

ANSI/ASME Two-Piece Ball Valves



Floating Ball
Full Bore
Flanged End

Class 150 – 300
½" – 12"

Applications

- Process and general industry
- For water, steam, gas, oil, and other media
- Other applications on request

Operating Data

- Maximum allowable pressure 740 psi (51 bar)
- Maximum allowable temperature 392°F (200°C)
- Pressure/Temperature ratings per ASME B16.34
- Temperature below 0°C on request

Body Materials

- ASTM A216 WCB Carbon Steel
- ASTM A351 CF8 Type 304 Stainless Steel
- ASTM A351 CF8M Type 316 Stainless Steel

Ball Materials

- ASTM A351 CF8 Type 304 Stainless Steel
- ASTM A351 CF8M Type 316 Stainless Steel

Seat Material

- PTFE up to 320°F (160°C)

Design

- Design per ASME B16.34
- Pressure/temperature rating per ASME B16.34
- End-end dimension per ASME B16.10
- Flange dimensions per ASME B16.5
- Testing per API 598
- Full bore
- Two-piece body
- Blowout proof stem
- ISO 5211 mounting pad
- Locking device
- Solid ball
- Antistatic device

The valves meet the safety requirements of the Pressure Equipment Directive 97/23/EC (PED) of Annex I for Fluid Groups 1 and 2.

Variants on request

- Gear operators
- Fire safe configuration
- RPTFE seats up to 392°F (200°C)
- PTFE + graphite seats up to 392°F (200°C)
- Pneumatic actuator
- Electric actuator

Remarks

- Operating Instructions No. 8222.81
- ECOLINE-BLC 1000 type series booklet no. 8222.53
- ECOLINE-GT type series booklet no. 7247.11
- ECOLINE-GL type series booklet no. 7247.12
- ECOLINE-SC type series booklet no. 7247.13

On all enquiries/orders please specify

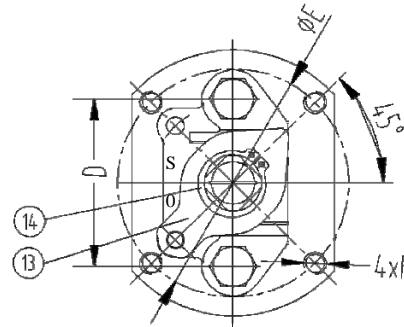
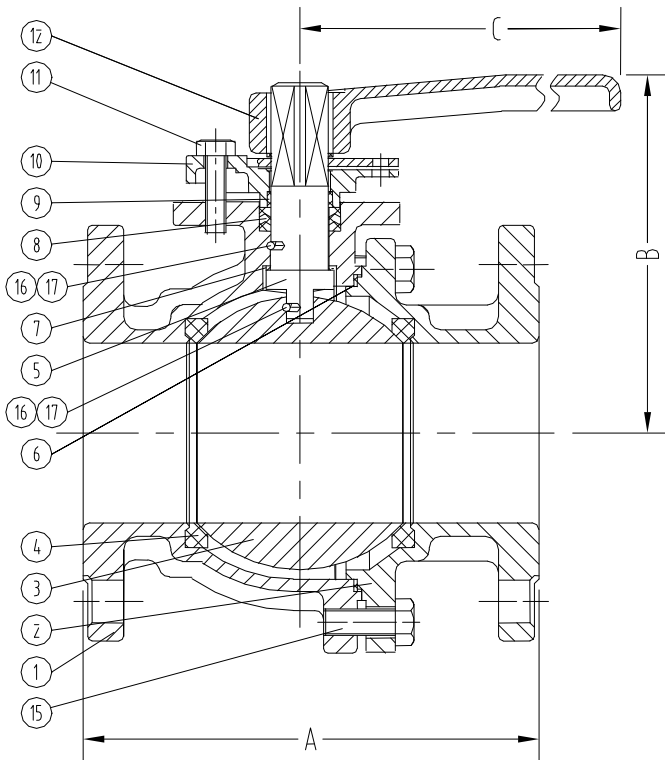
1. Valve type
2. ANSI pressure class
3. Size
4. Design pressure
5. Design temperature
6. Differential pressure-shut off
7. Flow medium
8. Material of construction
9. Variants
10. Type series booklet number
11. Valve data sheet if applicable

When ordering spare parts, indicate valve product code. (shown on nameplate) and serial number.

Two-Piece Ball Valves – Type BLT 150 – 300

Design Specifications

General Valve Design	: ASME B16.34
Pressure/Temperature Rating	: ASME B16.34
Flange Dimensions	: ASME B16.5
End-to-End	: ASME B16.10
Testing	: API 598



Dimensions and Data

CLASS	NPS	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	5	6	8	10	12
150	DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300
A	inch	4.25	4.63	5.00	5.50	6.50	7.00	7.50	8.00	9.00	14.00	15.50	18.00	21.00	24.00
	mm	108	117	127	140	165	178	190	203	229	356	394	457	533	610
B	inch	2.83	2.99	3.62	3.74	4.09	4.49	5.59	6.02	6.54	8.82	9.72	12.01	12.87	Gear
	mm	72	76	92	95	104	114	142	153	166	224	247	305	327	
C	inch	4.84	4.84	7.20	6.02	7.32	7.32	12.76	12.76	12.76	29.53	29.53	39.37	39.37	Gear
	mm	123	123	183	153	186	186	324	324	324	750	750	1000	1000	
D	inch	-	-	-	-	2.44	2.44	2.44	2.95	2.95	3.50	3.50	3.94	3.94	3.94
	mm	-	-	-	-	62	62	75	75	75	89	89	100	100	100
E	inch	1.42	1.42	11.97	1.65	2.76	2.76	2.76	4.02	4.02	4.92	4.92	4.92	5.51	5.51
	mm	36	36	50	42	70	70	70	102	102	125	125	125	140	140
F	--	M5	M5	M6	M5	M8	M8	M8	M10	M10	M12	M12	M12	M16	M16
	lbs	3.3	4.0	6.1	7.9	12	18	29	40	62	101	146	268	513	671
Weight	kg	1.5	1.8	2.8	3.6	5.6	8.3	13.3	18	28	46	66.5	122	233	305
	--	26	50	94	143	260	480	750	1300	2300	3200	5400	10000	15000	21000
Cv	ft.lb.	9	10	13	16	18	22	26	44	59	89	133	184	280	332
	Nm	12	14	18	21	25	30	35	60	80	120	180	250	380	450
Torque															
Mounting Pad		F03	F03	F05	F04	F07	F07	F07	F10	F10	F12	F12	F12	F14	F14

CLASS	NPS	1/2	3/4	1	1-1/2	2	2-1/2	3	4	6	8
300	DN	15	20	25	40	50	65	80	100	150	200
A	inch	5.50	6.00	6.50	7.50	8.50	9.50	11.14	12.00	15.87	19.75
	mm	140	152	165	190	216	241	283	305	403	502
B	inch	2.83	2.91	3.23	4.09	4.49	5.59	6.10	6.65	9.72	12.01
	mm	72	74	82	104	114	142	155	169	247	305
C	inch	6.3	6.3	6.3	7.32	7.32	12.8	12.8	12.76	29.53	39.37
	mm	160	160	160	186	186	324	324	324	750	1000
D	inch	1.97	1.97	1.97	2.44	2.44	2.95	2.95	2.95	3.50	3.94
	mm	50	50	50	62	62	75	75	75	89	100
E	inch	1.65	1.65	1.97	2.76	2.76	2.76	4.02	4.02	4.92	4.92
	mm	42	42	50	70	70	70	102	102	125	125
F	--	M5	M5	M6	M8	M8	M8	M10	M10	M12	M12
	lbs	5.9	7.3	14.0	20.0	25	40	56	85	191	343
Weight	kg	2.7	3.3	6.5	8.9	11.5	18.1	25.3	38.5	87	156
	--	26	50	94	260	480	750	1300	2300	5400	10000
Cv	ft.lb.	12	13	15	22	26	33	52	74	148	207
	Nm	16	18	20	30	35	45	70	100	200	280
Torque											
Mounting Pad		F04	F04	F05	F07	F07	F07	F10	F10	F12	F12

Standard Ball Valve Materials

Part No.	Part Name	WCB/304	WCB/316	CF8/CF8	CF8M/CF8M
1	Body	A216 WCB	A216 WCB	A351 CF8	A351 CF8M
2	Cap	A216 WCB	A216 WCB	A351 CF8	A351 CF8M
3	Ball	A351 CF8	A351 CF8M	A351 CF8	A351 CF8M
4	Seat	PTFE			
5	Stem	304 SS	316 SS	304 SS	316 SS
6	Gasket	PTFE			
7	Thrust Washer	PTFE			
8	Packing	PTFE			
9	Stem Packing	PTFE			
10	Gland	304 SS			
11	Gland Bolt	A194 B8			
12	Handle	Steel			
13	Stopper	304 SS			
14	Snap Ring	304 SS			
15	Body Bolt	A194 B8			
16	Antistatic Spring	SS			
17	Antistatic Ball	SS			

Test Requirements

Test	Medium	Class 150		Class 300	
		psi	bar	psi	bar
Shell	Water	450	32	1125	80
Seat	Air	85	6	85	6
Seat	Water	315	22	815	58

Note: A216 WCB test pressures



Pressure/Temperature Ratings: PTFE Seats (Standard)

CLASS 150 ASTM A216 WCB

Temperature		1/2"-3/4"		1"-2"		2.5"-4"		5"-8"		10"-12"	
°F	°C	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
32 to 100	0 to 38	285	19.7	285	19.7	285	19.7	285	19.7	285	19.7
150	66	273	18.8	273	18.8	273	18.8	273	18.8	273	18.8
200	93	260	17.9	260	17.9	260	17.9	260	17.9	260	17.9
250	121	245	16.9	245	16.9	236	16.3	212	14.6	189	13.0
300	149	130	9.0	92	6.3	67	4.6	60	4.1	53	3.7
320	160	0	0	0	0	0	0	0	0	0	0

CLASS 300 ASTM A216 WCB

Temperature		1/2"-3/4"		1"-2"		2.5"-4"		5"-8"		10"-12"	
°F	°C	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
32 to 100	0 to 38	740	51.0	740	51.0	725	50	653	45	580	40
150	66	708	48.8	708	48.8	568	39.2	511	35.3	454	31.3
200	93	675	46.5	559	38.5	405	27.9	365	25.1	324	22.3
250	121	462	31.9	325	22.4	236	16.3	212	14.6	189	13.0
300	149	130	9.0	92	6.3	66	4.6	60	4.1	53	3.7
320	160	0	0	0	0	0	0	0	0	0	0

CLASS 150 ASTM A351 CF8

Temperature		1/2"-3/4"		1"-2"		2.5"-4"		5"-8"		10"-12"	
°F	°C	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
32 to 100	0 to 38	275	19.0	275	19.0	275	19.0	275	19.0	275	19.0
150	66	253	17.5	253	17.5	253	17.5	253	17.5	253	17.5
200	93	230	15.9	230	15.9	230	15.9	230	15.9	230	15.9
250	121	218	15.0	218	15.0	218	15.0	212	14.6	189	13.0
300	149	130	9.0	92	6.3	67	4.6	60	4.1	53	3.7
320	160	0	0	0	0	0	0	0	0	0	0

CLASS 300 ASTM A351 CF8

Temperature		1/2"-3/4"		1"-2"		2.5"-4"		5"-8"		10"-12"	
°F	°C	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
32 to 100	0 to 38	720	49.6	720	49.6	720	49.6	653	45	580	40
150	66	660	45.5	660	45.5	568	39.2	511	35.3	454	31.3
200	93	600	41.4	559	38.5	405	27.9	365	25.1	324	22.3
250	121	462	31.9	325	22.4	236	16.3	212	14.6	189	13.0
300	149	130	9.0	92	6.3	66	4.6	60	4.1	53	3.7
320	160	0	0	0	0	0	0	0	0	0	0

CLASS 150 ASTM A351 CF8M

Temperature		1/2"-3/4"		1"-2"		2.5"-4"		5"-8"		10"-12"	
°F	°C	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
32 to 100	0 to 38	275	19.0	275	19.0	275	19.0	275	19.0	275	19.0
150	66	255	17.6	255	17.6	255	17.6	255	17.6	255	17.6
200	93	235	16.2	235	16.2	235	16.2	235	16.2	235	16.2
250	121	225	15.5	225	15.5	225	15.5	212	14.6	189	13.0
300	149	130	9.0	92	6.3	67	4.6	60	4.1	53	3.7
320	160	0	0	0	0	0	0	0	0	0	0

CLASS 300 ASTM A351 CF8M

Temperature		1/2"-3/4"		1"-2"		2.5"-4"		5"-8"		10"-12"	
°F	°C	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
32 to 100	0 to 38	720	49.6	720	49.6	720	49.6	653	45	580	40
150	66	670	46.2	670	46.2	568	39.2	511	35.3	454	31.3
200	93	620	42.7	559	38.5	405	27.9	365	25.1	324	22.3
250	121	462	31.9	325	22.4	236	16.3	212	14.6	189	13.0
300	149	130	9.0	92	6.3	66	4.6	60	4.1	53	3.7
320	160	0	0	0	0	0	0	0	0	0	0

Note 1. PTFE seats are limited to 320°F (160°C).

Pressure/Temperature Ratings: RPTFE or PTFE + Graphite Seats (Variant)
CLASS 150 ASTM A216 WCB

Temperature		1/2"-3/4"		1"-2"		2.5"-4"		5"-8"		10"-12"	
°F	°C	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
32 to 100	0 to 38	285	19.7	285	19.7	285	19.7	285	19.7	285	19.7
150	66	273	18.8	273	18.8	273	18.8	273	18.8	273	18.8
200	93	260	17.9	260	17.9	260	17.9	260	17.9	260	17.9
250	121	245	16.9	245	16.9	245	16.9	245	16.9	245	16.9
300	149	230	15.9	230	15.9	230	15.9	208	14.3	185	12.8
350	177	205	14.1	144	9.9	104	7.2	94	6.5	84	5.8
392	200	0	0	0	0	0	0	0	0	0	0

CLASS 300 ASTM A216 WCB

Temperature		1/2"-3/4"		1"-2"		2.5"-4"		5"-8"		10"-12"	
°F	°C	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
32 to 100	0 to 38	740	51.0	740	51.0	725	50	653	45.0	580	40.0
150	66	708	48.8	708	48.8	607	41.9	547	37.7	486	33.5
200	93	675	46.5	670	46.2	485	33.4	436	30.0	388	26.8
250	121	665	45.9	494	34.1	358	24.7	322	22.2	286	19.8
300	149	453	31.2	319	22.0	231	15.9	208	14.3	185	12.8
350	177	205	14.1	144	9.9	104	7.2	94	6.5	84	5.8
392	200	0	0	0	0	0	0	0	0	0	0

CLASS 150 ASTM A351 CF8

Temperature		1/2"-3/4"		1"-2"		2.5"-4"		5"-8"		10"-12"	
°F	°C	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
32 to 100	0 to 38	275	19.0	275	19.0	275	19.0	275	19.0	275	19.0
150	66	253	17.5	253	17.5	253	17.5	253	17.5	253	17.5
200	93	230	15.9	230	15.9	230	15.9	230	15.9	230	15.9
250	121	218	15.0	218	15.0	218	15.0	218	15.0	218	15.0
300	149	205	14.1	205	14.1	205	14.1	205	14.1	185	12.8
350	177	197	13.6	144	9.9	104	7.2	94	6.5	84	5.8
392	200	0	0	0	0	0	0	0	0	0	0

CLASS 300 ASTM A351 CF8

Temperature		1/2"-3/4"		1"-2"		2.5"-4"		5"-8"		10"-12"	
°F	°C	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
32 to 100	0 to 38	720	49.6	720	49.6	720	49.6	653	45.0	580	40.0
150	66	660	45.5	660	45.5	607	41.9	547	37.7	486	33.5
200	93	600	41.4	600	41.4	485	33.4	436	30.0	388	26.8
250	121	570	39.3	494	34.1	358	24.7	322	22.2	286	19.8
300	149	453	31.2	319	22.0	231	15.9	208	14.3	185	12.8
350	177	205	14.1	144	9.9	104	7.2	94	6.5	84	5.8
392	200	0	0	0	0	0	0	0	0	0	0

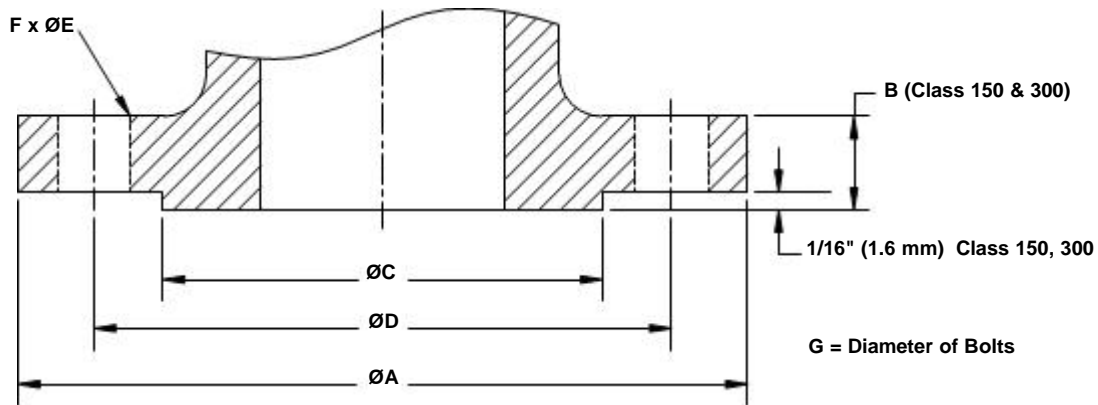
CLASS 150 ASTM A351 CF8M

Temperature		1/2"-3/4"		1"-2"		2.5"-4"		5"-8"		10"-12"	
°F	°C	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
32 to 100	0 to 38	275	19.0	275	19.0	275	19.0	275	19.0	275	19.0
150	66	255	17.6	255	17.6	255	17.6	255	17.6	255	17.6
200	93	235	16.2	235	16.2	235	16.2	235	16.2	235	16.2
250	121	225	15.5	225	15.5	225	15.5	225	15.5	225	15.5
300	149	215	14.8	215	14.8	215	14.8	208	14.3	185	12.8
350	177	205	14.1	144	9.9	104	7.2	94	6.5	84	5.8
392	200	0	0	0	0	0	0	0	0	0	0

CLASS 300 ASTM A351 CF8M

Temperature		1/2"-3/4"		1"-2"		2.5"-4"		5"-8"		10"-12"	
°F	°C	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
32 to 100	0 to 38	720	49.6	720	49.6	720	49.6	653	45.0	580	40.0
150	66	670	46.2	670	46.2	607	41.9	547	37.7	486	33.5
200	93	620	42.7	620	42.7	485	33.4	436	30.0	388	26.8
250	121	590	40.7	494	34.1	358	24.7	322	22.2	286	19.8
300	149	453	31.2	319	22.0	231	15.9	208	14.3	185	12.8
350	177	205	14.1	144	9.9	104	7.2	94	6.5	84	5.8
392	200	0	0	0	0	0	0	0	0	0	0

Note 1. RPTFE and PTFE + graphite seats are limited to 392°F (200°C).

Flange Dimensions per ASME B16.5

Class 150

Inches							
Size	A	B	C	D	E	F	G
0.5	3.50	0.38	1.38	2.38	0.62	4	½
0.75	3.88	0.41	1.69	2.75	0.62	4	½
1	4.25	0.44	2.00	3.12	0.62	4	½
1.25	4.62	0.50	2.50	3.50	0.62	4	½
1.5	5.00	0.56	2.88	3.88	0.62	4	½
2	6.00	0.62	3.62	4.75	0.75	4	5/8
2.5	7.00	0.69	4.12	5.50	0.75	4	5/8
3	7.50	0.75	5.00	6.00	0.75	4	5/8
4	9.00	0.94	6.19	7.50	0.75	8	5/8
5	10.00	0.94	7.31	8.50	0.88	8	¾
6	11.00	1.00	8.50	9.50	0.88	8	¾
8	13.50	1.12	10.62	11.75	0.88	8	¾
10	16.00	1.19	12.75	14.25	1.00	12	7/8
12	19.00	1.25	15.00	17.00	1.00	12	7/8

Millimeters							
DN	A	B	C	D	E	F	G
15	89	9.7	35	60.5	16	4	12.7
20	98	10.4	43	70.0	16	4	12.7
25	108	11.1	51	79.5	16	4	12.7
32	117	12.7	64	89.0	16	4	12.7
40	127	14.3	73	98.5	16	4	12.7
50	152	15.9	92	120.5	19.1	4	15.9
65	178	17.5	105	139.5	19.1	4	15.9
80	190	19.1	127	152.5	19.1	4	15.9
100	229	23.9	157	190.5	19.1	8	15.9
125	254	23.9	186	216.0	22.4	8	19.1
150	279	25.4	216	241.5	22.4	8	19.1
200	343	28.6	270	298.5	22.4	8	19.1
250	406	30.2	324	362.0	25.4	12	22.2
300	483	31.8	381	432.0	25.4	12	22.2

Class 300

Inches							
Size	A	B	C	D	E	F	G
0.5	3.75	0.56	1.38	2.62	0.62	4	½
0.75	4.62	0.62	1.69	3.25	0.75	4	5/8
1	4.88	0.69	2.00	3.50	0.75	4	5/8
1.5	6.12	0.81	2.88	4.50	0.88	4	¾
2	6.50	0.88	3.62	5.00	0.75	8	5/8
2.5	7.50	1.00	4.12	5.88	0.88	8	¾
3	8.25	1.12	5.00	6.62	0.88	8	¾
4	10.00	1.25	6.19	7.88	0.88	8	¾
6	12.50	1.44	8.50	10.62	0.88	12	¾
8	15.00	1.62	10.62	13.00	1.00	12	7/8

Millimeters							
DN	A	B	C	D	E	F	G
15	95	14.3	35	66.5	16	4	12.7
20	117	15.9	43	82.5	19	4	15.9
25	124	17.5	51	89.0	19	4	15.9
40	156	20.7	73	114.5	22	4	19.1
50	165	22.4	91.9	127.0	19.1	8	15.9
65	191	25.4	104.6	149.4	22.4	8	19.1
80	210	28.4	127.0	168.1	22.4	8	19.1
100	254	31.8	157.2	200.2	22.4	8	19.1
150	318	36.6	215.9	269.7	22.4	12	19.1
200	381	41.1	269.7	330.2	25.4	12	22.2

Tolerances

B	+0.12/-0 inch	+3/-0 mm	
C	+/- 0.06 inch	+/- 1.6 mm	(Class 150 and 300)
D	+/- 0.08 inch	+/- 2 mm	

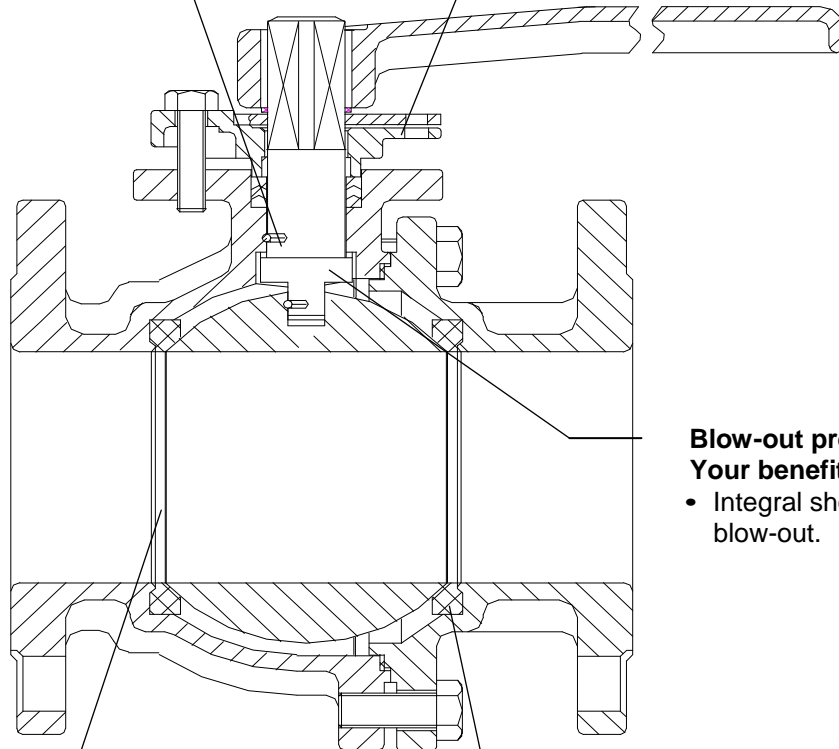
Product features – to our customers' benefit

**Anti-Static Connection
Your benefit**

- Prevents buildup of static charge during operation.

**ISO 5211 Mounting Pad
Your benefit**

- For gear or actuator mounting.



**Blow-out proof stem
Your benefit**

- Integral shoulder prevents blow-out.

**Full Port
Your benefit**

- For maximum flow with minimum pressure drop.

**PTFE Seats
Your benefit**

- Resilient seats provide tight shut-off.

Subject to technical modification without prior notice

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