



Grinnell
A Tyco International Company

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GRINNELL Model CB800 Circuit Balancing Valve

General Description

The GRINNELL Model CB800 Balancing Valve, offers features necessary to achieve accurate and efficient balancing of hydronic heating or cooling systems. One valve serves five functions: throttling, measuring (pressure & temperature), positive shutoff, draining and filling.

The Y pattern provides minimum pressure drop across the valve. The CB800 globe style design ensures precise throttling. Both the handwheel and test ports are located on the same side for easy access. The digital/vernier handwheel may be re-oriented a minimum of 70 unique positions to allow for easy reading. The built in handwheel lock feature prevents unauthorized handwheel movement. A built-in memory stop ensures return to the balanced position after shutoff.

Self-sealing pressure/temperature test ports use standard insertion probes to eliminate additional components. The Model CB800 Valve can be installed horizontally or vertically in the supply or return line - with the flow in the direction of the arrow cast in the body. It can also be installed with the handwheel up, down or on the side. An optional hose connection with ball valve for either test port allows the pipe to be drained regardless of whether the valve is in the supply or return piping system.

⚠WARNING

Never remove any piping component nor correct or modify any piping deficiencies without first de-pressurizing and draining the system. Failure to do so may result in serious personal injury, property damage, and/or impaired device performance.

It is the Designer's responsibility to select products suitable for the intended service and to ensure that pressure ratings and performance data are not exceeded. Material and gasket selection should be verified for compatibility with the specific application. Always read and understand the installation instructions.

The GRINNELL Model CB800 Balancing Valves described herein must be installed and maintained in compliance with this document, in addition to the standards of any other authorities having jurisdiction. Failure to do so may result in serious personal injury or impair the performance of these devices.

Owners are responsible for maintaining their mechanical system and devices in proper operating condition. The installing contractor or device manufacturer should be contacted with any questions.

Technical Data

Sizes

1/2" to 2" (DN15 to DN50)
Female NPT

1/2" to 2" (DN15 to DN50)
Female Solder

2-1/2" to 12" (DN65 to DN300)
Grooved

2-1/2" to 12" (DN65 to DN300)
Flanged

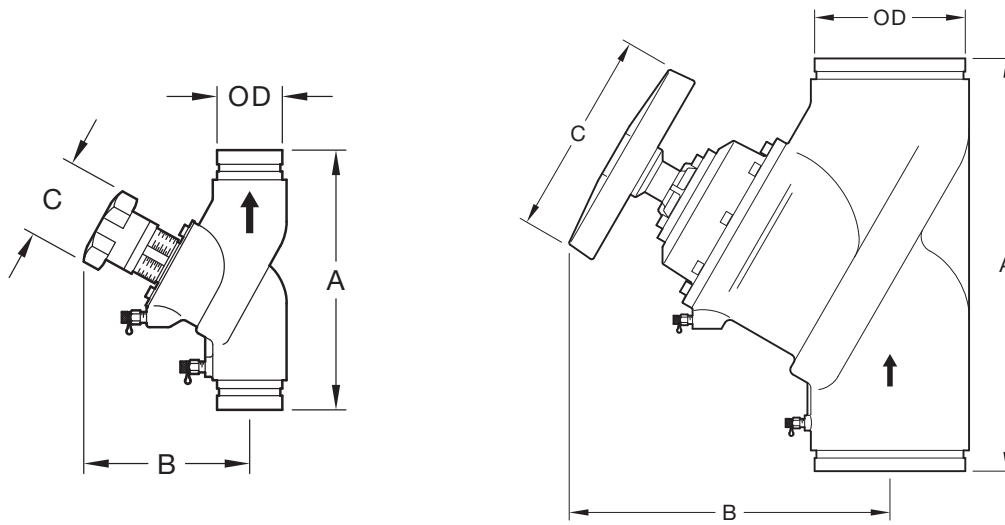
Maximum Working Pressure

- 300 psi (20,7 bar)
Grooved Connection
- 235 psi (16,0 bar)
Flanged, NPT, Solder Connection



Materials of Construction

- **Body**
Dezincification resistant brass
(Female NPT and Solder)
Cast Iron
(Flanged and Grooved)
- **Stem**
Dezincification resistant brass
- **Valve Disc**
1/2 to 2 inch - Dezincification resistant brass
2-1/2 to 12 inch - Bronze
- **O - Ring**
EPDM
- **Hand-wheel**
Thermoplastic



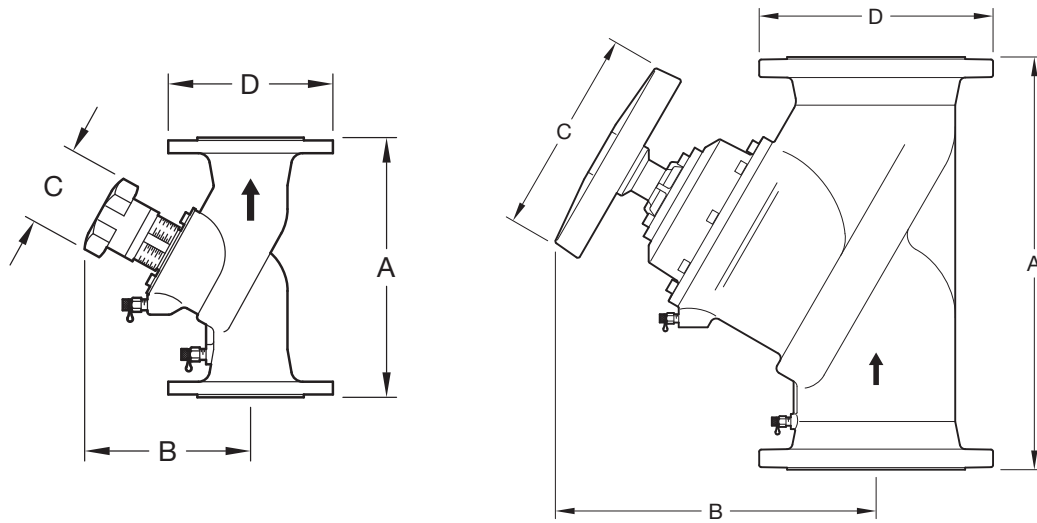
(DN65) to 6 (DN150)

8 (DN200) to 12 (DN300)

Nominal Pipe Size		Nominal Dimensions Inches (mm)			Approx. Weight Lbs. (kg)	Limits psi/°F (bar/°C)
ANSI Inches DN	O.D. Inches (mm)	A	B	C		
2-1/2 DN65	2.875 (73,0)	11.44 (290,6)	7.38 (187,5)	4.33 (110,0)	19.7 (8,9)	300/300 (20,7/150)
76,1 mm DN65	3.000 (76,1)	11.44 (290,6)	7.38 (187,5)	4.33 (110,0)	19.7 (8,9)	300/300 (20,7/150)
3 DN80	3.500 (88,9)	12.25 (311,2)	8.00 (203,2)	4.33 (110,0)	27.8 (12,6)	300/300 (20,7/150)
4 DN100	4.500 (114,3)	13.75 (349,3)	9.44 (239,8)	6.30 (160,0)	45.3 (20,6)	300/300 (20,7/150)
139,7 mm DN125	5.500 (139,7)	15.75 (400,0)	11.13 (282,7)	6.30 (160,0)	70.0 (31,8)	300/300 (20,7/150)
5 DN125	5.563 (141,3)	15.75 (400,0)	11.13 (282,7)	6.30 (160,0)	70.0 (31,8)	300/300 (20,7/150)
165,1 mm DN150	6.500 (165,3)	18.88 (479,6)	11.25 (285,8)	6.30 (160,0)	95.7 (43,5)	300/300 (20,7/150)
6 DN150	6.625 (168,3)	18.88 (479,6)	11.25 (285,8)	6.30 (160,0)	95.7 (43,5)	300/300 (20,7/150)
8 DN200	8.625 (219,1)	23.63 (600,2)	18.44 (468,4)	11.80 (300,0)	255.2 (116,0)	300/300 (20,7/150)
10 DN250	10.750 (273,1)	28.75 (730,3)	18.88 (479,6)	11.80 (300,0)	377.3 (171,5)	300/300 (20,7/150)
12 DN300	12.750 (323,9)	33.44 (849,4)	20.25 (514,4)	11.80 (300,0)	520.3 (236,5)	300/300 (20,7/150)

Grooved Connection

FIGURE 1
MODEL CB800 GROOVED BALANCING VALVE
NOMINAL DIMENSIONS



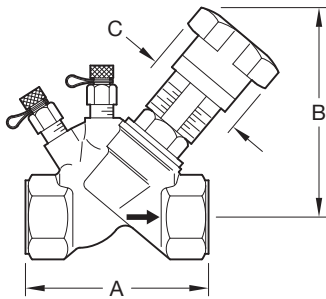
2-1/2 (DN65) to 6 (DN150)

8 (DN200) to 12 (DN300)

Nominal Pipe Size ANSI Inches DN	Nominal Dimensions Inches (mm)				Approx. Weight Lbs. (kg)	Limits psi/°F (bar/°C)
	A	B	C	D		
2-1/2 DN65	11.44 (290,6)	7.38 (187,5)	4.33 (110,0)	7.25 (184,2)	31.7 (14,4)	235/300 (16/150)
76,1 mm DN65	11.44 (290,6)	7.38 (187,5)	4.33 (110,0)	7.25 (184,2)	31.7 (14,4)	235/300 (16/150)
3 DN80	12.25 (311,2)	8.00 (203,2)	4.33 (110,0)	7.88 (200,2)	39.8 (18,0)	235/300 (16/150)
4 DN100	13.75 (349,3)	9.50 (241,3)	6.30 (160,0)	8.69 (220,7)	61.3 (27,8)	235/300 (16/150)
139,7 mm DN125	15.75 (400,1)	11.13 (282,7)	6.30 (160,0)	9.88 (250,9)	89.9 (40,9)	235/300 (16/150)
5 DN125	15.75 (400,1)	11.13 (282,7)	6.30 (160,0)	9.88 (250,9)	89.9 (40,9)	235/300 (16/150)
165,1 mm DN150	18.88 (479,6)	11.25 (285,8)	6.30 (160,0)	11.25 (285,8)	113.9 (51,8)	235/300 (16/150)
6 DN150	18.88 (479,6)	11.25 (285,8)	6.30 (160,0)	11.25 (285,8)	113.9 (51,8)	235/300 (16/150)
8 DN200	23.63 (600,2)	18.38 (466,9)	11.80 (300,0)	13.38 (339,9)	361.9 (164,5)	235/300 (16/150)
10 DN250	28.75 (730,3)	18.94 (481,1)	11.80 (300,0)	15.94 (404,9)	431.2 (196,0)	235/300 (16/150)
12 DN300	33.50 (850,9)	20.25 (514,4)	11.80 (300,0)	18.13 (460,5)	581.9 (264,5)	235/300 (16/150)

Flanges are available drilled for ANSI B16.1 (Class 125), B16.5 (Class 150), and B16.42 (Class 250) or PN16/10. Specify when ordering.

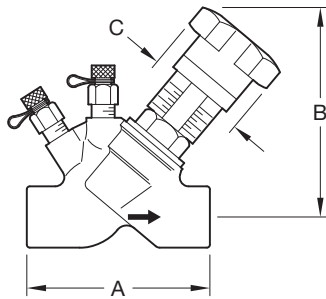
FIGURE 2
MODEL CB800 FLANGED BALANCING VALVE
NOMINAL DIMENSIONS



Nominal Pipe Size ANSI Inches DN	Nominal Dimensions Inches (mm)			Approx. Weight Lbs. (kg)	Limits psi/°F (bar/°C)
	A	B	C		
1/2 DN15	3.13 (79,5)	4.49 (114,0)	2.75 (70,0)	1.6 (0,7)	235/300 (16/150)
3/4 DN20	3.31 (84,1)	4.56 (115,8)	2.75 (70,0)	1.8 (0,8)	235/300 (16/150)
1 DN25	3.84 (97,5)	4.69 (119,1)	2.75 (70,0)	2.5 (1,1)	235/300 (16/150)
1-1/4 DN32	4.38 (111,3)	5.38 (136,7)	2.75 (70,0)	3.0 (1,4)	235/300 (16/150)
1-1/2 DN40	4.75 (120,7)	5.44 (138,2)	2.75 (70,0)	4.0 (1,8)	235/300 (16/150)
2 DN50	5.94 (150,9)	5.81 (147,6)	2.75 (70,0)	6.0 (2,7)	235/300 (16/150)

Female NPT Thread Connection

FIGURE 3
MODEL CB800 FEMALE NPT BALANCING VALVE
NOMINAL DIMENSIONS



Nominal Pipe Size ANSI Inches DN	Nominal Dimensions Inches (mm)			Approx. Weight Lbs. (kg)	Limits psi/°F (bar/°C)
	A	B	C		
1/2 DN15	3.50 (88,9)	4.50 (114,3)	2.75 (70,0)	1.6 (0,7)	235/300 (16/150)
3/4 DN20	3.81 (96,8)	4.56 (115,8)	2.75 (70,0)	1.4 (0,6)	235/300 (16/150)
1 DN25	4.31 (109,5)	4.69 (119,1)	2.75 (70,0)	1.8 (0,8)	235/300 (16/150)
1-1/4 DN32	5.06 (128,5)	5.38 (136,7)	2.75 (70,0)	3.1 (1,4)	235/300 (16/150)
1-1/2 DN40	5.56 (141,2)	5.44 (138,2)	2.75 (70,0)	3.8 (1,7)	235/300 (16/150)
2 DN50	6.56 (166,6)	5.81 (147,6)	2.75 (70,0)	5.2 (2,4)	235/300 (16/150)

Female Solder Connection

FIGURE 4
MODEL CB800 FEMALE SOLDER BALANCING VALVE
NOMINAL DIMENSIONS

Limited Warranty

Products manufactured by Tyco International (Tyco) under the GRINNELL brand are warranted solely to the original Buyer for ten (10) years from date of shipment by Tyco against defects in material and workmanship when paid for and properly installed and maintained under normal use and service, except for the G-MINE line of products, which are warranted solely to the original Buyer for six (6) months from date of shipment by Tyco against defects in material and workmanship when paid for and properly installed and maintained under normal use and service. No warranty is given for products or components manufactured by companies not affiliated by ownership with Tyco or for products and components which have been subject to misuse, improper installation or maintenance, corrosion, or other external sources of damage. Materials found by Tyco to be defective shall be either repaired or replaced, at Tyco's sole option. Tyco neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. Tyco shall not be responsible for system design errors or inaccurate or incomplete information supplied by Buyer or Buyer's representatives.

In no event shall Tyco be liable, in contract, tort, strict liability or under any other legal theory, for incidental, indirect, special or consequential damages, including but not limited to labor charges, regardless of whether Tyco was informed about the possibility of such damages, and in no event shall Tyco's liability exceed an amount equal to the sales price.

The foregoing warranty is made in lieu of any and all other warranties, express or implied, including warranties of merchantability and fitness for a particular purpose.

This limited warranty sets forth the exclusive remedy for claims based on failure of or defect in products, materials or components, whether the claim is made in contract, tort, strict liability or any other legal theory.

This warranty will apply to the full extent permitted by law. The invalidity, in whole or part, of any portion of this warranty will not affect the remainder.

Ordering Procedure

GRINNELL Mechanical Products are available globally through a network of distribution centers. Visit www.grinnell.com for the nearest distributor.

When placing an order, indicate the full product name. Specify the valve model number, size, type of end connection, and quantity.

