



NUTRON Model T3 Ball Valves

Forged-steel floating ball valves for heavy-duty,
reduced-maintenance performance

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NUTRON* Model T3 Ball Valves

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Sizes, Specifications, and Compliance

Model T3 three-piece threaded floating ball valves

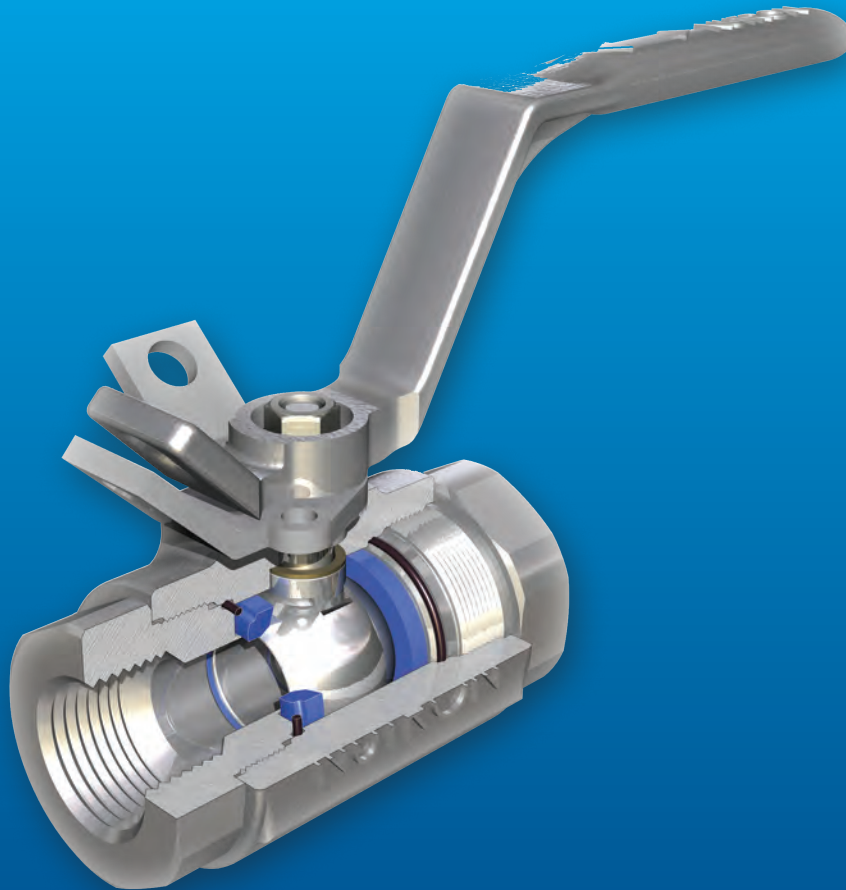
- Full-port sizes: ½–3 in [13–76 mm]
- Reduced-port sizes: ¾–4 in [19–102 mm]
- ASME Classes 150–2500 [PN 20–420] (see page 5)
- Water, oil, gas (WOG) pressure 1,000–6,000 psi (see page 5)
- End connections: threaded, flanged, socket weld, and butt weld

Materials and actuation

- Materials: carbon steel, stainless steel, and special alloys
- Operator: manual lever handle
- Actuation: consult Cameron for information on various types of actuators, including gear operators, pneumatic, hydropneumatic, electric, electropneumatic, and hydraulic actuators

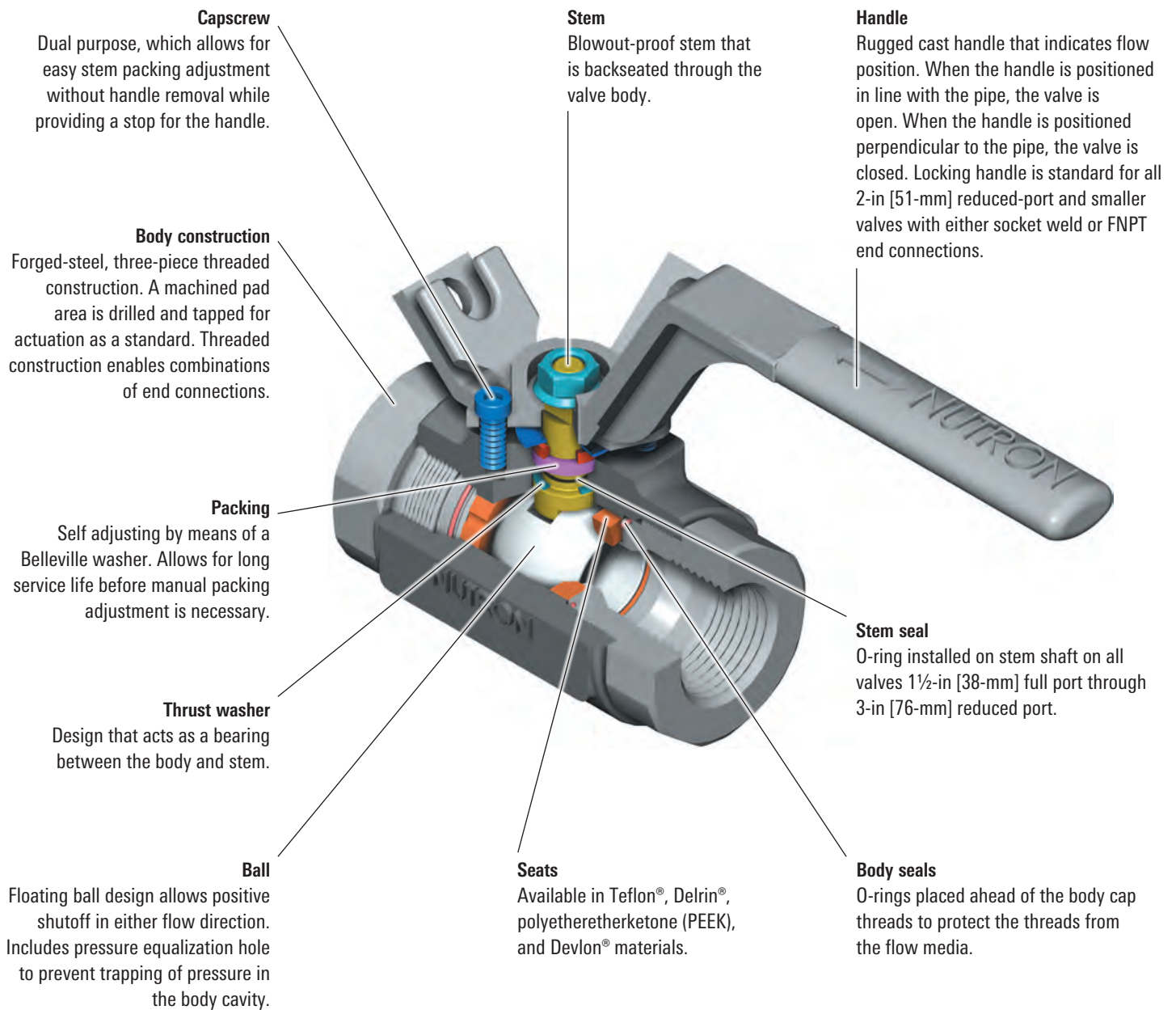
Compliance to standards and specifications

- ISO 9001:2000 registered quality system
- ASME B16.34
- API 607 4th Edition (fire safe)
- CE Mark Number 0038
- ASME Section VIII, Division 1 boiler and pressure vessel code
- CSA Z245.15 steel valves
- NACE MR0175 (Rev. 2002)
- Canadian Registration Number (CRN)
- API 603 (conduit factory) Model B3E



NUTRON Model T3 ball valve.

Standard Features



Available Sizes

Sizes, in [mm]	ASME Class [PN]					
	150 [20]	300 [50]	600 [100]	900 [150]	1500 [250]	2500 [420]
Full port minus 1 in [25 mm]	½-3 [13-76]	½-3 [13-76]	½-2 [13-51]	½-2 [13-51]	½-2 [13-51]	½-2 [13-51]
Reduced port minus 1½ in [38 mm]	¾-4 [19-102]	¾-4 [19-102]	¾-3 [19-76]	¾-3 [19-76]	¾-3 [19-76]	¾-3 [19-76]
Sizes, in [mm]	WOG Pressure, psi					
	–	1,000	2,000	3,000	4,000	6,000
Full port, threaded	–	3 [76]	¼-3 [6-76]	¼-2 [6-51]	¼-2 [6-51]	¼-2 [6-51]
Reduced port, threaded	–	4 [102]	¾-3 [19-76]	¾-3 [19-76]	¾-3 [19-76]	¾-3 [19-76]
Full port, socket weld	–	–	½-2 [13-51]	½-2 [13-51]	½-2 [13-51]	½-2 [13-51]
Reduced port, socket weld	–	–	¾-3 [19-76]	¾-3 [19-76]	¾-3 [19-76]	¾-3 [19-76]

How to Order

Example

T3-F07S20SZ: Model T3, full port, ¾ in [19 mm], FNPT, 2,000-psi WOG, sour valve, fire safe

T3 - F 07 S 20 S Z

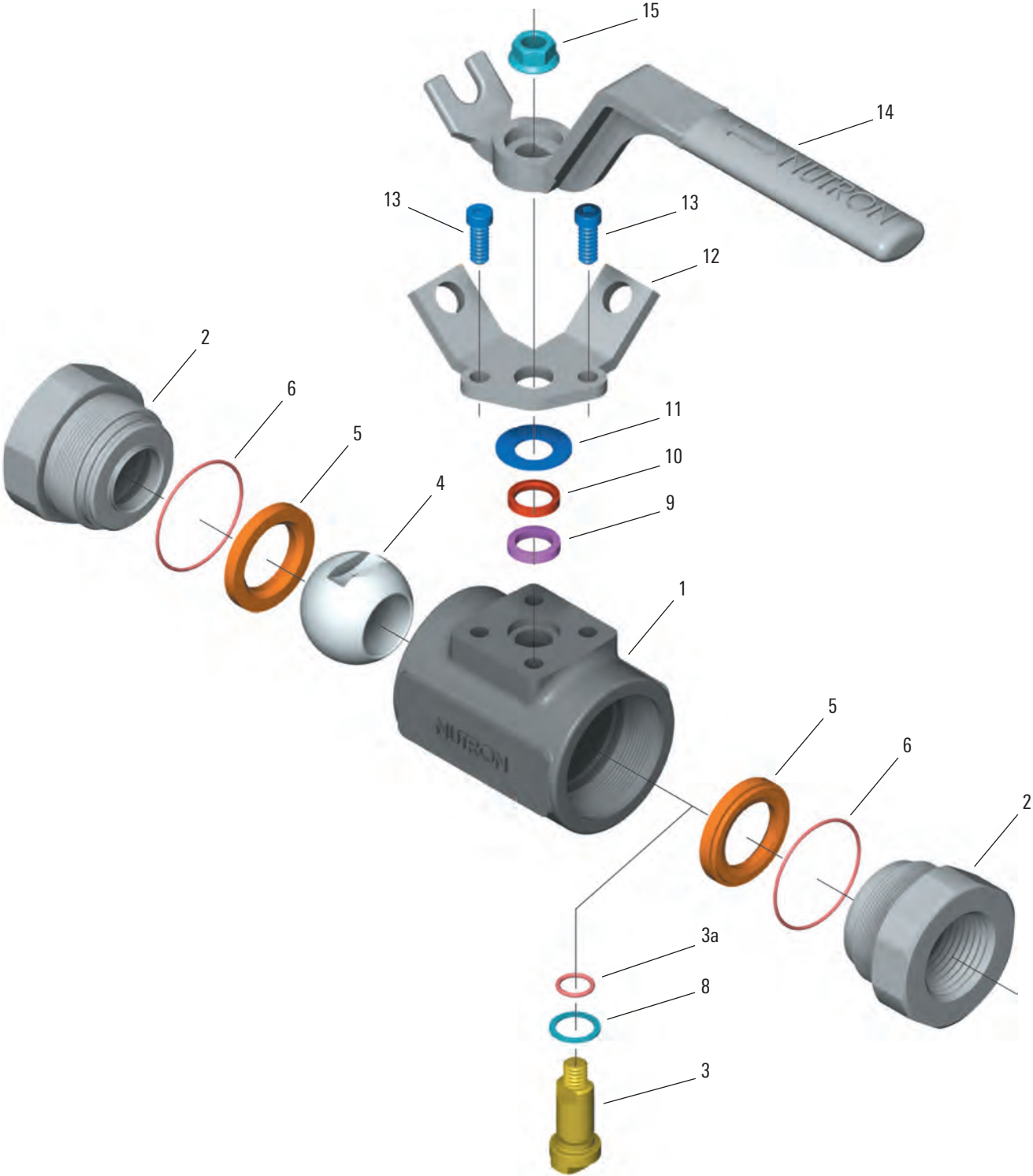
Model	Bore	Size, in [mm]	End Connection	Pressure	Style [†]	Temp. Rating, degF [degC]	Fire Safe
T3 Three-piece, threaded	F Full port R Reduced port	02 ¼ [6] 03 ⅜ [10] 05 ½ [13] 07 ¾ [19] 10 1 [25] 12 1¼ [32] 15 1½ [40] 20 2 [51] 25 2½ [64] 30 3 [76] 40 4 [102]	A Raised face (RF) smooth face B Butt weld (BW) Sch. 40 C BW Sch. 80 D BW Sch. 160 E BW Sch. XXH F Female NPT (FNPT) × Male NPT (MNPT) G FNPT × RF H FNPT × ring-type joint (RTJ) J RTJ M MNPT R Raised face S FNPT TS FNPT × socket weld WS Socket weld	10 1,000-psi WOG 20 2,000-psi WOG 30 3,000-psi WOG 40 4,000-psi WOG 60 6,000-psi WOG 01 150 ASME 03 300 ASME 06 600 ASME 09 900 ASME 15 1500 ASME 25 2500 ASME	A Stainless steel B Standard H High-temperature sour L Low-temperature sour N MONEL® alloy steel Q Duplex steel S Sour	–50 [–46] 500 [260] –50 [–46] –50 [–46] –20 [–29]	Z Fire safe

Common Options [†]	
Antistatic spring	
Car seal close	
Car seal open	
Delrin material seats	
Electroless nickel plating (ENP)	
Gear operator	
Graphite packing	
Highly saturated nitrile (HSN) O-rings	
ZPEX® coating	
Locking handle	
Nitrile O-rings	
PEEK seats	
Teflon material O-rings	
Viton material O-rings	

[†] Consult Cameron for detailed valve style descriptions, full range of options, materials, actuation packages, or for a particular special valve service application.

Valve Details and Materials Lists

Threaded End Connections



Materials Lists

Item	Part	Working Pressure, psi	Standard –20 degF [–29 degC]	Sour –20 degF [–29 degC]
1	Body	All	ASTM A350 Grade LF2	ASTM A350 Grade LF2
2	End caps	All	ASTM A350 Grade LF2	ASTM A350 Grade LF2
■ 3	Stem	150, 300, 600, and 900 1,500 and 2,500	ASTM A108, plated ASTM A564 17-4PH® stainless steel	ASTM A564 17-4PH stainless steel ASTM A564 17-4PH stainless steel
■ ● 3a [†]	Stem O-ring	All	Nitrile rubber	HSN
■ 4	Ball	150–1,500 2,500	Carbon steel, chrome plated ASTM A564 17-4PH stainless steel	ASTM A351 Grade CF8M ASTM A564 17-4PH stainless steel
■ ● 5	Seats	150, 300, and 600 900 and 1,500 2,500	Teflon material Delrin material PEEK	Teflon material Delrin material PEEK
■ ● 6	Body O-rings	All	Nitrile rubber	HSN
■ ● 8	Thrust washer	150, 300, and 600 900 and 1,500 2,500	Teflon material Delrin material PEEK	Teflon material Delrin material PEEK
■ ● 9	Packing	All	Teflon material	Teflon material
10	Packing follower	All	Carbon steel, plated	Stainless steel
11	Belleville washer	All	Carbon steel	Stainless steel
12	Gland flange [‡]	All	Carbon steel, plated	Carbon steel, plated
13	Capscrews	All	Carbon steel	Stainless steel
14	Handle	All	Carbon steel	Carbon steel
15	Handle nut	All	Carbon steel, plated	Carbon steel, plated

Item	Part	Working Pressure, psi	Low-Temperature Sour –50 degF [–46 degC]	Stainless Steel –50 degF [–46 degC]
1	Body	All	ASTM A350 Grade LF2	ASTM A479 316
2	End caps	All	ASTM A350 Grade LF2	ASTM A479 316
■ 3	Stem	All	ASTM A564 17-4PH stainless steel	ASTM A564 17-4PH stainless steel with nitriding
■ ● 3a [†]	Stem O-ring	All	HSN	
■ 4	Ball	2,000 3,000 and 4,000 6,000	ASTM A351 Grade CF8M ASTM A351 Grade CF8M ASTM A564 17-4PH stainless steel	ASTM A351 Grade CF8M ASTM A564 17-4PH stainless steel ASTM A564 17-4PH stainless steel
■ ● 5	Seats	2,000 3,000 and 4,000 6,000	Teflon material Delrin material PEEK	Teflon material PEEK PEEK
■ ● 6	Body O-rings	All	HSN	Teflon material
■ ● 8	Thrust washer	2,000 3,000 and 4,000 6,000	Teflon material Delrin material PEEK	Teflon material PEEK PEEK
■ ● 9	Packing	All	Teflon material	Teflon material
10	Packing follower	All	Stainless steel	Stainless steel
11	Belleville washer	All	Stainless steel	Stainless steel
12	Gland flange [‡]	All	Carbon steel, plated	Carbon steel, plated
13	Capscrews	All	Stainless steel	Stainless steel
14	Handle	All	Carbon steel	Carbon steel
15	Handle nut	All	Carbon steel, plated	Carbon steel, plated

■ Major repair kit.

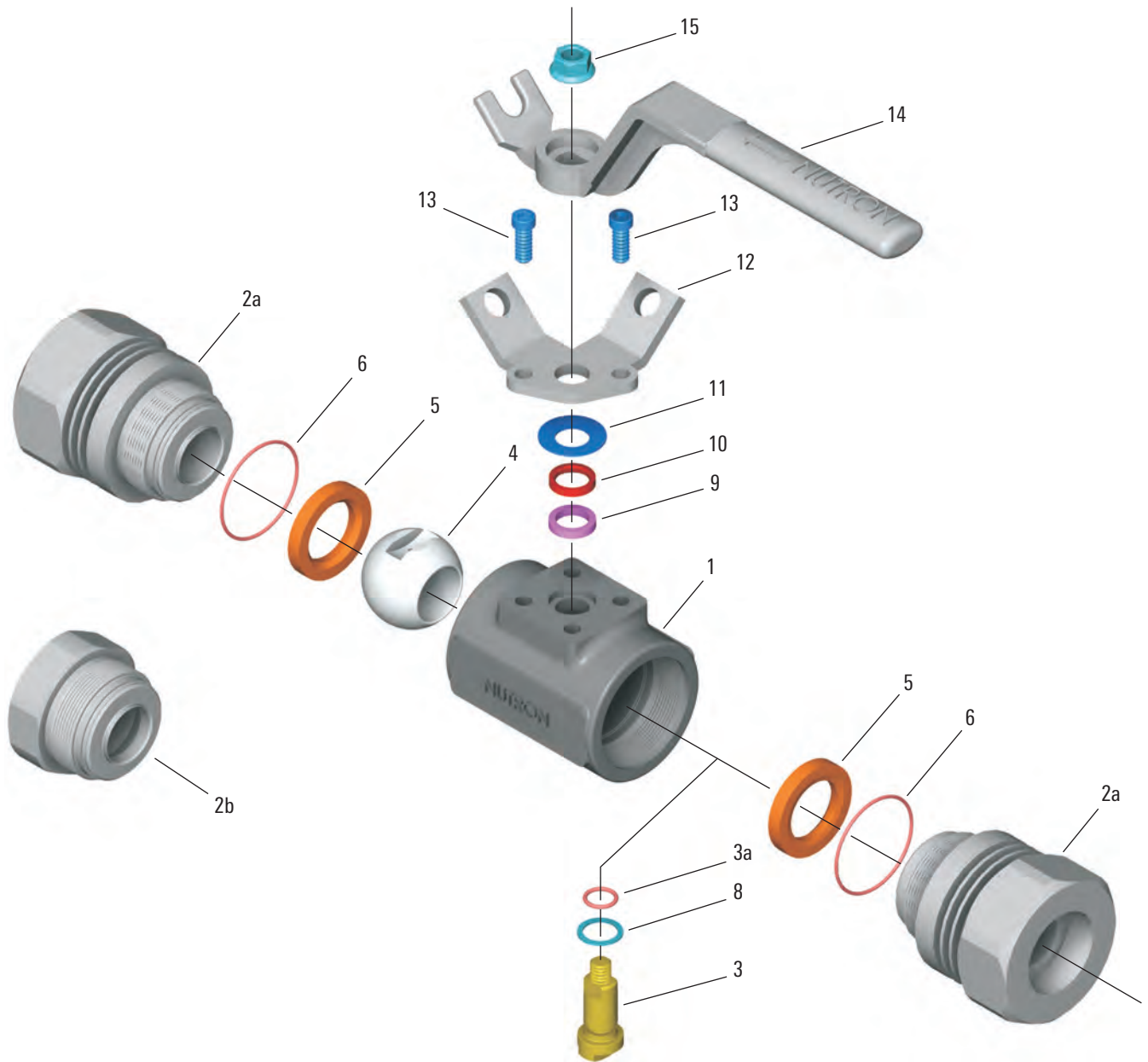
● Minor repair kit.

[†] Only available on sizes 1½-in [38-mm] full-port through 3-in [76-mm] reduced-port valves.

[‡] Locking device is standard on ¼-in [6-mm] full-port through 2-in [51-mm] reduced-port valves.

Fire-safe trim offered as standard whenever possible. Consult Cameron for fire-safe trim.

Socket Weld and Threaded × Socket Weld End Connections



Materials Lists

Item	Part	Working Pressure, psi	Standard –20 degF [–29 degC]	Sour –20 degF [–29 degC]
1	Body	All	ASTM A350 Grade LF2	ASTM A350 Grade LF2
2a	End caps—socket weld (SW)	All	ASTM A350 Grade LF2	ASTM A350 Grade LF2
2b	End caps—NPT	All	ASTM A350 Grade LF2	ASTM A350 Grade LF2
■	3	Stem	2,000 and 3,000 4,000 and 6,000	ASTM A108, plated ASTM A564 17-4PH ASTM A564 17-4PH stainless steel
■ ●	3a [†]	Stem O-ring	All	Viton material Viton material
■	4	Ball	2,000 3,000, 4,000, and 6000	ASTM A351 Grade CF8M ASTM A564 17-4PH stainless steel ASTM A564 17-4PH
■ ●	5	Seats	2,000 3,000, 4,000, and 6000	Teflon material PEEK Teflon material PEEK
■ ●	6	Body O-rings	All	Viton material Viton material
■ ●	8	Thrust washer	2,000 3,000, 4,000, and 6,000	Teflon material PEEK Teflon material PEEK
■ ●	9	Packing	All	Teflon material Teflon material
	10	Packing follower	All	Carbon steel, plated Stainless steel
	11	Belleville washer	All	Carbon steel Stainless steel
	12	Gland flange [‡]	All	Carbon steel, plated Carbon steel, plated
	13	Capscrews	All	Carbon steel Stainless steel
	14	Handle	All	Carbon steel Carbon steel
	15	Handle nut	All	Carbon steel, plated Carbon steel, plated

Item	Part	Working Pressure, psi	Low-Temperature Sour –50 degF [–46 degC]	Stainless Steel –50 degF [–46 degC]
1	Body	All	ASTM A350 Grade LF2	ASTM A479 Type 316
2a	End caps—SW	All	ASTM A350 Grade LF2	ASTM A479 Type 316 L
2b	End caps—NPT	All	ASTM A350 Grade LF2	ASTM A479 Type 316
■	3	Stem	All	ASTM A564 17-4PH stainless steel ASTM A564 17-4PH stainless steel with nitriding
■ ●	3a [†]	Stem O-ring	All	Viton material Viton material
■	4	Ball	2,000 3,000, 4,000, and 6,000	ASTM A351 Grade CF8M ASTM A564 17-4PH stainless steel ASTM A564 17-4PH stainless steel
■ ●	5	Seats	2,000 3,000, 4,000, and 6,000	Teflon material PEEK Teflon material PEEK
■ ●	6	Body O-rings	All	Viton material Viton material
■ ●	8	Thrust washer	2,000 3,000, 4,000, and 6,000	Teflon material PEEK Teflon material PEEK
■ ●	9	Packing	All	Teflon material Teflon material
	10	Packing follower	All	Stainless steel Stainless steel
	11	Belleville washer	All	Stainless steel Stainless steel
	12	Gland flange [‡]	All	Carbon steel, plated Carbon steel, plated
	13	Capscrews	All	Stainless steel Stainless steel
	14	Handle	All	Carbon steel Carbon steel
	15	Handle nut	All	Carbon steel, plated Carbon steel, plated

■ Major repair kit.

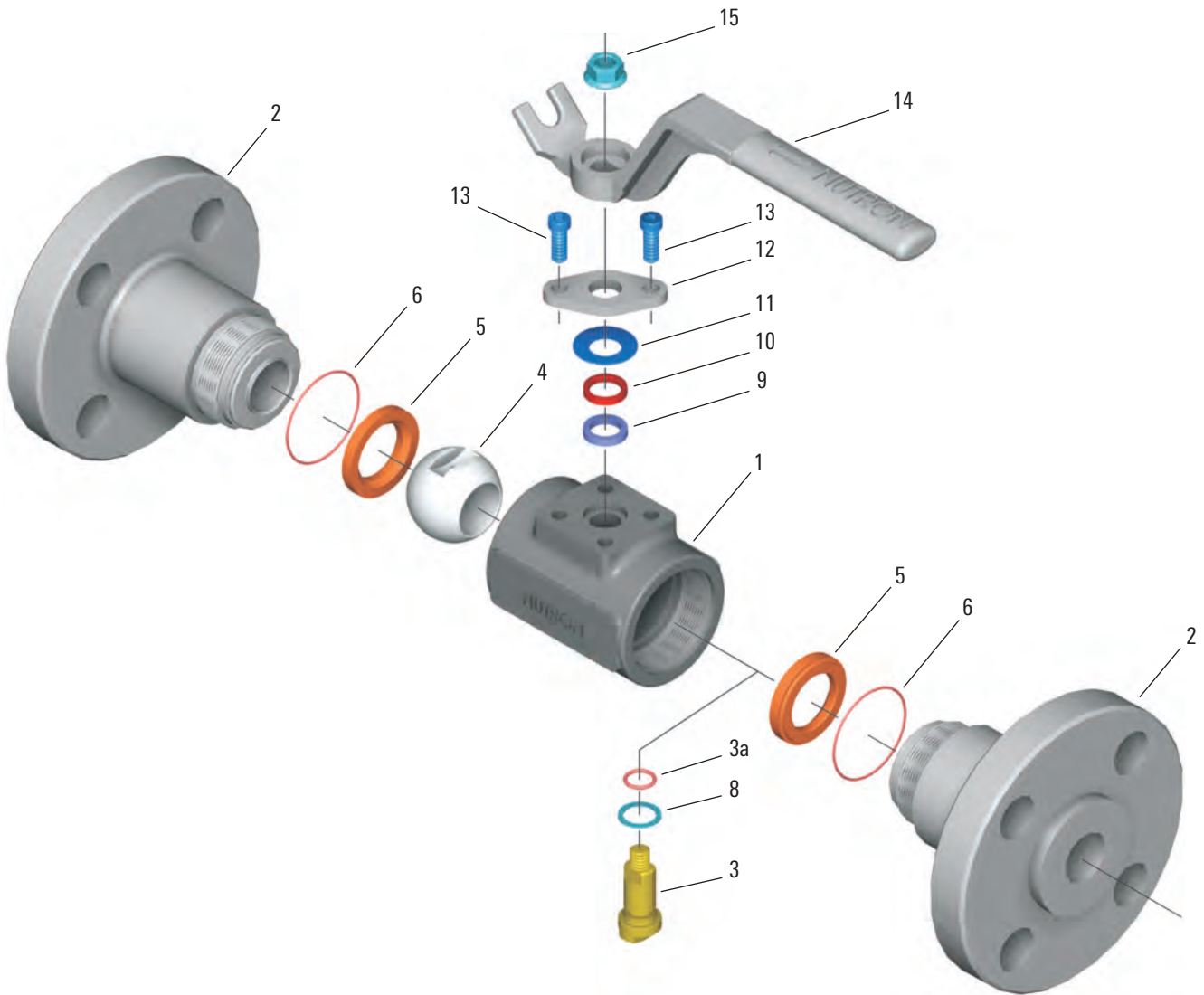
● Minor repair kit.

[†] Only available on sizes 1½-in [38-mm] full-port through 3-in [76-mm] reduced-port valves.

[‡] Locking device is standard on ¼-in [6-mm] full-port through 2-in [51-mm] reduced-port valves.

Fire-safe trim offered as standard whenever possible. Consult Cameron for fire-safe trim.

Flanged End Connections ASME Classes 150–2500 [PN 20–420]



Materials Lists

Item	Part	Working Pressure, psi	Standard –20 degF [–29 degC]	Sour –20 degF [–29 degC]
1	Body	All	ASTM A350 Grade LF2	ASTM A350 Grade LF2
2	End caps	All	ASTM A350 Grade LF2	ASTM A350 Grade LF2
■ 3	Stem	150, 300, 600, and 900 1,500 and 2,500	ASTM A108, plated ASTM A564 17-4PH stainless steel	ASTM A564 17-4PH stainless steel ASTM A564 17-4PH stainless steel
■ ● 3a [†]	Stem O-ring	All	Nitrile rubber	HSN
■ 4	Ball	150 through 1,500 2,500	Carbon steel, chrome plated ASTM A564 17-4PH stainless steel	ASTM A351 Grade CF8M ASTM A564 17-4PH stainless steel
■ ● 5	Seats	150, 300, and 600 900 and 1,500 2,500	Teflon material Delrin material PEEK	Teflon material Delrin material PEEK
■ ● 6	Body O-rings	All	Nitrile rubber	HSN
■ ● 8	Thrust washer	150, 300, and 600 900 and 1,500 2,500	Teflon material Delrin material PEEK	Teflon material Delrin material PEEK
■ ● 9	Packing	All	Teflon material	Teflon material
10	Packing follower	All	Carbon steel, plated	Stainless steel
11	Belleville washer	All	Carbon steel	Stainless steel
12	Gland flange	All	Carbon steel, plated	Carbon steel, plated
13	Capscrews	All	Carbon steel	Stainless steel
14	Handle	All	Carbon steel	Carbon steel
15	Handle nut	All	Carbon steel, plated	Carbon steel, plated

Item	Part	Working Pressure	Low-Temperature Sour –50 degF [–46 degC]	Stainless Steel –50 degF [–46 degC]
1	Body	All	ASTM A350 Grade LF2	ASTM A479 316
2	End caps	All	ASTM A350 Grade LF2	ASTM A479 316
■ 3	Stem	All	ASTM A564 17-4PH stainless steel	ASTM A564 17-4PH stainless steel with nitriding
■ ● 3a [†]	Stem O-ring	All	HSN	HSN
■ 4	Ball	150, 300, and 600 900 and 1,500 2,500	ASTM A351 Grade CF8M ASTM A351 Grade CF8M ASTM A564 17-4PH stainless steel	ASTM A351 Grade CF8M – ASTM A564 17-4PH stainless steel
■ ● 5	Seats	150, 300, and 600 900 and 1,500 2,500	Teflon material Delrin material PEEK	Teflon material PEEK PEEK
■ ● 6	Body O-rings	All	HSN	Teflon material
■ ● 8	Thrust washer	150, 300, and 600 900 and 1,500 2,500	Teflon material Delrin material PEEK	Teflon material PEEK PEEK
■ ● 9	Packing	All	Teflon material	Teflon material
10	Packing follower	All	Stainless steel	Stainless steel
11	Belleville washer	All	Stainless steel	Stainless steel
12	Gland flange	All	Carbon steel, plated	Carbon steel, plated
13	Capscrews	All	Stainless steel	Stainless steel
14	Handle	All	Carbon steel	Carbon steel
15	Handle nut	All	Carbon steel, plated	Carbon steel, plated

■ Major repair kit.

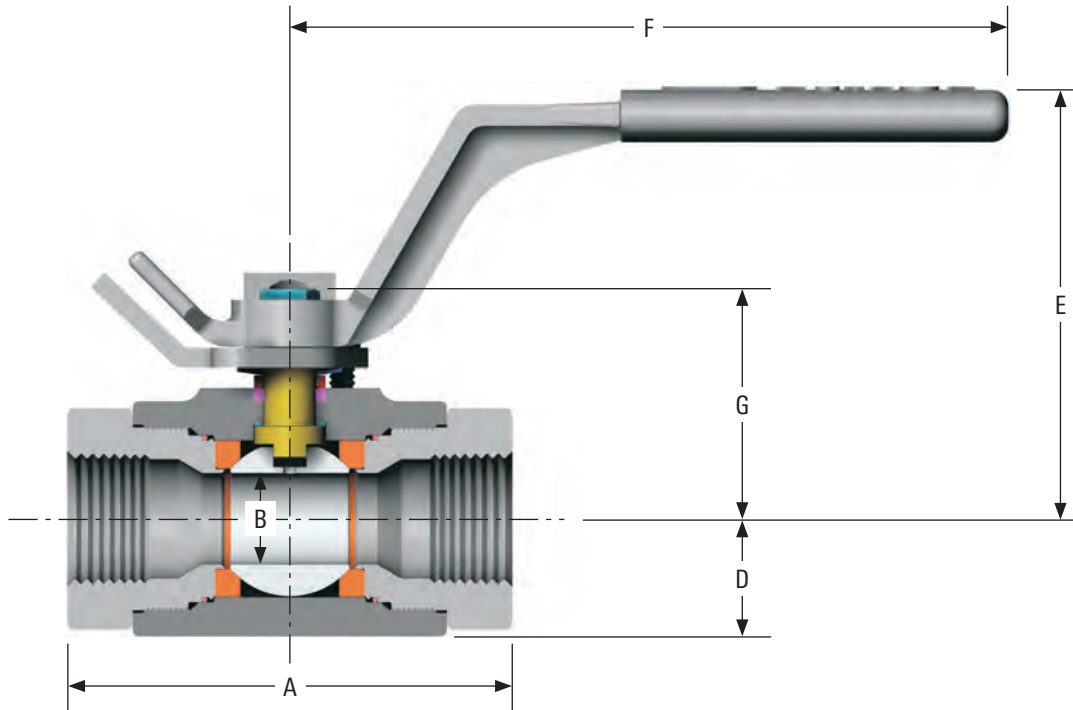
● Minor repair kit.

[†] Only available on sizes 1½-in [38-mm] full-port through 3-in [76-mm] reduced-port valves.

Fire-safe trim offered as standard whenever possible. Consult Cameron for fire-safe trim.

Valve Assemblies and Dimensions Tables

Full-Port Threaded



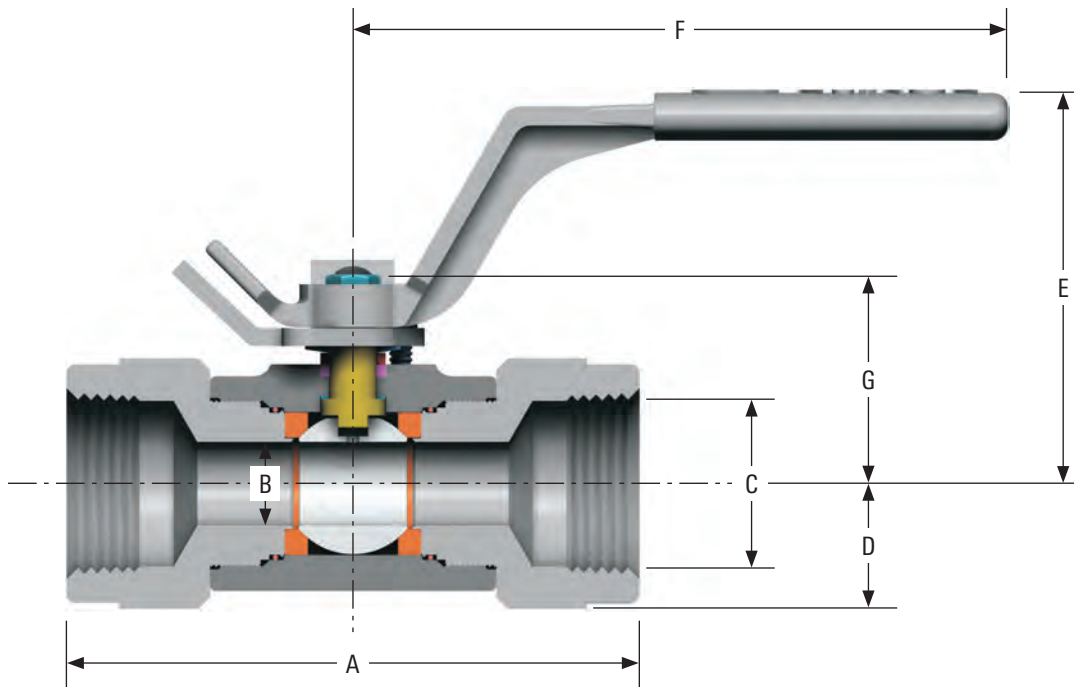
Dimensions

Size, in [mm]	WOG, psi	A	B	D	E	F	G	C _v	Weight, lbm [kg]
¼ [6]	2,000	3.88 [99]	0.50 [13]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	9	2.5 [1.1]
	3,000	3.88 [99]	0.50 [13]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	9	2.5 [1.1]
	4,000	3.88 [99]	0.50 [13]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	9	2.5 [1.1]
	6,000	3.88 [99]	0.50 [13]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	9	2.5 [1.1]
⅜ [10]	2,000	3.88 [99]	0.50 [13]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	9	2.4 [1.1]
	3,000	3.88 [99]	0.50 [13]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	9	2.4 [1.1]
	4,000	3.88 [99]	0.50 [13]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	9	2.4 [1.1]
	6,000	3.88 [99]	0.50 [13]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	9	2.4 [1.1]
½ [13]	2,000	3.88 [99] [†]	0.50 [13]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	26	2.2 [1.0]
	3,000	3.88 [99] [†]	0.50 [13]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	26	2.2 [1.0]
	4,000	3.88 [99] [†]	0.50 [13]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	26	2.2 [1.0]
	6,000	4.38 [111]	0.50 [13]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	26	2.2 [1.0]
¾ [19]	2,000	4.25 [108]	0.88 [22]	1.12 [28]	4.40 [112]	6.75 [171]	2.16 [55]	50	4.8 [2.2]
	3,000	4.25 [108]	0.88 [22]	1.12 [28]	4.40 [112]	6.75 [171]	2.16 [55]	50	4.8 [2.2]
	4,000	4.25 [108]	0.88 [22]	1.12 [28]	4.40 [112]	6.75 [171]	2.16 [55]	50	4.8 [2.2]
	6,000	4.25 [108]	0.88 [22]	1.50 [38]	4.40 [112]	6.75 [171]	2.16 [55]	50	6.5 [2.9]
1½ [38]	2,000	6.25 [159]	1.50 [38]	1.98 [50]	5.62 [143]	11.00 [279]	3.52 [89]	260	18.0 [8.2]
	3,000	6.25 [159]	1.50 [38]	1.98 [50]	5.62 [143]	11.00 [279]	3.52 [89]	260	18.0 [8.2]
	4,000	6.25 [159]	1.50 [38]	1.98 [50]	5.62 [143]	11.00 [279]	3.52 [89]	260	18.0 [8.2]
	6,000	6.25 [159]	1.50 [38]	1.98 [50]	5.62 [143]	11.00 [279]	3.52 [89]	260	18.0 [8.2]
2 [51]	2,000	6.25 [159]	2.00 [51]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	480	30.0 [13.6]
	3,000	6.25 [159]	2.00 [51]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	480	30.0 [13.6]
	4,000	6.25 [159]	2.00 [51]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	480	30.0 [13.6]
	6,000	6.25 [159]	2.00 [51]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	480	30.0 [13.6]
3 [76]	1,000	9.70 [246]	3.00 [76]	3.50 [89]	8.26 [210]	23.88 [607]	5.37 [136]	1,300	67.0 [30.4]
	2,000	9.70 [246]	3.00 [76]	3.50 [89]	8.26 [210]	23.88 [607]	5.37 [136]	1,300	67.0 [30.4]

[†]4.38 in [111 mm] for stainless steel valves.

*"A" dimension to be within ±0.062 in [1.6 mm].

Reduced-Port Threaded

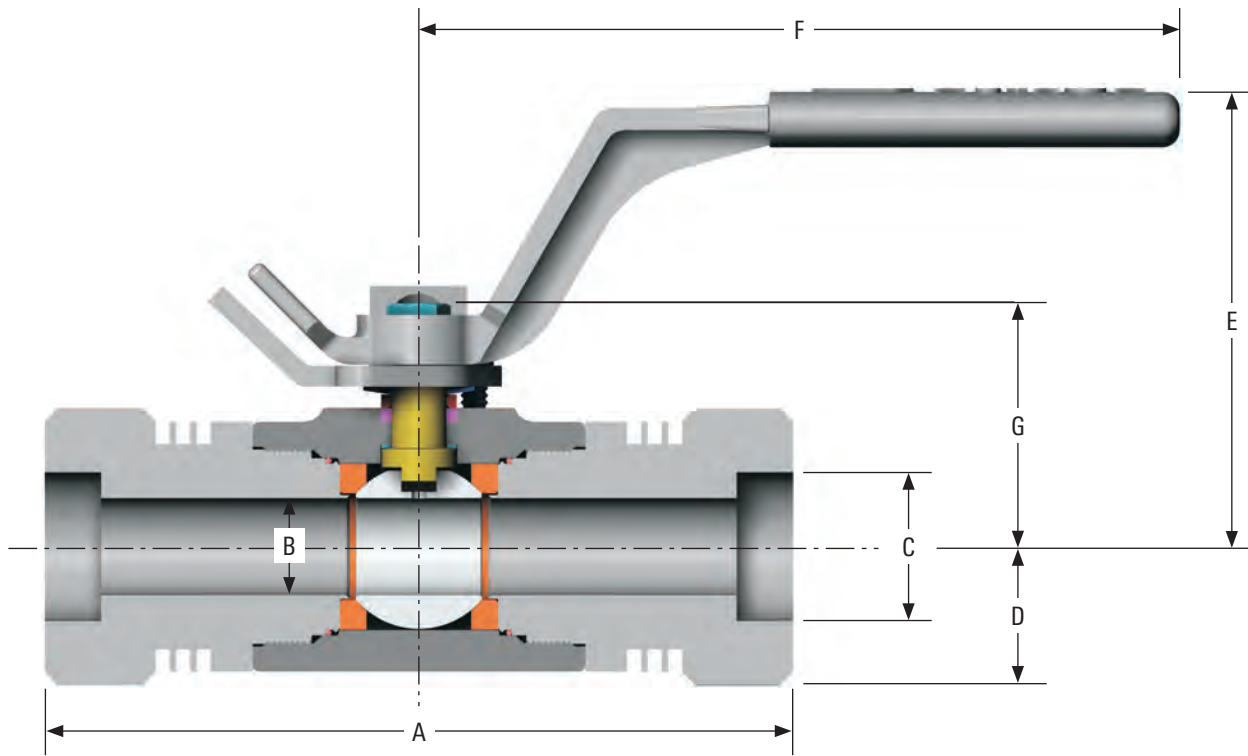


Dimensions

Size, in [mm]	WOG, psi	A	B	C	D	E	F	G	C _v	Weight, lbm [kg]
¾ [19]	2,000	4.38 [111]	0.50 [13]	0.75 [19]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	14	2.5 [1.1]
	3,000	4.38 [111]	0.50 [13]	0.75 [19]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	14	2.5 [1.1]
	4,000	4.38 [111]	0.50 [13]	0.75 [19]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	14	2.5 [1.1]
	6,000	4.38 [111]	0.50 [13]	0.75 [19]	0.82 [21]	3.29 [84]	4.82 [122]	1.73 [44]	14	2.5 [1.1]
1 [25]	2,000	4.25 [108]	0.88 [22]	1.00 [25]	1.12 [28]	4.40 [112]	6.75 [171]	2.16 [55]	35	4.5 [2.0]
	3,000	4.25 [108]	0.88 [22]	1.00 [25]	1.12 [28]	4.40 [112]	6.75 [171]	2.16 [55]	35	4.5 [2.0]
	4,000	4.25 [108]	0.88 [22]	1.00 [25]	1.12 [28]	4.40 [112]	6.75 [171]	2.16 [55]	35	4.5 [2.0]
	6,000	5.25 [133]	0.88 [22]	1.00 [25]	1.50 [38]	4.40 [112]	6.75 [171]	2.16 [55]	35	7.5 [3.4]
1¼ [32]	2,000	6.00 [152]	0.88 [22]	1.25 [32]	1.30 [33]	4.40 [112]	6.75 [171]	2.16 [55]	35	8.0 [3.6]
	3,000	6.00 [152]	0.88 [22]	1.25 [32]	1.30 [33]	4.40 [112]	6.75 [171]	2.16 [55]	35	8.0 [3.6]
2 [51]	2,000	6.25 [159]	1.50 [38]	2.00 [51]	1.98 [50]	5.62 [143]	11.00 [279]	3.52 [89]	100	17.5 [7.9]
	3,000	6.25 [159]	1.50 [38]	2.00 [51]	1.98 [50]	5.62 [143]	11.00 [279]	3.52 [89]	100	17.5 [7.9]
	4,000	6.25 [159]	1.50 [38]	2.00 [51]	1.98 [50]	5.62 [143]	11.00 [279]	3.52 [89]	100	17.5 [7.9]
	6,000	7.25 [184]	1.50 [38]	2.00 [51]	1.98 [50]	5.62 [143]	11.00 [279]	3.52 [89]	100	21.0 [9.5]
3 [76]	2,000	10.0 [254]	2.00 [51]	3.00 [76]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	420	39.0 [17.7]
	3,000	10.0 [254]	2.00 [51]	3.00 [76]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	420	39.0 [17.7]
	4,000	10.0 [254]	2.00 [51]	3.00 [76]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	420	39.0 [17.7]
	6,000	10.0 [254]	2.00 [51]	3.00 [76]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	420	48.0 [21.8]
4 [102]	1,000	9.5 [241]	3.00 [76]	4.00 [102]	3.50 [89]	8.26 [210]	23.88 [607]	5.37 [136]	770	80.0 [36.3]

*"A" dimension to be within ±0.062 in [1.6 mm].

Full-Port Socket Weld and Threaded × Socket Weld



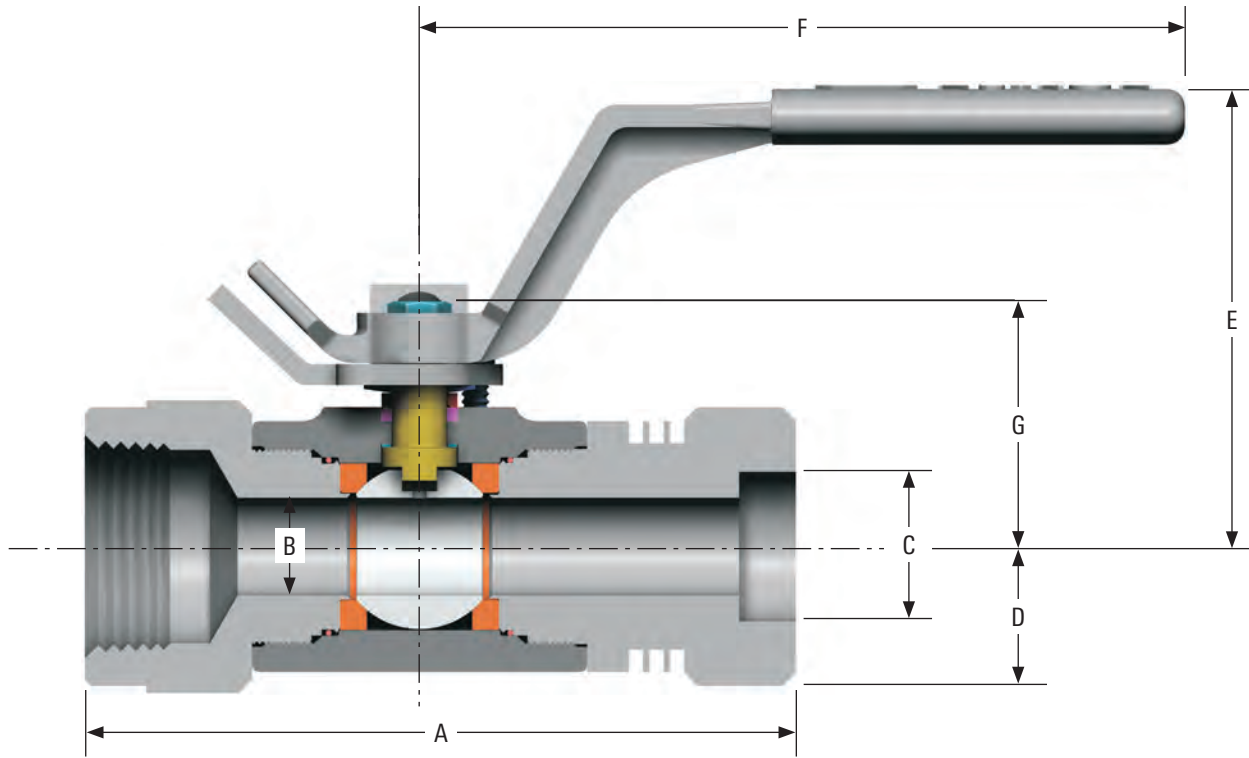
Dimensions

Size, in [mm]	WOG, psi	A		B	C		D	E	F	G	C _v	Weight, lbm [kg]	
		FNPT × SW	SW		FNPT × SW	SW						FNPT × SW	SW
½ [13]	2,000	4.44 [113] [†]	5.00 [127]	0.50 [13]	0.50 [13]	0.86 [22]	0.94 [24]	3.29 [83]	4.82 [122]	1.73 [44]	26	3.5 [1.5]	4.8 [2.1]
	3,000	4.44 [113] [†]	5.00 [127]	0.50 [13]	0.50 [13]	0.86 [22]	0.94 [24]	3.29 [83]	4.82 [122]	1.73 [44]	26	3.5 [1.5]	4.8 [2.1]
	4,000	4.44 [113] [†]	5.00 [127]	0.50 [13]	0.50 [13]	0.86 [22]	0.94 [24]	3.29 [83]	4.82 [122]	1.73 [44]	26	3.5 [1.5]	4.8 [2.1]
	6,000	4.69 [119]	5.00 [127]	0.50 [13]	0.50 [13]	0.86 [22]	0.94 [24]	3.29 [83]	4.82 [122]	1.73 [44]	26	3.5 [1.5]	4.8 [2.1]
¾ [19]	2,000	5.50 [140]	6.75 [171]	0.88 [22]	0.75 [19]	1.07 [27]	1.25 [32]	4.40 [112]	6.75 [172]	2.16 [55]	50	5.7 [2.5]	6.4 [2.9]
	3,000	5.50 [140]	6.75 [171]	0.88 [22]	0.75 [19]	1.07 [27]	1.25 [32]	4.40 [112]	6.75 [172]	2.16 [55]	50	5.7 [2.5]	6.4 [2.9]
	4,000	5.50 [140]	6.75 [171]	0.88 [22]	0.75 [19]	1.07 [27]	1.25 [32]	4.40 [112]	6.75 [172]	2.16 [55]	50	5.7 [2.5]	6.4 [2.9]
	6,000	5.50 [140]	6.75 [171]	0.88 [22]	0.75 [19]	1.07 [27]	1.50 [38]	4.40 [112]	6.75 [172]	2.16 [55]	50	8.6 [3.9]	9.2 [4.1]
1½ [38]	2,000	7.40 [188]	8.54 [217]	1.50 [38]	1.50 [38]	1.92 [49]	2.50 [64]	5.62 [143]	11.00 [279]	3.52 [89]	260	21.9 [9.9]	25.7 [11.6]
	3,000	7.40 [188]	8.54 [217]	1.50 [38]	1.50 [38]	1.92 [49]	2.50 [64]	5.62 [143]	11.00 [279]	3.52 [89]	260	21.9 [9.9]	25.7 [11.6]
	4,000	7.40 [188]	8.54 [217]	1.50 [38]	1.50 [38]	1.92 [49]	2.50 [64]	5.62 [143]	11.00 [279]	3.52 [89]	260	21.9 [9.9]	25.7 [11.6]
	6,000	7.40 [188]	8.54 [217]	1.50 [38]	1.50 [38]	1.92 [49]	2.50 [64]	5.62 [143]	11.00 [279]	3.52 [89]	260	21.9 [9.9]	25.7 [11.6]
2 [51]	2,000	9.50 [241]	12.75 [324]	2.00 [51]	2.00 [51]	2.41 [61]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	480	38.3 [17]	46.5 [21.0]
	3,000	9.50 [241]	12.75 [324]	2.00 [51]	2.00 [51]	2.41 [61]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	480	38.3 [17]	46.5 [21.0]
	4,000	9.50 [241]	12.75 [324]	2.00 [51]	2.00 [51]	2.41 [61]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	480	38.3 [17]	46.5 [21.0]
	6,000	9.50 [241]	12.75 [324]	2.00 [51]	2.00 [51]	2.41 [61]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	480	38.3 [17]	46.5 [21.0]

[†]4.69 in [119 mm] for stainless steel valves.

*"A" dimension to be within ±0.062 in [1.6 mm].

Reduced-Port Socket Weld and Threaded × Socket Weld



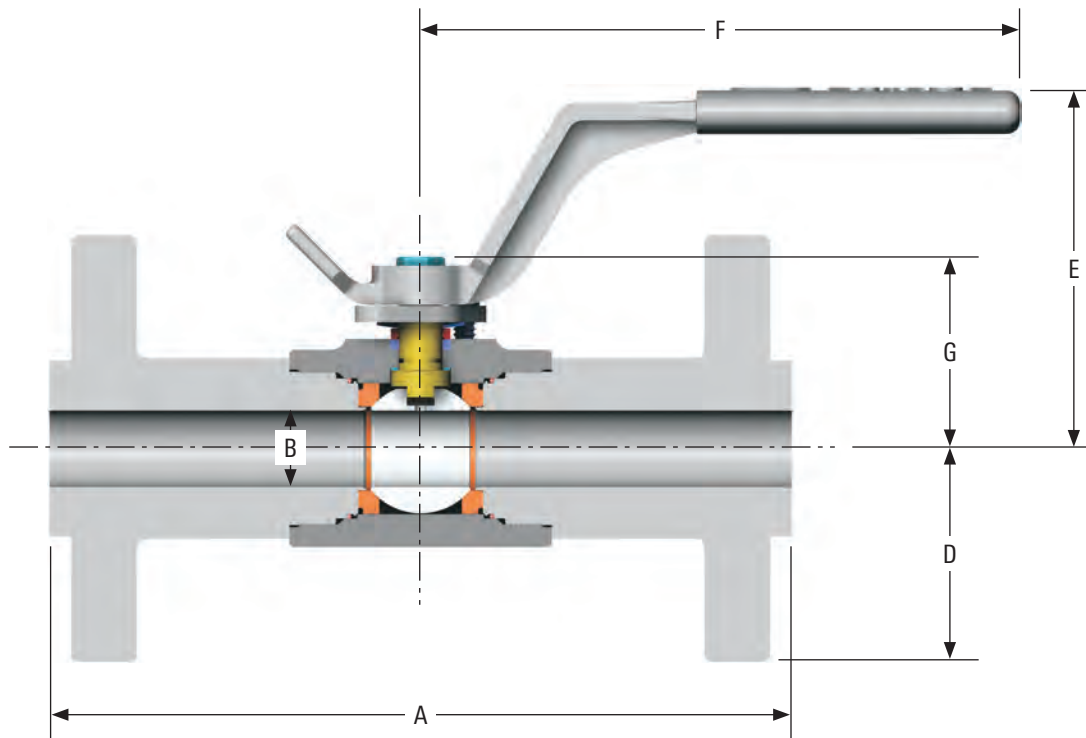
Dimensions

Size, in [mm]	WOG, psi	A		B	C		D	E	F	G	C _v	Weight, lbm [kg]	
		FNPT × SW	SW		FNPT × SW	SW						FNPT × SW	SW
¾ [19]	2,000	5.56 [141]	6.75 [171]	0.50 [13]	0.75 [19]	1.07 [27]	1.19 [30]	3.29 [84]	4.82 [122]	1.73 [44]	14	3.5 [1.6]	4.4 [2.0]
	3,000	5.56 [141]	6.75 [171]	0.50 [13]	0.75 [19]	1.07 [27]	1.19 [30]	3.29 [84]	4.82 [122]	1.73 [44]	14	3.5 [1.6]	4.4 [2.0]
	4,000	5.56 [141]	6.75 [171]	0.50 [13]	0.75 [19]	1.07 [27]	1.19 [30]	3.29 [84]	4.82 [122]	1.73 [44]	14	3.5 [1.6]	4.4 [2.0]
	6,000	5.56 [141]	6.75 [171]	0.50 [13]	0.75 [19]	1.07 [27]	1.19 [30]	3.29 [84]	4.82 [122]	1.73 [44]	14	3.5 [1.6]	4.4 [2.0]
1 [25]	2,000	5.50 [140] [†]	6.75 [171]	0.88 [22]	1.00 [25]	1.34 [34]	1.25 [32]	4.40 [112]	6.75 [171]	2.16 [55]	35	5.4 [2.4]	6.2 [2.8]
	3,000	5.50 [140] [†]	6.75 [171]	0.88 [22]	1.00 [25]	1.34 [34]	1.25 [32]	4.40 [112]	6.75 [171]	2.16 [55]	35	5.4 [2.4]	6.2 [2.8]
	4,000	5.50 [140] [†]	6.75 [171]	0.88 [22]	1.00 [25]	1.34 [34]	1.25 [32]	4.40 [112]	6.75 [171]	2.16 [55]	35	5.4 [2.4]	6.2 [2.8]
	6,000	6.00 [152]	6.75 [171]	0.88 [22]	1.00 [25]	1.34 [34]	1.50 [38]	4.40 [112]	6.75 [171]	2.16 [55]	35	8.3 [3.8]	9.0 [4.1]
2 [51]	2,000	7.40 [188]	8.55 [217]	1.50 [38]	2.00 [51]	2.42 [61]	2.50 [64]	5.62 [143]	11.00 [279]	3.52 [89]	100	22.5 [10.2]	26.0 [11.8]
	3,000	7.40 [188]	8.55 [217]	1.50 [38]	2.00 [51]	2.42 [61]	2.50 [64]	5.62 [143]	11.00 [279]	3.52 [89]	100	22.5 [10.2]	26.0 [11.8]
	4,000	7.40 [188]	8.55 [217]	1.50 [38]	2.00 [51]	2.42 [61]	2.50 [64]	5.62 [143]	11.00 [279]	3.52 [89]	100	22.5 [10.2]	26.0 [11.8]
	6,000	7.90 [201]	8.55 [217]	1.50 [38]	2.00 [51]	2.42 [61]	2.50 [64]	5.62 [143]	11.00 [279]	3.52 [89]	100	22.5 [10.2]	26.0 [11.8]
3 [76]	2,000	11.38 [289]	12.75 [324]	2.00 [51]	3.00 [76]	3.55 [90]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	420	49.0 [22.2]	60.0 [27.2]
	3,000	11.38 [289]	12.75 [324]	2.00 [51]	3.00 [76]	3.55 [90]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	420	49.0 [22.2]	60.0 [27.2]
	4,000	11.38 [289]	12.75 [324]	2.00 [51]	3.00 [76]	3.55 [90]	2.53 [64]	6.96 [177]	11.88 [302]	4.83 [123]	420	49.0 [22.2]	60.0 [27.2]

[†]6 in [152 mm] for stainless steel valves.

*"A" dimension to be within ±0.062 in [1.6 mm].

Full-Port Flanged



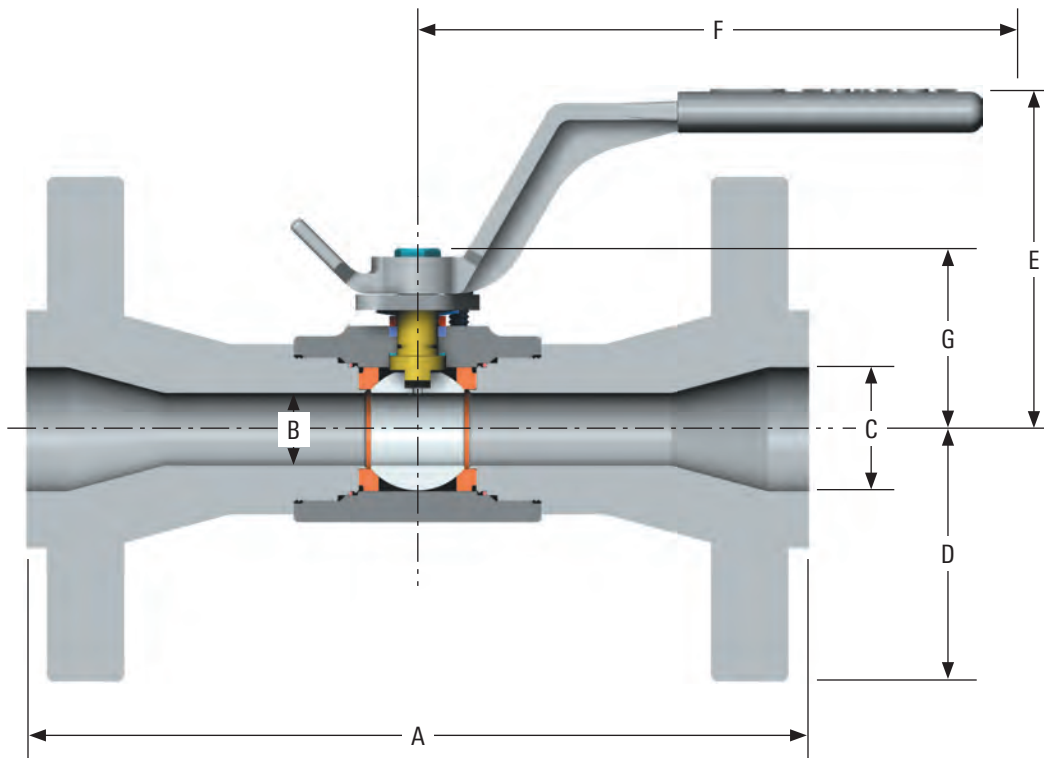
Dimensions

Size, in [mm]	ASME Class [PN]	A		B	D	E	F	G	C _v	Weight, lbm [kg]
		RF	RTJ							
½ [13]	150 [20]	4.25 [108]	–	0.50 [13]	1.75 [44]	3.29 [84]	4.82 [122]	1.73 [44]	26	4.0 [1.8]
	300 [50]	5.50 [140]	5.94 [151]	0.50 [13]	1.87 [47]	3.29 [84]	4.82 [122]	1.73 [44]	26	4.4 [2.0]
	600 [100]	6.50 [165]	6.50 [165]	0.50 [13]	1.87 [47]	3.29 [84]	4.82 [122]	1.73 [44]	26	5.5 [2.5]
	900 or 1500 [150 or 250]	8.50 [216]	8.50 [216]	0.50 [13]	2.37 [60]	5.73 [146]	8.00 [203]	1.73 [44]	26	11.0 [5.0]
	2500 [420]	10.37 [263]	10.37 [264]	0.50 [13]	2.63 [67]	5.73 [146]	8.00 [203]	1.73 [44]	26	17.5 [7.9]
¾ [19]	150 [20]	6.00 [152] [†]	–	0.88 [22]	1.94 [49]	4.40 [112]	6.75 [171]	2.16 [55]	50	10.3 [4.7]
	300 [50]	6.00 [152]	6.50 [165]	0.88 [22]	2.31 [59]	4.40 [112]	6.75 [171]	2.16 [55]	50	10.3 [4.7]
	600 [100]	7.50 [191]	7.50 [191]	0.88 [22]	2.31 [59]	4.40 [112]	6.75 [171]	2.16 [55]	50	13.3 [6.0]
	900 or 1500 [150 or 250]	9.00 [229]	9.00 [229]	0.88 [22]	2.56 [65]	4.40 [112]	6.75 [171]	2.16 [55]	50	16.3 [7.4]
	2500 [420]	10.75 [273]	10.75 [273]	0.88 [22]	2.75 [70]	6.20 [157]	8.12 [206]	2.16 [55]	50	22.8 [10.3]
1½ [38]	150 [20]	6.50 [165]	7.00 [178]	1.50 [38]	2.50 [64]	5.62 [143]	11.00 [279]	3.52 [89]	260	21.0 [9.5]
	300 [50]	7.50 [191]	8.00 [203]	1.50 [38]	3.06 [78]	5.62 [143]	11.00 [279]	3.52 [89]	260	29.0 [13.2]
	600 [100]	9.50 [241]	9.50 [241]	1.50 [38]	3.06 [78]	5.62 [143]	11.00 [279]	3.52 [89]	260	32.5 [14.7]
	900 or 1500 [150 or 250]	12.00 [305]	12.00 [305]	1.50 [38]	3.50 [89]	5.62 [143]	11.00 [279]	3.52 [89]	260	46.0 [20.9]
	2500 [420]	15.12 [384]	15.25 [387]	1.50 [38]	4.00 [102]	5.62 [143]	11.00 [279]	3.52 [89]	260	74.0 [33.6]
2 [51]	150 [20]	7.00 [178]	7.50 [191]	2.00 [51]	3.00 [76]	6.96 [177]	11.88 [302]	4.83 [123]	480	36.2 [16.4]
	300 [50]	8.50 [216]	9.12 [232]	2.00 [51]	3.25 [83]	6.96 [177]	11.88 [302]	4.83 [123]	480	43.3 [19.6]
	600 [100]	11.50 [292]	11.62 [295]	2.00 [51]	3.25 [83]	6.96 [177]	11.88 [302]	4.83 [123]	480	51.5 [23.4]
	900 or 1500 [150 or 250]	14.50 [368]	14.62 [371]	2.00 [51]	4.25 [108]	6.96 [177]	11.88 [302]	4.83 [123]	480	81.0 [36.7]
	2500 [420]	17.75 [451]	17.87 [454]	2.00 [51]	4.62 [117]	6.96 [177]	11.88 [302]	4.83 [123]	480	121.0 [54.9]
3 [76]	150 [20]	8.00 [203]	8.50 [216]	3.00 [76]	3.75 [95]	8.26 [210]	23.89 [607]	5.37 [136]	1,300	58.0 [26.3]
	300 [50]	11.12 [282]	11.75 [298]	3.00 [76]	4.12 [105]	8.26 [210]	23.89 [607]	5.37 [136]	1,300	77.5 [35.2]

Nonstandard length.

[†]"A" dimension to be within ±0.062 in [1.6 mm].

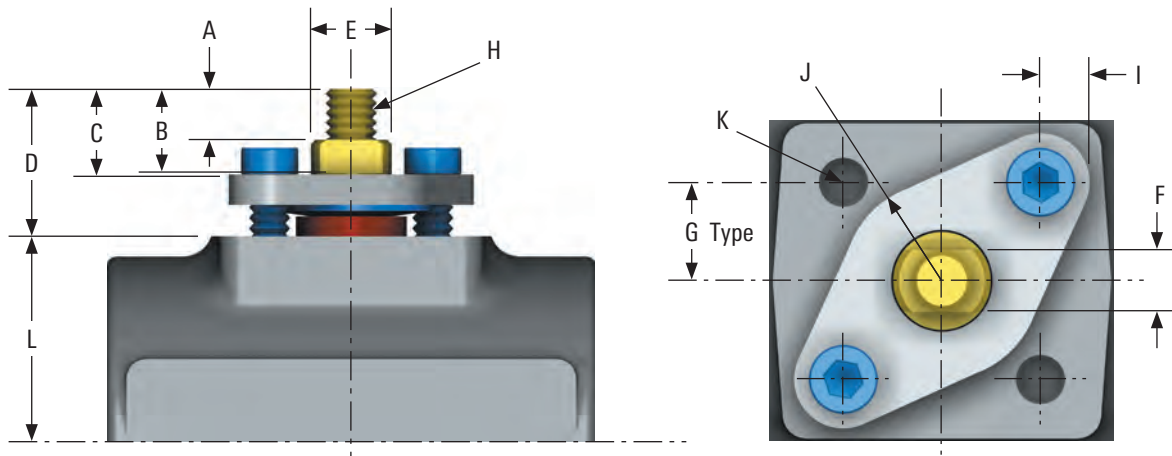
Reduced-Port Flanged



Dimensions											
Size, in [mm]	ASME Class [PN]	A		B	C	D	E	F	G	C _v	Weight, lbm [kg]
		RF	RTJ								
¾ [19]	150 [20]	4.63 [118]	—	0.50 [13]	0.75 [19]	1.94 [49]	3.29 [84]	4.82 [122]	1.73 [44]	14	5.0 [2.3]
	300 [50]	6.00 [152]	6.50 [165]	0.50 [13]	0.75 [19]	2.31 [59]	3.29 [84]	4.82 [122]	1.73 [44]	14	7.0 [3.2]
	600 [100]	7.50 [191]	7.50 [191]	0.50 [13]	0.75 [19]	2.31 [59]	3.29 [84]	4.82 [122]	1.73 [44]	14	9.0 [4.1]
	900 or 1500 [150 or 250]	9.00 [229]	9.00 [229]	0.50 [13]	0.75 [19]	2.56 [65]	5.73 [146]	8.00 [203]	1.73 [44]	14	14.0 [6.4]
	2500 [420]	10.75 [273]	10.75 [273]	0.50 [13]	0.75 [19]	2.75 [70]	5.73 [146]	8.00 [203]	1.73 [44]	14	20.5 [9.3]
1 [25]	150 [20]	5.00 [127]	5.50 [140]	0.88 [22]	1.00 [25]	2.12 [54]	4.40 [112]	6.75 [171]	2.16 [55]	35	8.0 [3.6]
	300 [50]	6.50 [165]	7.00 [178]	0.88 [22]	1.00 [25]	2.44 [62]	4.40 [112]	6.75 [171]	2.16 [55]	35	11.5 [5.2]
	600 [100]	8.50 [216]	8.50 [216]	0.88 [22]	1.00 [25]	2.44 [62]	4.40 [112]	6.75 [171]	2.16 [55]	35	13.8 [6.3]
	900 or 1500 [150 or 250]	10.00 [254]	10.00 [254]	0.88 [22]	1.00 [25]	2.94 [75]	4.40 [112]	6.75 [171]	2.16 [55]	35	23.0 [10.4]
	2500 [420]	12.12 [308]	12.12 [308]	0.88 [22]	1.00 [25]	3.13 [80]	6.20 [157]	8.12 [206]	2.16 [55]	35	32.0 [14.5]
2 [51]	150 [20]	7.00 [178]	7.50 [191]	1.50 [38]	2.00 [51]	3.00 [76]	5.62 [143]	11.00 [279]	3.52 [89]	100	27.0 [12.2]
	300 [50]	8.50 [216]	9.12 [232]	1.50 [38]	2.00 [51]	3.25 [83]	5.62 [143]	11.00 [279]	3.52 [89]	100	32.0 [14.5]
	600 [100]	11.50 [292]	11.62 [295]	1.50 [38]	2.00 [51]	3.25 [83]	5.62 [143]	11.00 [279]	3.52 [89]	100	38.0 [17.2]
	900 or 1500 [150 or 250]	14.50 [368]	14.62 [371]	1.50 [38]	2.00 [51]	4.25 [108]	5.62 [143]	11.00 [279]	3.52 [89]	100	72.0 [32.7]
	2500 [420]	17.75 [451]	17.87 [454]	1.50 [38]	2.00 [51]	4.62 [117]	5.62 [143]	11.00 [279]	3.52 [89]	100	107.5 [48.8]
3 [76]	150 [20]	8.00 [203]	8.50 [216]	2.00 [51]	3.00 [76]	3.75 [95]	6.96 [177]	11.88 [302]	4.83 [123]	420	50.0 [22.7]
	300 [50]	11.12 [282]	11.75 [298]	2.00 [51]	3.00 [76]	4.12 [105]	6.96 [177]	11.88 [302]	4.83 [123]	420	63.2 [28.7]
	600 [100]	14.00 [356]	14.12 [359]	2.00 [51]	3.00 [76]	4.12 [105]	6.96 [177]	11.88 [302]	4.83 [123]	420	76.0 [34.5]
	900 [150]	15.00 [381]	15.12 [384]	2.00 [51]	3.00 [76]	4.75 [121]	6.96 [177]	11.88 [302]	4.83 [123]	420	97.0 [44.0]
	1500 [250]	18.50 [470]	18.62 [473]	2.00 [51]	3.00 [76]	5.25 [133]	6.96 [177]	11.88 [302]	4.83 [123]	420	134.0 [60.8]
	2500 [420]	22.75 [578]	23.00 [584]	2.00 [51]	3.00 [76]	6.00 [152]	7.77 [197]	23.89 [607]	4.83 [123]	420	223.0 [101.2]
4 [102]	150 [20]	9.00 [229]	9.50 [241]	3.00 [76]	4.00 [102]	4.50 [114]	8.26 [210]	23.89 [607]	5.37 [136]	770	72.5 [32.9]
	300 [50]	12.00 [305]	12.63 [321]	3.00 [76]	4.00 [102]	5.00 [127]	8.26 [210]	23.89 [607]	5.37 [136]	770	99.0 [44.9]

*"A" dimension to be within ±0.062 in [1.6 mm].

Actuator Mounting Dimensions



Dimensions

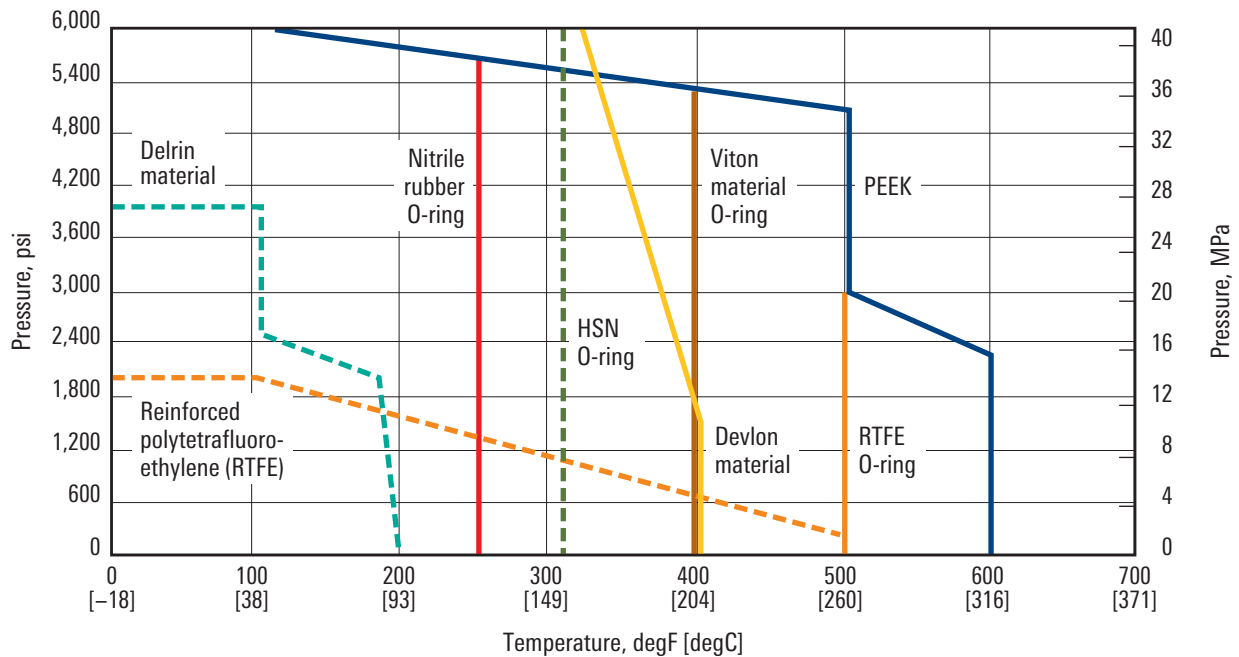
Size, in [mm]	A	B	C	D	E	F	G	H	I	J	K	L
¼ [6] FP	0.300 [7.6]	0.440 [11.2]	0.500 [12.7]	0.725 [18.4]	0.464 [11.8]	0.253 [6.4]	0.468 [11.9]	0.250-20 UNC [6.35-20 UNC]	0.23 [5.8]	0.50 [12.7]	#10-32 UNF-2B × 0.31 DP [#10-32 UNF-2B × 7.9 DP]	1.002 [25.5]
⅜ [10] FP	0.300 [7.6]	0.440 [11.2]	0.500 [12.7]	0.725 [18.4]	0.464 [11.8]	0.253 [6.4]	0.468 [11.9]	0.250-20 UNC [6.35-20 UNC]	0.23 [5.8]	0.50 [12.7]	#10-32 UNF-2B × 0.31 DP [#10-32 UNF-2B × 7.9 DP]	1.002 [25.5]
½ [13] FP and ¾ [19] RP	0.300 [7.6]	0.440 [11.2]	0.500 [12.7]	0.725 [18.4]	0.464 [11.8]	0.253 [6.4]	0.468 [11.9]	0.250-20 UNC [6.35-20 UNC]	0.23 [5.8]	0.50 [12.7]	#10-32 UNF-2B × 0.31 DP [#10-32 UNF-2B × 7.9 DP]	1.002 [25.5]
¾ [19] FP and 1 [25] RP	0.312 [7.9]	0.515 [13.1]	0.560 [14.2]	0.905 [23.0]	0.496 [12.6]	0.314 [8.0]	0.498 [12.6]	0.312-18 UNC [7.92-18 UNC]	0.25 [6.4]	0.50 [12.7]	0.25-28 UNF-2B × 0.30 DP [6.35-28 UNF-2B × 7.6 DP]	1.250 [31.8]
1½ [38] FP and 2 [51] RP [†]	0.475 [12.1]	0.826 [21.0]	0.900 [22.9]	1.270 [32.3]	0.749 [19.0]	0.441 [11.2]	0.737 [18.7]	0.438-14 UNC [11.1-14 UNC]	0.40 [10.2]	0.75 [19.1]	0.312-24 UNF-2B × 0.437 DP [7.92-24 UNF-2B × 11.1 DP]	2.250 [57.2]
2 [51] FP and 3 [76] RP [‡]	0.690 [17.5]	1.180 [30.0]	1.225 [31.1]	1.821 [46.3]	1.000 [25.4]	0.628 [16.0]	0.875 [22.2]	0.625-11 UNC [15.9-11 UNC]	0.41 [10.4]	1.00 [25.4]	0.375-24 UNF-2B × 0.50 DP [9.53-24 UNF-2B × 12.7 DP]	3.000 [76.2]
3 [76] FP and 4 [102] RP [§]	0.690 [17.5]	1.180 [30.0]	1.225 [31.1]	1.821 [46.3]	1.000 [25.4]	0.628 [16.0]	0.875 [22.2]	0.625-11 UNC [15.9-11 UNC]	0.41 [10.4]	1.00 [25.4]	0.375-24 UNF-2B × 0.50 DP [9.53-24 UNF-2B × 12.7 DP]	3.500 [88.9]

[†] Applies to B3 1½-in [38-mm] full port and 2-in [51-mm] reduced port ASME Classes 600, 900, and 1500 valves.

[‡] Applies to B3 2-in [51-mm] full port and 3-in [76-mm] reduced port ASME Classes 600, 900, and 1500 valves.

[§] Applies to B3 3-in [76-mm] full port and 4-in [102-mm] reduced port ASME Classes 150 and 300 valves.

Pressure and Temperature Ratings (Seats and Seals)



Consult ASME B16.34 for body and adapter material pressure and temperature ratings.

Breakaway Torque Data

Torque, in.lbf													
Bore size, in [DN]	ASME Class [PN]	–	150 [20]	300 [50]	–	600 [100]	–	900 [150]	–	1500 [250]	–	–	2500 [420]
	Pressure, psi	0	285	740	1,000	1,480	2,000	2,220	3,000	3,705	4,000	5,000	6,000
Seat Material													
½ [13]	PEEK	72	84	96	108	120	132	144	156	180	192	216	240
	Devlon material	72	84	96	108	120	132	144	156	180	192	216	240
	Delrin material	60	72	84	96	108	120	132	144	168	180	–	–
	Teflon material	60	72	84	96	108	120	–	–	–	–	–	–
¾ [22]	PEEK	276	276	276	276	276	300	324	360	420	444	540	660
	Devlon material	96	108	120	132	144	156	168	180	192	204	240	300
	Delrin material	96	108	120	132	144	156	168	180	192	204	–	–
	Teflon material	96	108	120	132	144	156	–	–	–	–	–	–
1½ [38]	PEEK	600	648	696	744	792	840	864	936	1,020	1,080	1,200	1,500
	Devlon material	360	420	480	576	660	720	792	900	960	1,020	1,080	1,260
	Delrin material	336	396	480	576	660	720	792	900	960	1,020	–	–
	Teflon material	336	360	396	420	456	504	–	–	–	–	–	–
2 [51]	PEEK	840	1,080	1,440	1,680	1,920	2,100	2,280	2,700	3,120	3,300	3,600	4,200
	Devlon material	600	720	900	1,080	1,200	1,500	1,680	1,920	2,160	2,400	2,400	2,880
	Delrin material	600	720	900	1,080	1,320	1,560	1,740	2,040	2,280	2,520	–	–
	Teflon material	600	636	816	936	1,128	1,344	–	–	–	–	–	–
3 [76]	PEEK	960	1,440	2,760	3,840	4,800	5,760	6,480	7,200	8,400	9,000	–	–
	Devlon material	720	1,200	1,920	2,400	2,880	3,360	3,600	4,080	4,800	5,760	–	–
	Delrin material	840	1,380	2,280	2,640	3,000	3,600	3,900	4,200	4,800	5,760	–	–
	Teflon material	720	1,320	1,920	2,400	2,880	3,600	–	–	–	–	–	–
4 [102]	PEEK	1,440	2,400	3,840	–	–	–	–	–	–	–	–	–
	Devlon material	1,200	2,040	3,120	–	–	–	–	–	–	–	–	–
	Teflon material	1,080	1,944	2,820	–	–	–	–	–	–	–	–	–

Torque values shown are to be used as a guide for actuator selection. All above torque values are based upon clean liquid service. Additional factors such as media characteristics, number of cycles, and temperature may require an additional safety factor. Please contact Cameron for these factors.

NUTRON Model T3 Ball Valves



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