



UNITED Engineering Corporation

Quality Solutions for Flow Control Requirements

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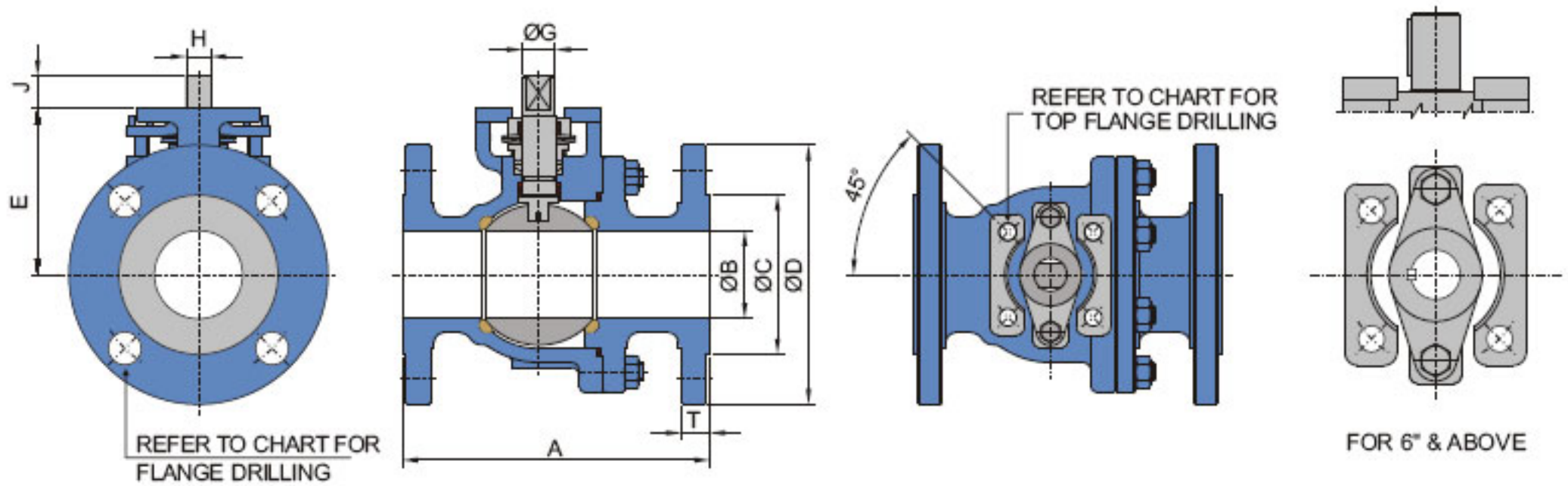
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Featuring an ISO 5211 Mounting Pad for **Direct Mounting** of Actuators and Gear Operators on sizes 1/2"-12"



Leading the Industry with Innovation by Design



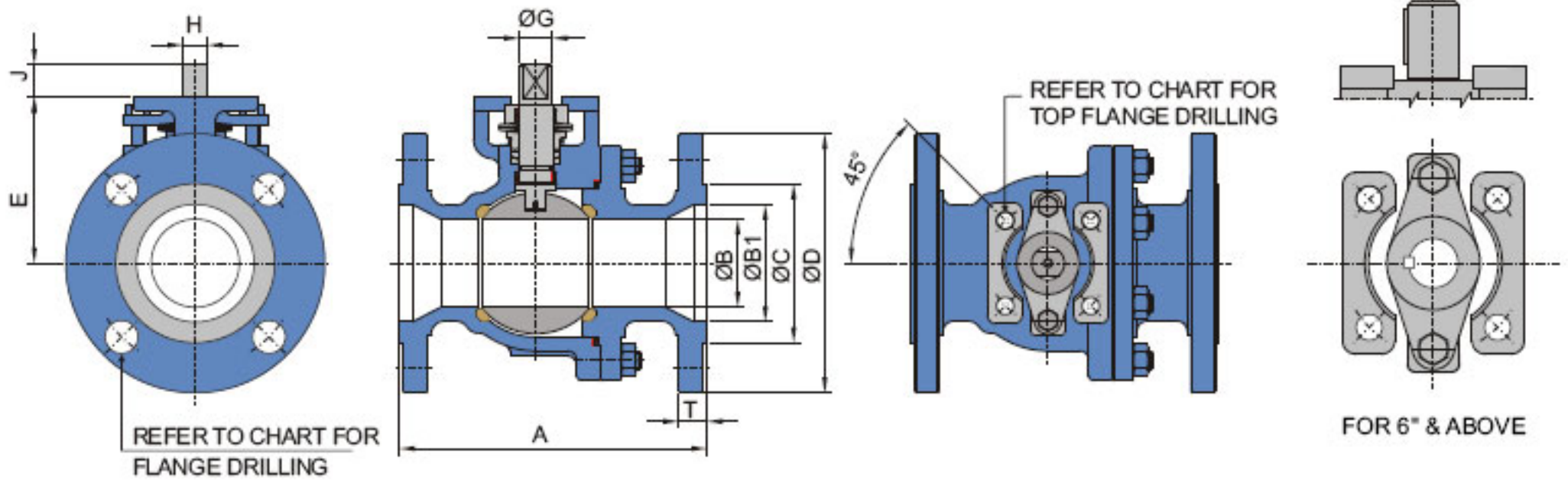
All dimensions in mm

Series 60 Full Bore Class 150

Valve Size		A	T	ØB	ØC	ØD	ØG	Flange Drilling			H	J	E	Key Size	Top Flange Drilling			Weight Kg
Inch	DN							BC	Hole Ø	Nos.					BC1	Hole Ø	Nos.	
1/2"	15	108	10	15	35	90	10	60.3	16	4	6	6	43	-	42	6	4	2.3
3/4"	20	117	10.9	20	43	100	12	69.9	16	4	8	6	50	-	42	6	4	2.8
1"	25	127	11.6	25	51	110	16	79.4	16	4	11	8	65	-	50	7	4	3.8
1-1/2"	40	165	14.7	38	73	125	16	98.4	16	4	11	9	78.5	-	50	7	4	6.3
2"	50	178	16.3	51	92	150	19	120.7	19	4	14	19	96	-	70	10	4	10.5
2-1/2"	65	190	17.9	62	105	180	19	139.7	19	4	14	25	100	-	70	10	4	16.5
3"	80	203	19.5	76	127	190	30	152.4	19	4	22	25	144.5	-	102	12	4	20.5
4"	100	229	24.3	102	157	230	30	190.5	19	8	22	25	165	-	102	12	4	38.5
6"	150	267	25.9	150	216	280	35	241.3	22.2	8	-	43	228	8x10	125	14	4	92.5
8"	200	457	29	202	270	345	45	298.5	22.2	8	-	45	296.5	9x14	140	18	4	152
10"	250	533	30.6	252	324	405	50	362	25.4	12	-	67	352	9x14	165	22	4	252
12"	300	610	32.2	305	381	485	70	431.8	25.4	12	-	84	464	12x20	254	18	8	384

Series 61 Full Bore Class 300

Valve Size		A	T	ØB	ØC	ØD	ØG	Flange Drilling			H	J	E	Key Size	Top Flange Drilling			Weight Kg
Inch	DN							BC	Hole Ø	Nos.					BC1	Hole Ø	Nos.	
1/2"	15	140	14.7	15	35	95	10	66.7	16	4	6	6	43	-	42	6	4	3
3/4"	20	152	16.3	20	43	115	12	82.6	19	4	8	6	50	-	42	6	4	4
1"	25	165	17.9	25	51	125	16	88.9	19	4	11	8	65	-	50	7	4	5.5
1-1/2"	40	190	21.1	38	73	155	16	114.3	22.2	4	11	9	78.5	-	50	7	4	10
2"	50	216	22.7	51	92	165	19	127	19	8	14	19	96	-	70	10	4	15.5
2-1/2"	65	241	25.9	62	105	190	19	149.2	22.2	8	14	25	100	-	70	10	4	25.5
3"	80	282	29.0	76	127	210	30	168.3	22.2	8	22	25	144.5	-	102	12	4	32.5
4"	100	305	32.2	102	157	255	30	200.0	22.2	8	22	25	165	-	102	12	4	52.5
6"	150	403	37.0	150	216	320	35	269.9	22.2	12	-	43	228	8x10	125	14	4	116
8"	200	502	41.7	202	270	380	45	330.2	25.4	12	-	45	296.5	9x14	140	18	4	186
10"	250	568	48.1	252	324	445	50	387.4	28.5	16	-	67	352	9x14	165	22	4	325
12"	300	648	51.3	305	381	520	70	450.8	31.8	16	-	84	464	12x20	254	18	8	552



All dimensions in mm

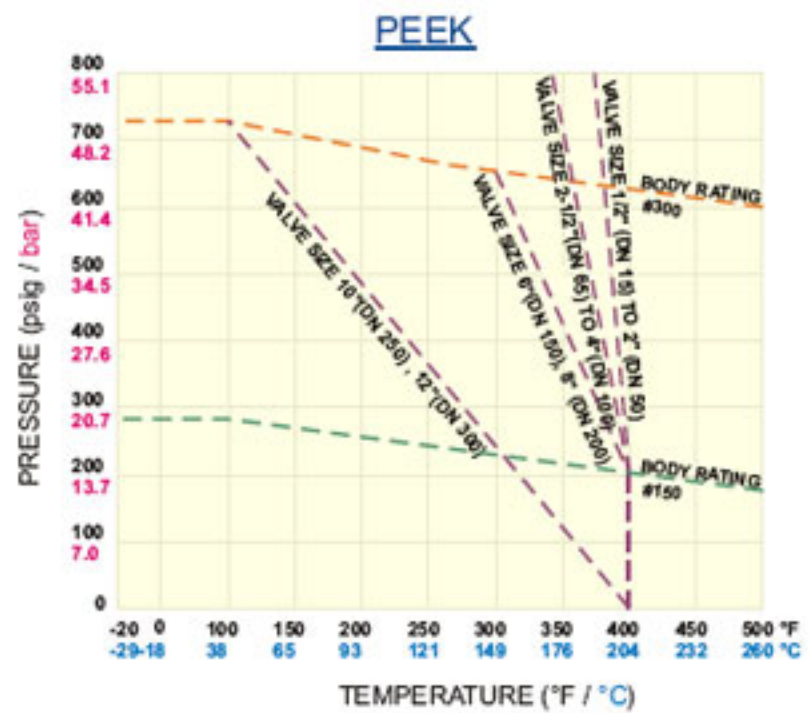
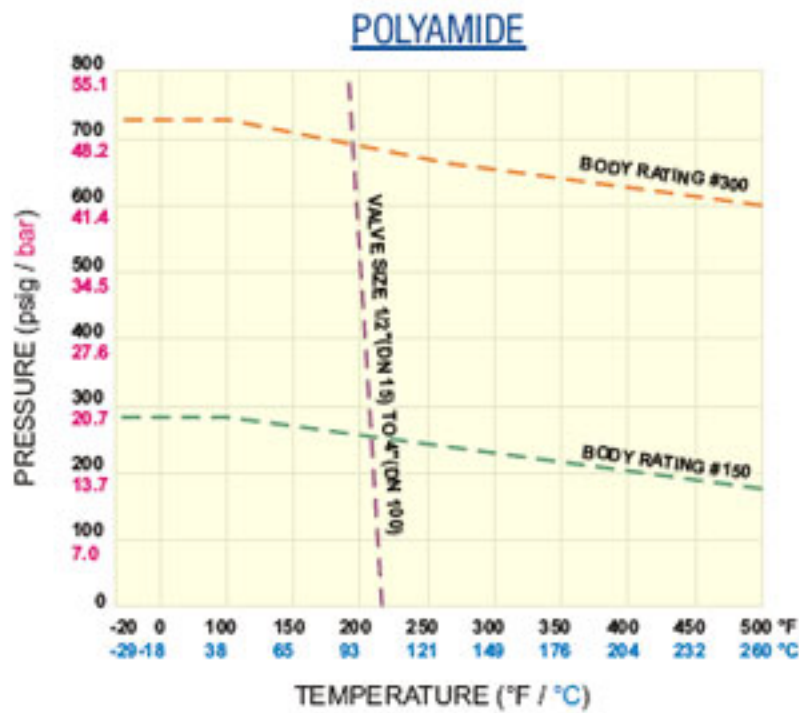
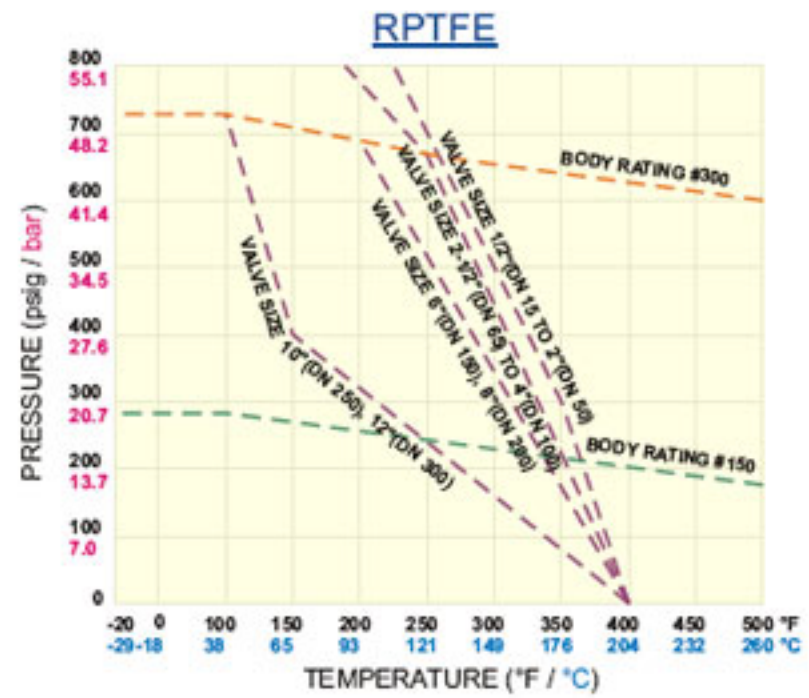
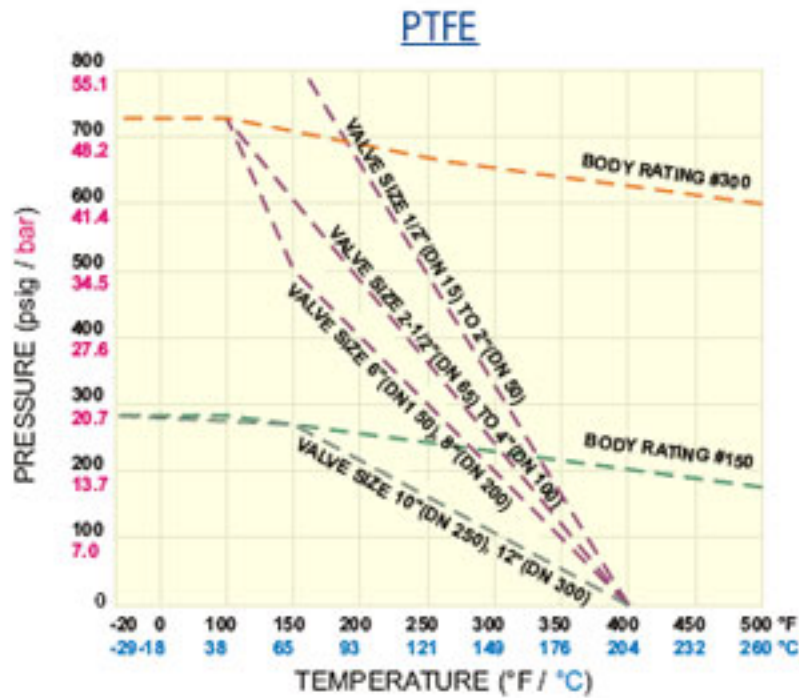
Series 62 Reduced Bore Class 150

Valve Size		A	T	ØB1	ØB	ØC	ØD	ØG	Flange Drilling			H	J	E	Key Size	Top Flange Drilling			Weight Kg
Inch	DN								BC	Hole Ø	Nos.					BC1	Hole Ø	Nos.	
1/2"	15	108	10	15	10	35	90	10	60.3	16	4	6	6	43	-	42	6	4	1.5
3/4"	20	117	10.9	20	15	43	100	10	69.9	16	4	6	6	43	-	42	6	4	2.5
1"	25	127	11.6	25	20	51	110	12	79.4	16	4	8	6	50	-	42	6	4	3
1-1/2"	40	165	14.7	38	25	73	125	16	98.4	16	4	11	8	65	-	50	7	4	8.2
2"	50	178	16.3	51	38	92	150	19	120.7	16	4	11	9	78.5	-	50	7	4	14
2-1/2"	65	190	17.9	62	51	105	180	19	139.7	19	4	14	19	96	-	70	10	4	18
3"	80	203	19.5	76	62	127	190	19	152.4	19	4	14	25	100	-	70	10	4	28.5
4"	100	229	24.3	102	76	157	230	30	190.5	19	8	22	25	144.5	-	102	12	4	44.5
6"	150	267	25.9	150	102	216	280	30	241.3	22.2	8	22	25	165	-	102	12	4	80
8"	200	457	29	202	150	270	345	35	298.5	22.2	8	-	43	228	8x10	125	14	4	146
10"	250	533	30.6	252	202	324	405	45	362	25.4	12	-	45	296.5	9x14	140	18	4	326
12"	300	610	32.2	305	252	381	485	50	431.8	25.4	12	-	67	352	9x14	165	22	4	350

Series 63 Reduced Bore Class 300

Valve Size		A	T	ØB1	ØB	ØC	ØD	ØG	Flange Drilling			H	J	E	Key Size	Top Flange Drilling			Weight Kg
Inch	DN								BC	Hole Ø	Nos.					BC1	Hole Ø	Nos.	
1/2"	15	140	14.7	15	10	35	95	10	66.7	16	4	6	6	43	-	42	6	4	2.0
3/4"	20	152	16.3	20	15	43	115	10	82.6	19	4	6	6	43	-	42	6	4	3.5
1"	25	165	17.9	25	20	51	125	12	88.9	19	4	8	6	50	-	42	6	4	4.5
1-1/2"	40	190	21.1	38	25	73	155	16	114.3	22.2	4	11	8	65	-	50	7	4	8.7
2"	50	216	22.7	51	38	92	165	16	127	19	8	11	9	78.5	-	50	7	4	12
2-1/2"	65	241	25.9	62	51	105	190	19	149.2	22.2	8	14	19	96	-	70	10	4	21
3"	80	282	29.0	76	62	127	210	19	168.3	22.2	8	14	25	100	-	70	10	4	23
4"	100	305	32.2	102	76	157	255	30	200.0	22.2	8	22	25	144.5	-	102	12	4	38.5
6"	150	403	37.0	150	102	216	320	30	269.9	22.2	12	22	25	165	-	102	12	4	88
8"	200	502	41.7	202	150	270	380	35	330.2	25.4	12	-	43	228	8x10	125	14	4	143.5
10"	250	568	48.1	252	202	324	445	45	387.4	28.5	16	-	45	296.5	9x14	140	18	4	198
12"	300	648	51.3	305	252	381	520	50	450.8	31.8	16	-	67	352	9x14	165	22	4	417

Pressure - Temperature data for various seat polymers



Flow Coefficient "Cv" (USGPM)

Valve Size	Inch	1/2"	3/4"	1"	1-1/2"	2"	2-1/2"	3"	4"	6"	8"	10"	12"
	DN	15	20	25	40	50	65	80	100	150	200	250	300
Full Bore Class 150		19	40	79	208	434	793	1158	2355	5095	10055	18705	25155
Full Bore Class 300		17	36	69	195	395	705	981	2042	5042	9605	16205	24405
Reduced Bore Class 150		10	15	32	90	126	351	319	589	1273	2011	3741	4192
Reduced Bore Class 300		9	13	28	85	115	312	270	510	1008	1600	3241	4067

For "Kv" Values multiply the above values by 0.8675

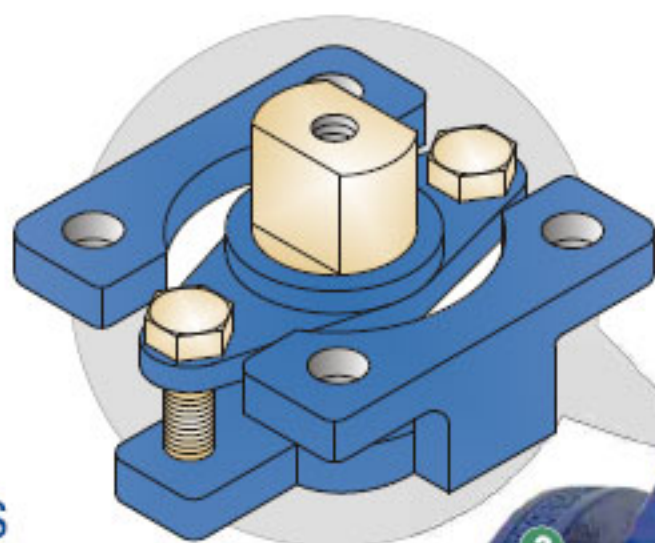
Torque(Nm)

Torque Full Bore Class 150 (Nm)													
Valve Size	Inch	1/2"	3/4"	1"	1-1/2"	2"	2-1/2"	3"	4"	6"	8"	10"	12"
	DN	15	20	25	40	50	65	80	100	150	200	250	300
Δ P ≈ 20 Bar		04	06	10	20	25	40	65	110	330	750	1175	1900
Torque Full Bore Class 300 (Nm)													
Δ P ≈ 50 Bar		06	08	15	32	40	60	100	170	500	900	2000	3000

Note:

- Above stem torques are for clean fluids. For slurries and high viscosity fluids, add suitable safety margins for sizing of actuators or contact factory.
- To determine torques for reduced bore, please refer to torque values of the next smaller size. For example : 2" 150 reduced bore torque equals 1-1/2" full bore torque (20 Nm).

Controls is pleased to offer top-of-the-line products in pipeline flow control. The **United Series 60/61/62/63 Industrial Process Ball Valves** have been developed with extensive application, design and manufacturing expertise. These products are produced by employing modern manufacturing practices under a robust quality assurance system. These practices ensure consistent product quality and dependable performance. The **United Series 60/61/62/63 Industrial Process Ball Valves** have been designed to include state-of-the-art features that are described in this bulletin.



Features

1. Top Flange

Top Flange is designed as per EN ISO 5211 for direct mounting of actuators and gear operators. Top flange design provides easy access for adjustment of gland bolts when the valve is mounted with actuators.

2. Adjustable Packing Gland

Packing gland bolts are easily accessible to adjust packing with the actuator in place.

3. Valve Design

Design generally conforms to ASME B 16.34-2004 / API 6D / BS EN ISO 17292 (BS 5351); class 150 & class 300; DIN EN 12516.

4. End-to-End Dimensions

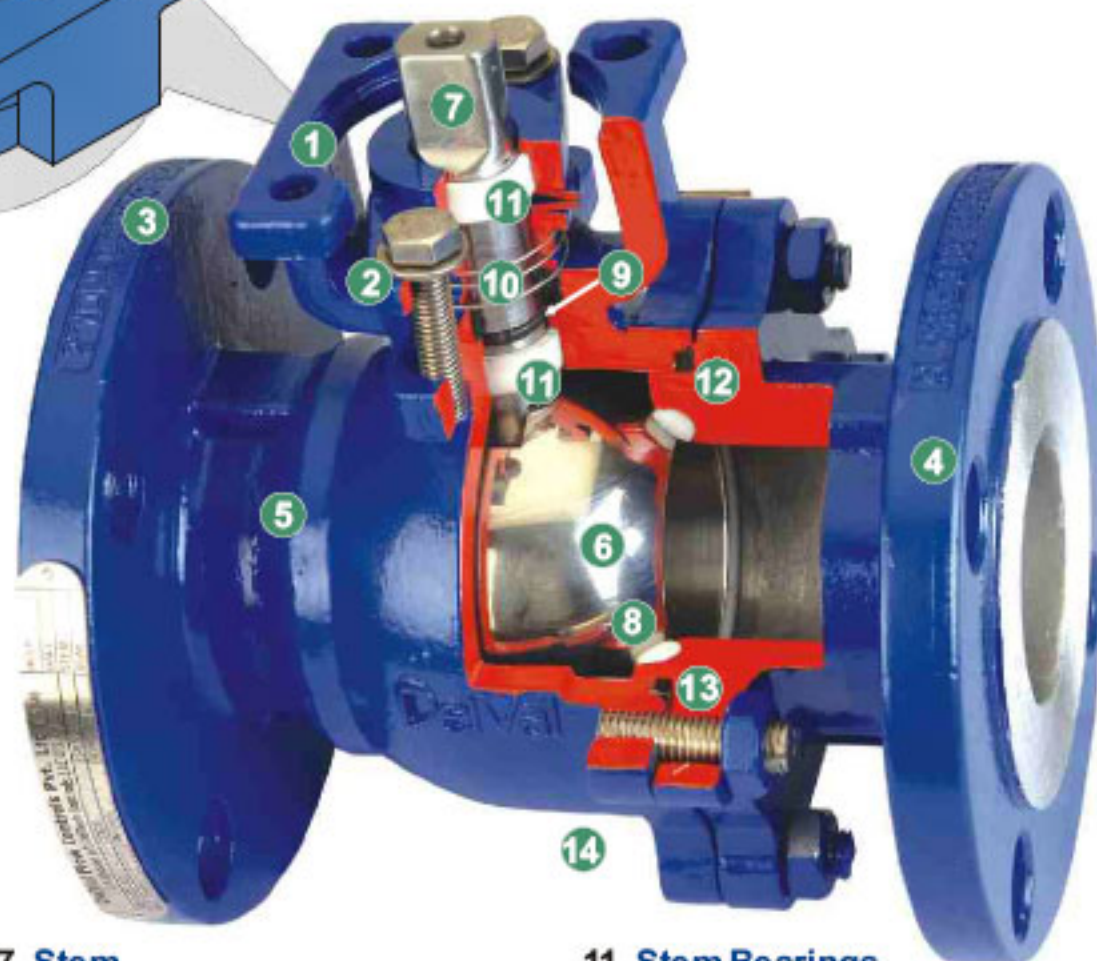
Valve end-to-end dimensions as per ASME B 16.10/ API 6D.

5. Valve Body

Flanged, two-piece design in cast construction. Flanges are raised face and serrated and dimensions conform to ASME B 16.5 - 2003 class 150 / 300. Jacketing options of body available for heating or cooling of media. Carbon steel valve bodies are finished with two-coat zinc rich epoxy paint in "DelVal Blue".

6. Ball

Floating design, stainless steel ball with superior finish and sphericity ensures extended seat life and low operating torques. The combination of the balanced seat design and ball ensures consistent and dependable leak tightness.



7. Stem

Stem in stainless steel, heavy-duty construction with double "D" (sizes up to 4") and round and keyed (sizes 6" and above) configurations for positive engagement with all types of valve operators.

8. Seat

Seat is contoured to ensure that all stresses due to the line pressure are counterbalanced and that the extrusion of the seat into the body cavity due to sealing forces is eliminated. Seat design is fire-safe as per API 607/BS EN ISO 10497.

9. Stem Sealing

Double "V" stem packing in graphite is live loaded with the gland assembly to ensure positive and trouble free sealing. Online tightening of gland assembly can be done. Viton "o"-ring provides sealing against fugitive emissions.

10. Antistatic Devices

Antistatic devices at the ball-stem interface and body-stem interface.

11. Stem Bearings

Two heavy-duty reinforced Teflon® bearings located at the stem top and bottom. Side loads are absorbed by the two stem bearings, protecting the stem packing from undue stresses and deformation thus eliminating leakage.

12. Body Seal

Body joint sealing is by a reinforced graphite gasket to withstand high temperatures and is contained in a precision-machined groove for extended sealing life.

13. Body Stud and Nut

Body joint bolting is in ASTM A 193 B7 / ASTM A 194 2H material for carbon steel bodies and ASTM A 193 GR.B8/ASTM A 194 GR.8 material for stainless steel bodies.

14. Body Cavity Drain Plug

Body cavity drain plug facility is available upon request.

