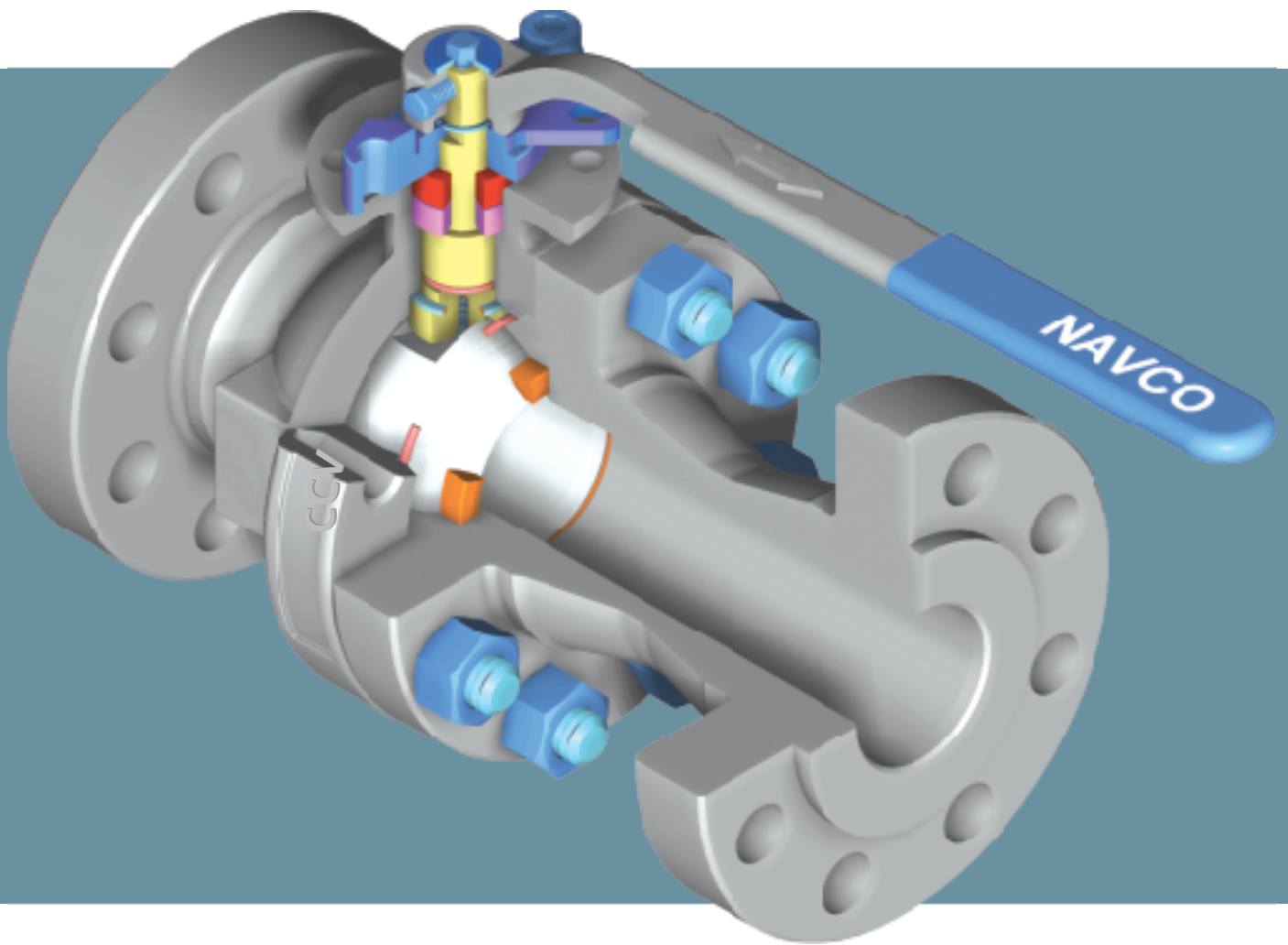


# Model B2 Cast Steel Flanged Floating Ball Valves



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FLOATING BALL VALVES**

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## MODEL B2 CAST STEEL FLANGED FLOATING BALL VALVES

### SIZES AND PRESSURE RATINGS

- Full Port sizes 1 1/2 in. through 8 in. (40 mm through 200 mm)
- Reduced Port sizes 2 in. through 10 in. (50 mm through 250 mm)
- ASME Class 150 through 600 (PN 20 through 100)

### MATERIALS AND ACTUATION

- Materials: Carbon Steel, Stainless Steel
- Operator: Manual Lever Handle. Optional Gear Operator for 6 in. (150 mm) and larger sizes
- Actuation: Consult Cooper Cameron Valves - NUTRON Sales Department for information on various types of actuators

### COMPLIANCE TO STANDARDS AND SPECIFICATIONS:

- ISO 9001-2000: Registered Quality System
- CE Mark Number 0879
- ASME B16.34
- API 598, 607 4th Edition (Fire Safe)
- NACE MR0175 (Rev. 2002)
- CSA Z245.15 Steel Valves
- ASME Section VIII Division 1 Boiler and Pressure Vessel Code
- Canadian Registration Number (CRN)

## MODEL B2 CAST STEEL FLANGED FLOATING BALL VALVES STANDARD FEATURES

### MODEL B2

#### ISO ACTUATOR MOUNTING PAD

Provides for easy installation of actuators and accessories, gear operators and locking device. Bolting Pad as per ISO 5211 and MSS-SP 101.

STAINLESS STEEL TRIM IS INCORPORATED AS STANDARD.  
FIRE SAFE QUALIFIED TO API 607 4th EDITION.

#### STEM

Valve incorporates blow out proof stem. Anti static. Adjustable graphite packing.

#### THRUST WASHER

Lowers turning torque.

#### ANTI STATIC SPRING

#### BALL

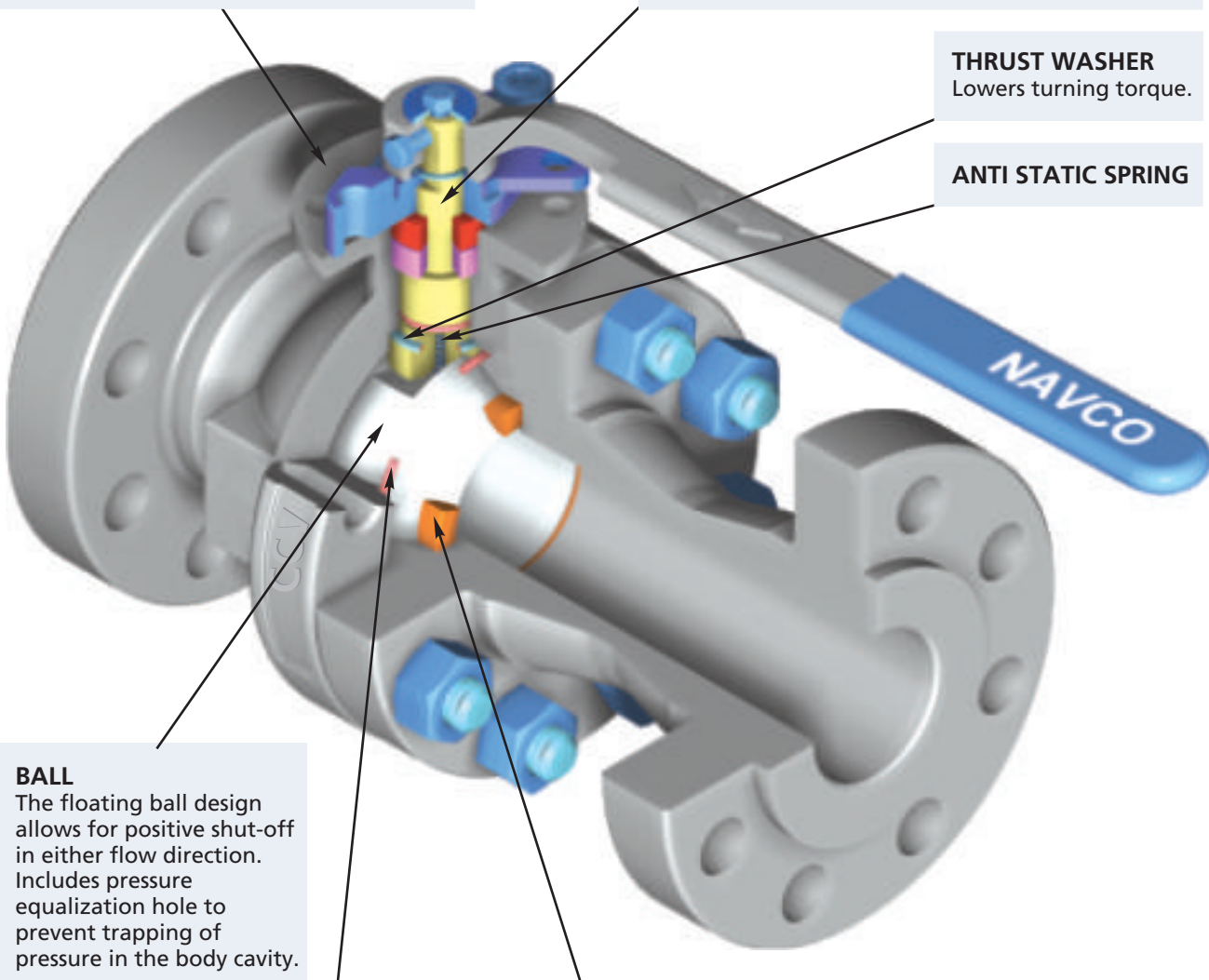
The floating ball design allows for positive shut-off in either flow direction. Includes pressure equalization hole to prevent trapping of pressure in the body cavity.

#### SEALS

Viton or HSN O-ring as primary body seal.

#### SEAT

Large cross section of the seating surface provides long life and low turning torque. The seat design allows for shut off at both low and high pressures. Materials available are PTFE and Nylon.

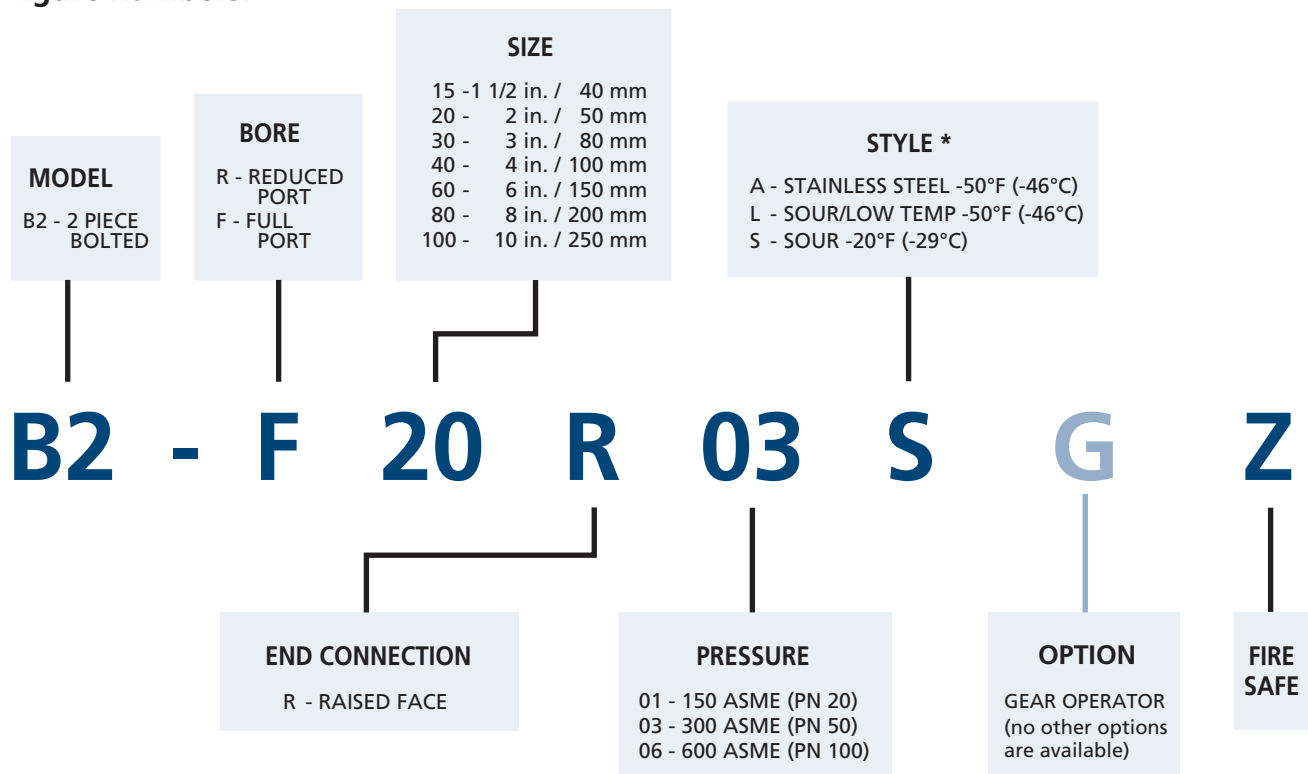


## MODEL B2 CAST STEEL FLANGED FLOATING BALL VALVES SIZES AVAILABLE

ASME CLASS (PN)		150 (20)	300 (50)	600 (100)
B2- Full Port (DN)	in. (mm)	1 1/2 thru 8 (40 thru 200)	1 1/2 thru 8 (40 thru 200)	1 1/2 thru 4 in. (40 thru 100)
B2 - Reduced Port (DN)		2 thru 10 (50 thru 250)	2 thru 10 (50 thru 250)	2 thru 6 (50 thru 150)

## ORDERING INFORMATION

How to develop  
figure numbers:

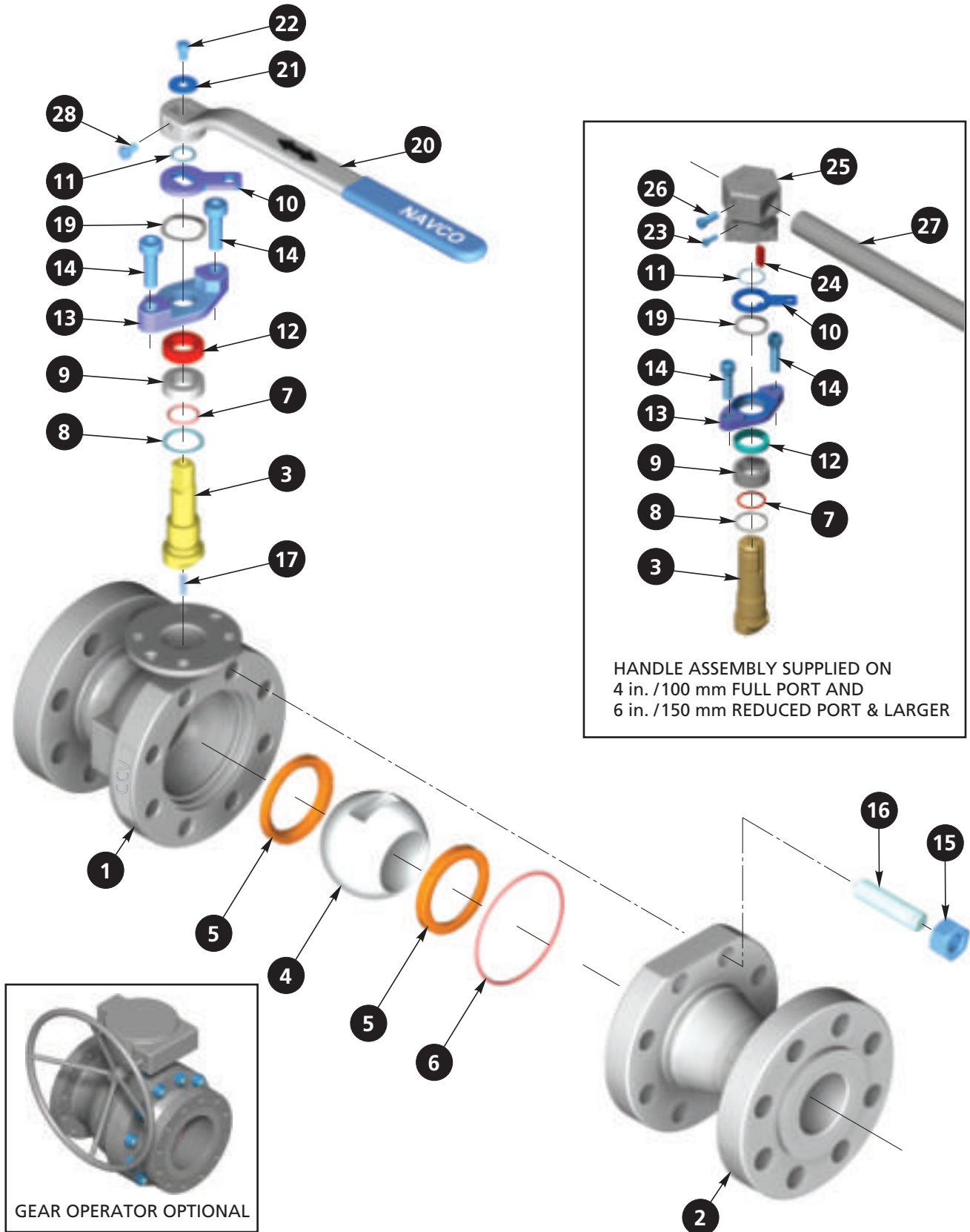


### Examples:

- B2-F20R03SZ = Model B2, Full Port, 2 in. /50 mm, Raised Face, ASME 300 (PN 50), Sour Style Valve. Fire Safe Qualified to API 607 4th Edition.
- B2-R60R06LZ = Model B2, Reduced Port, 6 in. /150 mm, Raised Face, ASME 600 (PN 100), Sour/Low Temp Style Valve. Fire Safe Qualified to API 607 4th Edition.

\* Consult Cameron, Valves & Measurement - NUTRON Sales Department for detailed valve style descriptions and actuation packages or for a particular special valve service application.

**MODEL B2 CAST STEEL FLANGED FLOATING BALL VALVES  
VALVE DETAILS**



## MODEL B2 CAST STEEL FLANGED FLOATING BALL VALVES MATERIALS LIST

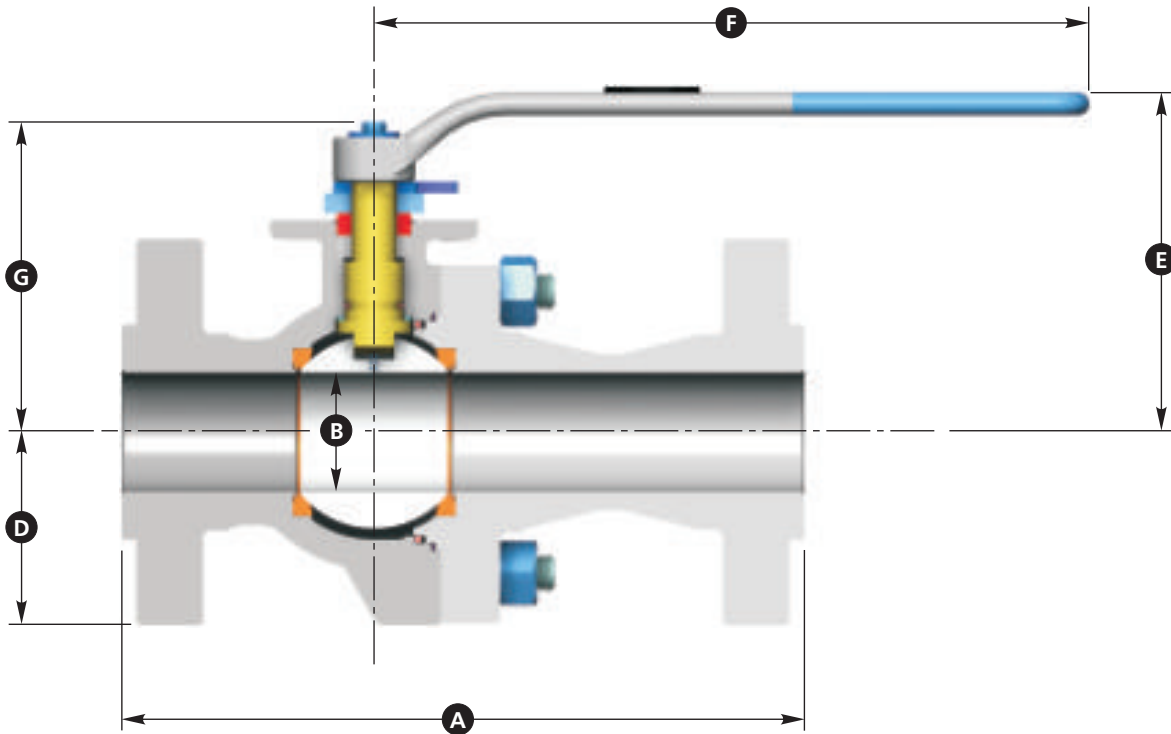
ITEM	PART	ASME CLASS*	SOUR	SOUR & LOW TEMP
1	Body	150, 300 & 600	ASTM A216 Gr. WCC	ASTM A352 Gr. LCC
2	Adapter	150, 300 & 600	ASTM A216 Gr. WCC	ASTM A352 Gr. LCC
■ 3	Stem	150, 300 & 600	ASTM A564 17-4 PH H1150	ASTM A564 17-4 PH H1150
■ 4	Ball	150, 300 & 600	ASTM A351 Gr. CF8	ASTM A351 Gr. CF8
■● 5	Seat	150 & 300 600	PTFE** Nylon	PTFE** Nylon
■● 6	Body O-Ring	150, 300 & 600	Viton	HSN
■● 7	Stem O-Ring	150, 300 & 600	Viton	HSN
■● 8	Thrust Bearing	150, 300 & 600	Teflon	Teflon
■● 9	Packing Ring	150, 300 & 600	Graphite	Graphite
10	Stop Plate	150, 300 & 600	Carbon Steel	Carbon Steel
11	Retaining Ring	150, 300 & 600	Carbon Steel	Carbon Steel
12	Packing Follower	150, 300 & 600	Stainless Steel	Stainless Steel
13	Packing Gland	150, 300 & 600	Stainless Steel	Stainless Steel
14	Socket Head Cap Screw	150, 300 & 600	Stainless Steel	Stainless Steel
15	Nut	150, 300 & 600	ASTM A194 Gr. 2HM	ASTM A194 Gr. L7M
16	Stud	150, 300 & 600	ASTM A193 B7M	ASTM A320 L7M
■ 17	Spring (Anti-Static)	150, 300 & 600	Inconel X-750	Inconel X-750
19	Wave Spring Washer	150, 300 & 600	Carbon Steel	Carbon Steel
20	Handle	150, 300 & 600	Ductile Iron	Ductile Iron
21	Washer	150, 300 & 600	Carbon Steel	Carbon Steel
22	Screw	150, 300 & 600	Carbon Steel	Carbon Steel
23	Socket Head Cap Screw	150, 300 & 600	Carbon Steel	Carbon Steel
24	Key	150, 300 & 600	Carbon Steel	Carbon Steel
25	Cast Handle Hub	150, 300 & 600	Carbon Steel	Carbon Steel
26	Screw	150, 300 & 600	Carbon Steel	Carbon Steel
27	Handle	150, 300 & 600	Carbon Steel	Carbon Steel
28	Screw	150, 300 & 600	Carbon Steel	Carbon Steel

ITEM	PART	ASME CLASS*	STAINLESS STEEL
1	Body	150, 300 & 600	ASTM A351 Gr. CF8M
2	Adapter	150, 300 & 600	ASTM A351 Gr. CF8M
■ 3	Stem	150, 300 & 600	ASTM A564 17-4 PH H1150 CW Nitriding
■ 4	Ball	150, 300 & 600	ASTM A351 Gr. CF8
■● 5	Seat	150 & 300 600	PTFE** Nylon
■● 6	Body O-Ring	150, 300 & 600	HSN
■● 7	Stem O-Ring	150, 300 & 600	HSN
■● 8	Thrust Bearing	150, 300 & 600	Teflon
■● 9	Packing Ring	150, 300 & 600	Graphite
10	Stop Plate	150, 300 & 600	Stainless Steel
11	Retaining Ring	150, 300 & 600	Stainless Steel
12	Packing Follower	150, 300 & 600	Stainless Steel
13	Packing Gland	150, 300 & 600	Stainless Steel
14	Socket Head Cap Screw	150, 300 & 600	Stainless Steel
15	Nut	150, 300 & 600	ASTM A453 Gr. 660
16	Stud	150, 300 & 600	ASTM A453 Gr. 660
■ 17	Spring (Anti-Static)	150, 300 & 600	Inconel X-750
19	Wave Spring Washer	150, 300 & 600	Stainless Steel
20	Handle	150, 300 & 600	Stainless Steel
21	Washer	150, 300 & 600	Stainless Steel
22	Screw	150, 300 & 600	Stainless Steel
23	Socket Head Cap Screw	150, 300 & 600	Stainless Steel
24	Key	150, 300 & 600	Stainless Steel
25	Cast Handle Hub	150, 300 & 600	Stainless Steel
26	Screw	150, 300 & 600	Stainless Steel
27	Handle	150, 300 & 600	Stainless Steel
28	Screw	150, 300 & 600	Stainless Steel

- Major repair kit. \* PN 20, 50 & 100 is equivalent to ASME CLASS 150, 300 & 600.
- Minor repair kit. \*\* 6 in. (150 DN), 8 in. (200 DN) Full Port and 8 in. (200 DN), 10 in. (250 DN) Reduced Port ASME 300 use Nylon Seats.

Cameron, Valves & Measurement reserves the right to substitute materials listed above with alternative material approved for designated service.

## MODEL B2 CAST STEEL FLANGED FLOATING BALL VALVES FULL PORT



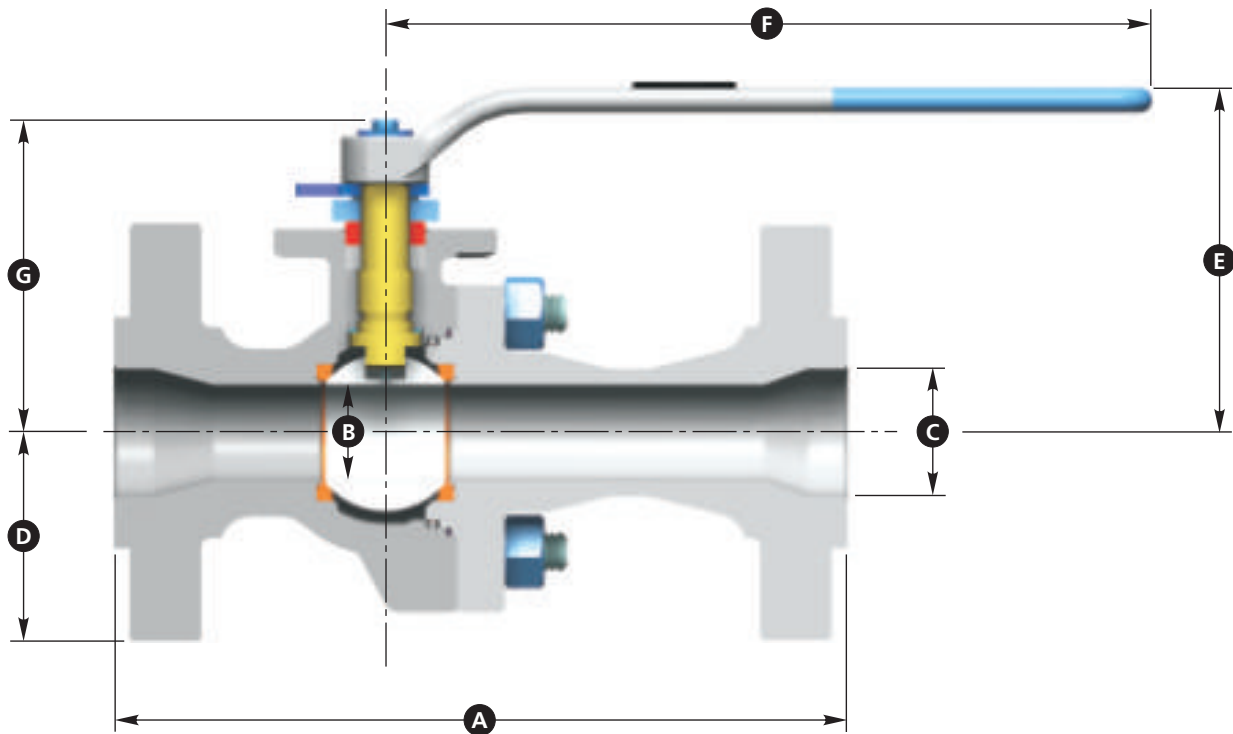
### DIMENSIONS inches (mm)

NPS in. (DN)	ASME CLASS (PN)	A RF	B	D	E	F	G	C <sub>v</sub>	(K <sub>v</sub> )	WEIGHT lb. (kg)
1 1/2 (40)	150 (20)	6.50 (165)	1.50 (38)	2.50 (64)	5.50 (140)	12.00 (305)	5.00 (127)	260	(0.225)	21 (9.5)
	300 (50)	7.50 (191)	1.50 (38)	3.06 (78)	5.50 (140)	12.00 (305)	5.00 (127)	209	(0.181)	28 (12.7)
	600 (100)	9.50 (241)	1.50 (38)	3.06 (78)	5.50 (140)	12.00 (305)	5.00 (127)	225	(0.195)	37 (16.8)
2 (50)	150 (20)	7.00 (178)	2.00 (51)	3.00 (76)	5.88 (149)	12.00 (305)	5.25 (133)	442	(0.382)	29 (13.2)
	300 (50)	8.50 (216)	2.00 (51)	3.25 (83)	5.88 (149)	12.00 (305)	5.25 (133)	454	(0.393)	41 (18.6)
	600 (100)	11.50 (292)	2.00 (51)	3.25 (83)	5.88 (149)	12.00 (305)	5.25 (133)	302	(0.261)	50 (22.7)
3 (80)	150 (20)	8.00 (203)	3.00 (76)	3.75 (95)	8.00 (203)	20.00 (508)	6.68 (170)	1363	(1.179)	63 (28.6)
	300 (50)	11.12 (283)	3.00 (76)	4.12 (105)	8.00 (203)	20.00 (508)	6.68 (170)	1197	(1.035)	83 (37.7)
	600 (100)	14.00 (356)	3.00 (76)	4.12 (105)	8.00 (203)	20.00 (508)	6.68 (170)	1072	(0.927)	97 (44.0)
4 (100)	150 (20)	9.00 (229)	4.00 (102)	4.50 (114)	11.88 (302)	22.50 (572)	N/A	2452	(2.12)	96 (43.5)
	300 (50)	12.00 (305)	4.00 (102)	5.00 (127)	11.88 (302)	22.50 (572)	N/A	2323	(2.01)	135 (61.2)
	600 (100)	17.00 (432)	4.00 (102)	5.38 (137)	11.88 (302)	34.50 (876)	N/A	1729	(1.50)	180 (81.6)
6 (150)	150 (20)	15.50 (394)	6.00 (152)	5.50 (140)	15.25 (387)	46.50 (1181)	N/A	4700	(4.07)	204 (92.5)
	300 (50)	15.88 (403)	6.00 (152)	6.25 (159)	15.25 (387)	70.50 (1790)	N/A	5483	(4.74)	250 (113.4)
8 (200)	150 (20)	18.00 (457)	8.00 (203)	6.75 (171)	N/A	N/A	13.47 (342)	10206	(8.83)	355 (161.0)
	300 (50)	19.75 (502)	8.00 (203)	7.50 (191)	N/A	N/A	13.47 (342)	8333	(7.21)	435 (197.3)

NOTE: " A " dimension to be within  $\pm 0.060$  in. /2 mm.



## MODEL B2 CAST STEEL FLANGED FLOATING BALL VALVES REDUCED PORT



### DIMENSIONS inches (mm)

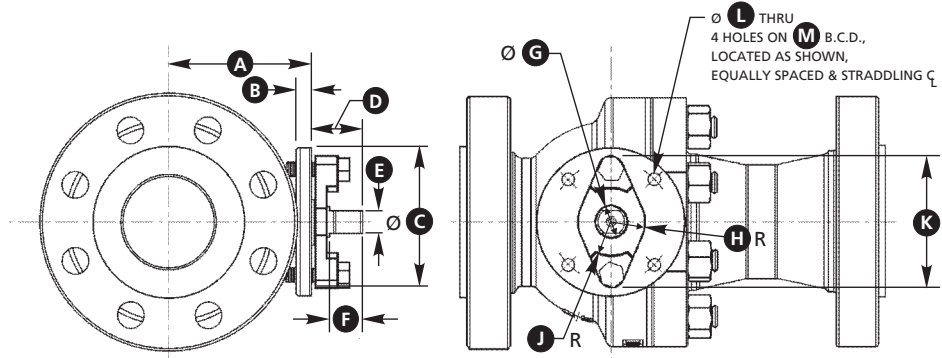
NPS in. (DN)	ASME CLASS (PN)	A RF	B	C	D	E	F	G	C <sub>v</sub>	(K <sub>v</sub> )	WEIGHT lb. (kg)
2 (50)	150 (20)	7.00 (178)	1.50 (38)	2.00 (51)	3.00 (76)	5.50 (140)	12.00 (305)	5.00 (127)	185	(0.160)	25 (11.3)
	300 (50)	8.50 (216)	1.50 (38)	2.00 (51)	3.25 (83)	5.50 (140)	12.00 (305)	5.00 (127)	182	(0.157)	32 (14.5)
	600 (100)	11.50 (292)	1.50 (38)	2.00 (51)	3.25 (83)	5.50 (140)	12.00 (305)	5.00 (127)	171	(0.148)	43 (19.5)
3 (80)	150 (20)	8.00 (203)	2.00 (51)	3.00 (76)	3.75 (95)	5.88 (149)	12.00 (305)	5.25 (133)	221	(0.191)	40 (18.1)
	300 (50)	11.12 (283)	2.00 (51)	3.00 (76)	4.12 (105)	5.88 (149)	12.00 (305)	5.25 (133)	381	(0.330)	60 (27.2)
	600 (100)	14.00 (356)	2.00 (51)	3.00 (76)	4.12 (105)	5.88 (149)	12.00 (305)	5.25 (133)	289	(0.250)	69 (31.3)
4 (100)	150 (20)	9.00 (229)	3.00 (76)	4.00 (102)	4.50 (114)	8.00 (203)	20.00 (508)	6.68 (170)	509	(0.440)	73 (33.1)
	300 (50)	12.00 (305)	3.00 (76)	4.00 (102)	5.00 (127)	8.00 (203)	20.00 (508)	6.68 (170)	606	(0.524)	104 (47.2)
	600 (100)	17.00 (432)	3.00 (76)	4.00 (102)	5.38 (137)	8.00 (203)	20.00 (508)	6.68 (170)	464	(0.401)	139 (63.0)
6 (150)	150 (20)	10.50 (267)	4.00 (102)	6.00 (152)	5.50 (140)	11.88 (302)	22.50 (572)	N/A	1020	(0.882)	116 (52.6)
	300 (50)	15.88 (403)	4.00 (102)	6.00 (152)	6.25 (159)	11.88 (302)	22.50 (572)	N/A	1029	(0.890)	190 (86.2)
	600 (100)	22.00 (559)	4.00 (102)	6.00 (152)	7.00 (178)	11.88 (302)	34.50 (876)	N/A	1068	(0.924)	288 (130.6)
8 (200)	150 (20)	11.50 (292) <sup>+</sup>	6.00 (152)	8.00 (203)	6.75 (171)	15.25 (387)	46.50 (1181)	N/A	2216	(1.92)	224 (101.6)
	300 (50)	16.50 (419) <sup>+</sup>	6.00 (152)	8.00 (203)	7.50 (191)	15.25 (387)	70.50 (1790)	N/A	2343	(2.03)	315 (142.9)
10 (250)	150 (20)	21.00 (533)*	8.00 (203)	10.00 (254)	8.00 (203)	N/A	N/A	13.47 (342)	3890	(3.37)	422 (191.4)
	300 (50)	22.38 (568)*	8.00 (203)	10.00 (254)	8.75 (222)	N/A	N/A	13.47 (342)	4172	(3.61)	540 (244.9)

NOTE: " A " dimension to be within  $\pm 0.060$  in. /2 mm.

\* ASME B16.10 Long Pattern. <sup>+</sup> ASME B16.10 Short Pattern.

# MODEL B2 CAST STEEL FLANGED FLOATING BALL VALVES ACTUATOR MOUNTING DIMENSIONS

NOTE:  
SHOWN IN OPEN POSITION,  
CLOCKWISE 90° TO CLOSE

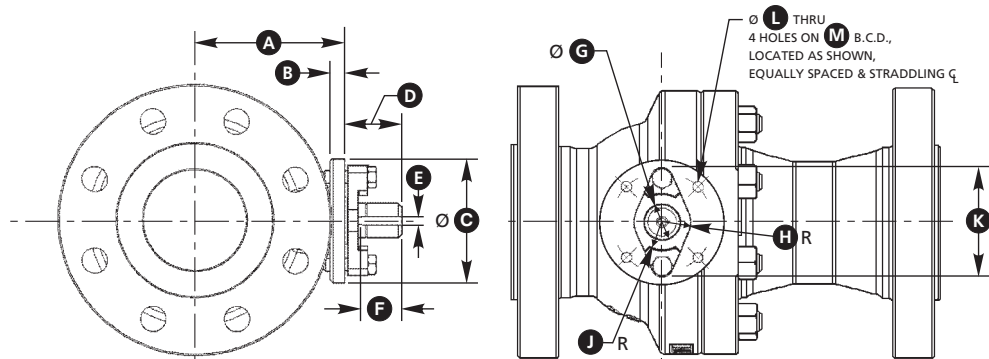


## DIMENSIONS

inches  
(mm)

Bore Size in. (DN)	ASME CLASS	(PN)	A	B	C	D	E	F	G	H	J	K	L	M
1 1/2 (40)	150	(20)	3.188 (81.0)	0.440 (11.2)	3.500 (88.9)	1.428 (36.3)	0.494 (12.5)	0.906 (23.0)	0.683 (17.3)	0.840 (21.3)	0.750 (19.0)	3.510 (89.2)	0.406 (10.3)	2.750 (69.9)
	300	(50)	3.188 (81.0)	0.440 (11.2)	3.500 (88.9)	1.428 (36.3)	0.494 (12.5)	0.906 (23.0)	0.683 (17.3)	0.840 (21.3)	0.750 (19.0)	3.510 (89.2)	0.406 (10.3)	2.750 (69.9)
	600	(100)	3.188 (81.0)	0.440 (11.2)	3.500 (88.9)	1.428 (36.3)	0.494 (12.5)	0.906 (23.0)	0.683 (17.3)	0.840 (21.3)	0.750 (19.0)	3.510 (89.2)	0.406 (10.3)	2.750 (69.9)
2 (50)	150	(20)	3.500 (88.9)	0.380 (9.7)	3.500 (88.9)	1.444 (36.7)	0.494 (12.5)	0.906 (23.0)	0.683 (17.3)	0.840 (21.3)	0.750 (19.0)	3.510 (89.2)	0.406 (10.3)	2.750 (69.9)
	300	(50)	3.500 (88.9)	0.380 (9.7)	3.500 (88.9)	1.444 (36.7)	0.494 (12.5)	0.906 (23.0)	0.683 (17.3)	0.840 (21.3)	0.750 (19.0)	3.510 (89.2)	0.406 (10.3)	2.750 (69.9)
	600	(100)	3.500 (88.9)	0.380 (9.7)	3.500 (88.9)	1.444 (36.7)	0.494 (12.5)	0.906 (23.0)	0.683 (17.3)	0.840 (21.3)	0.750 (19.0)	3.510 (89.2)	0.406 (10.3)	2.750 (69.9)
3 (80)	150	(20)	4.625 (117.5)	0.500 (12.7)	4.938 (125.4)	1.693 (43.0)	0.744 (18.9)	1.125 (28.6)	1.000 (25.4)	1.125 (28.6)	1.125 (28.6)	4.380 (111.3)	0.406 (10.3)	4.000 (101.6)
	300	(50)	4.625 (117.5)	0.500 (12.7)	4.938 (125.4)	1.693 (43.0)	0.744 (18.9)	1.125 (28.6)	1.000 (25.4)	1.125 (28.6)	1.125 (28.6)	4.380 (111.3)	0.406 (10.3)	4.000 (101.6)
	600	(100)	4.625 (117.5)	0.500 (12.7)	4.938 (125.4)	1.693 (43.0)	0.744 (18.9)	1.125 (28.6)	1.000 (25.4)	1.125 (28.6)	1.125 (28.6)	4.380 (111.3)	0.406 (10.3)	4.000 (101.6)

NOTE:  
SHOWN IN OPEN POSITION,  
CLOCKWISE 90° TO CLOSE

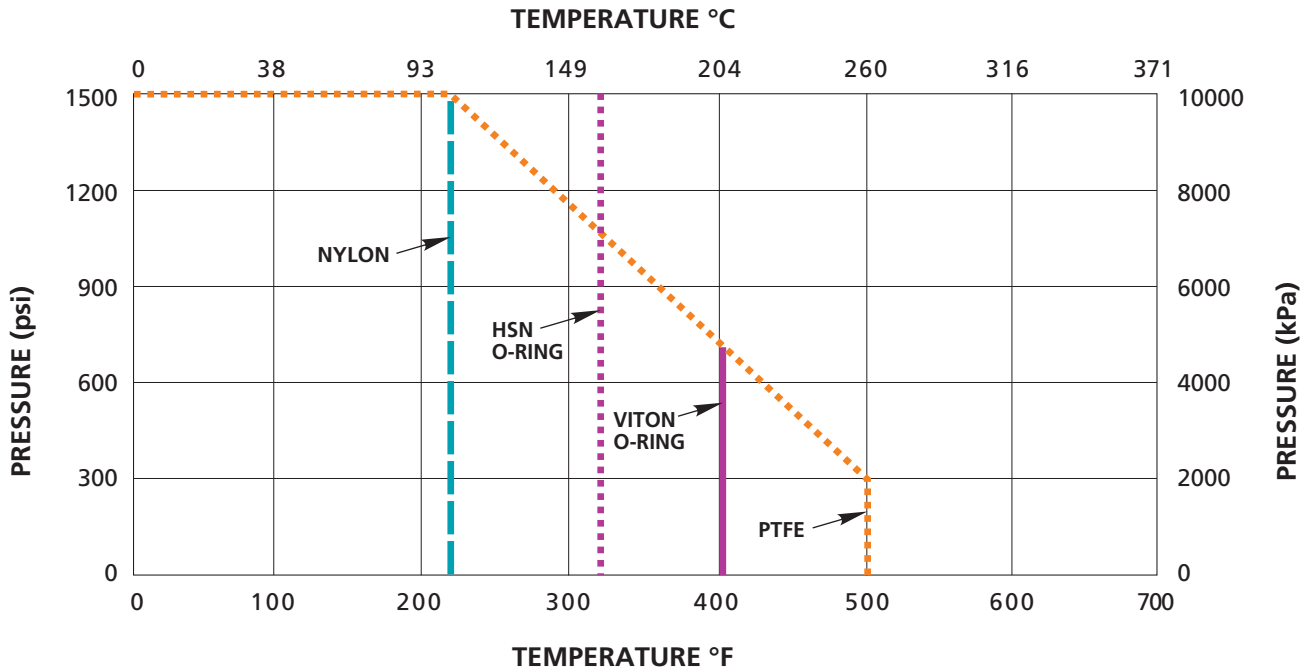


## DIMENSIONS

inches  
(mm)

Bore Size in. (DN)	ASME CLASS	(PN)	A	B	C	D	E	F	G	H	J	K	L	M
4 (100)	150	(20)	5.875 (149.2)	0.560 (14.2)	4.938 (125.4)	2.255 (57.3)	0.313 (8.0)	1.607 (40.8)	1.375 (34.9)	1.125 (28.6)	1.125 (28.6)	4.380 (11.3)	0.406 (10.3)	4.000 (101.6)
	300	(50)	5.875 (149.2)	0.560 (14.2)	4.938 (125.4)	2.255 (57.3)	0.313 (8.0)	1.607 (40.8)	1.375 (34.9)	1.125 (28.6)	1.125 (28.6)	4.380 (11.3)	0.406 (10.3)	4.000 (101.6)
	600	(100)	5.875 (149.2)	0.560 (14.2)	4.938 (125.4)	2.255 (57.3)	0.313 (8.0)	1.607 (40.8)	1.375 (34.9)	1.125 (28.6)	1.125 (28.6)	4.380 (11.3)	0.406 (10.3)	4.000 (101.6)
6 (150)	150	(20)	8.500 (215.9)	0.570 (14.5)	5.938 (150.8)	2.850 (72.4)	0.376 (9.6)	1.906 (48.4)	1.478 (37.5)	1.530 (38.9)	1.440 (36.6)	5.310 (134.9)	0.531 (13.5)	4.950 (125.7)
	300	(50)	8.500 (215.9)	0.570 (14.5)	5.938 (150.8)	2.850 (72.4)	0.376 (9.6)	1.906 (48.4)	1.478 (37.5)	1.530 (38.9)	1.440 (36.6)	5.310 (134.9)	0.531 (13.5)	4.950 (125.7)
8 (200)	150	(20)	10.125 (257.2)	0.630 (16.0)	6.875 (174.6)	3.344 (84.9)	0.502 (12.8)	2.156 (54.8)	1.927 (48.9)	1.780 (45.2)	1.565 (39.8)	5.940 (150.9)	0.656 (16.7)	5.500 (139.7)
	300	(50)	10.125 (257.2)	0.630 (16.0)	6.875 (174.6)	3.344 (84.9)	0.502 (12.8)	2.156 (54.8)	1.927 (48.9)	1.780 (45.2)	1.565 (39.8)	5.940 (150.9)	0.656 (16.7)	5.500 (139.7)

## MODEL B2 CAST STEEL FLANGED FLOATING BALL VALVES PRESSURE/TEMPERATURE RATINGS (SEATS AND SEALS)\*



\* Consult ASME B16.34 for Body and Adapter Material Pressure/Temperature Ratings.

## BREAKAWAY TORQUE DATA

Torque=inch-pounds

Bore Size in. (DN)	ASME CLASS (PN)	Seat Material	150	300	600
			(20)	(50)	(100)
	Pressure (psi)	0	285	740	1480
1 1/2 (40)	PTFE	240	360	480	-
	Nylon	420	480	540	660
2 (50)	PTFE	360	600	720	-
	Nylon	480	720	960	1200
3 (80)	PTFE	600	1080	1680	-
	Nylon	720	1200	1800	2160
4 (100)	PTFE	840	1560	2160	-
	Nylon	960	1680	2280	2880
6 (150)	PTFE	3600	7200	-	-
	Nylon	4800	9600	13200	-
8 (200)	PTFE	4800	9000	-	-
	Nylon	8400	15600	24000	-

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 the actuator supplier/manufacturer for these factors.

## TRADEMARK INFORMATION

NAVCO® is a registered trademark which is owned by Cameron.

This document contains references to registered trademarks or product designations, which are not owned by Cameron.

<b>Trademark</b>	<b>Owner</b>
Inconel	INCO Nickel Sales, Inc.
Teflon	E.I. DuPont De Nemours & Company
Viton	E.I. DuPont De Nemours & Company

# CAMERON, VALVES & MEASUREMENT TERMS AND CONDITIONS OF SALE

## 1. CONTRACT ACCEPTANCE:

Any written or oral purchase order received from Buyer by Seller shall be construed as a written acceptance of Seller's offer to sell and shall be filled in accordance with the terms and conditions of sale set forth herein. SELLER'S ACCEPTANCE OF THIS ORDER IS EXPRESSLY CONDITIONED ON BUYER'S ASSENT TO THE TERMS CONTAINED HEREIN. The terms and conditions of Seller's proposal (if any) and acknowledgement shall prevail over any conflicting or different terms in Buyer's order unless Buyer notifies Seller in writing of its objections thereto within fifteen (15) days from receipt of Seller's acknowledgement. Buyer's standard terms of purchase will not be considered a counteroffer to Seller's terms and conditions of sale. The failure of Seller to object to any provision in conflict herewith which contained on Buyer's purchase order or otherwise shall not be construed as a waiver of the provisions hereof nor as an acceptance thereof.

## 2. QUOTATIONS AND PRICES:

Any product, service capability or manufacturing capability which may be available at the time a quotation is made is subject to prior sale. Prices quoted are subject to change without notice. The price in effect at the time of shipment including any escalation formula will apply, unless a valid quotation or written agreement to the contrary exists between Buyer and Seller. All prices shown are in U.S. dollars and are F.O.B. Seller's shipping point. Seller reserves the right to place a service charge on past due accounts at the highest rate permitted by law. Any documentation pertaining to traceability requirements for raw materials or products or documentation required for any routine or special processes must be identified by the Buyer at the time of quotation (if any) or at the time of order placement.

## 3. TAXES:

Any tax or other charge imposed by law on the sale or production of goods or the performance of services shall be paid by the Buyer, unless the law specifically provides that such payment must be made by Seller, in which case Buyer shall reimburse Seller for such payment as part of the purchase price. Custom duties, consular fees, insurance charges and other comparable charges will be borne by Buyer.

## 4. SHIPPING SCHEDULE AND DELIVERY:

Shipment schedules are given as accurately as conditions permit and every effort will be made to make shipments as scheduled. Seller will not be responsible for deviations in meeting shipping schedules nor for any losses or damages to Buyer (or any third party) occasioned by deviations in the shipping schedule, whether due to Acts of God, orders bearing priority ratings established pursuant to law, differences with workmen, local labor shortages, fire, flood, shortages or failure of raw materials, supplies, fuel, power or transportation, breakdown of equipment or any other causes beyond Seller's reasonable control, whether of similar or dissimilar nature than those enumerated. Seller shall have additional time within which to perform as may be reasonably necessary under the circumstances and shall have the right to apportion its production among its customers in such a manner as it may consider to be equitable. Seller reserves the right to furnish commercially equivalent or better substitutes for materials or to subcontract the Buyer's order or portions thereof as Seller deems necessary. In no event shall Seller be liable for any consequential damages resulting from failure or delay in shipment. If Buyer requires drawings, procedures, standards or similar material for approval, shipping schedules will be calculated from the time such approvals are received by Seller, since shipping schedules are based on Seller having all required information and a firm order from Buyer which is enterable into production. Any hold points, witness points or the need for inspection by Buyer's representatives must be identified by Buyer at the time of quotation (if any) and/or order placement in order that the effect on the prices or shipping schedules (if any) can be taken into account. Additional inspection or testing required by Buyer which affects normal production sequence will be considered as extending the shipping dates accordingly.

## 5. TERMS OF PAYMENT:

Terms of payment are 30 days from date of invoice unless otherwise stated in the quotation or Seller's order acknowledgment.

## 6. CANCELLATIONS AND RETURNS:

Purchase orders once placed by Buyer and accepted by Seller can be canceled only with Seller's written consent and upon terms which will save Seller from loss. No products may be returned for credit or adjustment without written permission from Seller's office authorized to issue such permission.

## 7. WARRANTIES:

All products of Seller's manufacture except for its Orbit product are warranted against defects of material and workmanship for a period of twelve (12) months from the date of installation or eighteen (18) months from date of shipment, whichever period first expires while its Orbit product is warranted for thirty six (36) months from date of shipment, when all such products are used in the service and within the pressure range for which they were manufactured. In the case of products or parts not wholly of Seller's manufacture, Seller's liability shall be limited to the extent of its recovery from the manufacturer of such products or parts under its liability to Seller. Any repair work performed by Seller is warranted for one year from completion of such repairs and applies only to work performed. If, within these specified periods, Seller receives notice from Buyer of any alleged defect in or nonconformance of any product or repair and if in the Seller's sole judgment the product or repair does not conform or is found to be defective in material or workmanship, then, Buyer shall, at Seller's request, return the part or product F.O.B. to Seller's designated plant or service location. Seller has no liability for removal or reinstallation of products or equipment. Seller, at its option and expense, shall repair or replace the defective part or product, or repair to Buyer the full price paid by Buyer for such defective part, repair or product. Any repayment of purchase price shall be without interest. Seller's warranty liability, including defects caused by Seller's negligence, shall be limited to such repair, replacement or refund, and shall not include claims for labor costs, expenses of Buyer resulting from such defects, recovery under general tort law or strict liability or for damages resulting from delays, loss of use, or other direct, indirect, incidental or consequential damages of any kind. Seller will not be responsible for failures of products which have been in any way tampered with or altered by anyone other than an authorized representative of Seller, failures due to lack of compliance with recommended maintenance procedures or products which have been repaired or altered in such a way (in Seller's judgment) as to affect the products adversely. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, STATUTORY OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE WHICH EXCEED THE FOREGOING WARRANTY.

## 8. ENGINEERING AND SERVICE:

Upon request, Seller will provide engineering and/or technical information regarding its products and their uses and, if feasible, will provide personnel to assist Buyer in effecting field installations and/or field service. Any such information, service or assistance so provided, whether with or without charge, shall be advisory only.

## 9. LABOR STANDARDS:

Seller hereby certifies that these products were produced in accordance with all applicable requirements of Section 6, 7 and 12 of the Fair Labor Standards Act as amended and of regulations and orders of the United States Department of Labor issued under Section 14 thereof.

## 10. INSPECTION:

Unless otherwise agreed in writing, final inspection and acceptance of products must be made at Seller's plant or other shipping or receiving point designated by Seller and shall be conclusive except as regards latent defects. Buyer's representatives may inspect at the Seller's plant or shipping point during working hours prior to shipment in such manner as will not interfere with operations.

## 11. DELIVERY AND ACCEPTANCE:

Delivery shall be in accordance with the requirements in the Purchase Contract, provided, in the event Buyer is unable to accept delivery upon completion of the manufacture of the Goods in accordance with such requirements, Buyer agrees that (i) title and risk of ownership shall pass to Buyer on date of Seller's invoice, and (ii) Buyer will make payments within thirty days after date of such invoice. Seller shall retain custodial risk of loss until delivery is made in accordance with such requirements.

## 12. EXPORT COMPLIANCE:

The Buyer shall provide the Seller with relevant end-use, end-user and country of end-use information with respect to the goods, services, software or technology to be supplied hereunder (collectively, "Items"). Based on and in reliance on such information, the Seller will supply such Items in compliance with applicable trade and customs laws including that of the United States of America. The Seller cautions and the Buyer acknowledges that any change in end-use, end-user or country of end-use (including a shipment between countries other than the U.S.) may be restricted or prohibited by applicable trade and

customs law, whether it be of the U.S. or other country. The Parties shall comply with all trade and customs laws (including U.S. Export Controls) except for any such laws which conflict with or are otherwise penalized under the laws of the U.S., which in the event of such conflict, Seller shall notify Buyer. The Buyer agrees in particular that it shall not use and shall not permit any third party to use such items in connection with the design, production, use, or storage of chemical, biological or nuclear weapons or missiles of any kind.

## 13. TRANSPORTATION CHARGES, ALLOWANCES, CLAIMS:

All prices are F.O.B. Seller's plant or other designated shipping point. No freight is allowed unless stated in Seller's quotation (if any) or in a written contract which may exist between Seller and Buyer at the time of shipment. If Seller's quotation or a written contract states that all or a portion of freight is allowed, all prices are F.O.B. Seller's plant or other designated shipping point, with most economical surface transportation allowed. If the quoted or contractual price includes transportation, Seller reserves the right to designate the common carrier and to ship in the manner it deems most economical. Added costs due to special routing requested by the Buyer are chargeable to the Buyer. Under no circumstances is any freight allowance which is absorbed by Seller to be deducted from the selling price. If the quoted price or contract includes transportation, no deduction will be made in lieu thereof whether Buyer accepts shipment at plant, warehouse, freight station, or otherwise supplies its own transportation. When sales are made from the Seller's warehouse, Seller reserves the right to charge either actual or pro-rated freight from Seller's principle point of manufacture to Seller's warehouse. Buyer assumes risk of loss upon delivery to the carrier, regardless of who pays shipping costs. Seller endeavors to pack or prepare all shipments so that they will not break, rust or deteriorate in transit, but does not guarantee against such damage. Unless requested in writing by the Buyer, no shipments are insured by Seller against damage or loss in transit. Seller will place insurance as nearly as possible in accordance with Buyer's written instructions but in such case Seller acts only as agent between the insurance company and the Buyer and assumes no liability whatsoever. Any claims for shipping loss, breakage or damage (obvious or concealed) are Buyer's responsibility and should be made to the carrier. All claims regarding shortages must be made within thirty (30) days from receipt of shipment and must be accompanied by the packing list(s) covering the shipment.

## 14. INDEMNIFICATION AND LIMITATION OF LIABILITY:

### A. INDEMNIFICATION:

"Buyer Group" means: Buyer, its parent (if any), subsidiaries, affiliates, co-owners, co-venturers, partners and any entity with whom Buyer has an economic interest with respect to the Work including Buyer's customer and its and their respective employees, personnel, directors, officers, borrowed servants, representatives, agents, contractors and subcontractors (respectively and of any tier or level and who are not included within the Seller Group). "Seller Group" means: Seller, its parent (if any), subsidiaries, affiliates, co-owners and its and their respective employees, personnel, directors, officers, borrowed servants, representatives, agents, contractors and subcontractors (respectively and of any tier or level and who are not included within the Buyer Group). "Negligence" means: sole, joint or concurrent, active, passive, gross or willful misconduct.

(1) Seller shall release, defend, save, indemnify (collectively "Indemnify") and hold Buyer Group harmless from and against all claims, demands, losses, damages and causes of action of whatever kind or nature (collectively "Claims"), for loss of or damage to the property of the members of the Seller Group even if such Claims arise from or attributable to the Negligence of the members of Buyer Group.

(2) Seller shall Indemnify and hold Buyer Group harmless from and against all Claims for the death(s) of or personal injury(ies) to members of the Seller Group even if such Claims arise from or attributable to the Negligence of the members of Buyer Group.

(3) Buyer shall Indemnify and hold Seller Group harmless from and against all Claims for loss of or damage to the property (including the Work) of the members of the Buyer Group even if such Claims arise from or attributable to the Negligence of the members of Seller Group.

(4) Buyer shall Indemnify and hold Seller Group harmless from and against all Claims for the death(s) of or personal injury(ies) to members of the Buyer Group even if such Claims arise from or attributable to the Negligence of the members of Seller Group.

(5) Buyer (on its own behalf and on behalf of Buyer Group) and Seller (on its own behalf and on behalf of Seller Group) shall Indemnify and hold each other harmless from and against any and all Claims asserted against them by or on behalf of any third party for the death(s) of or personal injury (ies) to such a third party, as well as loss (es) of or damage(s) to the property of such a third party. A third party is a person or entity not included in Buyer Group or Seller Group. It is agreed by Buyer and Seller that their respective duty of indemnity to each other with respect to Claims asserted against them by a third party pursuant to this Article 14 (A) (5) shall be limited to their respective degree of Negligence.

(6) Notwithstanding any other provision contained in this Agreement, Buyer shall Indemnify and hold the members of Seller Group harmless from and against all Claims (including clean-up costs and loss (es) of oil, gas or hydrocarbons) arising from pollution, contamination, dumping or spilling of any substance and even if arising out of or attributable to the Negligence of the members of the Seller Group.

### B. INDEMNITY FOR CONSEQUENTIAL DAMAGES:

UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, EXEMPLARY OR PUNITIVE DAMAGES (collectively "CONSEQUENTIAL"), AS DEFINED BY THE LAWS GOVERNING THIS PURCHASE ORDER, NOR FOR ANY LOSS OF ANTICIPATED PROFITS, LOSS OF BUSINESS OPPORTUNITY, LOSS OF USE OF EQUIPMENT OR OF ANY INSTALLATION, SYSTEM OR FACILITY INTO WHICH SELLER'S EQUIPMENT MAY BE LOCATED OR AT WHICH MEMBERS OF THE SELLER GROUP MAY BE PERFORMING WORK AND BUYER AGREES TO "INDEMNIFY" AND HOLD SELLER GROUP HARMLESS FROM AND AGAINST ANY "CLAIMS" FOR SUCH "CONSEQUENTIAL" DAMAGES EVEN IF ARISING OUT OF OR ATTRIBUTABLE TO THE "NEGLIGENCE" OF THE MEMBERS OF THE SELLER GROUP.

### C. LIMITATION OF LIABILITY:

EXCEPT AS OTHERWISE EXPRESSLY LIMITED IN THIS AGREEMENT IT IS THE EXPRESS INTENTION OF THE PARTIES HERETO THAT ALL INDEMNITY OBLIGATIONS AND/OR LIABILITIES HEREBY ASSUMED BY THE PARTIES SHALL BE: (i) SUPPORTED BY INSURANCE; (ii) WITHOUT LIMIT; (iii) AND WITHOUT REGARD TO THE CAUSE OR CAUSES THEREOF, INCLUDING, BUT NOT LIMITED TO, PREEXISTING CONDITIONS (WHETHER SUCH CONDITIONS BE PATENT OR LATENT); THE UNSEAWORTHINESS OF ANY VESSEL OR VESSELS (WHETHER OR NOT PREEXISTING); THE UNAIRWORTHINESS OF ANY AIRCRAFT; BREACH OF REPRESENTATION OR WARRANTY (EXPRESS OR IMPLIED); BREACH OF CONTRACT; BREACH OF DUTY (STATUTORY, CONTRACTUAL, COMMON LAW OR OTHERWISE); STRICT LIABILITY; CONDITION OF RUIN OR DEFECTIVE PREMISES, EQUIPMENT, FACILITIES, OR APPURTENANCES OF ANY PARTY UNDER ANY CODE, LAW OR (WHETHER OR NOT SAID CONDITION IS PREEXISTING AND/OR LATENT, PATENT OR OTHERWISE); THE LOADING OR UNLOADING OF PERSONS OR CARGO; TORT; OR THE NEGLIGENCE OR FAULT OF ANY PARTY (AS DEFINED AT THE BEGINNING OF THIS ARTICLE 14; OR ANY OTHER THEORY OF LEGAL LIABILITY).

Seller's total responsibility for any claims, damages, losses or liability arising out of or related to its performance of this contract or the products or services covered hereunder shall not exceed the purchase price.

## 15. MODIFICATION, RESCISSION & WAIVER:

The terms herein may not be modified or rescinded nor any of its provisions waived unless such modification, rescission or waiver is in writing and signed by an authorized employee of Seller at its office in Houston, Texas. Failure of Seller to insist in any one or more instances upon the performance of any of the terms and conditions of the contract or the failure of Seller to exercise any of its rights hereunder shall not be construed as a waiver or relinquishment of any such term, condition, or right hereunder and shall not affect Seller's right to insist upon strict performance and compliance with regard to any unexecuted portions of this contract or future performance of these terms and conditions.

All orders must be accepted by an authorized employee of Seller. The rights and duties of the parties and construction and effect of all provisions hereof shall be governed by and construed according to the internal laws of the State of Texas. Any disputes which arise under this agreement shall be venued in the District Court of Harris County, Texas or in the Southern District of Texas.





**VALVES & MEASUREMENT**

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For the most current contact and location information go to: [www.c-a-m.com](http://www.c-a-m.com)