



- Hydronic Heating
- Cooling Systems
- Domestic Water Systems

# Relief and Reducing Valves

# B&G ASME Safety Relief Valves

Meet requirements of Section IV of the ASME Code for Heating Boilers

## DESCRIPTION

Bell & Gossett cast iron and bronze body ASME Safety Relief Valves are engineered in accordance with the requirements of Section IV of the ASME Boiler & Pressure Vessel Code for Heating Boilers, and their capacities are certified by the National Board of Boiler and Pressure Vessel Inspectors. B&G diaphragm operated cast iron, and diaphragm-assist operated bronze ASME Safety Relief Valves, are designed to protect fired and unfired hot water vessels against overpressure conditions. The effective area of the EPDM diaphragm is approximately 5 times greater than some conventional "pop-type" relief valves. The diaphragms "oversized" effective area generates a greater operating force which helps to overcome the effects of fouling. Bell & Gossett ASME Safety Relief Valves feature a unique fail-safe disc with sufficient area to permit the valves to maintain their safety relief function in the event of a diaphragm rupture.

The low differential between opening and closing pressures prevent conditions under which system water might flash into steam and cause hammering. Under normal operating conditions thermal expansion opens the valve allowing water to discharge at a low rate of flow. Under emergency conditions the valve will discharge its certified capacity.

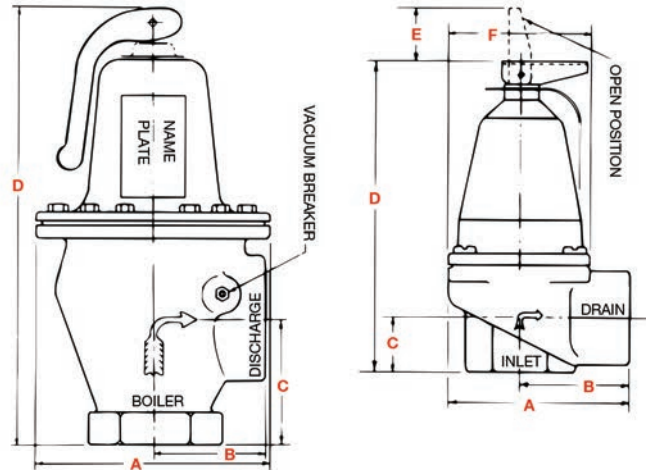
Bell & Gossett bronze ASME Safety Relief Valves offer the highest BTUH rating available in the marketplace for valves of their size. B&G ASME Safety Relief Valves are available in a wide range of pressure settings, other than those listed, to closely match the BTUH output rating of hot water heating boilers, direct fired hot water heaters (use bronze valves only), storage tanks with indirect heaters (use bronze valves only), and the BTUH load of heat exchangers and other pressure vessels handling water at a maximum pressure of 125 psi (8.6 bar) and maximum temperature of 250°F (121°C).



**Models 3301/4100  
Iron Body Valves**



**Models 790/1170  
Bronze Body Valves**



Models 3301 and 4100 Iron body relief valves are not recommended for use on domestic water service.

Size, Capacity and Relief Setting for B&G ASME Safety Relief Valves*				
Relief Setting PSIG (bar)	Model Number Capacity in BTU Per Hour			
	Iron Body		Bronze Body	
30 (2.0)	3301-30 3,300,000	4100-30 4,100,000	790-30 790,000	1170-30 1,170,000
36 (2.5)	3301-36 3,800,000	4100-36 4,600,000	790-36 900,000	1170-36 1,330,000
45 (3.1)	3301-45 4,500,000	4100-45 5,515,000	790-45 1,065,000	1170-45 1,575,000
50 (3.5)	3301-50 4,900,000	4100-50 5,990,000	790-50 1,160,000	1170-50 1,710,000
75 (5.2)	Not Available		790-75 1,615,000	1170-75 2,385,000
100 (7.0)			790-100 2,075,000	1170-100 3,060,000
125 (8.6)			790-125 2,535,000	1170-125 3,735,000

\*Contact your local wholesaler or Bell & Gossett representative for availability of ASME Safety Relief Valves with special pressure settings.

**MAXIMUM OPERATING TEMPERATURE 250°F (121°C)**  
**MAXIMUM WORKING PRESSURE 125 PSIG (8.6 bar)**

## DIMENSIONS & WEIGHTS

Model Number	Body Material	Dimension Inches (mm)								Approx. Shipping Weight lbs (Kg)
		NPT Connections		A	B	C	D	E	F	
		Inlet	Outlet							
790	BRONZE	3/4	3/4	2-9/16 (65)	1-1/2 (38)	3/4 (19)	4-9/16 (116)	1-1/32 (26)	2-3/32 (53)	1.2 (0.5)
1170		1	1	2-7/8 (73)	1-3/4 (44)	7/8 (22)	4-15/16 (125)		2-1/4 (57)	1.5 (0.7)
3301	IRON	1-1/2	2	6 (152)	2-7/8 (73)	3-1/4 (83)	11 (279)	—		17 (7.7)
4100										

Actual unit model numbers include individual valve pressure settings as a suffix to the basic valve model number noted.

# B&G Reducing Unit Valves

## Maintain proper system pressure

The established operating principal of the B&G Reducing Valve is now offered with a lead free brass\* body as standard material. Highly resistant to corrosion, lead free brass\* is recognized as the material of choice in water systems.

Another standard feature is a unique low inlet pressure check valve. The check valve is designed to help prevent the loss of system pressure if the supply water pressure drops below the system pressure.

During normal operation the valve seat opens because of low system pressure and water flows in through the valve seat. In order to enter the system, this water must first pass under the flexible sealing lips of the check valve. In case of low city water pressure, the pressure on the inside of the check valve (the city water side) would be less than the pressure on the outside (the system water side). This outside pressure then forces the lips of the check valve against the main diaphragm preventing the flow of water out of the system.

A simple, yet extremely effective device, the low inlet pressure check valve is less affected by dirt than are ball and flapper type checks.

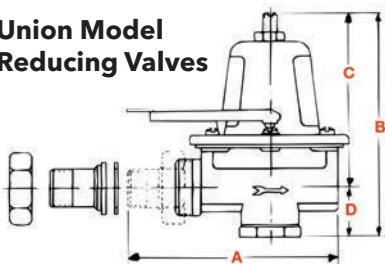
Also available are a fastfill feature and a model with a union connection.

Some models are standard with a manual fastfill feature that facilitates fast filling of a Hydronic System. A real time saver for that initial fill or when a substantial amount of water must be added to a system.

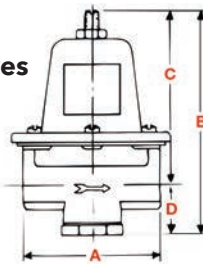
An optional feature available is a union connection. Bell & Gossett offers a body configuration with a union nut and universal tailpiece. The tailpiece is designed with a 1/2 inch male NPT thread and a 1/2 inch female sweat connection. No more second trips to the supplier, the right connection is available.

All Bell & Gossett Reducing Valves feature a cleanable strainer which is designed to prevent dirt and sediment from entering the valve. The strainer is readily accessible at the bottom of the valve.

**Union Model Reducing Valves**



**Threaded Reducing Valves**



**Model B-38TU**

**Model FB-38**

### B7-12 Reducing Valve

This low pressure reducing valve is equipped with a low inlet pressure check valve and removable strainer. It is suitable for use in buildings with a maximum of three floors.

### Nos. B-38, FB-38, B-38TU, & FB-38TU

These low pressure reducing valves are equipped with a low inlet pressure check valve and removable strainer. Models with an "F" prefix feature fastfill. Models ending with "TU" feature a 1/2" sweat/NPT union.

### Nos. 6 & 7 High Pressure Reducing Valves

Protects plumbing fixtures against excessive line pressures. All wetted parts are lead free brass\*. These valves are fitted with a removable strainer, low inlet pressure check valve and extra large diaphragm. They are factory adjusted to deliver 45 psi (3.1 bar) with 125 psi (8.6 bar) to the valve.



## DIMENSIONS & WEIGHTS

Model Number	Parts Number	Body Material	Connection Size Inches		Factory Setting PSIG (bar)	Adjustable Range PSIG (bar)	Dimension Inches (mm)				Approx. Ship. WT. lbs (Kg) Each	
							A	B	C	D		
<b>Pressure Reducing Valves</b>												
B-38	110190LF	Lead Free Brass*	1/2	NPT	12 (0.8)	10-25 (0.7-1.7)	3-1/16 (78)	4-3/16 (122)	3-11/16 (94)	1-1/8 (29)	1-3/4 (0.8)	
B7-12	110196LF		3/4				3 (76)	4-31/32 (126)	3-21/32 (93)	1-5/16 (33)	2-1/4 (1.0)	
B-38TU	110191LF		1/2	UNION NPT/SWEAT			4-31/32 (126)	4-13/16 (122)	3-11/16 (94)	1-1/8 (29)	2 (0.9)	
FB-38	110192LF		1/2	NPT			3-1/16 (78)				1-3/4 (0.8)	
FB-38TU	110193LF		1/2	UNION NPT/SWEAT			4-31/32 (126)				2 (0.9)	
6	110194LF		1/2	NPT			45 (3.1)	25-60 (1.7-4.1)	3-1/16 (78)	3-21/32 (93)	1-5/16 (33)	1-3/4 (0.8)
7	110195LF		3/4						3 (76)			4-31/32 (126)

**MAXIMUM FLOW 6-1/2-7GPM (0.4-0.44 Ltrs./Sec.) AT 125 PSIG (8.6 bar) INLET PRESSURE**

**MAXIMUM OPERATING TEMPERATURE 225°F (107°C) – MAXIMUM WORKING PRESSURE 125 PSIG (8.6 bar)**

\*Contains less than .25% lead by weight on wetted surfaces.

# B&G Dual-Unit Valves

Combine functions of reducing and relief valves

The Bell & Gossett Pressure Reducing Valve is coupled with the noncode relief valve providing fill overpressure protection as well as the fill function. The pressure reducing valve features a lead free brass\* body, corrosion resistant wetted parts, low inlet pressure check valve and a cleanable strainer. The noncode relief valve features a corrosion resistant seat and a large diaphragm for positive action. Units are available with lead free brass\* relief valve bodies.

Some models feature pressure reducing valves with a fast fill option while others offer the new union tailpiece connection.

NOTE: This noncode relief valve is not to be used alone to protect the system. An ASME type safety relief valve must also be installed on the system for output overpressure protection.



**Model F-3TU**

**Model F-3**

## Nos. 8, F-3 & F-3TU Dual Unit Valves

B&G Dual Unit Valves combine the functions of reducing and relief valves. Models with an "F" prefix feature fastfill. Models ending with "TU" feature a 1/2" sweat/NPT union.



## DIMENSIONS & WEIGHTS

Model Number	Parts Number	Component Valves	Body Material	Connections Inches (mm)		Dimension Inches (mm)		Approx. Ship. WT. lbs (Kg) Each
				Boiler	Fill	Between Connection	Overall Height	
8	110199LF	Relief B-38	Lead Free Brass*	1/2 NPT	1/2 NPT	6-7/16 (164)	5-3/8 (137)	4 (1.8)
F-3	110197LF	Relief FB-38	Lead Free Brass*		1/2 NPT	6-7/16 (164)	6 (152)	3-3/4 (1.7)
F-3TU	110198LF	Relief FB-38TU	Lead Free Brass*		1/2 Union NPT/Sweat	8-5/8 (219)		4 (1.8)

### Pressure setting

Relief 30 psi (2 bar) standard, 20 to 40 psi (1.4 To 2.8 bar) adjustable range  
Reducing 12 psi (0.8 bar) standard, 10 to 25 psi (0.7 To 1.7 bar) adjustable range.

**MAXIMUM OPERATING TEMPERATURE 225°F (107°C)**

**MAXIMUM OPERATING PRESSURE 125 PSIG (8.6 bar)**

**\*Contains less than .25% lead by weight on wetted surfaces.**



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