

AVCO

Alloy Valves and Control

BALL VALVES 2100 SERIES

INSTRUMENTS • CONTROLS • VALVES

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ARCO

Engineering, Inc.

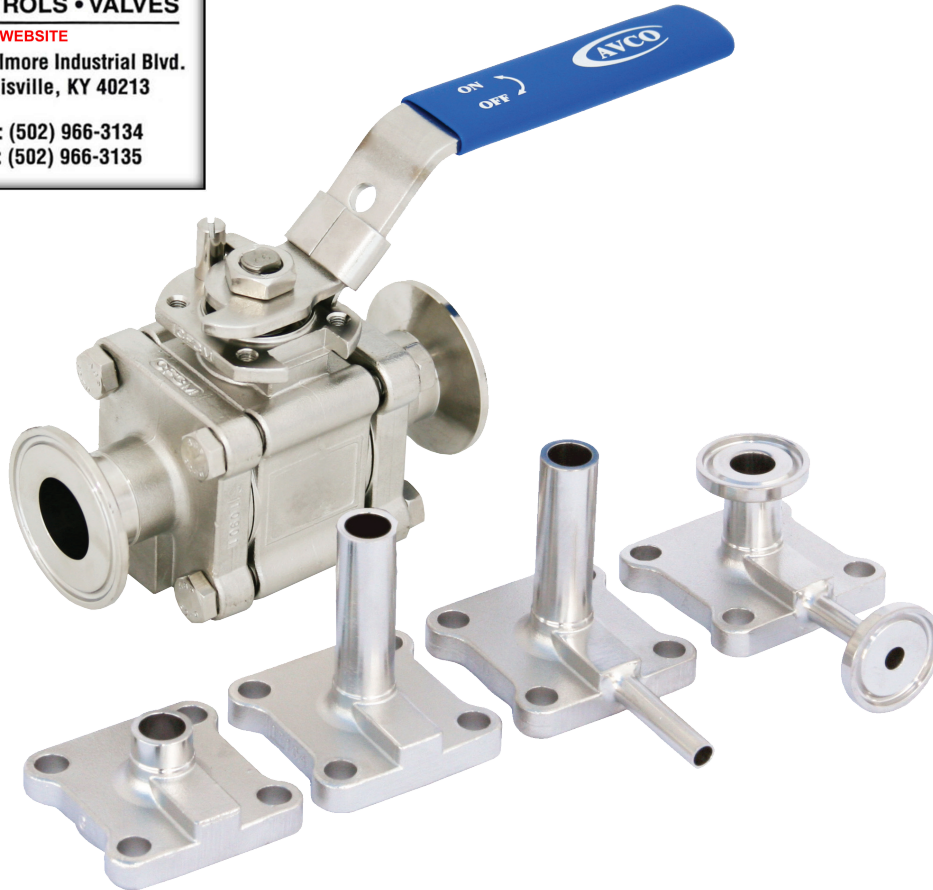
SINCE 1954

www.arcoengineering.com

3317 Gilmore Industrial Blvd.
Louisville, KY 40213

Ph: (502) 966-3134

Fx: (502) 966-3135



Size

1/4" - 4" (Full Port Tube OD)
1500 WOG

End Connections

Extended Tube OD
Short Tube OD
Socket Weld Tube OD
Clamp Ends
Flush Bottom Tank Pad
Compression Fitting (AVCO-LOK)
Vacuum Fitting

Valve Materials

316L Stainless Steel
Various Alloys

Ball and Stem Materials

316L Stainless Steel
Various Alloys

Seat Materials

TFM
PEEK
UHMWPE

Options

Cavity Filled Seats
Purge Ports
Electro-Polish
Mechanical Polish to 10 Ra

Service Applications

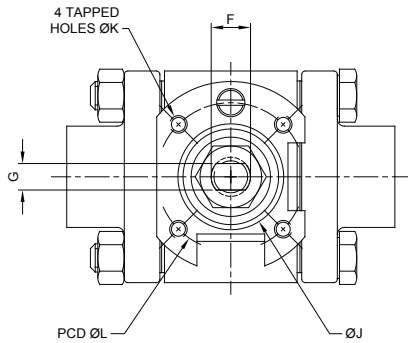
Biotech
Clean Steam
Cleaning Solutions
Detergents
Gas and Air Delivery
High Purity Gases
High Purity Water/Oils
Pharmaceutical
Vacuum
Waxes

Applicable Standards

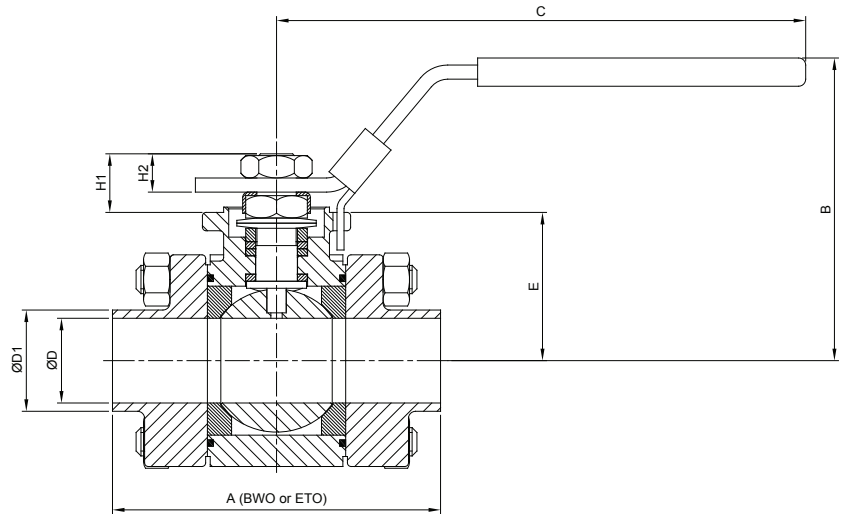
ASME B16.34
ASME-BPE
ISO 5211

Alloy Valves and Control

1/2" THRU 2" Butt Weld OD & Extended Tube OD

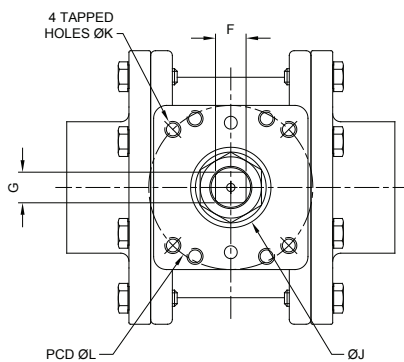


Plan View with Handle Removed

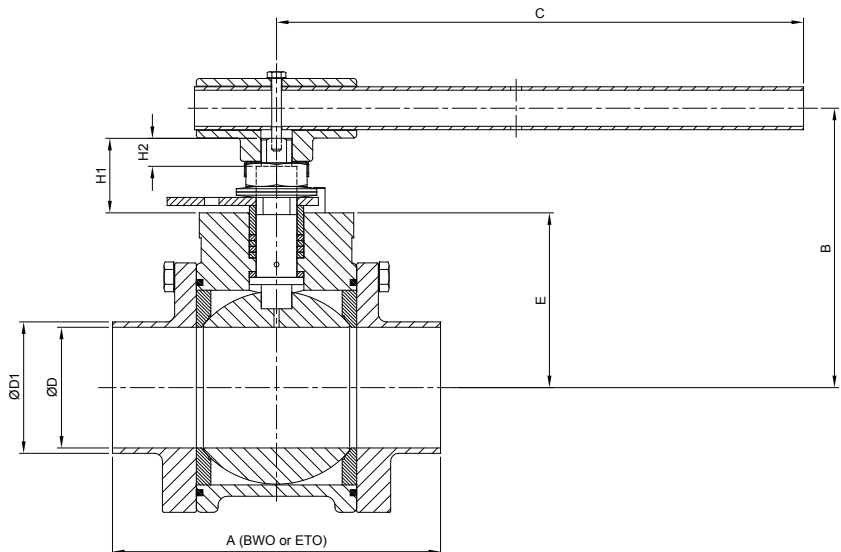


SIZE	A (in.)		B (in.)	C (in.)	D (in.)	D1 (in.)	E (in.)	F (in.)	G (in.)	H1 (in.)	H2 (in.)	J (in.)	K	L (in.)	ISO 5211	Weight (lbs)
	BWO	ETO														
1/2"	2.61	5.50	2.35	4.53	0.37	0.50	1.09	0.38	0.22	0.52	0.28	0.98	M5	1.42	F03	2
3/4"	3.03	6.00	2.41	4.53	0.62	0.75	1.15	0.38	0.22	0.52	0.28	0.98	M5	1.42	F03	2.5
1"	4.06	6.50	3.33	5.91	0.87	1.00	1.64	0.44	0.30	0.65	0.46	1.18	M5	1.65	F04	4
1 1/2"	5.50	7.50	3.92	6.85	1.37	1.50	1.90	0.57	0.34	1.12	0.61	1.38	M6	1.97	F05	8
2"	6.25	8.50	4.26	6.85	1.87	2.00	2.24	0.57	0.34	1.12	0.60	1.38	M6	1.97	F05	14

2 1/2" THRU 4" Butt Weld OD & Extended Tube OD



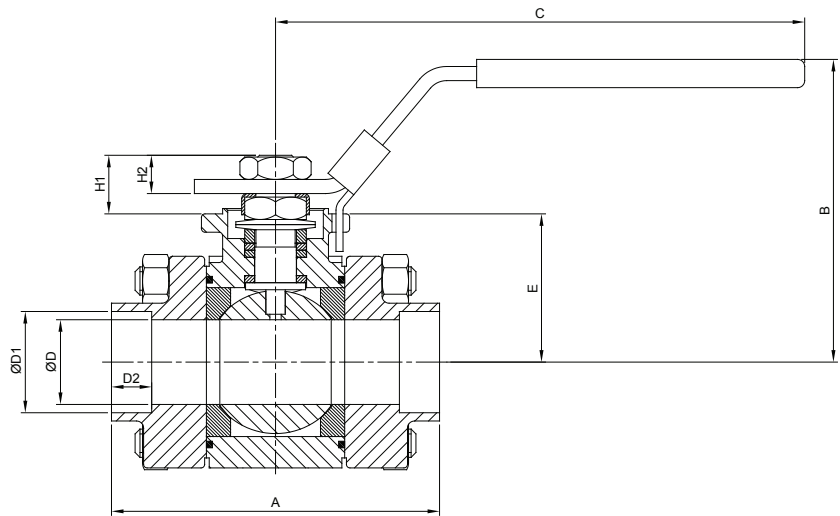
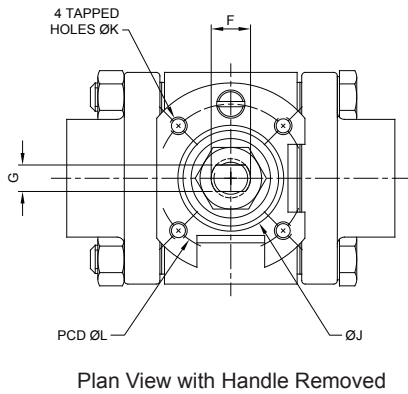
Plan View with Handle Removed



SIZE	A (in.)		B (in.)	C (in.)	D (in.)	D1 (in.)	E (in.)	F (in.)	G (in.)	H1 (in.)	H2 (in.)	J (in.)	K	L (in.)	ISO 5211	Weight (lbs)
	BWO	ETO														
2 1/2"	6.26	10.00	5.28	8.84	2.37	2.50	3.25	0.79	0.55	1.65	0.72	1.58	M8	2.76	F07	22
3"	7.00	10.00	6.84	13.74	2.87	3.00	4.28	0.75	0.75	1.82	0.69	1.97	M10	4.02	F10	35
4"	8.50	11.00	7.37	13.74	3.83	4.00	4.81	0.75	0.75	1.82	0.69	1.97	M10	4.02	F10	55

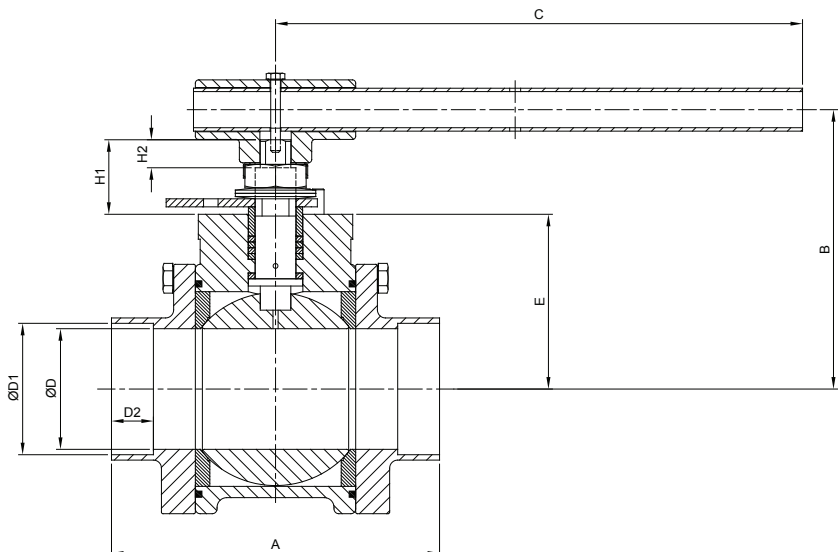
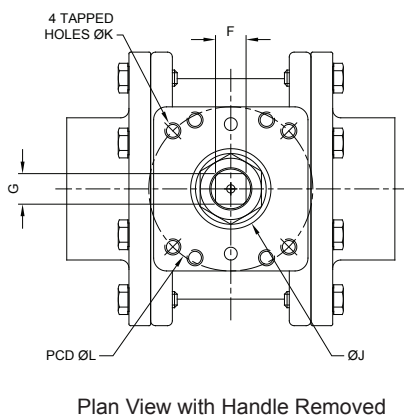
Alloy Valves and Control

1/2" THRU 2" Socket Weld Tube OD



SIZE	A (in.)	B (in.)	C (in.)	D (in.)	D1 (in.)	D2 (in.)	E (in.)	F (in.)	G (in.)	H1 (in.)	H2 (in.)	J (in.)	K	L (in.)	ISO 5211	Weight (lbs)
1/2"	2.61	2.35	4.53	0.37	0.51	0.43	1.09	0.38	0.22	0.52	0.28	0.98	M5	1.42	F03	2
3/4"	3.03	2.41	4.53	0.62	0.76	0.51	1.15	0.38	0.22	0.52	0.28	0.98	M5	1.42	F04	2.5
1"	4.06	3.33	5.91	0.87	1.01	0.51	1.64	0.44	0.30	0.65	0.46	1.18	M5	1.65	F04	4
1 1/2"	5.50	3.92	6.85	1.37	1.52	0.51	1.90	0.57	0.34	1.12	0.61	1.38	M6	1.97	F05	8
2"	6.25	4.26	6.85	1.87	2.02	0.63	2.24	0.57	0.34	1.12	0.60	1.38	M6	1.97	F05	14

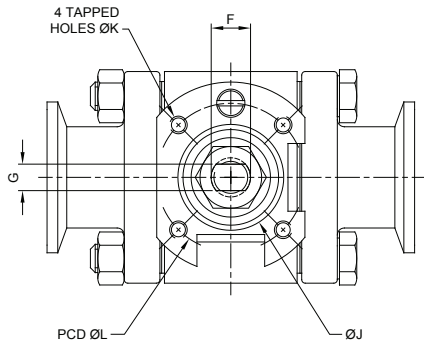
2 1/2" THRU 4" Socket Weld Tube OD



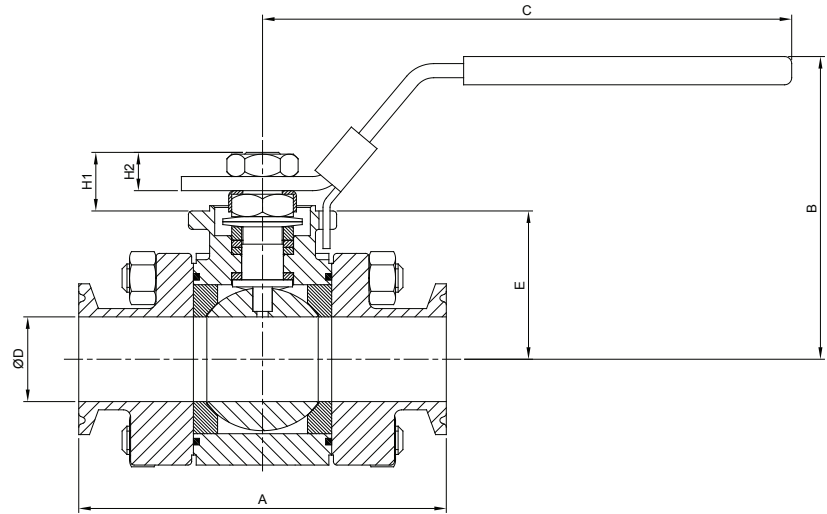
SIZE	A (in.)	B (in.)	C (in.)	D (in.)	D1 (in.)	D2 (in.)	E (in.)	F (in.)	G (in.)	H1 (in.)	H2 (in.)	J (in.)	K	L (in.)	ISO 5211	Weight (lbs)
2 1/2"	6.26	5.28	8.84	2.37	2.52	0.63	3.25	0.79	0.55	1.65	0.72	1.58	M8	2.76	F07	22
3"	7.00	6.84	13.74	2.87	3.02	0.63	4.28	0.75	0.75	1.82	0.69	1.97	M10	4.02	F10	35
4"	8.50	7.37	13.74	3.83	4.02	0.79	4.81	0.75	0.75	1.82	0.69	1.97	M10	4.02	F10	55

Alloy Valves and Control

1/2" THRU 2" Clamp Ends

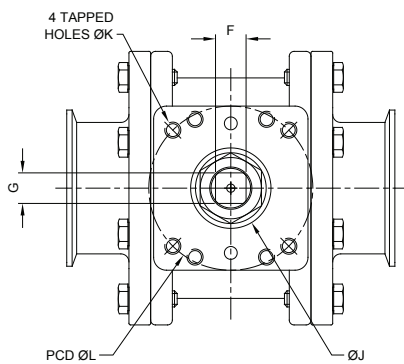


Plan View with Handle Removed

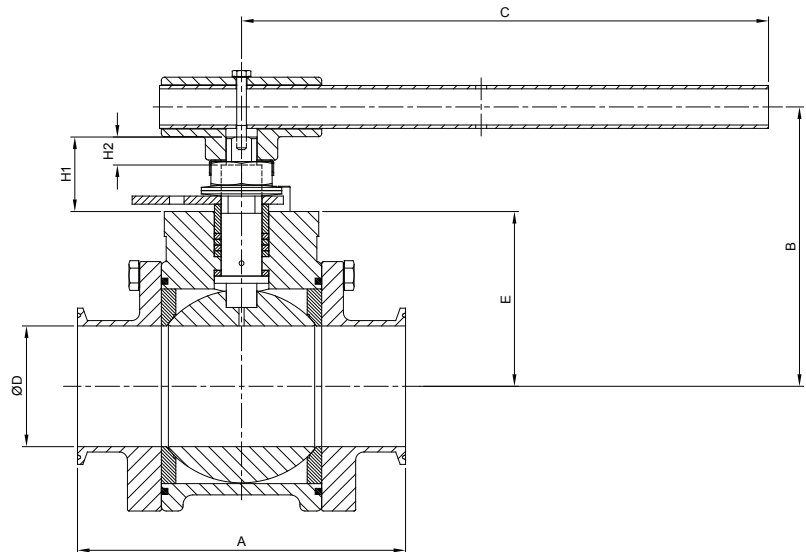


SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H1 (in.)	H2 (in.)	J (in.)	K	L (in.)	ISO 5211	Weight (lbs)
1/2"	3.50	2.35	4.53	0.37	1.09	0.38	0.22	0.52	0.28	0.98	M5	1.42	F03	2
3/4"	4.00	2.41	4.53	0.62	1.15	0.38	0.22	0.52	0.28	0.98	M5	1.42	F04	2.5
1"	4.50	3.33	5.91	0.87	1.64	0.44	0.30	0.65	0.46	1.18	M5	1.65	F04	4
1 1/2"	5.50	3.92	6.85	1.37	1.90	0.57	0.34	1.12	0.61	1.38	M6	1.97	F05	8
2"	6.25	4.26	6.85	1.87	2.24	0.57	0.34	1.12	0.60	1.38	M6	1.97	F05	14

2 1/2" THRU 4" Clamp Ends

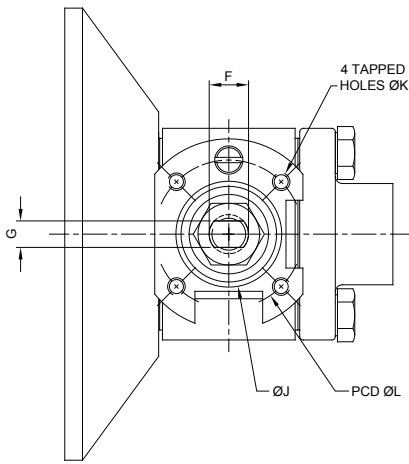


Plan View with Handle Removed

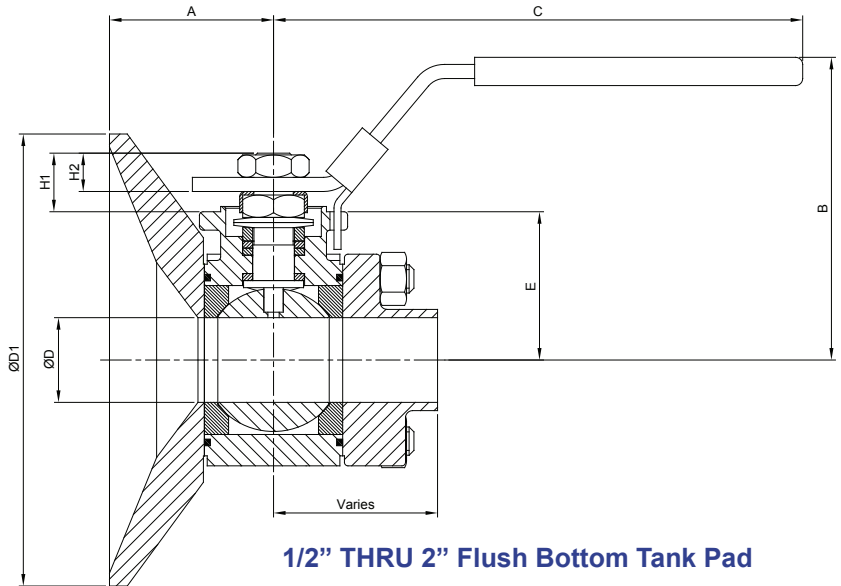


SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H1 (in.)	H2 (in.)	J (in.)	K	L (in.)	ISO 5211	Weight (lbs)
2 1/2"	6.26	5.28	8.84	2.37	3.25	0.79	0.55	1.65	0.72	1.58	M8	2.76	F07	22
3"	7.00	6.84	13.74	2.87	4.28	0.75	0.75	1.82	0.69	1.97	M10	4.02	F10	35
4"	8.50	7.37	13.74	3.83	4.81	0.75	0.75	1.82	0.69	1.97	M10	4.02	F10	55

Alloy Valves and Control

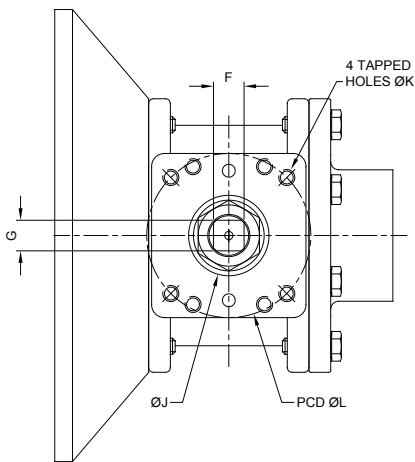


Plan View with Handle Removed

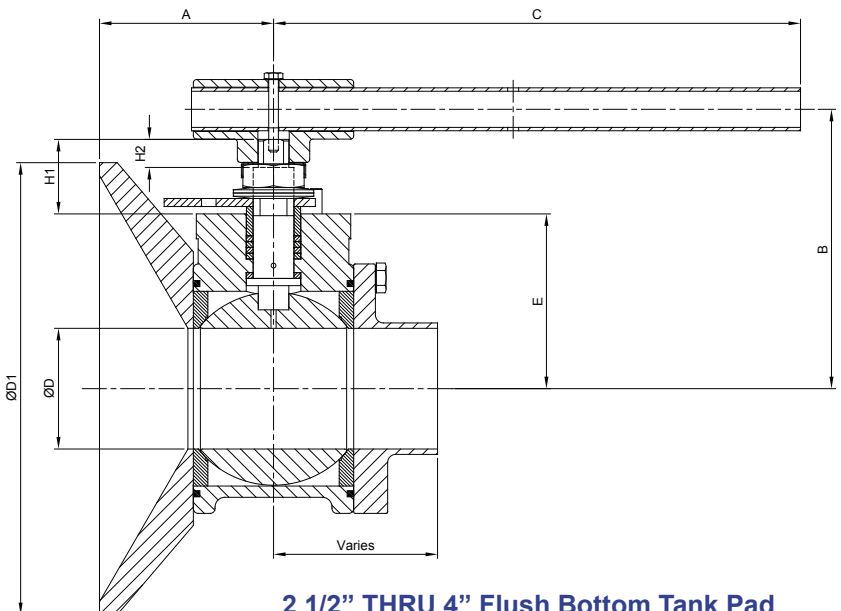


1/2" THRU 2" Flush Bottom Tank Pad

SIZE	A (in.)	B (in.)	C (in.)	D (in.)	D1 (in.)	E (in.)	F (in.)	G (in.)	H1 (in.)	H2 (in.)	J (in.)	K	L (in.)	ISO 5211	Weight (lbs)
1/2"	1.27	2.35	4.53	0.37	2.75	1.09	0.38	0.22	0.52	0.28	0.98	M5	1.42	F03	2
3/4"	1.35	2.41	4.53	0.62	3.00	1.15	0.38	0.22	0.52	0.28	0.98	M5	1.42	F04	2
1"	1.71	3.33	5.91	0.87	3.75	1.64	0.44	0.30	0.65	0.46	1.18	M5	1.65	F04	5
1 1/2"	2.39	3.92	6.85	1.37	5.50	1.90	0.57	0.34	1.12	0.61	1.38	M6	1.97	F05	9
2"	2.66	4.26	6.85	1.87	6.50	2.24	0.57	0.34	1.12	0.60	1.38	M6	1.97	F05	16



Plan View with Handle Removed

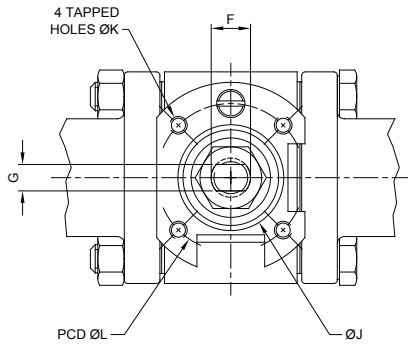


2 1/2" THRU 4" Flush Bottom Tank Pad

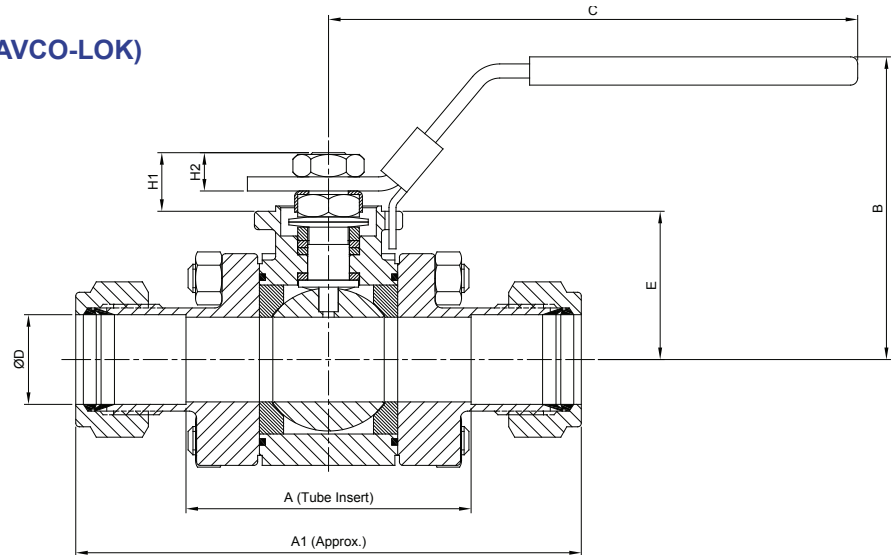
SIZE	A (in.)	B (in.)	C (in.)	D (in.)	D1 (in.)	E (in.)	F (in.)	G (in.)	H1 (in.)	H2 (in.)	J (in.)	K	L (in.)	ISO 5211	Weight (lbs)
2 1/2"	3.25	5.28	8.84	2.37	8.00	3.25	0.79	0.55	1.65	0.72	1.58	M8	2.76	F07	25
3"	3.88	6.84	13.74	2.87	9.00	4.28	0.75	0.75	1.82	0.69	1.97	M10	4.02	F10	39
4"	4.50	7.37	13.74	3.83	11.50	4.81	0.75	0.75	1.82	0.69	1.97	M10	4.02	F10	61

Alloy Valves and Control

1/4" THRU 1" Compression Fitting (AVCO-LOK)



Plan View with Handle Removed



SIZE	A (in.)	A1 (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H1 (in.)	H2 (in.)	J (in.)	K	L (in.)	ISO 5211	Weight (lbs)
1/4"	2.44	3.64	2.35	4.53	0.37	1.09	0.38	0.22	0.52	0.28	0.98	M5	1.42	F03	2
3/8"	2.46	3.78	2.35	4.53	0.37	1.09	0.38	0.22	0.52	0.28	0.98	M5	1.42	F03	2
1/2"	2.20	4.00	2.35	4.53	0.37	1.09	0.38	0.22	0.52	0.28	0.98	M5	1.42	F03	2
3/4"	2.33	4.25	2.41	4.53	0.62	1.15	0.38	0.22	0.52	0.28	0.98	M5	1.42	F04	2.5
1"	2.79	5.25	3.33	5.91	0.87	1.64	0.44	0.30	0.65	0.46	1.18	M5	1.65	F04	4

Common to all Valves

Size	Torque (in.lbs)	Cv
1/4"	65	12
3/8"	65	12
1/2"	65	12
3/4"	80	36
1"	120	71
1 1/2"	290	178
2"	450	437
2 1/2"	685	729
3"	1200	1118
4"	2000	2237

General Notes

All Valves

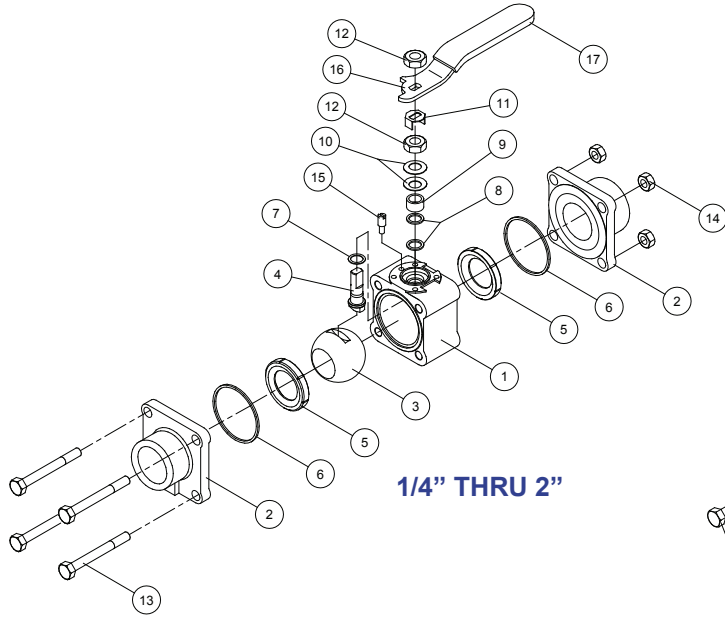
1. Special customized end connections can be supplied to all valves upon request.
2. All valves can be adapted for cryogenic use.
3. All valves can have bonnet extensions added, which is particularly useful for flush tank pad applications.

Flush Bottom Tank Pads

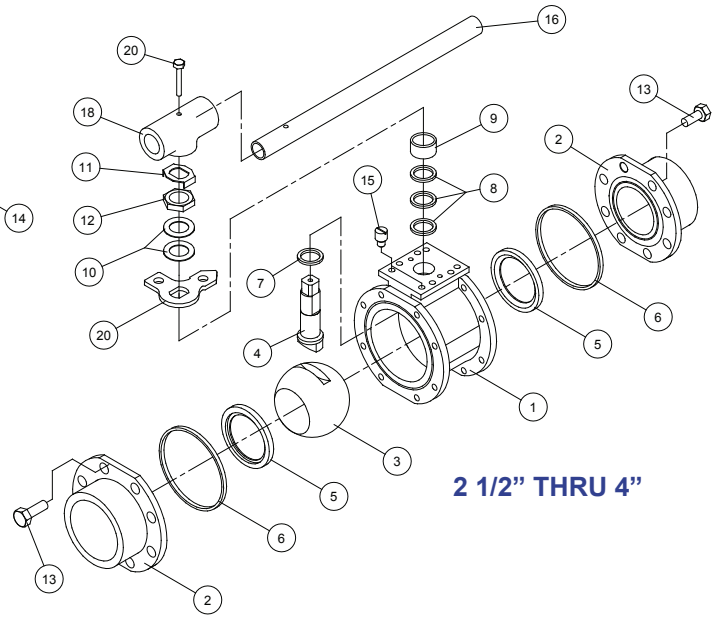
1. The tank pad can be supplied with a radius to suit the actual tank diameter in most cases, thus reducing welding stresses.
2. The opposite end to the tank pad can be any other fitting type shown within this brochure or a customized one.

Compression Fitting Ends

1. Valve sizes 1/4" and 3/8" can be supplied with a bracket to prevent tube twist upon valve operation.

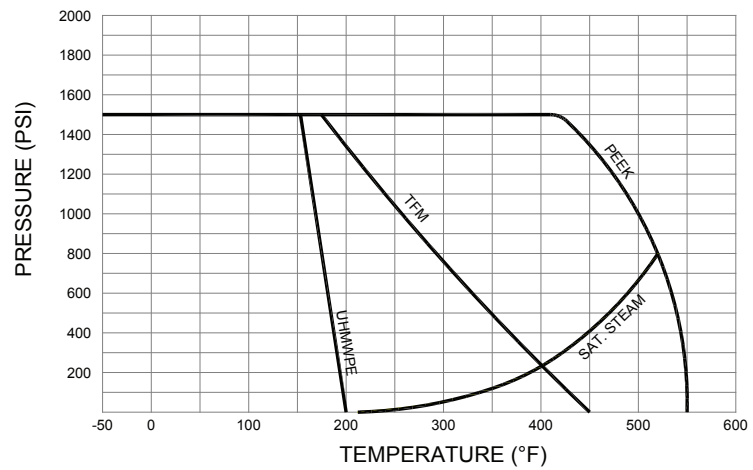


1/4" THRU 2"



2 1/2" THRU 4"

Pressure/Temperature Rating



Item	Parts
1	Body
2	End Cap
3	Ball
4	Stem
5	Ball Seat
6	Body Seal
7	Thrust Washer
8	Packing
9	Gland Ring
10	Disc Spring
11	Lock Tab
12	Stem Nut
13	Body Bolt
14	Body Nut
15	Stop Pin
16	Handle
17	Handle Sleeve
18	Wrench Block
19	Handle Bolt
20	Lock Pad

Features

- 3 Piece Design
- Tube OD Bore
- 316L Stainless Body, Ball, Stem & Ends
- Inter-changeable Ends
- Standard Seats
- Cavity Filled Seats
- Electro-Polished Internal Bore to 10 Ra
- ISO 5211 Mounting Pad
- ASME-BPE Compliant



Electric Actuator

120 VAC
12/24 VDC
NEMA 4/7
Positioners 4-20 mA
Reversing
Telemetry
Battery Back-up
Spring Return



Pneumatic Actuator

Double Acting
Spring Return
Solenoid Valves
Limit Switches
Positioners 3-15 psi
Positioners 4-20 mA
Intelligent Positioner
Dec clutchable Manual Override



Manual Valves

Oval Handle
Spring Return
Fusible Link
Locking Device
Gear Operators
Stem Extensions
Wing Handle

HOW TO ORDER

21	3	3	E	E	ETO	100	LH
Series	Body & End Material	Ball & Stem Material	Seat Material	Seal Material	End Style	Size	Options
2100 Series 3 Piece High Performance Full Port Tube OD Ball Valve	3 - 316L SS	3 - 316L SS	E - TFM P - PEEK T - PTFE U - UHMWPE	E - TFM P - PEEK T - PTFE U - UHMWPE	ETO - Extended Tube OD BWO - Butt Weld Tube OD SWO - Socket Weld Tube OD TR - Clamp Ends TP - Tank Pad AL - AVCO-LOK KF - Vacuum Ends Variations of the above or special ends can be supplied upon request	025 - 1/4" 038 - 3/8" 050 - 1/2" 075 - 3/4" 100 - 1" 150 - 1 1/2" 200 - 2" 250 - 2 1/2" 300 - 3" 400 - 4"	10 - 10 Ra EP - Electro-Polish CF - Cavity Filled O2CB - O ₂ Clean/Bagged LH - Locking Handle

Example ordering codes:

2133EE-ETO-100-LH = 1" ball valve with stainless steel body/ball, TFM seats/seals, Extended Tube OD ends & locking lever handle
2133EE-TR-100-CF = 1" ball valve with stainless steel body/ball, Cavity Filled TFM seats/seals, Extended Tube OD ends & bare stem

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