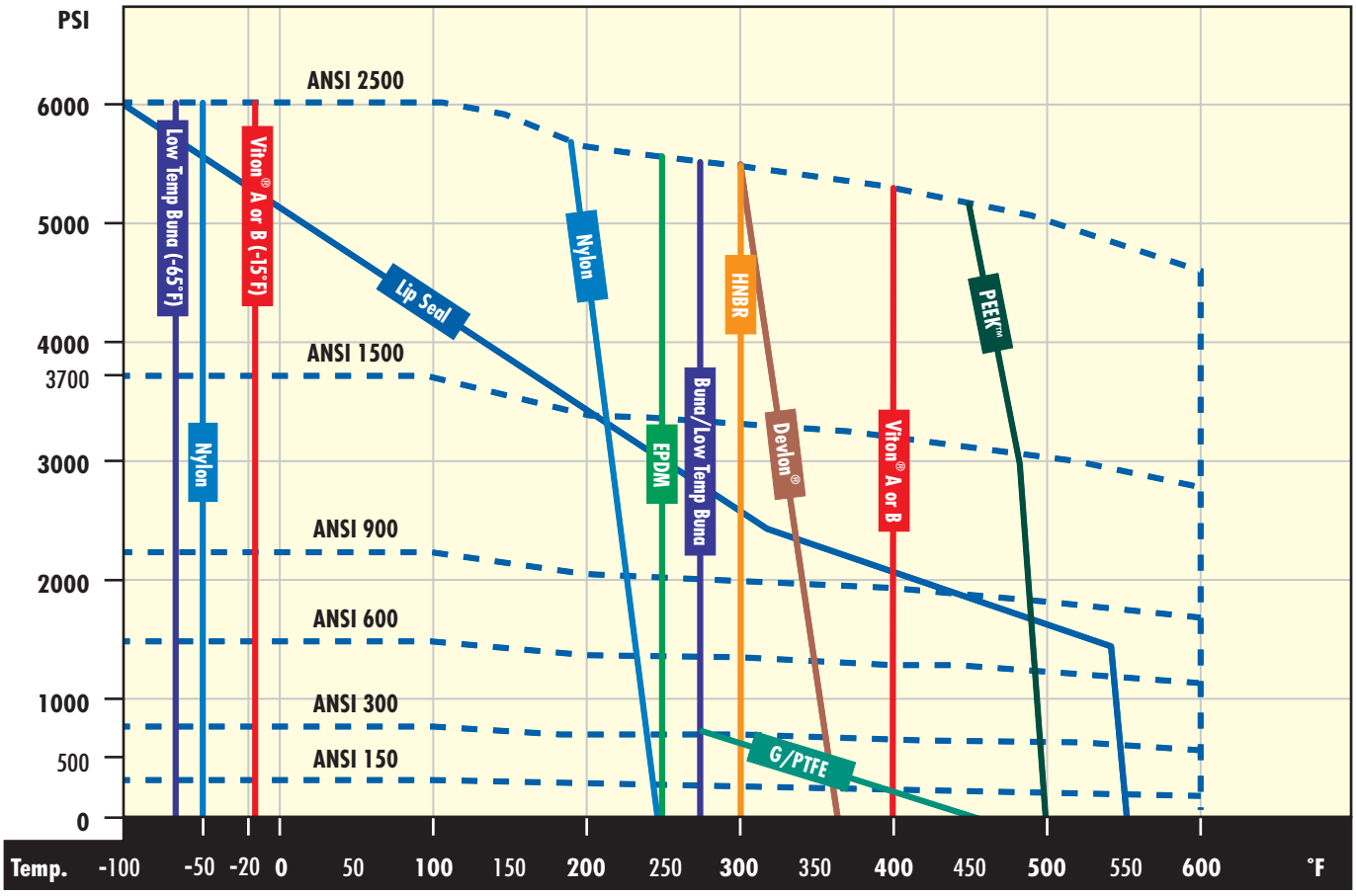
Series 5700/6700 ▪ Pressure Temperature

The chart below depicts pressure and temperature ratings for common plastics and elastomers used in PBV® ball valves. Other materials are available upon request.



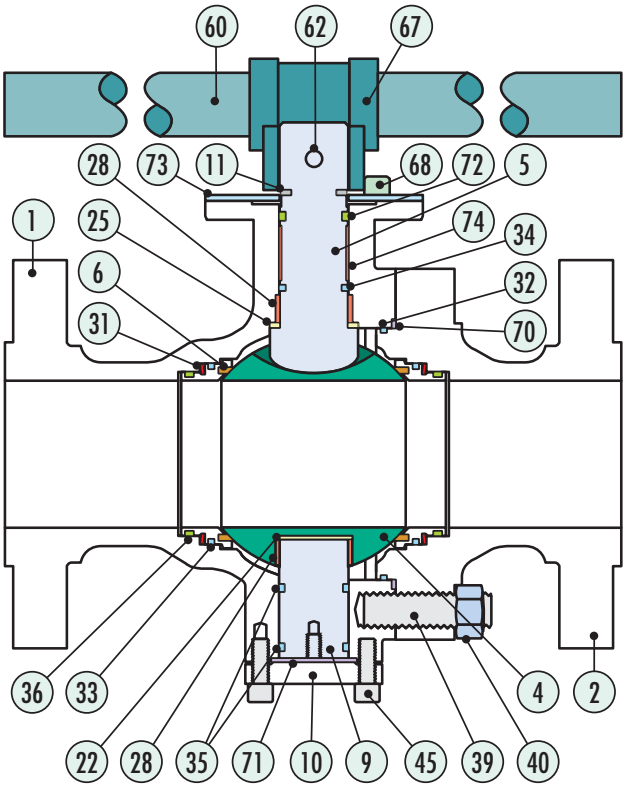
Ball Valve Stem Torques (in.-lbs.)

To calculate torque at any pressure use the formula located under Class for each valve size.
Example: An 8" Class 600 at 1100 psi = 4471 + (9.1 x 1100) = 14,481 in.-lbs.

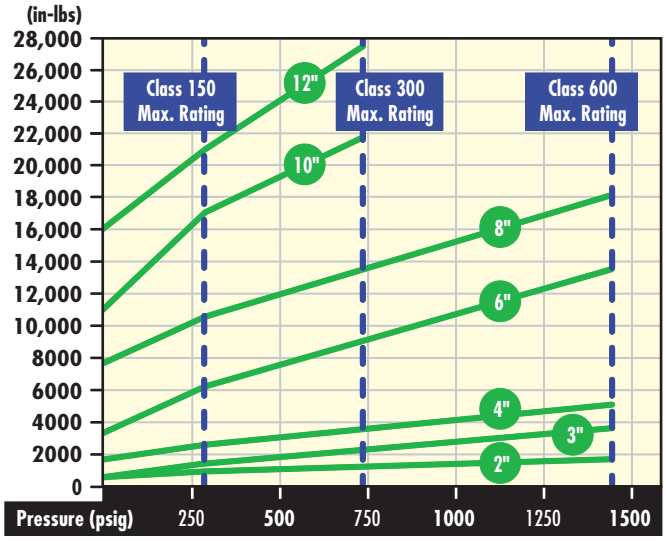
Seat	G/PTFE	G/PTFE	G/PTFE	Nylon	Nylon	Nylon	Nylon	Nylon	Nylon	Nylon	Nylon
Port Size	Cl.150-300 Stem Torque Formula	Cl.150 Stem Torque	Cl. 300 Stem Torque	Cl. 600 Stem Torque Formula	Cl. 600 Stem Torque	Cl. 900 Stem Torque Formula	Cl. 900 Stem Torque	Cl. 1500 Stem Torque Formula	Cl. 1500 Stem Torque	Cl. 2500 Stem Torque Formula	Cl. 2500 Stem Torque
	MOP (psi)	285	740	MOP (psi)	1480	2220	2220	3705	3705	6170	6170
2	500 + 0.51 * ΔP	650	880	640 + 0.62 * ΔP	1,560	700 + 0.61 * ΔP	2,050	849 + 0.61 * ΔP	3,110	792 + 0.39 * ΔP	3,200
3	1105 + 1.13 * ΔP	1,430	1,940	1333 + 1.47 * ΔP	3,510	1427 + 1.35 * ΔP	4,420	1705 + 1.14 * ΔP	5,930	1510 + 0.84 * ΔP	6,690
4	1540 + 1.99 * ΔP	2,110	3,010	1839 + 2.47 * ΔP	5,490	1985 + 2.26 * ΔP	7,000	2423 + 2.08 * ΔP	10,130	2345 + 1.35 * ΔP	10,670
6	1630 + 3.9 * ΔP	2,740	4,520	2069 + 4.4 * ΔP	8,580	2760 + 4.1 * ΔP	11,860	4612 + 5.1 * ΔP	23,510	5442 + 4.2 * ΔP	31,360
8	3600 + 8.0 * ΔP	5,880	9,520	4471 + 9.1 * ΔP	17,940	4162 + 7.8 * ΔP	21,480	6588 + 8.4 * ΔP	37,710	8463 + 8.6 * ΔP	61,530
10	4280 + 13 * ΔP	7,990	13,900	5452 + 14 * ΔP	26,170	6094 + 14 * ΔP	37,170	6193 + 16 * ΔP	65,470	10003 + 16 * ΔP	108,720
12	5275 + 20 * ΔP	10,980	20,080	7444 + 22 * ΔP	40,000	6800 + 24 * ΔP	60,080	9558 + 23 * ΔP	94,770	18889 + 24 * ΔP	166,970
14	6600 + 26 * ΔP	14,010	25,840	8624 + 33 * ΔP	57,460	12436 + 37 * ΔP	94,580	15278 + 35 * ΔP	144,950	—	—
16	8660 + 34 * ΔP	18,350	33,820	11074 + 42 * ΔP	73,230	16700 + 55 * ΔP	138,800	19630 + 48 * ΔP	197,470	—	—
18	13175 + 56 * ΔP	29,140	54,620	18050 + 68 * ΔP	118,690	17930 + 58 * ΔP	146,690	20930 + 60 * ΔP	243,230	—	—
20	16860 + 84 * ΔP	40,800	79,020	18659 + 100 * ΔP	166,660	25050 + 69 * ΔP	178,230	35820 + 87 * ΔP	358,165(*)	—	—
24	22480 + 121 * ΔP	56,970	112,020	30326 + 164 * ΔP	273,050	47570 + 139 * ΔP	356,150	60400 + 187 * ΔP	753,235(**)	—	—

(*) Bore = 18.69"
(**) Bore = 23.25"
Torque values are for new valves with clean water.
No additional safety factors have been added.
For powered actuators, it is recommended to add an additional 25% minimum.
For dirty service, add an additional 25% minimum.
For dry gas service, add 50% minimum.
To prevent stem side loading and eliminate potential stem galling, the following tolerances for mounting actuators are recommended.

- Actuator mounting bracket flanges must be parallel within .015".
- The max allowed runout on the stem coupling bores are .008".



Stem Torque



Max Break Torques (in.-lbs.)

Pressure	Torque (in.-lbs.) By Size						
psig	2	3	4	6	8	10	12
0	540	720	1560	3180	7560	9000	16,000
285	900	1440	2580	6120	10,560	15,700	21,000
740	1320	2460	3600	9540	13,560	21,600	27,200
1480	1620	3720	5220	13,800	18,180	—	—

Parts & Materials
Typical 4" Steel Valve

No.	Qty.	Description	Material/Carb. Steel Std.	Spares
1	1	Body	A216-WCB/WCC	
2	1	Adapter Cap	A216-WCB/WCC	
4	1	Ball	A351-CF8M	
5	1	Stem	A276-316	
6	2	Seat Assembly	Nylon/316	S
9	1	Trunnion	A276-316	
10	1	Trunnion Plate	A352-LCC	
11	1	Snap Ring	Stainless Steel	
22	1	Bearing	TFMC	S
25	1	Stem Thrust Bearing	TFMC	S
28	2	Bearing Washer	Steel/PTFE	S
31	2	Spring	Inconel X-750	
32	1	O-ring, Body	HNBR	S
33	2	O-ring, Seat	HNBR	S
34	2	O-ring, Stem	HNBR	S
35	2	O-ring, Trunnion	HNBR	S
36	—	Packing	Graphite	S
39	See Dim.	Stud	A193-B7M	
40	See Dim.	Nut	A194-2HM	
45	4	Cap Screw, Trunnion	A574	
60	1	Handle	Carbon Steel	
62	1	Handle Screw	F912	
67	1	Handle Adapter	Ductile Iron	
68	1	Cap Screw, Stop	A574	
70	1	Gasket, Body	Graphite	S
71	1	Gasket, Trunnion	Graphite	S
72	—	Packing, Stem	Graphite	S
73	1	Stop Plate	Carbon Steel	
74	1	Stem Bearing	PTFE	S

NOTE: We reserve the right to change materials and specifications.

Pressure Temperature