530
12	305	838	841	838	372	308	780
14	337	889	892	889	378	420	1000
16	387	991	994	991	430	500	1240
18	438	1092	1095	1092	475	560	1720
20	489	1194	1200	1194	500	640	2311
22	540	1296	1305	1296	520	659	2911
24	591	1397	1406	1397	550	680	3611
26	635	1448	1461	1448	580	730	4794
28	686	1550	1562	1550	620	740	5742
30	736	1651	1664	1651	620	760	7030
32	781	1778	1764	1778	670	820	8744
34	832	1930	1946	1930	710	840	9614
36	876	2083	2098	2083	740	860	11225
40	978	2337	T.B.A.	2337	780	1080	15640
42	1022	2439		2439	880	1150	18354
48	1168	2700		2700	980	1170	27475
56	1361	3150		3150	1160	1420	40000
60	1464	3700		3700	1400	1570	50000

Note :

- Dimensions in mm.
- Dimensions and weights are subject to change without notice
- T.B.A. : to be advise

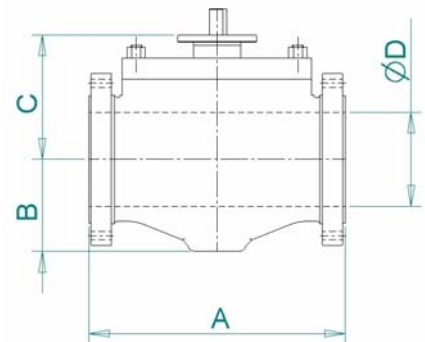




- API 6D -

Overall Dimensions

ASME 600							
Nominal Size (inch)	D	A			B	C	Weight (Kg.)
		RF	RTJ	WE			
2	51	292	295	292	80	170	54
3	76	356	359	356	100	215	87
4	102	432	435	432	120	235	167
6	153	559	562	559	160	270	290
8	203	660	664	660	185	325	480
10	254	787	791	787	260	350	710
12	305	838	841	838	300	415	919
14	337	889	892	889	378	440	1280
16	387	991	994	991	430	523	1870
18	438	1092	1095	1092	475	581	2281
20	489	1194	1200	1194	500	662	2941
22	540	1296	1305	1296	520	689	3671
24	591	1397	1406	1397	565	700	4720
26	635	1448	1461	1448	590	755	6128
28	686	1550	1562	1550	630	790	7343
30	736	1651	1664	1651	658	800	8990
32	781	1778	1794	1778	690	860	11175
34	832	1930	1946	1930	720	965	12285
36	876	2083	2098	2083	750	985	14365
40	978	2337	2365	2337	800	1145	20000
42	1022	2439	2467	2439	880	1150	23020
48	1168	2700	2728	2700	1000	1250	33310
56	1361	3150	3150	3150	1180	1450	45000
60	1464	3700	3700	3700	1400	1600	55000



Note :
 - Dimensions in mm.
 - Dimensions and weights are subject to change without notice



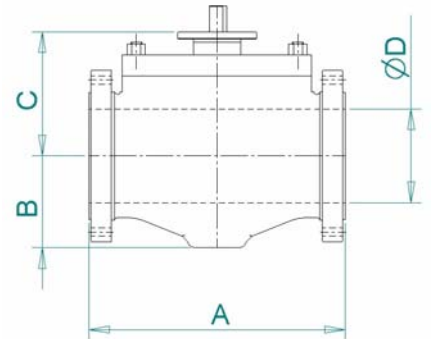
- API 6D -

Overall Dimensions

ASME 900							
Nominal Size (inch)	D	A			B	C	Weight (Kg.)
		RF	RTJ	WE			
2	51	368	371	368	80	190	79
3	76	381	384	381	110	240	102
4	102	457	460	457	150	240	185
6	153	610	613	610	175	300.0	380
8	203	737	740	737	240	345	600
10	254	839	842	839	278	390	865
12	305	965	968	965	320	450	1280
14	324	1029	1038	1029	400	475	1870
16	375	1131	1140	1131	436	577	2891
18	425	1219	1232	1219	491	641	3761
20	473	1321	1334	1321	500	680	4750
24	572	1549	1568	1549	600	780	7910
26	619	1651	1674	1651	682	837	9292
28	667	1753	1775	1753	728	883	11015
30	714	1880	1902	1880	773	927	13487
32	762	2032	2054	2032	825	998	16685
34	810	2159	2188	2159	830	1060	18334
36	857	2286	2315	2286	934	1136	21557

Note :

- Dimensions in mm.
- Dimensions and weights are subject to change without notice



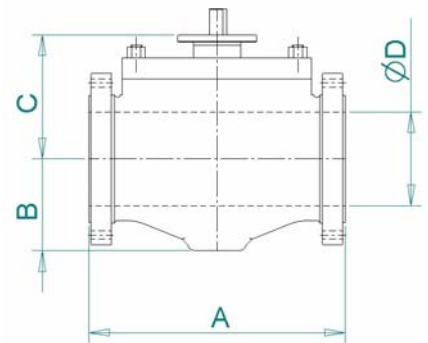


- API 6D -

Overall Dimensions

ASME 1500							
Nominal Size (inch)	D	A			B	C	Weight (Kg.)
		RF	RTJ	WE			
2	51	368	371	368	85	195	79
3	76	470	473	470	115	240	142
4	102	546	549	546	140	280	260
6	146	705	711	705	205	313	560
8	194	832	841	832	255	380	870
10	241	991	1000	991	300	480	1380
12	289	1130	1146	1130	345	496	2290
14	317.5	1257	1276	1257	454	536	2591
16	362	1348	1407	1348	499	589	4661
18	407	1537	1559	1537	569	671	5600
20	457	1664	1686	1664	640	755	7910
24	534	2043	2071	2043	729	890	12000
26	573	2150	2150	2150	720	920	17500
28	620	2210	2210	2210	740	950	19000
30	667	2350	2350	2350	760	1045	24400

Note :
 - Dimensions in mm.
 - Dimensions and weights are subject to change without notice





- API 6D -

Overall Dimensions

ASME 2500							
Nominal Size (inch)	D	A			B	C	Weight (Kg.)
		RF	RTJ	WE			
2	44.5	451	454	451	95	230	140
3	63	578	584	578	120	290	215
4	89	914	927	914	160	325	390
6	133.5	914	927	914	242	372	750
8	181	1022	1038	1022	276	421	1250
10	225.4	1270	1292	1270	337	513	2200
12	266.7	1422	1445	1422	394	585	3400

Note :

- Dimensions in mm.
- Dimensions and weights are subject to change without notice

