

For Commercial and Industrial Applications

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

Series B6780, B6781

2-Piece, Full Port, Bronze Diverter Ball Valves

Sizes: 1/4" – 2" (8 – 50mm)

Series B6780, B6781 2-Piece, Full Port, Bronze Diverter Ball Valves are designed to divert liquids and gases in commercial and industrial applications. The B6780, B6781's full port orifice ensures minimal pressure drop, while PTFE seats and chrome plated brass ball provide lasting service.

Features

- Suitable for a full range of liquids and gases.
- Minimal pressure drop due to full size ports
- Blowout proof pressure retaining stem
- Pressure rated at 400psi (28 bars) WOG non-shock @ 100°F (38°C); 125psi (8.6 bars) WSP
- Virgin PTFE stem packing seal and thrust bearing
- Vinyl insulator on heavy duty, zinc-plated carbon steel handles
- Low operating torque
- Adjustable stem packing gland
- Each valve factory tested

Models

B6780 1/4" – 2" (8 – 50mm) threaded NPT end connections

B6781 1/2" – 1" (15 – 25mm) solder end connections

Specifications

A 2-piece full port bronze diverter ball valve to be installed as indicated on the plans. The valve must have a blowout proof pressure retaining stem, chrome plated brass ball, PTFE seats, virgin PTFE stem packing seal and adjustable packing. Pressure rating no less than 400psi (28 bars) WOG non-shock, 125psi (8.6 bars) WSP. Valve shall be a Watts Regulator Company Series B6780 (threaded) or B6781 (solder).

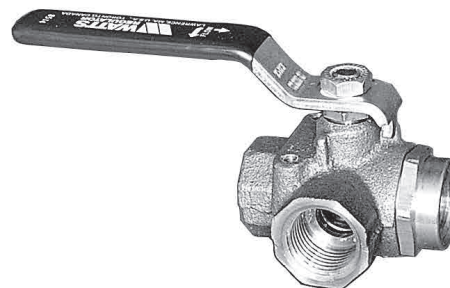
Pressure – Temperature

Temperature Range: 0°F - 350°F (-18°C – 177°C) @ 50psi (3.5 bars)

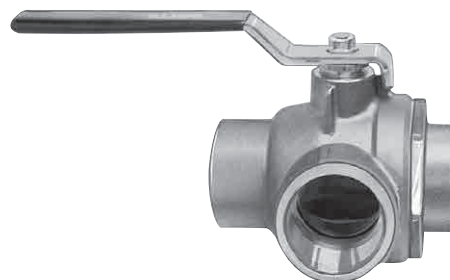
Maximum Working Pressure: 400psi (28 bars) WOG non-shock @ 100°F (38°C); 125psi (8.6 bars) WSP

⚠ WARNING

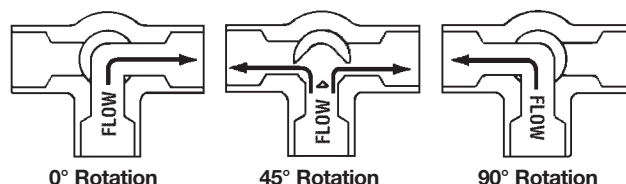
It is illegal to use this product in any plumbing system providing water for human consumption, such as drinking or dishwashing, in the United States. Before installing standard material product, consult your local water authority, building and plumbing codes.



B6780



B6781



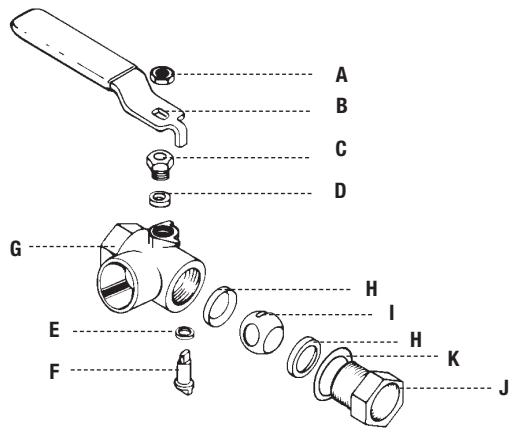
Options

Suffix

- OV – High profile safety oval handle
- RH – Round handle
- SH – Stainless steel handle & nut
- SS – Stainless steel ball and stem

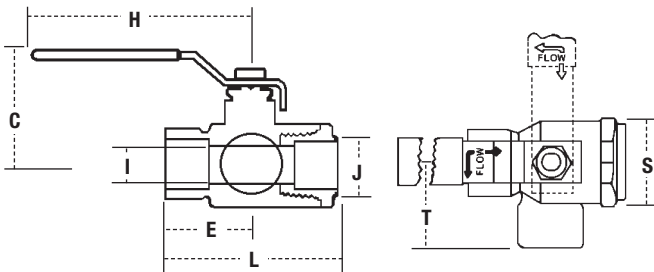
*This valve is designed to be soft soldered into lines without disassembly, using a low temperature solder 420°F (216°C). Other solders such as 95/5 tin antimony 460°F (238°C) or 96/4 tin silver 420°F (216°C) can be used, however extreme caution must be used to prevent seat damage. Higher temperature solders will damage the seat material. ANSI B.16.18 states that the maximum operating pressure of 50-50 solder connections is 200 psi (14 bars) at 100°F (38°C) and decreases with higher temperatures. Apply heat with the flame directed **AWAY** from the center of the valve body. Excessive heat can harm the seats. After soldering, the packing nut may have to be tightened.

Materials



A	Handle Nut	Zinc Plated Carbon Steel
B	Handle	Zinc Plated Carbon Steel with Vinyl Insulator
C	Packing Nut	Brass ASTM B16, C36000
D	Stem Packing	PTFE
E	Thrust Bearing	PTFE
F	Stem	Brass ASTM B16, C36000
G	Body	Bronze ASTM B584, C84400
H	Seats	PTFE
I	Ball	Brass ASTM B16, C36000
J	Adapter	Brass
K	Body Seal	PTFE (1 1/4" – 2")

Dimensions — Weights



B6780

SIZE (DN)		DIMENSIONS				WEIGHT							
		C Center to Handle	E Center to End	H Radius of Handle	I Ball Orifice	J Dia. Solder Connection	L End to End	S Diameter	T Center to Side				
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg.
1/4, 3/8, 1/2	8, 10, 15	1 5/8	41.3	1 1/4	31.7	3/4	95.3	1/2	12.7	-	-	2 9/32	57.9
3/4	20	1 3/4	44.5	1 9/16	39.7	3/4	95.3	1 1/8	30.4	1 1/8	30.4	1.00	.45
1	25	2 1/16	52.4	1 7/8	47.6	1	25.4	1 1/8	30.4	1 1/8	30.4	1.88	.85
1 1/4	32	2 3/16	71.4	2 1/16	52.4	1 1/4	31.8	2 3/4	69.8	2 1/16	52.4	4.00	1.81
1 1/2	40	3	76.2	2 7/32	56.3	1 1/2	38.1	2 7/8	70.0	2 7/32	56.3	5.50	2.49
2	50	4	101.6	2 11/16	68.2	2	50.8	3 1/8	79.2	2 11/16	68.2	10.00	4.54

*B6781

1/2	15	1 5/8	41.3	1 1/8	28.6	3/4	95.3	1/2	12.7	5/8	15.8	2 5/16	58.7	1 1/4	31.7	1 1/8	28.6	.66	.30
3/4	20	1 3/4	44.5	1 9/16	39.7	3/4	95.3	1 1/8	30.4	7/8	22.2	3 1/16	80.9	1 1/8	30.4	1 1/8	30.4	1.00	.45
1	25	2 1/16	52.4	1 9/16	49.1	1	25.4	1 1/8	30.4	1 1/8	30.4	3 3/8	98.4	2 1/8	54.0	1 15/16	49.1	1.88	.85

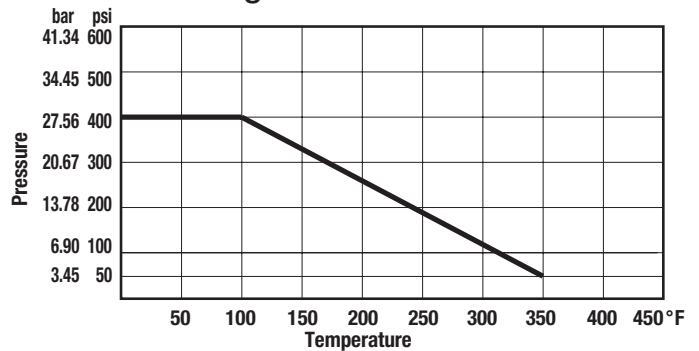
*See Solder Instructions on front.

NOTE: Seat rating based on pressure entering side port.



A Watts Water Technologies Company

Valve Seat Rating



Valve Torque Rating

SIZE DN		RATING		OPERATING TORQUE	
in.	mm	Cv	in./lbs.	N-m	
*1/4, 3/8	8-10	4.8	60	6.8	
1/2	15	4.8	60	6.8	
3/4	20	11	150	16.9	
1	25	21	200	22.6	
1 1/4	32	33	250	28.2	
1 1/2	40	49	320	36.2	
2	50	91	500	56.5	

* Threaded only

Pressure Drop vs. Flow

