AVCO

Alloy Valves and Control

BALL VALVES
1900 SERIES

Size

1/4” - 4” (Up to Class 600)
1500 or 2000 WOG (size dependent)
3000 WOG Option

End Connections

NPT
Butt Weld
Socket Weld
Flanged (150#, 300#, 600#)

Valve Materials

316 Stainless Steel
Carbon Steel
Hastelloy C
Monel
Alloy 20
Duplex/Super Duplex

Ball and Stem Materials

316 Stainless Steel
Hastelloy C
Monel 400
Alloy 20
Duplex/Super Duplex

Seat Materials

Teflon (PTFE)
25% Carbon Filled Teflon
15% Glass Filled Teflon
Kel-F® (PCTFE)
PEEK
TFM (Cavity Filled Option)
UHMWPE
Metals

Service Applications

Chemical
Dry/Liquid Chlorine
Food Processing
Hydraulic
Oxygen
Steam
Thermal Fluids
Vacuum
Water/Oil/Gas

Applicable Standards

ASME B16.34
API 598
API 607 (7th Edition)
CRN (All Provinces)
NACE MR0175/ISO 15156

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About the 1900 Series Ball Valve

The AVCO 1900 series V-ported (Vee) flow control ball valve brings together all the advantages of the 1100 series 3-piece ball valve into the precision flow control market. Precise control is achieved by an engineered Vee or slot in the floating ball along with tight tolerances to minimize hysteresis (backlash and judder). Standard balls are available with 15, 30, 45, 60 and 90 degree Vee ports and we also carry blanks that are engineered to suit custom flow characteristics. The 1900 series V port valve also facilitates tight shut-off to act as isolation when needed. It is designed in-house to meet or exceed ASME B16.34 and fully tested to API 598. Materials of construction are stainless steel, carbon steel and various alloys including Hastelloy, Alloy 20, Monel, Duplex and Super Duplex. The floating full port ball lies between seats encapsulated in metal retainer rings. The encapsulation of the seat also gives an option for fire safe trim that meets API 607. Seats are available in TFE, RTFE, CTFE, TFM, UHMWPE, PEEK, PCTFE and Stellite metal to satisfy harsh environment and high temperature applications. Cavity filled seat options are available for many of the seat materials. The stem is live loaded with blow out prevention and has online adjustment capability. Sealing occurs at the thrust washer inside the body to reduce the potential for leakage. The ISO 5211 mount pad allows for many actuator styles (electric, pneumatic, etc.) to be mounted with ease. Whether for use in the oil, gas, chemical or steam industry, this valve will deliver performance, quality and ease of use.

Design

- The valve body has three cast sections (body and two end caps).
- The three cast sections are bolted together and fully conform to ASME B16.34.
- Body bolts are encapsulated to minimize corrosion in hazardous or harsh locations.
- The valve is bidirectional design.
- Valves are available up to class 600 per ASME B16.34 or 2000/3000 WOG
- The end to end dimensions conform to ASME B16.10 for flanged versions and to AVCO standards for all other styles.
- Butt weld ends conform to ASME B16.25.
- Flange ends conform to ASME B16.5.
- Threaded ends conform to ASME B1.20.1, B16.11 & B16.34.
- Socket weld ends conform to ASME B16.11 & B16.34
- The ball is available as 15, 30, 45, 60 & 90 degree Vee as standard. Other configurations are available
- The seats are encapsulated for greater durability.
- The valve is available for fire safe installations and tested per API 607 (7th Edition).
- The valve body has an integral mounting pad conforming to ISO 5211.
- The stem has blow-out prevention and anti-static design.
- The body gasket material is available in several materials to cover different media types.
- The seat material is available in several materials to cover different media types
- The stem assembly enables online adjustment of the packing.
- The valves are tested to API 598 and ASME B16.34.
- Valve sizes available are 1/4” thru 4”.

Operation

The following operators can be utilized on the valve:

- Various manual handles (Lever, Tee, Oval)
- Chain wheel operator.
- Worm Gear operator.
- Pneumatic actuator.
- Hydraulic actuator.
- Electric motor actuator.

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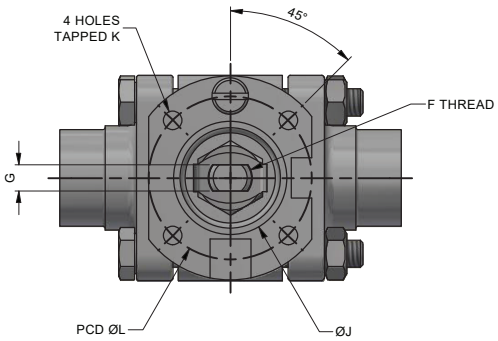
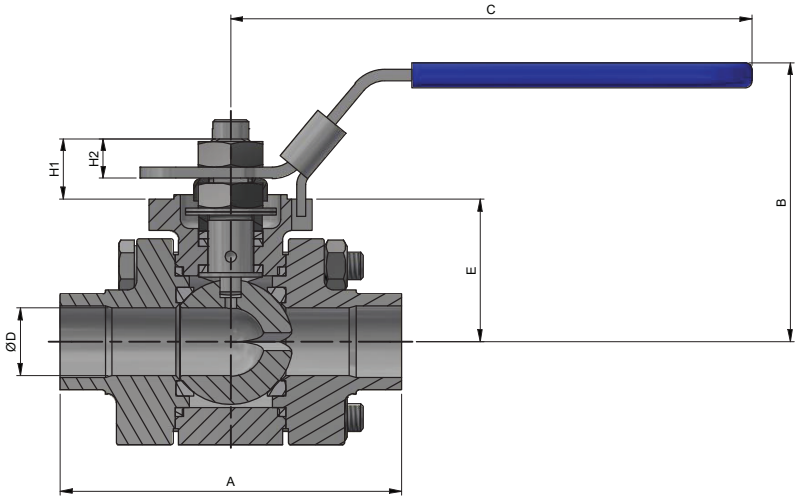
1900 SERIES

1/4" THRU 3/4"

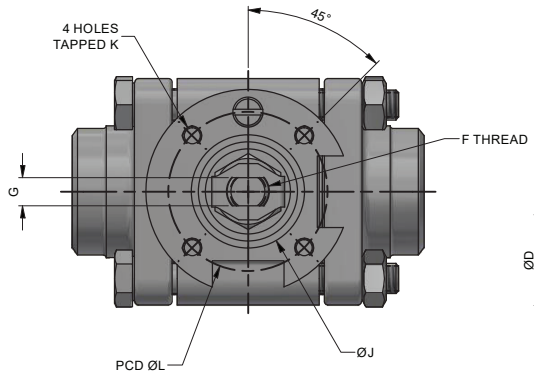


Plan View with Handle Removed



SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F	G (in.)	H1 (in.)	H2 (in.)	J (in.)	K	L (in.)	ISO 5211	Weight (lbs)
1/4"	2.61	2.48	4.53	0.36	1.240	3/8-24 UNF	0.224	0.524	0.344	0.984	M5	1.417	F03	2
3/8"	2.61	2.48	4.53	0.49	1.240	3/8-24 UNF	0.224	0.524	0.344	0.984	M5	1.417	F03	2
1/2"	2.97	2.48	4.53	0.59	1.240	3/8-24 UNF	0.224	0.524	0.344	0.984	M5	1.417	F03	2
3/4"	3.18	2.56	4.53	0.75	1.319	3/8-24 UNF	0.224	0.524	0.344	0.984	M5	1.417	F03	2.5

1" THRU 2"



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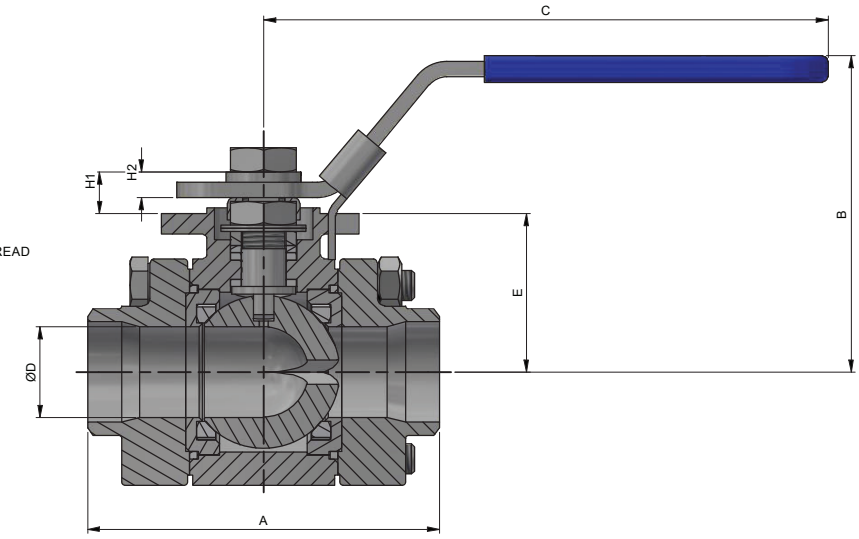

SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F	G (in.)	H1 (in.)	H2 (in.)	J (in.)	K	L (in.)	ISO 5211	Weight (lbs)
1"	3.67	3.38	5.91	0.95	1.654	7/16-20 UNF	0.295	0.654	0.478	1.181	M5	1.654	F04	4
1 1/4"	4.37	3.50	5.91	1.18	1.850	7/16-20 UNF	0.295	0.654	0.478	1.181	M5	1.654	F04	6
1 1/2"	4.72	3.92	6.85	1.50	1.909	9/16-18 UNF	0.339	1.122	0.660	1.378	M6	1.969	F05	8
2"	5.53	4.25	6.85	1.97	2.264	9/16-18 UNF	0.339	1.122	0.660	1.378	M6	1.969	F05	14

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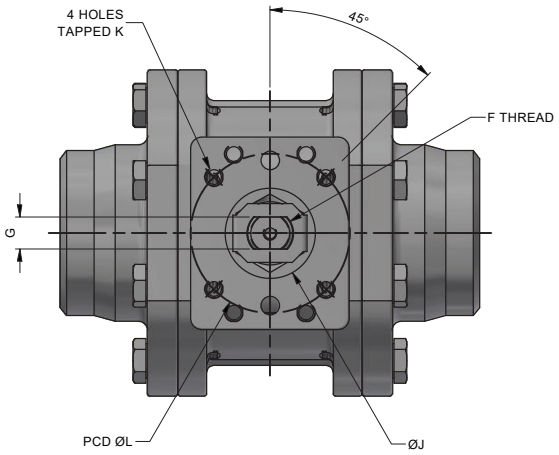
2 1/2”



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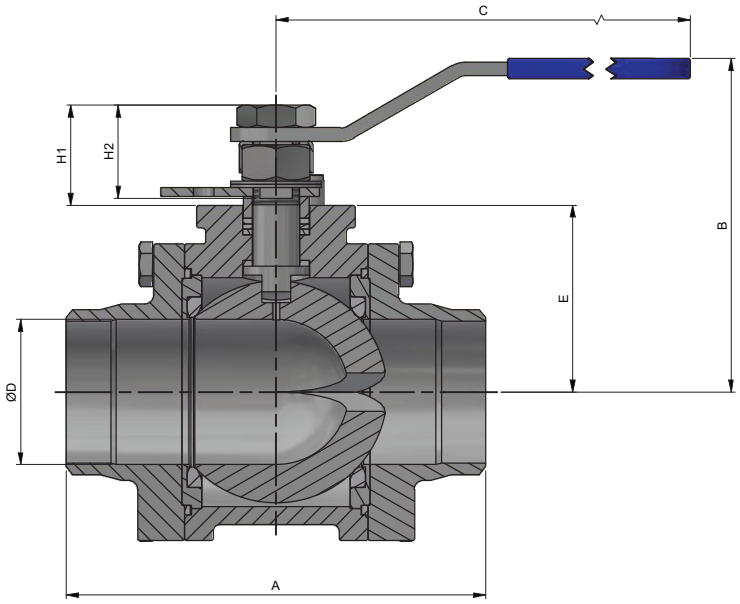
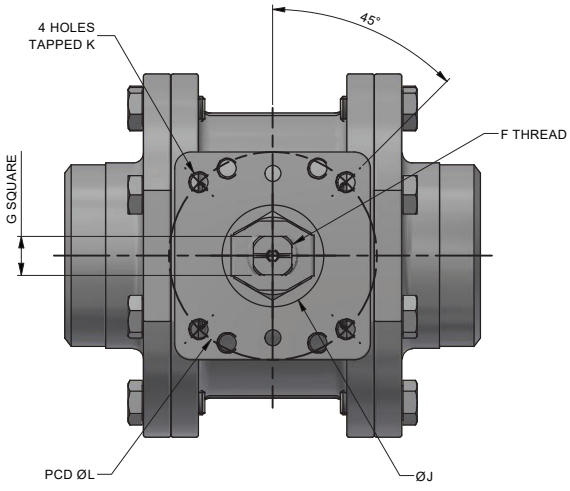
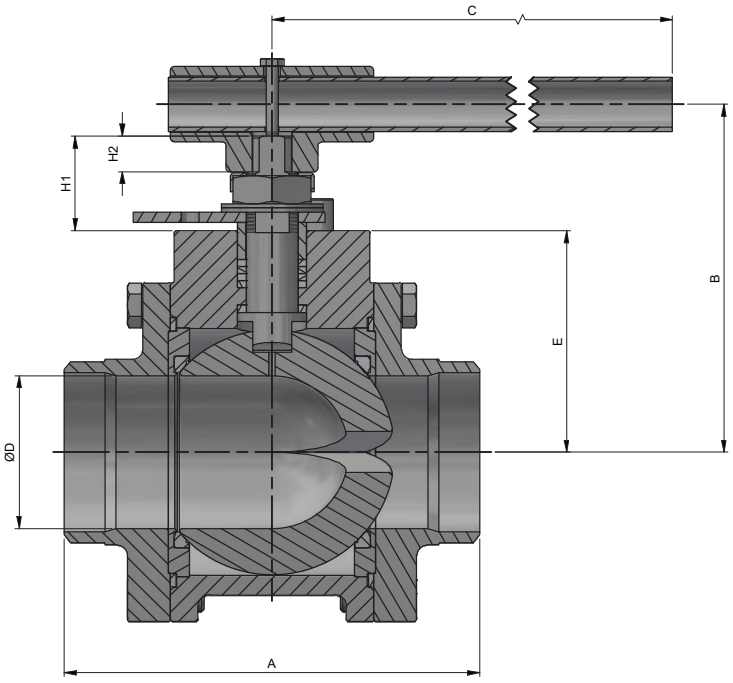


SIZE	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F	G (in.)	H1 (in.)	H2 (in.)	J (in.)	K	L (in.)	ISO 5211	Weight (lbs)
2 1/2”	7.27	5.28	8.84	2.52	3.248	M20	0.551	1.673	0.728	1.575	M8	2.756	F07	22

3” & 4”



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)
3”	8.02	6.84	13.74	2.95	4.276	1-14 UNS	0.748	1.823	0.685	1.969	M10	4.016	F10	35
4”	9.46	7.37	13.74	3.78	4.807	1-14 UNS	0.748	1.823	0.685	1.969	M10	4.016	F10	55

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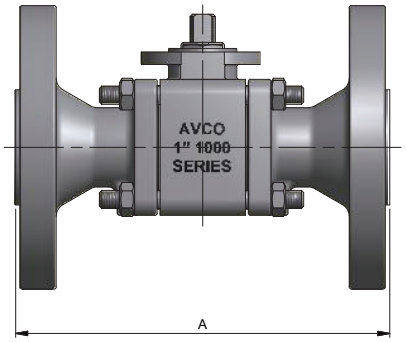
Flanged Ends (150#, 300#, 600#)

SIZE	A (in.)		
	150#	300#	600#
1/2"	5.50	5.50	6.50
3/4"	6.00	6.00	7.50
1"	6.50	6.50	8.50
1 1/4"	7.00	7.00	9.00
1 1/2"	7.50	7.50	9.50*
2"	8.50	8.50	11.50*
2 1/2"	9.50	9.50	13.00*
3"	11.12	11.12	14.00*
4"	12.00	12.00	17.00*



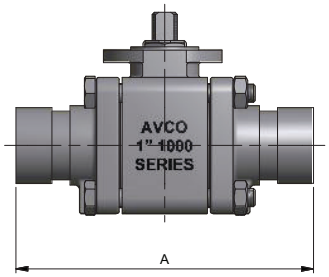
Note

Flanged ends are raised face per ASME B16.5. End to end dimensions meet ASME B16.10 for class 300 and 600. Please contact AVCO if you require flanged ends other than raised face or custom end to end dimensions.

* Valve sizes 1 1/2" thru 4" with class 600 flanges do not meet ASME B16.34.

Grooved Ends

SIZE	A (in.)
3/4"	4.63
1"	5.17
1 1/4"	6.00
1 1/2"	6.50
2"	6.99
2 1/2"	7.88
3"	8.50
4"	10.00



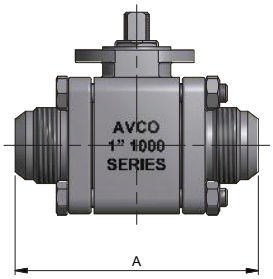
Note

Grooved Ends are furnished with standard cut grooves meeting AWWA C-606. End seal grooved ends are available upon request.

Pressure ratings are restricted to the grooved end ratings and associated clamps.

AN Fitting Ends

SIZE	A (in.)
1/4"	2.77
3/8"	2.77
1/2"	2.96
3/4"	3.61
1"	4.22
1 1/4"	5.04
1 1/2"	5.55
2"	6.99

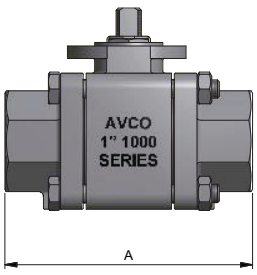


Note

AN Fitting ends are 37° flare type meeting SAE AS4395. They are designed for use with fittings per SAE AS4841.

Internal Straight Thread Ends

SIZE	A (in.)
1/4"	3.04
3/8"	3.04
1/2"	3.04
3/4"	3.73
1"	4.30
1 1/4"	4.98
1 1/2"	5.32
2"	6.44



Note

Internal Straight Thread ends meet SAE AS5202. They are designed for use with fittings per SAE AS4875.

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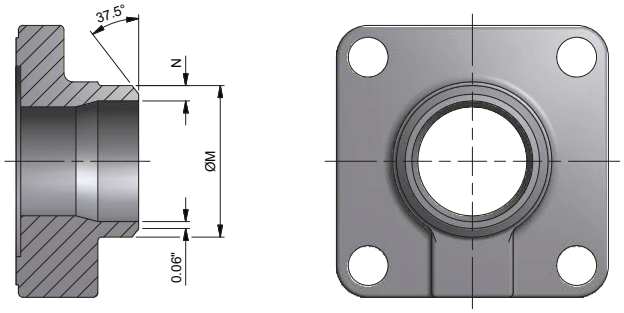
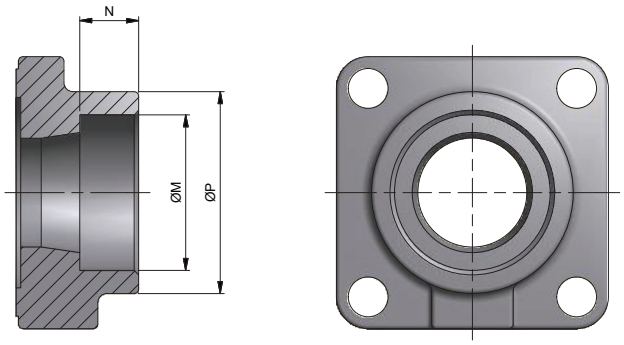
BUTT WELD END STYLE (SCH 10, SCH 40, SCH 80)



Note: As stated in ASME B16.25, paragraphs 3.1a and 3.2a, butt weld ends are square cut where N is less than or equal to 0.12".

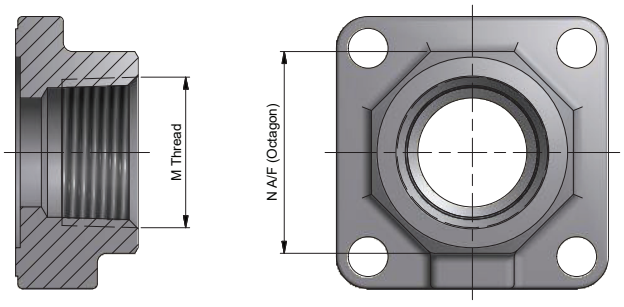
SIZE	M (in.)	N (in.)		
		Sch 10	Sch 40	Sch 80
1/4"	0.540	0.065	0.088	0.119
3/8"	0.675	0.065	0.091	0.126
1/2"	0.840	0.083	0.109	0.147
3/4"	1.050	0.083	0.113	0.154
1"	1.315	0.109	0.133	0.179
1 1/4"	1.660	0.109	0.140	0.191
1 1/2"	1.900	0.109	0.145	0.200
2"	2.375	0.109	0.154	0.218
2 1/2"	2.875	0.120	0.203	0.276
3"	3.500	0.120	0.216	0.300
4"	4.500	0.120	0.237	0.337

SOCKET WELD END STYLE



SIZE	M (in.)	N (in.)	P (in.)
1/4"	0.57	0.39	1.00
3/8"	0.71	0.39	1.00
1/2"	0.87	0.39	1.20
3/4"	1.07	0.51	1.42
1"	1.35	0.51	1.75
1 1/4"	1.70	0.51	2.13
1 1/2"	1.94	0.51	2.44
2"	2.43	0.65	2.99
2 1/2"	2.93	0.65	3.62
3"	3.56	0.65	4.33
4"	4.56	0.79	5.59

THREADED NPT END STYLE



SIZE	M (NPT)	N (in.)
1/4"	1/4	1.00
3/8"	3/8	1.00
1/2"	1/2	1.20
3/4"	3/4	1.42
1"	1	1.75
1 1/4"	1 1/4	2.13
1 1/2"	1 1/2	2.44
2"	2	2.99
2 1/2"	2 1/2	3.62
3"	3	4.33
4"	4	5.59

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Valve Pressure Ratings

The AVCO 1900 series ball valve can be supplied with WOG or ASME B16.34 pressure ratings. ASME B16.34 restricts the allowable bolt stress to 20,000 psi, whereas WOG has no restrictions on bolting allowing us to achieve greater pressure ratings within the same valve pattern. The WOG rated valves also use the standardized ASME allowable stress values to determine wall thickness, thereby resulting in a safe and reliable design. For ASME B16.34 rated valves, the 1900 series is fully compliant when used within the pressure/temperature limits defined on the next page.

The pressure ratings are available as follows:

WOG Ratings

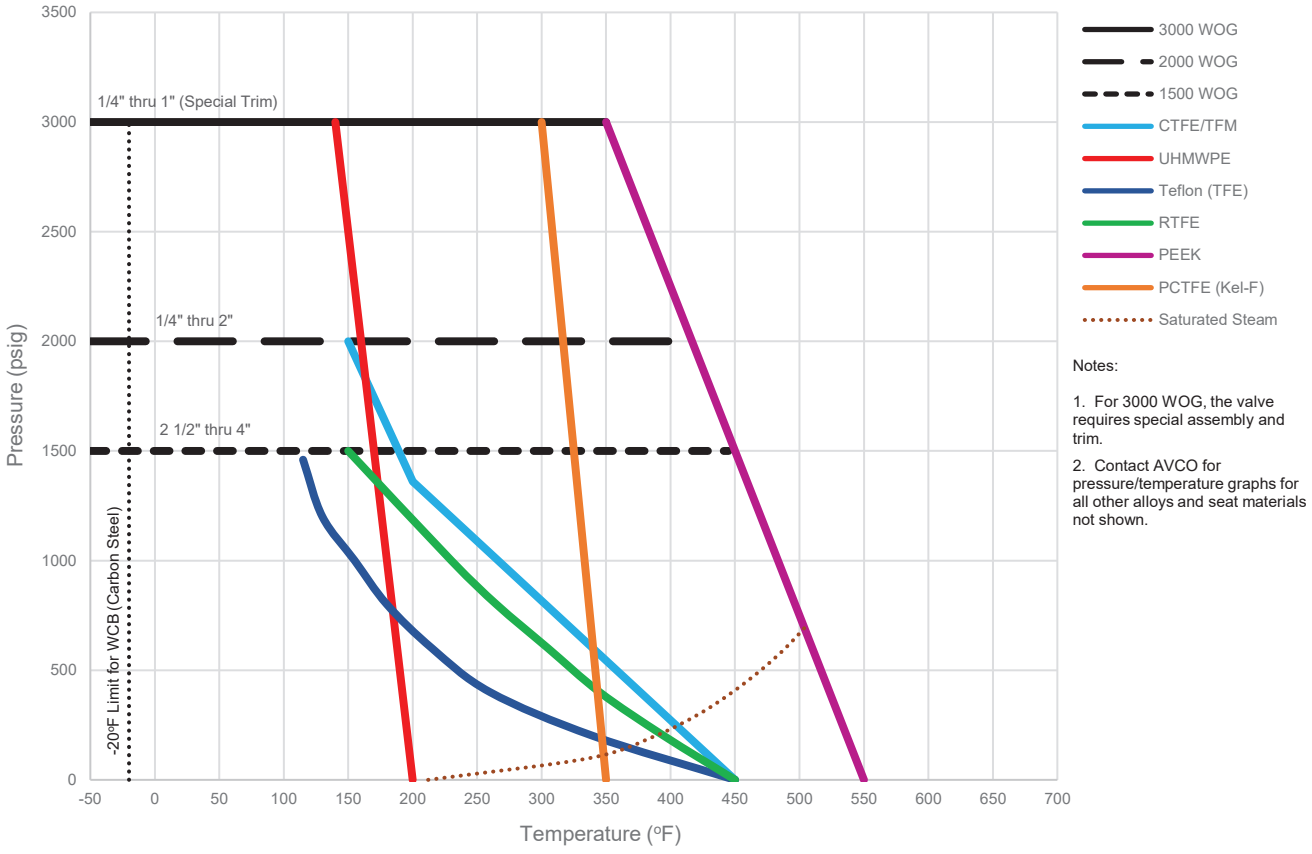
3000 WOG - 1/4” thru 1” (with special trim)
2000 WOG - 1/4” thru 2”
1500 WOG - 2 1/2” thru 4”

ASME B16.34 Ratings

Class 600 - 1/4” thru 1 1/4”
Class 300 - 1 1/2” thru 4”

Unless otherwise requested, the 1900 series will be supplied with ASME B16.34 ratings on the valve tag.

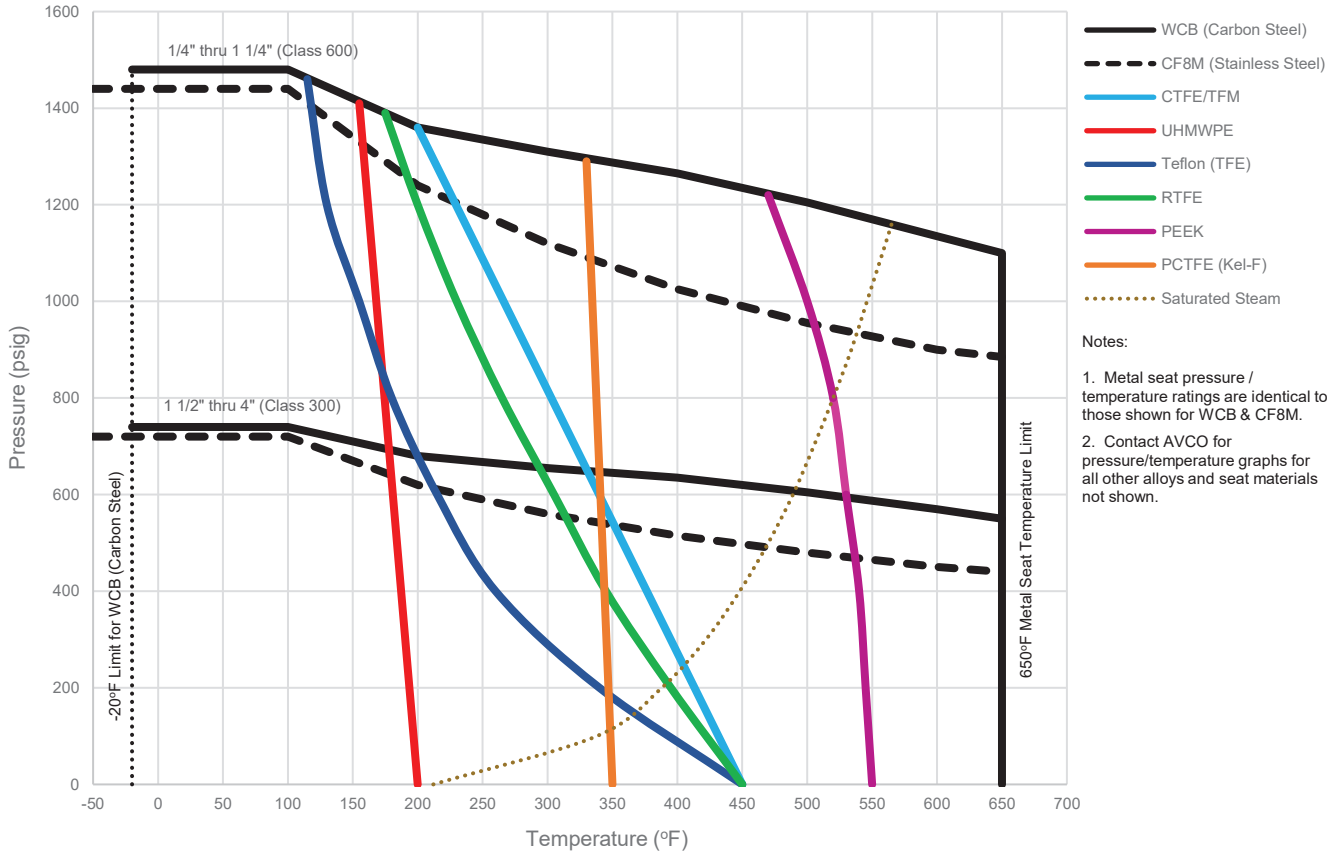
Pressure/Temperature Rating Graph for WOG rated valves



Notes:

1. For 3000 WOG, the valve requires special assembly and trim.
2. Contact AVCO for pressure/temperature graphs for all other alloys and seat materials not shown.

Pressure/Temperature Rating Graph Per ASME B16.34



Notes:

1. Metal seat pressure / temperature ratings are identical to those shown for WCB & CF8M.
2. Contact AVCO for pressure/temperature graphs for all other alloys and seat materials not shown.

Torque Table (in.lbs)

SEAT MATERIAL	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
TFE	30	30	30	60	90	140	150	720	900	1000	1100
TFM	30	30	30	40	55	125	135	600	900	1000	1700
RTFE	30	30	30	75	80	175	225	800	1000	1100	1450
CTFE	78	78	78	110	160	240	500	900	1000	1620	2750
UHMWPE	140	140	140	150	160	220	360	720	840	1560	1860
PCTFE	205	205	205	220	230	265	1000	1200	1450	2600	3000
PEEK	160	160	160	170	360	700	960	1320	1200	2100	3800
METAL	140	140	140	285	495	755	1295	1450	2500	4010	6800

Notes

1. Torque shown is actual measured maximum values, using water, at the maximum valve pressure rating and ambient temperature. Actual operating conditions and media type will affect torque values. If in doubt, please contact AVCO.

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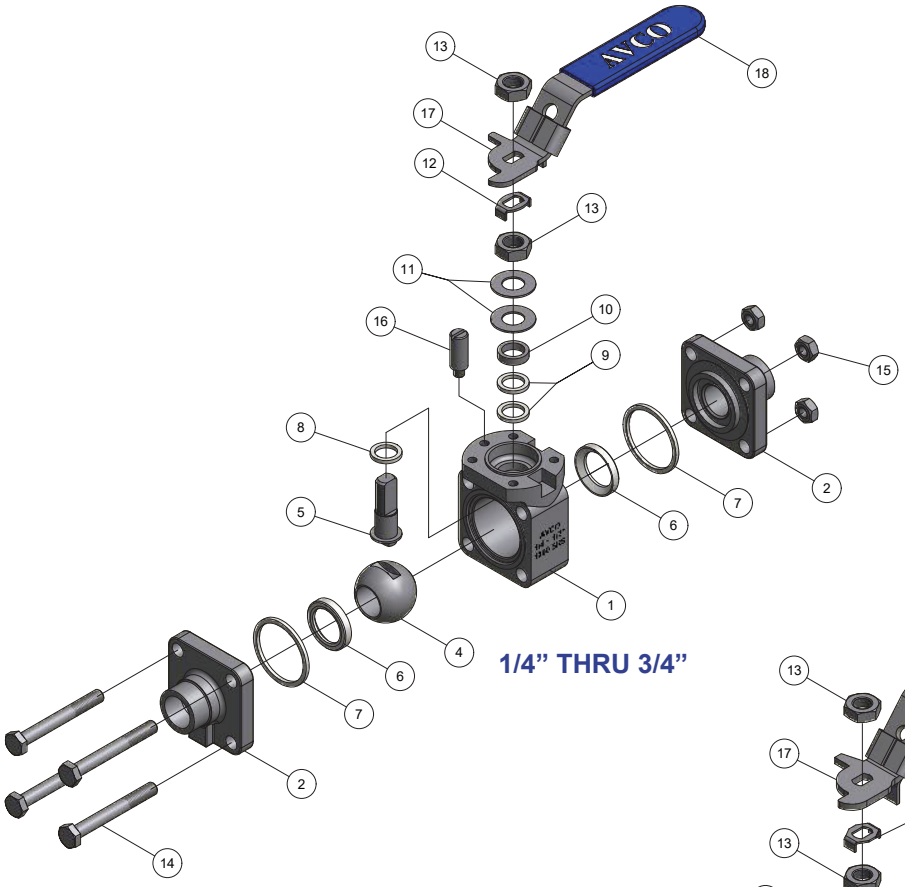
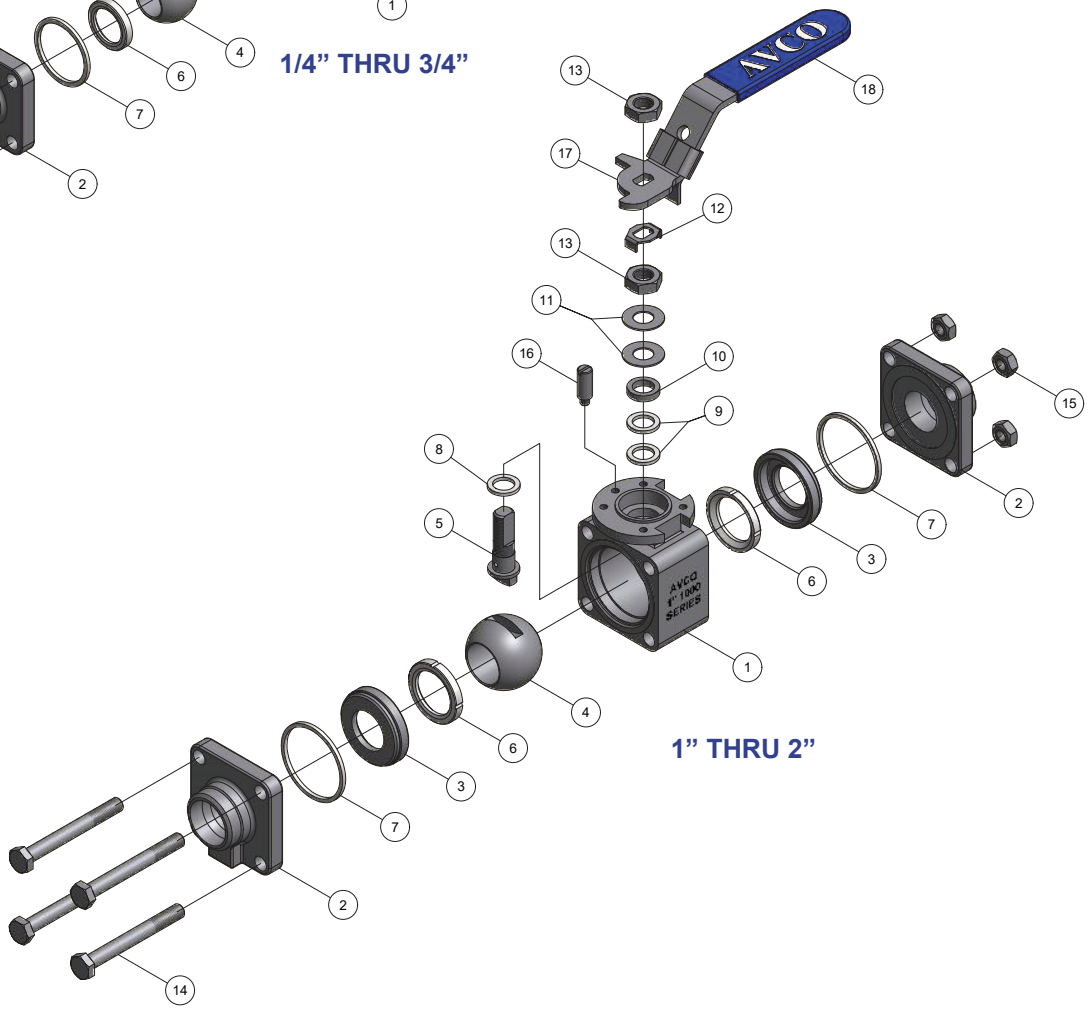


1/4” THRU 3/4”



1” THRU 2”

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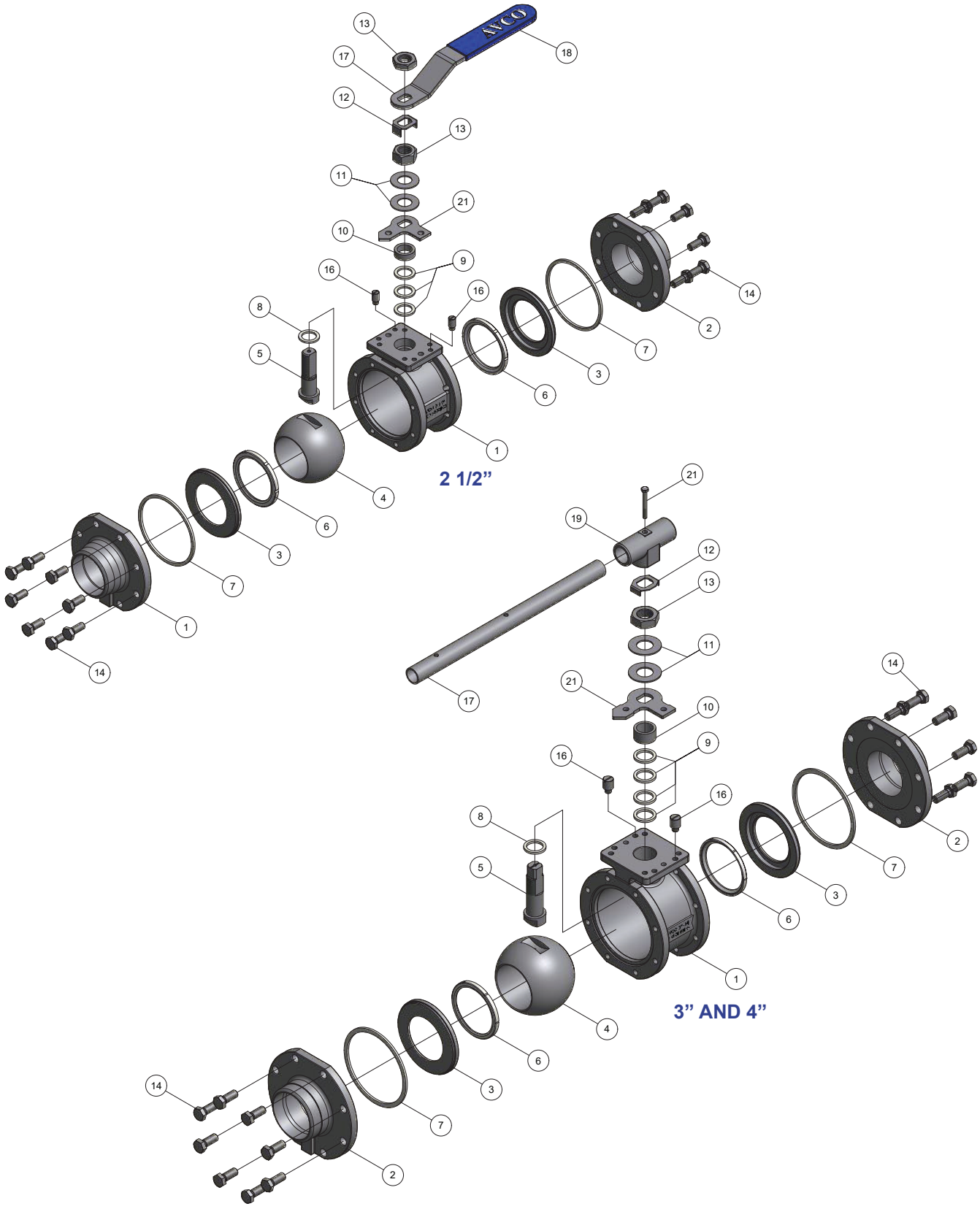

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BALL VALVES 1900 SERIES

Item	Description	Included in Valve Assembly				Material	
		1/4" thru 3/4"	1" thru 2"	2 1/2"	3" thru 4"	Stainless Steel	Carbon Steel
1	Body	Yes	Yes	Yes	Yes	A351 CF8M	A216 WCB
2	End Cap	Yes	Yes	Yes	Yes	A351 CF8M	A216 WCB
3	Retainer	No	Yes	Yes	Yes	A276 316	A276 316
4	Ball	Yes	Yes	Yes	Yes	A276 316	A276 316
5	Stem	Yes	Yes	Yes	Yes	A276 316 or ASTM A594 17-4	A276 316 or ASTM A594 17-4
6	Seat	Yes	Yes	Yes	Yes	Varies by Trim	Varies by Trim
7	Body Seal	Yes	Yes	Yes	Yes	Varies by Trim	Varies by Trim
8	Thrust Washer	Yes	Yes	Yes	Yes	Varies by Trim	Varies by Trim
9	Packing	Yes	Yes	Yes	Yes	Varies by Trim	Varies by Trim
10	Gland Ring	Yes	Yes	Yes	Yes	A276 316	A276-316
11	Disc Spring	Yes	Yes	Yes	Yes	Stainless Steel	Stainless Steel
12	Lock Washer	Yes	Yes	Yes	Yes	Stainless Steel	Stainless Steel
13	Stem Nut	Yes	Yes	Yes	Yes	Stainless Steel	Stainless Steel
14	Body Bolt	Yes	Yes	Yes	Yes	A2-70 or A193 B8	A2-70 or A193 B8
15	Body Nut	Yes	Yes	No	No	A2-70 or A194 2H	A2-70 or A194 2H
16	Stop Pin	Yes	Yes	Yes	Yes	Stainless Steel	Stainless Steel
17	Handle	Yes	Yes	Yes	No	Stainless Steel	Stainless Steel
18	Handle Sleeve	Yes	Yes	Yes	No	Vinyl	Vinyl
19	Wrench Block	No	No	No	Yes	Stainless Steel	Stainless Steel
20	Handle Bolt	No	No	No	Yes	Stainless Steel	Stainless Steel
21	Stop Pad	No	No	Yes	Yes	Stainless Steel	Stainless Steel

Maintenance & Repair

The AVCO 1900 series ball valve is a very reliable and robust design, but as with all resilient seated valves, the 'soft' parts are subject to wear over time. Replacing a whole valve is an unnecessarily high cost and as such, the 1900 series is fully repairable while in-line. Repair and maintenance kits are usually available for same day shipping and are easy to install when following the IOM manual.

AVCO is committed to ensuring repair and maintenance kits are available for your valves for many years service and even when we make design improvements to our products, we ensure all changes are backwards compatible.

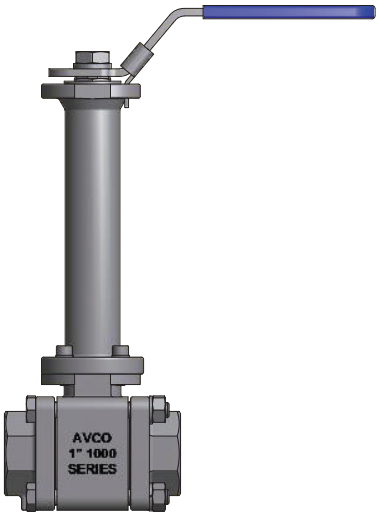
Fire Safe Design

When supplied with graphoil seals most AVCO 1900 series ball valves meet the requirements of API 607 (7th Edition) for fire safe applications. Please contact AVCO for full details of applicable valve materials and trim details.

AVCO
Alloy Valves and Control

BALL VALVES
1900 SERIES

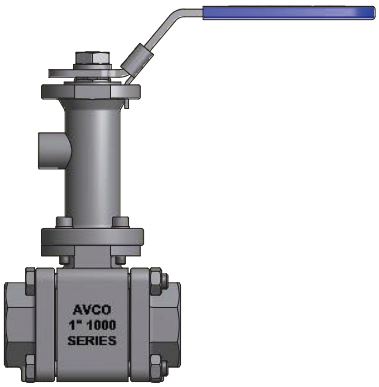
OPTIONAL FEATURES



Cryogenic Option

The AVCO 1000 series ball valves are available for cryogenic service with an extended bonnet. The extended bonnet can be shortened or lengthened to suit many applications and is also available 'off the shelf' in standard lengths.
Most options and end styles available for the regular 1900 series valves are also available for the 1500 series valves.

Click here for more information.



Fugitive Emissions Option

The AVCO 1000 series ball valves can be supplied with fugitive emissions (sniffer) bonnets. These bonnets give an early warning system when the valve stem packing is becoming worn and ready for adjustment or renewal, thus preventing dangerous chemicals/gases from entering the surrounding environment.

3400 W. Fordham Av, Santa Ana, CA 92704 Tel (714) 427-0877 Fax (714) 427-6392 Website: www.avcovalve.com

15° Vee Port - Cv Table

SIZE	PERCENTAGE OPEN								
	20	30	40	50	60	70	80	90	100
1/4”	N/A	0.01	0.03	0.10	0.22	0.40	0.62	0.90	1.23
3/8”	N/A	0.01	0.03	0.10	0.22	0.40	0.62	0.90	1.23
1/2”	N/A	0.01	0.03	0.10	0.22	0.40	0.62	0.90	1.23
3/4”	N/A	0.02	0.10	0.24	0.44	0.72	1.06	1.46	1.91
1”	N/A	0.03	0.16	0.38	0.70	1.13	1.68	2.31	3.02
1 1/4”	N/A	0.04	0.27	0.62	1.12	1.79	2.62	3.57	4.63
1 1/2”	N/A	0.16	0.50	1.07	1.90	2.99	4.32	5.87	7.57
2”	N/A	0.43	1.12	2.18	3.65	5.53	7.79	10.36	13.14
2 1/2”	N/A	0.84	2.02	3.80	6.23	9.29	12.92	17.02	21.39
3”	N/A	0.76	2.18	4.49	7.75	11.97	17.12	23.05	29.53
4”	N/A	1.89	4.53	8.53	13.97	20.82	28.96	38.10	47.88

Cv values below 20% open and marked N/A are negligible and not recommended.

30° Vee Port - Cv Table

SIZE	PERCENTAGE OPEN								
	20	30	40	50	60	70	80	90	100
1/4”	N/A	0.01	0.06	0.21	0.46	0.83	1.35	2.04	2.93
3/8”	N/A	0.01	0.06	0.21	0.46	0.83	1.35	2.04	2.93
1/2”	N/A	0.01	0.06	0.21	0.46	0.83	1.35	2.04	2.93
3/4”	N/A	0.05	0.21	0.49	0.92	1.51	2.29	3.26	4.42
1”	N/A	0.08	0.33	0.77	1.45	2.38	3.60	5.12	6.92
1 1/4”	N/A	0.15	0.55	1.26	2.31	3.74	5.56	7.77	10.34
1 1/2”	N/A	0.32	1.02	2.20	3.94	6.30	9.33	13.03	17.40
2”	0.17	0.88	2.28	4.49	7.61	11.73	16.93	23.18	30.43
2 1/2”	0.41	1.71	4.11	7.81	12.96	19.67	27.99	37.90	49.24
3”	N/A	1.54	4.44	9.21	16.10	25.35	37.12	51.52	68.46
4”	0.92	3.83	9.23	17.53	29.04	44.02	62.56	84.54	109.57

Cv values below 20% open and marked N/A are negligible and not recommended.

45° Vee Port - Cv Table

SIZE	PERCENTAGE OPEN								
	20	30	40	50	60	70	80	90	100
1/4”	N/A	0.02	0.10	0.32	0.71	1.32	2.21	3.52	5.52
3/8”	N/A	0.02	0.10	0.32	0.71	1.32	2.21	3.52	5.52
1/2”	N/A	0.02	0.10	0.32	0.71	1.32	2.21	3.52	5.52
3/4”	N/A	0.08	0.32	0.75	1.43	2.39	3.70	5.47	7.83
1”	N/A	0.12	0.50	1.19	2.25	3.76	5.81	8.53	12.10
1 1/4”	N/A	0.23	0.84	1.93	3.57	5.85	8.85	12.68	17.45
1 1/2”	N/A	0.49	1.56	3.40	6.14	9.97	15.10	21.85	30.62
2”	0.26	1.36	3.50	6.94	11.89	18.66	27.63	39.30	54.28
2 1/2”	0.63	2.62	6.32	12.07	20.24	31.25	45.59	63.88	86.84
3”	N/A	2.36	6.83	14.22	25.13	40.24	60.53	87.31	122.34
4”	1.41	5.89	14.19	27.07	45.29	69.77	101.53	141.78	191.75

Cv values below 20% open and marked N/A are negligible and not recommended.

60° Vee Port - Cv Table

SIZE	PERCENTAGE OPEN								
	20	30	40	50	60	70	80	90	100
1/4”	N/A	0.03	0.13	0.44	0.99	1.86	3.24	5.53	9.93
3/8”	N/A	0.03	0.13	0.44	0.99	1.86	3.24	5.53	9.93
1/2”	N/A	0.03	0.13	0.44	0.99	1.86	3.24	5.53	9.93
3/4”	N/A	0.11	0.44	1.03	1.98	3.36	5.36	8.27	12.74
1”	N/A	0.17	0.69	1.63	3.11	5.27	8.34	12.74	19.27
1 1/4”	N/A	0.32	1.16	2.65	4.91	8.12	12.50	18.40	26.37
1 1/2”	N/A	0.67	2.14	4.67	8.50	14.01	21.80	32.92	49.32
2”	0.36	1.86	4.81	9.55	16.54	26.42	40.29	60.08	89.17
2 1/2”	0.87	3.60	8.67	16.63	28.13	44.16	66.23	96.92	140.28
3”	0.41	3.25	9.37	19.58	34.88	56.88	88.14	133.45	201.90
4”	1.95	8.09	19.47	37.22	62.86	98.40	146.92	213.52	306.23

Cv values below 20% open and marked N/A are negligible and not recommended.

90° Vee Port - Cv Table

SIZE	PERCENTAGE OPEN								
	20	30	40	50	60	70	80	90	100
1/4"	N/A	0.04	0.22	0.71	1.57	2.95	5.23	9.43	19.04
3/8"	N/A	0.04	0.22	0.71	1.57	2.95	5.23	9.43	19.04
1/2"	N/A	0.04	0.22	0.71	1.57	2.95	5.23	9.43	19.04
3/4"	N/A	0.19	0.71	1.67	3.21	5.61	9.51	16.55	32.07
1"	N/A	0.30	1.12	2.63	5.03	8.72	14.55	24.57	44.53
1 1/4"	N/A	0.52	1.87	4.24	7.86	13.15	20.90	32.60	51.14
1 1/2"	N/A	1.10	3.47	7.52	13.81	23.41	38.66	65.10	118.69
2"	0.61	3.05	7.78	15.44	27.11	44.90	73.54	124.50	233.32
2 1/2"	1.45	5.89	14.06	27.04	46.66	76.59	124.94	211.29	398.80
3"	0.70	5.34	15.19	31.63	57.08	96.35	160.37	276.68	537.12
4"	3.25	13.20	31.39	59.96	102.46	165.40	262.05	421.05	711.22

Cv values below 20% open and marked N/A are negligible and not recommended.

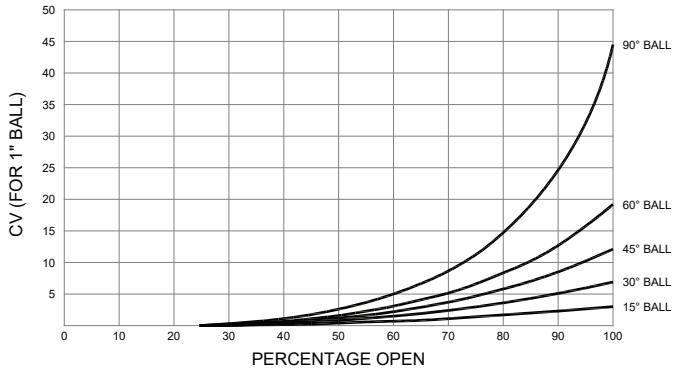
Liquid Pressure Recovery & Pressure Drop Ratio Factors

SIZE	PERCENTAGE OPEN								
	20	30	40	50	60	70	80	90	100
F_L	0.95	0.94	0.93	0.92	0.90	0.88	0.86	0.82	0.75
X_T	0.77	0.71	0.67	0.64	0.63	0.62	0.55	0.43	0.40

How to use tables

- Calculate required maximum and minimum Cv using appropriate formulas for gas or liquid (AVCO can provide assistance if required).
- Select a valve size based upon the maximum Cv whilst ensuring the percentage open is less than 90 percent.
- Check that the minimum Cv is greater than the figure for 30 percent open.
- If the values fall between these criteria then the valve should be suitable for the application.
- Please check with AVCO if further help or confirmation is required.

Typical Ball Characteristics



AVCO

Alloy Valves and Control

BALL VALVES
1900 SERIES

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
Declutchable Manual Override

Manual Valves

Oval Handle
Spring Return
Fusible Link
Lock Device
Gear Operators

HOW TO ORDER

19	3	3	T	T	SE	100	BAV60
Series	**Body & End Material**	**Ball & Stem Material**	**Seat Material**	**Seal Material**	**End Style**	**Size**	**Options**
1900 Series 3 Piece Vee Port Ball Valve	1 - Carbon Steel	2 - Alloy 20	T - Teflon (PTFE)	T - Teflon (PTFE)	SE - NPT	025 - 1/4"	BAV15 - 15° Vee Port
	2 - Alloy 20	3 - 316 SS	E - TFM 1600	C - 25% Carbon PTFE	SW - Socket Weld	038 - 3/8"	BAV30 - 30° Vee Port
	3 - 316 SS	4 - Monel 400	R - 15% Glass PTFE	G - Graphoil	BW - Butt Weld	050 - 1/2"	BAV45 - 45° Vee Port
	4 - Monel 400	6 - Hastelloy C	C - 25% Carbon PTFE	U - UHMWPE	GR - Grooved	075 - 3/4"	BAV60 - 60° Vee Port
	6 - Hastelloy C	8 - Titanium	P - PEEK		TP - Tank Pad	100 - 1"	BAV90 - 90° Vee Port
	8 - Titanium	9 - Aluminum	U - UHMWPE		AN - SAE 4395	125 - 1 1/4"	BAVT - Vented Balls
	9 - Aluminum	E - Super Duplex	K - Kel-F (PCTFE)		150 - 150# Flange	150 - 1 1/2"	BAHL - Hardened Ball
	E - Super Duplex	G - Duplex	S - Stellite		300 - 300# Flange	200 - 2"	IE - Emissions Bonnet
	G - Duplex				600 - 600# Flange	250 - 2 1/2"	O2CB - O2 Clean/Bagged
					AS5202 - SAE Ends	300 - 3"	LH - Locking Lever Handle
						400 - 4"	OH - Oval Handle
					Variations of the above or special ends can be supplied upon request		Customized Ports are available upon request

Example ordering codes:

1933TT-SE-100-BAV60-LH = 1" ball valve with 316 SS body/ball, Teflon seats/seals, NPT ends, 60° Vee Ball & locking lever handle
1944PG-300-100-BAV15 = 1" ball valve with Monel 400 body/ball, PEEK seats, Graphoil Seals, 300# RF Flange, 15° Vee Ball and bare stem

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