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For your convenience in quickly finding any B & G Product, this catalog is divided into differently colored sections for each type of equipment. Just follow the Color Code Index. See also Page Index on back cover.



WARM WATER HEATING SYSTEMS

Pages 2 to 14

DOMESTIC WATER HEATING SYSTEMS

Pages 15 to 28

ELECTRICAL CONTROLS

Pages 29 to 30

**NEW
COLOR CODE INDEX**

FOR QUICK REFERENCE

BULLETIN No. F-339

B & G TRIPLE DUTY MONOFLO SYSTEM



7 A.M.

No early morning chills. Forced circulation speeds heat to every radiator in a moment's time.



9 A.M.

Plenty of hot water. The B & G Heater supplies an ample quantity, WINTER AND SUMMER.



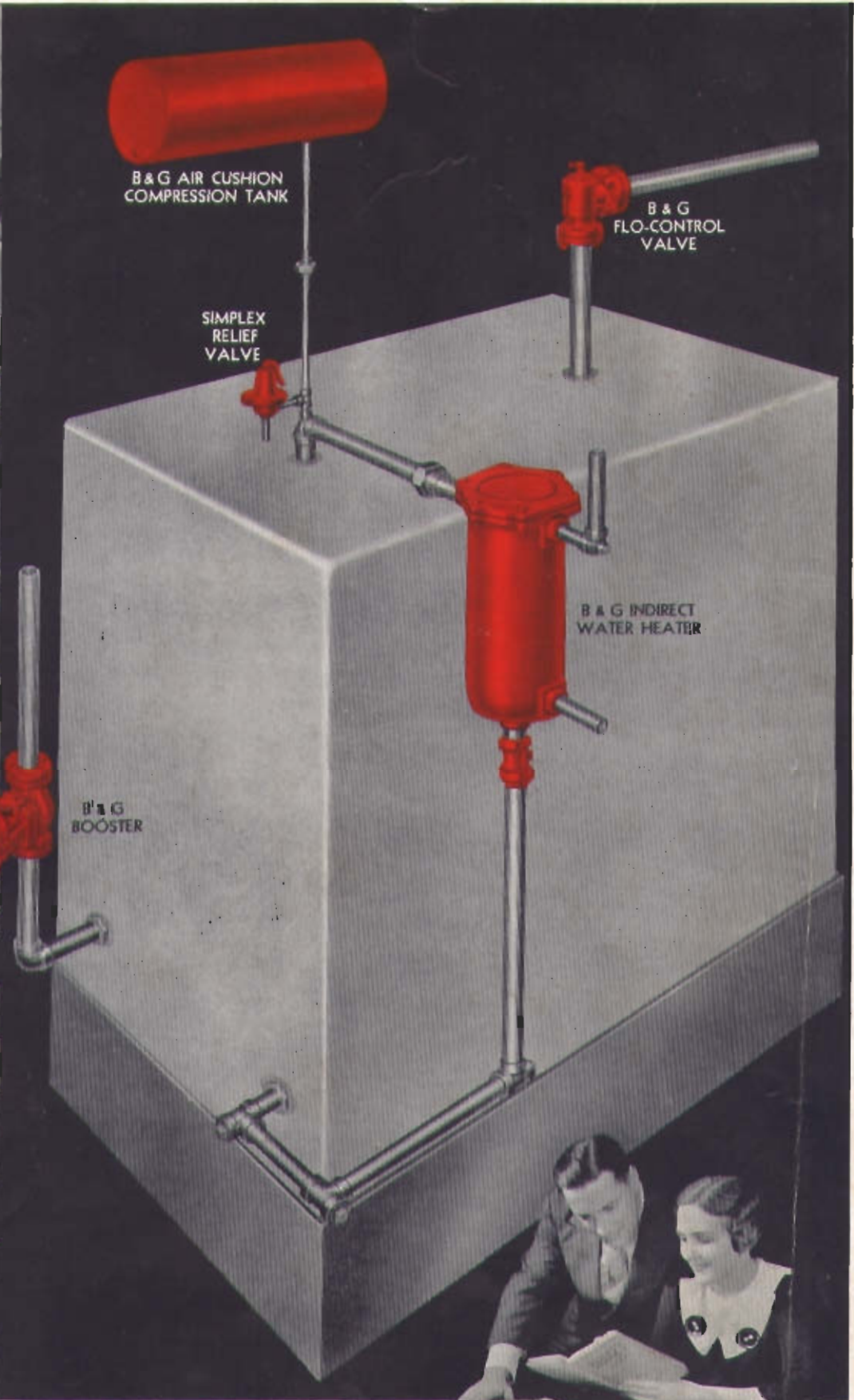
2 P.M.

No chills or drafts. Radiant, sun-like heat from the radiators keeps the temperature uniform.



11 P.M.

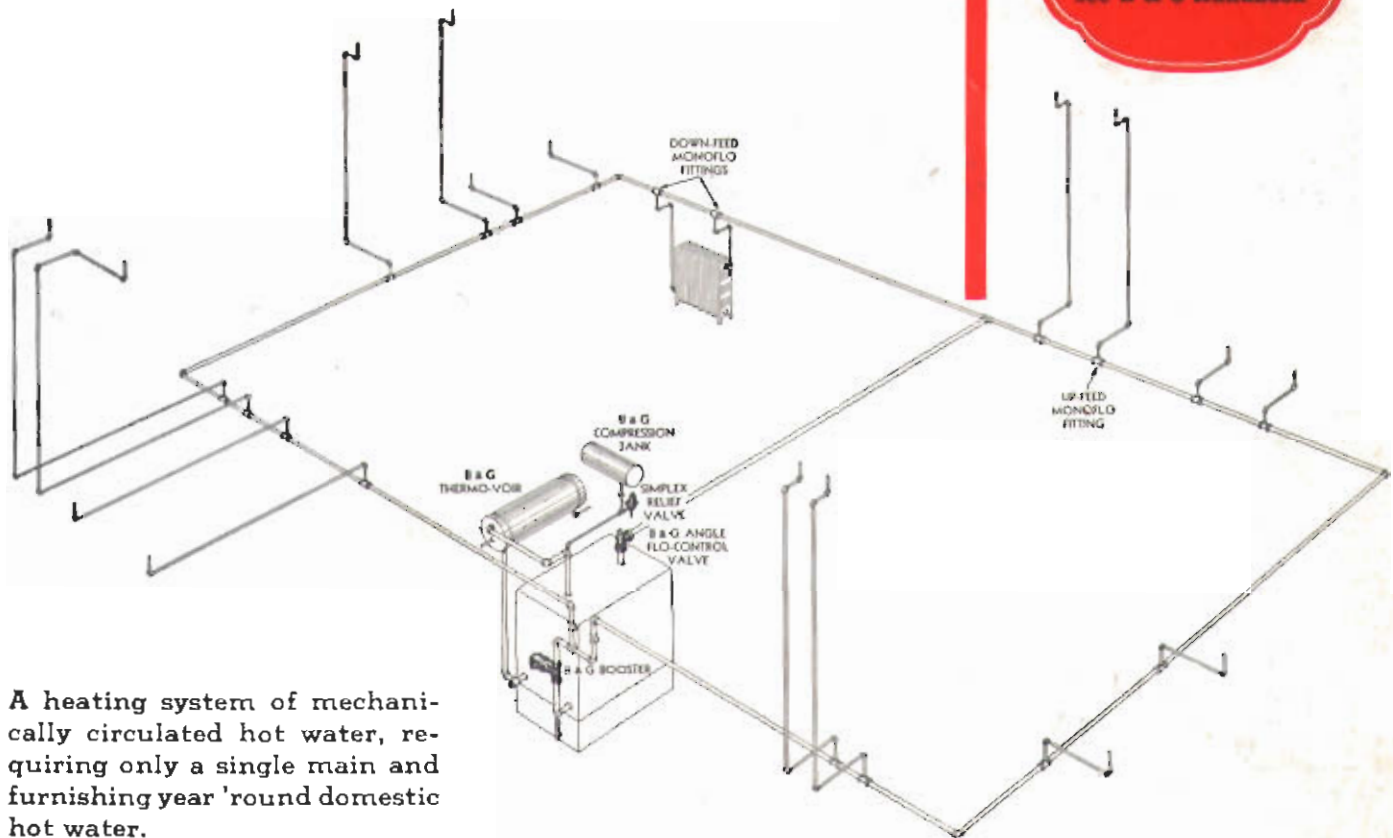
Solid comfort late at night. Monoflo Heating is on the job at every hour.



...and at the end of the month, fuel bills prove that Monoflo Heating is amazingly economical.

TRIPLE DUTY MONOFLO SYSTEM

For
complete
installation information
see B & G Handbook



A heating system of mechanically circulated hot water, requiring only a single main and furnishing year 'round domestic hot water.

The B & G Monoflo System brings Radiator Heat a selling story unequalled in the history of the industry. It offers the builder of homes, apartments, institutions and factories vastly improved comfort at an unbelievably low installation and operating cost. In over 30,000 installations, Monoflo Heating has demonstrated its ability to provide more luxurious living at less expense in homes and apartments. In large buildings and factories, it provides more accurate heat control and lower operating cost.

Monoflo System equipment is simple in construction and operation. Here are the units:—

B & G BOOSTER

An electrically driven centrifugal pump which circulates hot water through the system, providing instant and ample heat when needed.

B & G INDIRECT WATER HEATER

Any one of the many types can be installed to furnish a year 'round supply of hot water at a smaller cost than possible with most other methods.

B & G FLO-CONTROL VALVE

This valve, installed in the main, prevents circulation of hot water to the radiators during summer operation of the Indirect Water Heater. It also serves to maintain a uniform room temperature during the heating season.

B & G PRESSURE SYSTEM

Consists of a Relief Valve and Air-Cushion Compression Tank and is the ultimate in quiet operation and safety. Higher temperatures are possible with an Air-Cushion Compression Tank because of the fact that the boiling point of water is raised so that extreme flexibility is possible during zero weather. At 50° below or 50° above, ideal temperatures can be maintained.

B & G MONOFLO FITTING

This patented device is the product of one of the most practical, advanced-thinking heating engineers this country has ever produced. It has changed the thinking of the heating industry from two-pipe mains to the single main idea.

Balanced distribution is achieved by this fitting with minimum frictional resistance. Each radiator can take up from this single main precisely the amount of heat loss within the radiator itself, so that temperature of each radiator is properly maintained.



... for homes



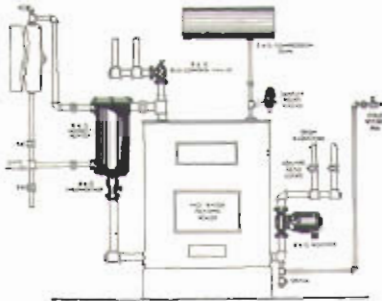
... for apartments



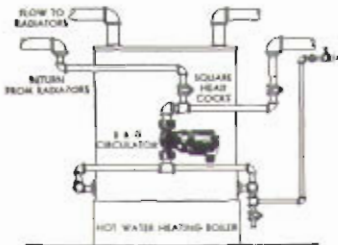
... for institutions and factories

For complete installation information see B & G Handbook

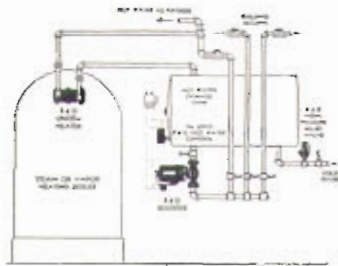
HEATING SYSTEMS BOOSTER PUMP



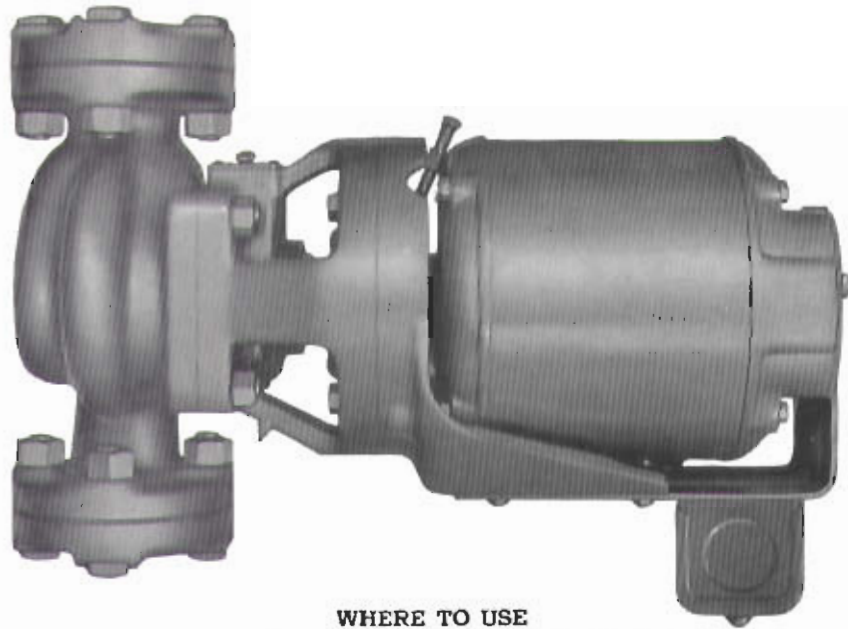
Booster installed on B & G Triple Duty System.



Booster used to improve circulation in old gravity system.



Circulating service water with a Booster assures many economies.



WHERE TO USE

For modern forced circulation systems. The B & G Booster is the heart of a modern forced hot water heating system. In combination with a B & G Flo-Control Valve and B & G Indirect Heater, both heat and domestic hot water are furnished for the usual cost of heat alone.

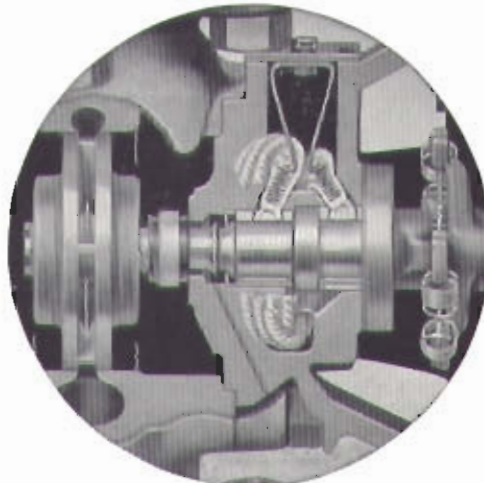
For improving gravity hot water heating systems. The B & G Booster ends slow, uncertain heating in old style gravity hot water systems by greatly speeding up sluggish circulation. Motionless water is a poor conductor of heat but water in motion becomes an excellent conductor. By increasing circulation over the prime heating parts of the boiler, heat is picked up rapidly, thereby reducing loss through the chimney.

For circulating hot or cold service water. In large service water installations, a B & G Booster assures instant water at every faucet. Where a heater installation is undersized, a B & G Booster will increase its capacity by as much as 25%. A distant or low storage tank, where gravity circulation is difficult or impossible, can be effectively and economically circulated by this pump unit.

FEATURES OF CONSTRUCTION

Not merely gallons of water delivered, nor head pressure, nor power consumption alone, but the *related efficiency of all three* is your guide to circulating pump selection. In the B & G Booster these three factors are accurately balanced to provide maximum performance at minimum cost. Booster capacities are ample at all practical head pressures, yet power consumption is extraordinarily small.

Refer to the chart on Page 6 and note the capacity curves. These curves are based on *actual performance*, not on theoretical plotting and conclusively show why the B & G Booster is the preferred pump. The wide range of Booster sizes permits the selection of a pump without over or undersizing. Boosters are made with cast iron bodies for heating system use, and with bronze bodies for pumping domestic hot or cold water.



Construction of Booster permits genuine oil lubrication.

Genuine Oil-Circulating Lubrication System

Here is one of the greatest reasons for the quiet, dependable and economical operation of the B & G Booster—it is *oil-lubricated!* Engineers agree that the only way to secure thorough, complete lubrication is by means of an oil system. Grease-cup lubrication is *not* only a messy, inconvenient method, but also fails to provide full protection to the bearings.

The B & G Booster is a horizontal drive unit, a construction which in combination with the B & G Packless Water-tight Seal pioneered by B & G, permits lubrication by a genuine oil-circulating system. *No other pump built for the same purpose has this superior feature.*

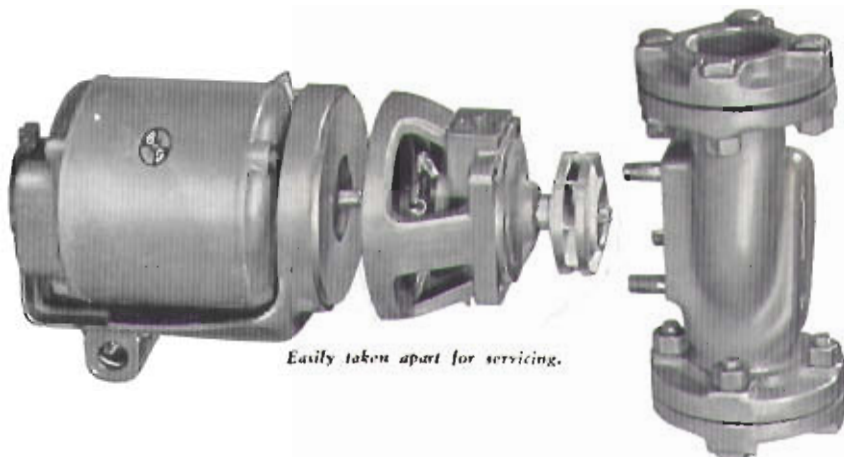
In the Booster, oil is picked up from the oil reservoir by wool fibre wicking and is carried up and dropped on the bearing surfaces. A good medium grade motor oil is used and only a few drops at infrequent intervals required.



The Water-Tight Seal.

HEATING SYSTEMS

BOOSTER PUMP - cont.



Easily taken apart for servicing.

No Water Leakage into Bearings

The B & G Water-Tight Seal is the patented device which eliminates the need for a stuffing box. Here is a real economy feature, as a stuffing box is recognized as a power waster.

The Seal is held tightly against the face of the bearing bracket, preventing entry of water into the bearings. Protection is thus afforded against emulsification of the oil with consequent lubrication failure.

No Waste Motion

The forged Navy brass impeller has a true centrifugal construction and tolerances between the impeller and pump body are held to a few thousandths of an inch. Therefore, every revolution of the pump delivers a full quota of water, which accounts for the large capacities of B & G Boosters.

No End Play in Shaft

The immovable Collar which is an integral part of the B & G Booster shaft, effectively prevents end-play which might cause noise. One of the outstanding features of the B & G Booster is the shaft construction. Tolerances are maintained within 1/10,000 of an inch. The cost is three to four times that of ordinary bar stock used in practically every other similar type of product and freedom from trouble in the B & G Booster is due largely to this extra expense in shaft and bearing construction. Note that the bearings are generously long, providing a smoothness of operation which lengthens the life of the unit.

Full Protection against Motor Burn-out

It is extremely important to satisfactory operation that the motor be protected against both usual and unusual causes of failure. The B & G Booster was first to be equipped with the most modern and efficient devices for this purpose. The Thermal Overload Equipment (Circuit-breaker) shuts off the current should a dead-stall be caused by foreign matter in the pump, or if for any other reason, such as low voltages or lack of lubrication, the motor should start to overheat.

If for any of the foregoing reasons the motor stops, it will automatically try to start after 1½ minutes. Such stopping and starting will continue until the cause of the overload on the pump has been removed. This operation of the protective device is not harmful to the motor.

Easily Taken Apart for Servicing

As shown in the illustration above, the Booster is easily taken apart so that all working parts are exposed. The practical value of this easy accessibility needs no further comment. Johansson gauges are used throughout in the construction and assembling of B & G Circulators. This use of precision instruments assures absolute accuracy of fit and greatly simplifies servicing of B & G Boosters in the field. The Seal Assembly and Motor are interchangeable in any size of Booster up to and including 2 inches.

Ideal for Zone Control

Modern heating system design is turning strongly to the zoned type of system. By splitting up the system into individually controlled circuits, the effects of wind, sunshine and exposure can be fully compensated for, with material reduction in fuel expense and improved comfort. See also zone control with B & G Motorized Valves on Page 12.

Forced warm water heating, with a B & G Booster to supply and control the heat delivery to each zone, has a flexibility which most fully achieves the benefits of zoning. See B & G Handbook for typical zoning arrangements.

Easier to Install

The B & G Horizontal Booster is adaptable to installation in a choice of six different positions (see Page 6)—a great convenience in meeting every situation which may be encountered. The fact that the B & G Booster can be installed in an upright pipe has many advantages. It can be placed high enough above the floor to avoid the hazard of a flooded basement. All details of installation are made easier. Sediment and sludge cannot accumulate when Circulators are installed in this manner.

For complete installation information see B & G Handbook



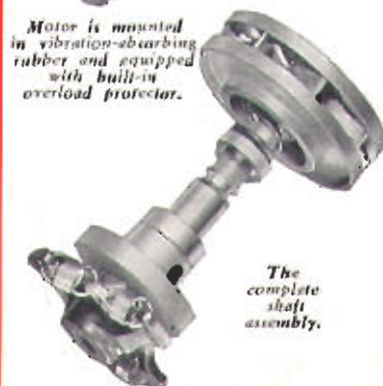
Forged navy brass impeller.



Collar on high grade, polished shaft prevents end-play.



Motor is mounted in vibration-absorbing rubber and equipped with built-in overload protector.

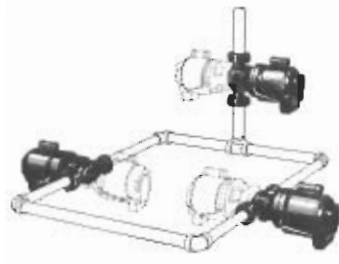


The complete shaft assembly.

For complete installation information see B & G Handbook

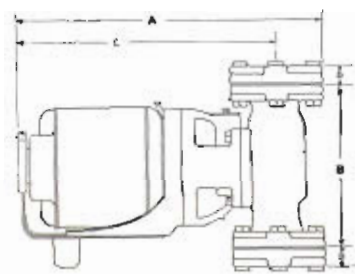
HEATING SYSTEMS

BOOSTER PUMP - cont.

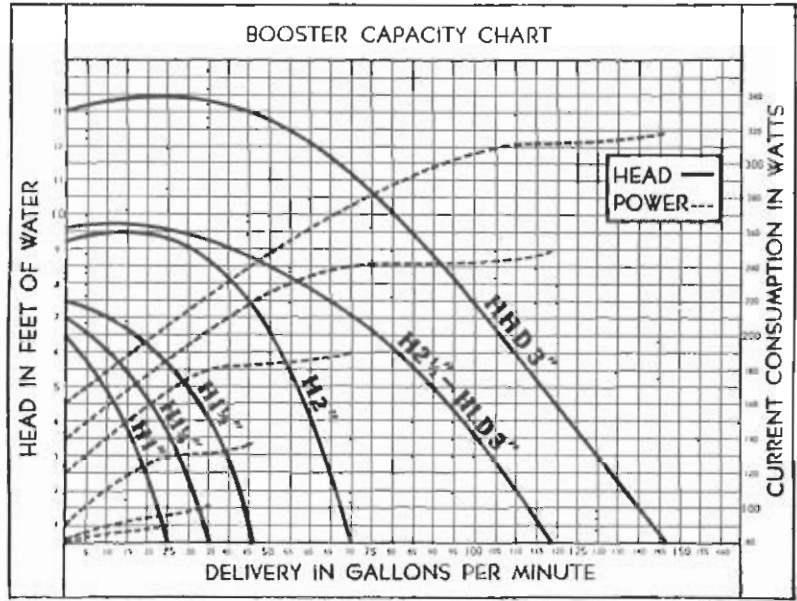


Booster can be installed in any of these six positions.

For information on B & G Pumps with larger capacities and higher head pressures, see page 31.



Booster Size	DIMENSIONS IN INCHES			
	A	B	C	D
H1"	15 1/2	8 1/2	14 1/2	1 1/2
H1 1/4"	16 1/4	8 1/2	14 1/2	1 1/2
H1 1/2"	16 3/4	8 1/2	14 1/2	1 1/2
H2"	16 3/4	8 1/2	14 1/2	1 1/2
H2 1/4"	17 1/4	9 1/4	14 1/2	1 1/2
HL D3"	18 1/2	9 1/4	14 1/2	1 1/2
HHD3"	19 3/4	12	16 1/2	1 1/2



This Chart is based on 1750 R.P.M., 60 cycle or D.C. For 25, 40, or 50 cycle motors, larger pumps may be necessary. Write for special capacity charts.

How to Select a B & G Booster for New High Temperature System

Assume that 30 gallons of water per minute must be pumped to supply the BTU requirement of the building. Look first at the bottom of the chart where pump delivery in gallons per minute is shown. Run a line straight upward from the 30 gallon point until it intersects the first pump capacity curve above 2 1/2 ft. of Pressure Head. This occurs at approximately 5 ft. of Head Pressure on the curve of the 1 1/2" Booster. Hence, a 1 1/2" Booster will deliver 30 gallons per minute against a Head of 5 ft.

The B & G Handbook will show you how to determine the amount of water to be pumped for any hot water heating system and how to size the pipe to meet the indicated Pressure Head.

Selecting a Pump on the Basis of Radiation

We have been frequently requested to indicate the amount of radiation which can be handled by each size of B & G Booster.

You must realize, however, that the capacities in the table below are based on an arbitrarily selected Pressure Head and do not permit the accurate designing which means most satisfactory results. You are urged, therefore, to use the Chart above when selecting a B & G Booster. See B & G Handbook for proper sizing of pipes.

For Conversion Jobs

The uncertainties of design in old systems with large pipe sizes make it advisable to use a larger pump than indicated in table below.

SIZES, CAPACITIES AND DIMENSIONS

Size Number	Pipe Size	***Motor 110 Volt, 60 Cycle Standard Equipment	Delivery Gals. Per Minute	*Sq. Ft. of Radiation on Properly Pipe Sized New Installations			Approx. Shipping Weight
				150 B.T.U.	200 B.T.U.	240 B.T.U.	
H1"	1" FLANGED	1/2 H.P.	25 GALS.	750	562	469	55 LBS.
H1 1/4"	1 1/4" FLANGED	3/4 H.P.	35 GALS.	1000	750	675	56 LBS.
H1 1/2"	1 1/2" FLANGED	1 H.P.	47 GALS.	1750	1312	1094	57 LBS.
H2"	2" FLANGED	1 1/2 H.P.	70 GALS.	3500	2625	2187	62 LBS.
H2 1/4"	2 1/4" FLANGED	2 H.P.	118 GALS.	4500	3375	2820	85 LBS.
HL D3"	3" FLANGED	2 1/2 H.P.	118 GALS.	4300	3375	2820	94 LBS.
HHD3"	3" FLANGED	3 H.P.	147 GALS.	5500	4125	3437	124 LBS.

*For conversion jobs use larger pump than indicated in the above table.

WHERE SERVICE WATER IS PUMPED, MOST LOCALITIES REQUIRE THE USE OF A BRONZE BODIED BOOSTER

VERTICAL PUMPS

V1"	1" FLANGED	1/2 H.P.	CAPACITIES ARE THE SAME AS FOR HORIZONTAL BOOSTERS LISTED ABOVE	56 LBS.
V1 1/4"	1 1/4" FLANGED	3/4 H.P.		56 LBS.
V1 1/2"	1 1/2" FLANGED	1 H.P.		59 LBS.
V2"	2" FLANGED	1 1/2 H.P.		63 LBS.

***SPECIAL MOTORS

	220 V. 60 Cy. 1 Phase	110 V. 50 Cy. 1 Phase	110 V. 40 Cy. 1 Phase	110 V. 25 Cy. 1 Phase	220 V. 60 Cy. 3 Phase	32 V. D. C.	115 V. D. C.	230 V. D. C.
1/2 H.P.								
3/4 H.P.								
1 H.P.								

ADD THE NET EXTRA CHARGES AS LISTED ON NET TRADE PRICE SHEET FOR SPECIAL CURRENT CHARACTERISTICS

HEATING SYSTEMS

FLO-CONTROLS

WHERE TO USE

Flo-Control Valves are used in forced circulation hot water heating systems to prevent the circulation of hot boiler water when heat is not needed in the radiators. They thus permit the year around operation of an Indirect Water Heater as well as providing a method of maintaining a uniform room temperature during heating season.



ONLY ONE VALVE NEEDED on small-pipe installations

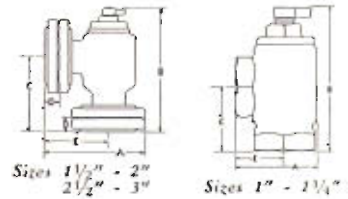
B & G Angle and Straight Flo-Control Valves, either with or without a compression tank are unconditionally guaranteed to be tight and will not pass heat to the radiators when pump is not in operation. It is not necessary that the compression tank be connected to valve to prevent leakage or back circulation. B & G Flo-Control Valves will work on open or closed systems.



ANGLE PATTERN FLO-CONTROL VALVE

This valve represents an improved construction in angle-type flow-control valves and is designed for use where an angle valve is easier to install.

A special feature is the easy way in which the valve can be opened manually. For automatic operation, the valve stem is screwed all the way *down*. It is screwed all the way *up* for gravity circulation. This is done by simply turning with the fingers the wing extension at the top of the stem. It's as simple as opening a gate valve—no guesswork as to whether the valve is fully opened or closed.



Sizes 1 1/2" - 2"
2 1/2" - 3"
Sizes 1" - 1 1/4"
For Angle Valve dimensions see table.



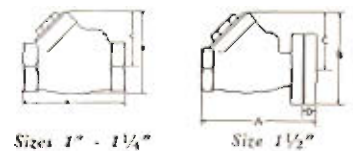
Illustrating interior construction of B & G Angle Flo-Control Valve.

Valve Number and Size		A1"	A1 1/4"	A1 1/2"	A2"	A2 1/2"	A3"
Connections		Screwed 2 Ends	Screwed 2 Ends	Flanged 2 Ends	Flanged 2 Ends	Flanged 2 Ends	Flanged 2 Ends
RADIATION CAPACITY IN SQ. FT.	150 B.T.U.	750	1000	1750	3500	4500	5500
	200 B.T.U.	562	750	1312	2625	3375	4125
	240 B.T.U.	469	675	1094	2187	2820	3437
SHIP. WGT. APPROX.		4 LBS.	4 LBS.	18 LBS.	22 LBS.	33 LBS.	43 LBS.

Angle Flo-Control Valve No. and Size	DIMENSIONS IN INCHES				
	A	B	C	D	E
A1"	2	5 1/2	2 1/2	.....	1 13/16
A1 1/4"	2	5	2 1/2	.....	1 13/16
A1 1/2"	6 5/8	7 1/2	4	.....	3 1/2
A2"	6 3/8	8	4 1/2	2 1/2	4 1/2
A2 1/2"	7 1/2	9	5	1 1/2	5
A3"	9	10 1/2	6	1 1/2	5 1/2

STRAIGHT PATTERN FLO-CONTROL VALVE

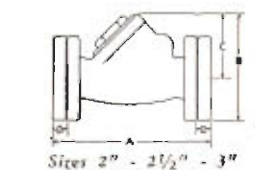
While different in construction, the B & G Straight Flo-Control Valve accomplishes the same purpose as the Angle Pattern Valve. The hinged valve is forced open when the Booster starts and closes of its own weight when the Booster stops. Use this valve when a straight run of pipe offers the most convenient location. Do not install in a vertical pipe.



Sizes 1" - 1 1/4"
Size 1 1/2"

Valve Number and Size		S1"	S1 1/4"	S1 1/2"	S2"	S2 1/2"	S3"
Connections		Screwed 2 Ends	Screwed 2 Ends	Screwed 1 End Flanged 1 End	Flanged 2 Ends	Flanged 2 Ends	Flanged 2 Ends
RADIATION CAPACITY IN SQ. FT.	150 B.T.U.	750	1000	1750	3500	4500	5500
	200 B.T.U.	562	750	1312	2625	3375	4125
	240 B.T.U.	469	675	1094	2187	2820	3437
SHIP. WGT. APPROX.		5 LBS.	5 LBS.	17 LBS.	25 LBS.	33 LBS.	53 LBS.

Straight Flo-Control Valve No. and Size	DIMENSIONS IN INCHES			
	A	B	C	D
S1"	4 1/4	3 1/2	2 1/2	.....
S1 1/4"	4 3/4	3 3/4	2 3/4	.....
S1 1/2"	7 1/4	6	3 3/4	.....
S2"	9 1/4	6 1/2	4	2 3/4
S2 1/2"	10 1/4	7 1/2	4 1/2	1
S3"	12 1/4	7 3/4	4 3/4	1 1/2



Sizes 2" - 2 1/2" - 3"
For Straight Valve dimensions see table.

For complete installation information see B & G Handbook

HEATING SYSTEMS

MONOFLO FITTINGS

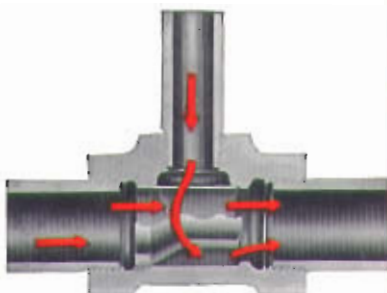
A device which has revolutionized the whole theory and practice of forced hot water heating

The introduction of the B & G Monoflo Fitting provides the means for a natural evolution from the two-pipe to the one-pipe system. The obvious advantages of cost, neatness of installation and the elimination of involved designing in the one-pipe Monoflo System have justified its rapid growth in popularity.

The Monoflo Fitting is entirely different from other devices claiming to perform the same functions. For these reasons:—

1. It is scientifically designed to induce flow into the radiators without penalizing the pump with excessive resistance.
2. It is not dependent upon variations in main sizes to obtain proper resistances.
3. It permits radiators *below* the main to be operated as successfully as those above the main.
4. It maintains a uniform distribution of hot water to radiators, regardless of position.

Comparison with other fittings of this type will show Monoflo Fittings to be units of exceptionally precise manufacture. They are made by a machine designed especially for the purpose which taps the threads so accurately that installation is always easy.



The illustration above shows how the B & G Monoflo Return Fitting accomplishes its remarkable results. The main body of water passes through the eccentric central tube of the Fitting, yet a balanced distribution of water to each radiator is achieved without a power-wasting penalty on the pump. The Monoflo Fitting permits an actual stratification of water in a single main.



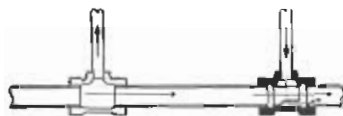
FACE TO FACE DIMENSIONS

Size	
3"	4 ³ / ₁₆ "
2 ¹ / ₂ "	4"
2"	4"
1 ¹ / ₂ "	3 ³ / ₄ "
1 ¹ / ₄ "	3 ⁷ / ₁₆ "
1"	3"

IMPORTANT

Follow these directions for installing Monoflo Fittings on Radiators below the Main—

1. Special Down-Fed Monoflo Fittings must be installed at both supply and return connections to the main.



UP-FEED MONOFLO FITTINGS

Illustration shows how Monoflo Fittings are installed at riser connections to the single main. See B & G Handbook about use of one or two Fittings.



DOWN-FEED MONOFLO FITTINGS

Down-fed radiators must be equipped with a Down-fed Supply Monoflo Fitting and a Down-fed Return Monoflo Fitting.

SIZES—CAST IRON FITTINGS

Sizes shown below apply to both Standard and Down-feed Monoflo Fittings.

Size	Information Required With Order	Tapping Sizes	Approx. Shipping Weight, Lbs. Each
1"	ON ALL ORDERS SPECIFY NUMBER OF SUPPLY AND RETURN FITTINGS AND WHETHER UP-FEED OF DOWN-FEED	1" X 1/2" OR 3/4"	1 1/2
1 1/4"		1 1/4" X 1/2" OR 3/4"	2 1/4
1 1/2"		1 1/2" X 1/2" OR 3/4"	3
2"		2" X 1/2" OR 3/4"	4
2 1/2"		2 1/2" X 1" OR 1 1/4"	5 1/2
3"		3" X 1" OR 1 1/4"	9



STREAMLINE COPPER MONOFLO FITTINGS

To meet the rapid growth in popularity of copper piping, Monoflo fittings are available for this type of installation. Copper Monoflo Fittings have the same characteristics and diversion capacity as the cast iron units.

SIZES—COPPER FITTINGS

Sizes shown below apply to both Standard and Down-feed Monoflo Fittings.

Size	Information Required With Order	Tapping Sizes	Approx. Shipping Weight, Lbs. Each
1"	ON ALL ORDERS SPECIFY NUMBER OF SUPPLY AND RETURN FITTINGS AND WHETHER UP-FEED OR DOWN-FEED	1" X 1/2" OR 3/4"	3/4
1 1/4"		1 1/4" X 1/2" OR 3/4"	1 1/4
1 1/2"		1 1/2" X 1/2" OR 3/4"	2
2"		2" X 1" OR 1 1/4"	2 1/2

NOTE!

Owing to wide range of sizes and capacities of Unit Heaters, we urge you to consult our factory or field engineers as to piping details.

HEATING SYSTEMS

CLOSED TANK SYSTEMS



Air Cushion
Compression Tank

WHERE TO USE

The use of a compression tank on closed hot water heating systems is now universally recognized as essential. Expansion of heated water is taken up by the tank, providing a cushion of compressed air against sudden pressures and water hammer shocks which might injure the boiler. On high temperature installations, a closed system with a compression tank is absolutely imperative, in order that sufficient pressure can be developed to prevent boiling of the water in the system. B & G Compression Tanks can be installed either in the basement or any convenient place in the system.

SIMPLEX "TANK-IN-BASEMENT" SYSTEM—AIR CUSHIONED

The original Simplex "Tank-in-Basement" is known everywhere for its fool-proof simplicity and complete dependability. Equipment consists of one Simplex Relief Valve and an Air Sealed Compression Tank which can be installed either on floor or ceiling.

System Number	Tank Capacity Gallons	*Capacity Sq. Ft. Radiation	Tank Dimensions	Approx. Shipping Weight, Lbs.
S. T. 18	18	UP TO 500 FT.	13" X 39 1/2"	54
S. T. 24	24	UP TO 1000 FT.	13" X 50 1/2"	62
S. T. 30	30	UP TO 2000 FT.	13" X 61 1/2"	72
S. T. 35	35	UP TO 2500 FT.	16" X 48"	74
S. T. 40	40	UP TO 3000 FT.	16" X 54"	92
S. T. 60	60	UP TO 4000 FT.	18" X 62"	154
S. T. 80	80	UP TO 4500 FT.	24" X 45"	166

*Capacities are based on forced circulation and small pipe sizes. On old systems use next larger size tank.

SELF-FILLING "TANK-IN-BASEMENT" SYSTEM—AIR CUSHIONED

Consists of a No. 500 Valve which combines the functions of a Relief Valve, Reducing Valve, Emergency Relief Valve, Strainer and By-Pass Valve for quick filling, and an Air-Sealed Compression Tank which can be installed either on floor or ceiling.

System Number	Tank Capacity Gallons	*Capacity Sq. Ft. Radiation	Tank Dimensions	Approx. Shipping Weight, Lbs.
518	18	UP TO 500 FT.	13" X 39 1/2"	54
524	24	UP TO 1000 FT.	13" X 50 1/2"	62
530	30	UP TO 2000 FT.	13" X 61 1/2"	72
535	35	UP TO 2500 FT.	16" X 48"	74
540	40	UP TO 3000 FT.	16" X 54"	92
560	60	UP TO 4000 FT.	18" X 62"	154
580	80	UP TO 4500 FT.	24" X 45"	166

*Capacities are based on forced circulation and small pipe sizes. On old systems use next larger size tank.

D & T AIR CUSHION COMPRESSION TANK

Can be installed on either floor or ceiling

The D & T Tank can be easily installed on old jobs by merely inserting a tee above the drain cock and connecting to the side opening of the tank, which is placed on the floor in an upright position.

Tank Number	Tank Capacity Gallons	*Capacity Sq. Ft. Radiation	Tank Dimensions	Approx. Shipping Weight, Lbs.
S18	18	UP TO 500 FT.	13" X 39 1/2"	44
S24	24	UP TO 1000 FT.	13" X 50 1/2"	52
S30	30	UP TO 2000 FT.	13" X 61 1/2"	62
S35	35	UP TO 2500 FT.	16" X 48"	64
S40	40	UP TO 3000 FT.	16" X 54"	82
S60	60	UP TO 4000 FT.	18" X 62"	144
S80	80	UP TO 4500 FT.	24" X 45"	156

*Capacities are based on forced circulation and small pipe sizes. On old systems use next larger size tank.

B & G AIR CUSHION COMPRESSION TANK

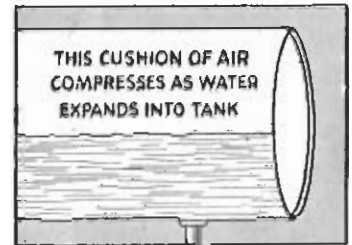
To be installed on ceiling only

Tank Number	Tank Capacity Gallons	*Capacity Sq. Ft. Radiation	Tank Dimensions	Approx. Shipping Weight, Lbs.
15	15	UP TO 300 FT.	12" X 30"	31
18	18	UP TO 500 FT.	12" X 36"	35
21	21	UP TO 700 FT.	12" X 42"	39
24	24	UP TO 1000 FT.	12" X 48"	44
30	30	UP TO 2000 FT.	12" X 60"	56
40	40	UP TO 3000 FT.	13" X 71"	68

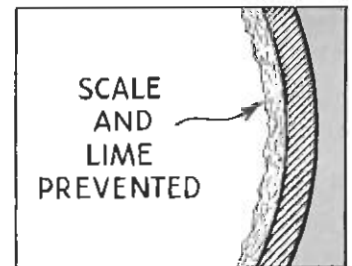
*Capacities are based on forced circulation and small pipe sizes. On old systems use next larger size tank.



**NO CLOSED
HOT WATER SYSTEM IS
COMPLETE WITHOUT
AN AIR CUSHION TANK**

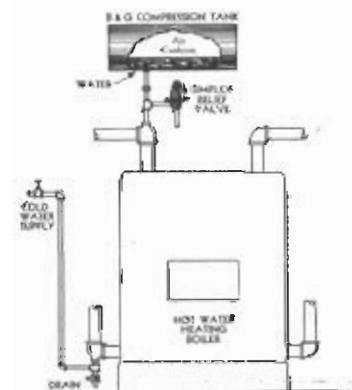


When the water in the system is heated it expands—approximately 1/2% in volume when raised 100°. If no tank is installed, the expanding water is forced through the Relief Valve onto the basement floor. When the system cools, additional water must be drawn in to replace the amount lost by expansion. Extra fuel is then consumed to heat this cold water, easily totaling up to an appreciable sum.



The continual adding of water brings in foreign matter, such as sediment and lime. Over a period of years, the boiler becomes scaled and requires an ever-increasing amount of fuel to heat it.

When a compression tank is used, the expanding water is forced up into the tank, compressing the air. As the system cools, the water recedes back into the boiler. Hence, lime and sediment deposits in the boiler are prevented.



B & G Compression Tank and Simplex Relief Valve installed on hot water boiler.

For complete installation information see B & G Handbook

HEATING SYSTEMS

RELIEF and SELF-FILLING VALVES

SIMPLEX RELIEF VALVE



For over 25 years the Simplex Relief Valve has been the standard of comparison in its field. Body is of heavy construction and valve seat of rust-proof bronze. Any pressure in excess of 30 lbs. lifts the extremely large, composition diaphragm to relieve the system. The large area of the diaphragm assures ample lifting power and positive action.

There are no guides to set up friction or become corroded and the valve meets fully all ASME code requirements.



No. A3—Brass Body
No. A8—Iron Body

No. A3 (brass body) and No. A8 (iron body) RELIEF VALVE

The same Relief Valve used in the B & G Dual Unit. Size 1/2" only. Maximum setting 30 lbs.

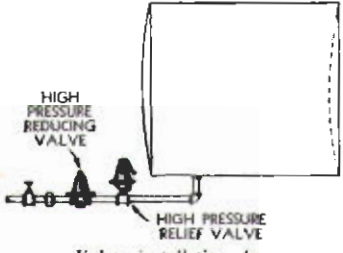
Number	Size	Max. Setting	Approx. Ship. Weight
SIMPLEX	1/2"	30 LBS.	9 LBS.

Number	Size	Body Const.	Approx. Ship. Weight
A3	1/2"	BRASS	2 1/4 LBS.
A8	1/2"	IRON	2 1/4 LBS.

Simplex Valve

NOTE!

A compression tank must be installed on all closed systems.



Valve installation for domestic water service.



Nos. 4, 5—Brass Body
Nos. 9, 10—Iron Body

B & G HIGH PRESSURE RELIEF VALVE

Designed to give protection against excess pressure in service water systems. Diaphragm operated, with all working parts made of brass. Body in either brass or iron.

Number	Size	Const.	Pressure Setting	*Pressure Range	Approx. Ship. Weight
4	1/2"	BRASS	75 LBS.	40 TO 150 LBS.	2 1/4 LBS.
5	1/2"	BRASS	75 LBS.	40 TO 150 LBS.	2 1/4 LBS.
9	1/2"	IRON	75 LBS.	40 TO 150 LBS.	2 1/4 LBS.
10	1/2"	IRON	75 LBS.	40 TO 150 LBS.	3 LBS.

*Standard setting 75 lbs. For other setting specify when ordering. Adjustable 40 to 150 lbs.

SELF-FILLING VALVES

No. 500 SELF-FILLING VALVE



No. 500—Brass Body

This unit combines the functions of a Relief Valve, Reducing Valve, Strainer and By-Pass Valve, including an Emergency Relief Valve to protect boiler against water hammer in the domestic water system. All parts exposed to water are of corrosion-proof phosphorus bronze. The relief valve opens at 30 lbs. pressure. The factory setting of the Reducing Valve is 12 lbs. and can be adjusted for varying building heights. By-pass Valve is 1/2" and permits rapid filling of the system—an exclusive feature. Relief Valve setting non-adjustable.

Number	Size	Body Const.	Approx. Shipping Weight
500	1/2"	BRASS	8 1/4 LBS.

No. 510 SELF-FILLING VALVE

Exact duplicate of No. 500—without Emergency Relief.

Number	Size	Body Const.	Approx. Shipping Weight
510	1/2"	BRASS	8 1/4 LBS.

No. 3 DUAL UNIT VALVE
Chrome De Luxe Finish



No. 3—Brass Body
No. 8—Iron Body

The B & G No. 3 Dual Unit is a low-priced combination relief and reducing valve—yet is built to the high standards of all B & G Products; and offers many outstanding superiorities. The body and all parts exposed to water are made of corrosion-proof brass with built-in strainer and extra large relief diaphragm. The Reducing Valve is factory-set at 12 lbs. but can be easily adjusted to meet varying building heights. No chattering—the special composition valve disk seats on stainless steel and is practically noiseless in operation.

No. 8 DUAL UNIT VALVE

Same valve as No. 3 Dual Unit, but with iron body.

Number	Size	Body Construction	Approx. Shipping Weight
3	1/2"	BRASS	5 LBS.
8	1/2"	IRON	5 LBS.

Maximum setting 30 lbs.

HEATING SYSTEMS

REDUCING & THERMO-FLO VALVES

For complete installation information see B & G Handbook



No. 12—Iron Body

No. 12 REDUCING VALVE

An excellent fast-filling valve which automatically keeps the system properly filled with water. All working parts are of brass, with easily cleaned built-in strainer. Factory-adjusted at 12 lbs., suitable for 1, 2 and 3-story buildings. Adjustment easily made.

Number	Size	Body Construction	Approx. Shipping Weight
12	1/2"	IRON	3 LBS.



No. B3—Brass Body
No. B8—Iron Body

No. B3 REDUCING VALVE (Brass Body)

The same Reducing Valve used in the B & G Dual Unit. Available with two female connections, if desired. Size 1/2" only.

No. B8 REDUCING VALVE (Iron Body)

Same valve as No. B3 but with iron body. Available only with one male and one female connection.

Number	Size	Body Const.	Approx. Shipping Weight
B3	1/2"	BRASS	3 LBS.
B8	1/2"	IRON	2 1/4 LBS.

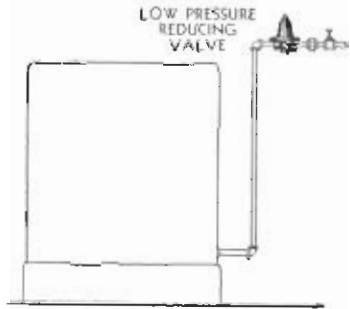


Nos. 6 and 7
Brass Body

B & G HIGH PRESSURE REDUCING VALVE

Protects plumbing fixtures against excessive line pressures. Factory adjusted for 150 lbs. initial pressure, 45 lbs. delivery pressure. Other pressures must be specified when ordering. All working parts brass construction, built-in strainer, extra large diaphragm.

Number	Size	Body Const.	Factory Pressure Setting	Approx. Ship. Weight
6	1/2"	BRASS	45 LBS. DELIVERY	2 1/4 LBS.
7	1/2"	BRASS	45 LBS. DELIVERY	3 1/4 LBS.



Method of installing Low Pressure Reducing Valve on hot water boiler.

THERMO-FLO VALVE

WHERE TO USE

This improved unit combines the functions of a Flo-Control Valve with a device for preventing the "over-ride" in boiler water temperature which occasionally occurs in stoker or hand-fired forced circulation hot water heating systems. It embodies a balanced-type thermal member which opens a by-pass when boiler water reaches an excessive temperature, permitting the water to circulate by gravity to the radiators. At any temperature below this point, or when the pump is running, the thermostatic by-pass is closed.

Since the by-pass of the B & G Thermo-Flo Valve is thermostatically operated, its controlling action is not affected by current failure. This valve should not be used on systems with radiation on a level with the boiler or where all radiation is below the main. The "over-ride" of such system should be taken care of by a reverse type limit control.

Install this valve as close to the boiler as possible, using a short nipple.



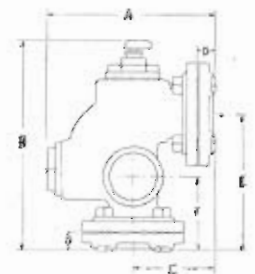
Patent No. 2,194,805



B & G Thermo-Flo Valve installation

SIZES, CAPACITIES AND DIMENSIONS

Size	Sq. Ft. of Radiation Handled	Temperature Adjustment	Compression Tank Opening	DIMENSIONS IN INCHES						Approx. Shipping Weight Lbs.
				A	B	C	D	E	F	
2"	UP TO 1500 SQ. FT.	FACTORY-SET AT 215°—NON-ADJUSTABLE.	1/2"	8 3/8	10 3/8	4 1/8	2 3/8	6 1/8	3 3/8	29



For dimensions see table at left

For complete installation information see B & G Handbook

HEATING SYSTEMS

MOTOR VALVES & CONVERTORS

MOTORIZED VALVE (FOR HOT WATER SYSTEMS ONLY)

WHERE TO USE

B & G Motorized Valves are ideal for zoned hot water heating systems, as they offer a positive control of boiler water flow at very small operating cost. For example, a six zone forced circulation system would require six Valves and one Booster pump. Since these Valves open in a few seconds and as they use no current when opened or closed, their economy of operation is apparent.

They are also used in gravity hot water systems to shut off the flow of boiler water when heat is not needed in the radiators. An indirect water heater can thus be used to supply domestic hot water the year around.

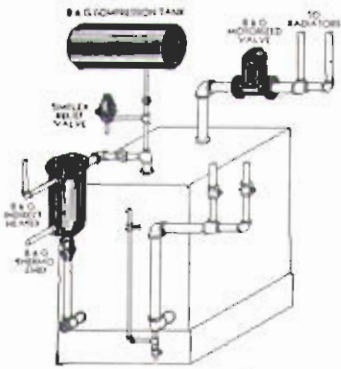
Very heavy construction is used in all moving parts, yet the valve is exceptionally compact. A straight-through instead of globe construction eliminates air-binding.



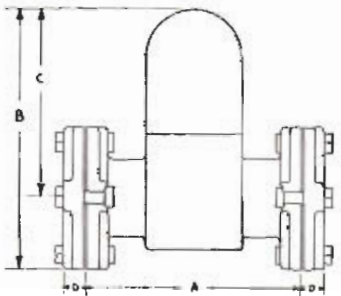
This Valve can be installed in either vertical or horizontal pipes and in any position except upside down. Transformer is furnished separately at no extra cost for mounting on any convenient outlet box. This Valve has auxiliary low voltage contact for energizing relay. Do not use this valve to control the flow of steam.

SIZES, CAPACITIES AND DIMENSIONS

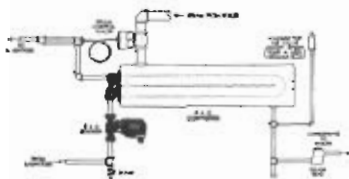
3 Wire Standard Unit—Aux. Low Voltage Switch		2 Wire with Aux. Low Voltage Switch		B. E. R. Type Motorized Valve 2 Wire Motor with 2 Aux. Switches—1 Low and 1 High Voltage		DIMENSIONS—INCHES				Approx. Ship. Weight Lbs.
No.	Size	No.	Size	No.	Size	A	B	C	D	
3M1	1"	2M1	1"	2R1	1"	6 3/4"	8 3/4"	6 1/2"	11 1/2"	23
3M1 1/2	1 1/4"	2M1 1/2	1 1/4"	2R1 1/2	1 1/4"	6 3/4"	8 7/8"	6 1/2"	11 1/2"	23
3M1 1/2	1 1/2"	2M1 3/4	1 1/2"	2R1 3/4	1 1/2"	6 3/4"	9"	6 1/2"	11 1/2"	27
3M2	2"	2M2	2"	2R2	2"	6 1/2"	9 1/4"	6 1/2"	11 1/2"	27



B & G Motorized Valve Installation.

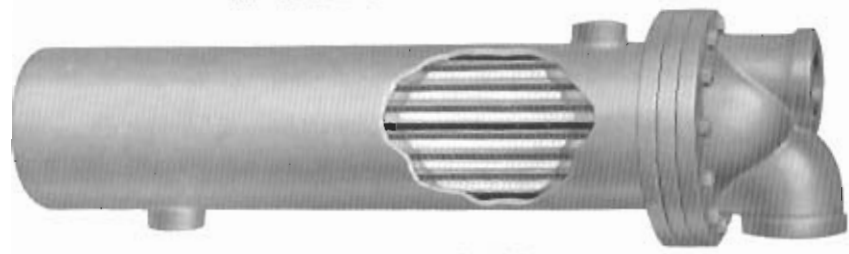


For dimensions see table at right.



Typical Installation of B & G Converter.

CONVERTORS



WHERE TO USE

Convertors are generally used to transfer heat from steam or hot water to water. Where steam is required for process work, the advantages of a hot water heating system can be obtained by installing a convertor instead of an extra boiler. Convertors also have many applications in zoning large hot water heating installations and in heating outlying buildings by means of water heated in a convertor by steam from a central plant. It is advisable to select a convertor of a size sufficient to assure a low pressure drop, as it will save materially in pumping cost.

MBH and pressure drop ratings are based on a 20° F. rise in heated water with pumped circulation through radiators. Pressure drop is the loss of water pressure occurring between inlet and outlet of convertor when pump is running.

CONVERSION FACTORS FOR CONVERTORS

For Pressures Higher Than 10 lbs. per Sq. In. — Use convertor capacity at 180° outlet water temperature and 1/2 lb. steam pressure and multiply by factor for higher pressure and desired outlet water temperatures.

Outlet Water Temperature	PRESSURE FACTORS FOR HIGHER STEAM PRESSURE			
	15 lbs.	25 lbs.	50 lbs.	75 lbs.
180° F	3.0	4.3	6.85	9.45
200° F	1.87	2.9	5.15	7.25
220° F	.91	1.7	3.50	5.38
240° F	.27	.8	2.27	3.74

SIZES AND CAPACITIES ON NEXT PAGE

NOTE!

For Radiation Heaters installed below water line see page 26.

HEATING SYSTEMS CONVERTORS - cont.



J SERIES—SCREWED HEAD—STEAM IN SHELL, POUNDS PER SQUARE INCH

Unit Number	Water leaving unit, °F	½ Lb.					2 Lbs.					5 Lbs.					10 Lbs.					Max. Overall Dimensions	Openings		Approx. Supt. Wt. Lbs.
		180	200	180	200	210	180	200	210	220	180	200	210	220	225	Length	Dia.	Head	Shell						
		Emission, BTU per sq. ft. Rad.	150	180	150	180	200	150	180	200	225	150	180	200	225					240					
J11	SQ. FT. RAD.	45	12	61	19.5	9	76	32	15.5	6	109	51	30	16	11	16 1/4"	4"	1 1/2"	1 1/2"	20					
	MBH PD	6.7	2.16	9.1	3.5	1.8	11.5	5.7	3.1	1.3	16.3	9.1	6.1	3.5	2.6										
J12	SQ. FT. RAD.	181	48	242	83.9	37	308	120	62.5	25	435	203	123	67	49	28 1/4"	4"	1 1/2"	1 1/2"	28					
	MBH PD	27.2	8.65	36.6	15.	7.42	48.	21.6	12.5	5.7	65.5	36.6	24.7	15.	11.8										
J13	SQ. FT. RAD.	420	113	570	195	86.5	720	280	148	56	1020	475	290	156	105	40 1/4"	4"	1 1/2"	1 1/2"	40					
	MBH PD	63.2	20.3	85.5	35.	17.3	108	50.5	29.6	13.	153	85.5	58	35.	25.3										
J23	SQ. FT. RAD.	580	151	760	260	118	961	372	197	75	1360	634	386	208	140	41 1/4"	4 1/2"	2"	2"	48					
	MBH PD	84.4	27.1	114	46.5	23.1	144	67.5	39.5	17.	204	114	77.2	46.5	33.8										
J24	SQ. FT. RAD.	960	256	1310	440	197	1630	640	330	132	2330	1085	655	352	240	53 1/4"	4 1/2"	2"	2"	60					
	MBH PD	144	46.2	195	79.5	39.5	244	115	66	29.7	350	195	131	79.5	57.5										

C SERIES—BOLTED HEAD—STEAM IN SHELL, POUNDS PER SQUARE INCH

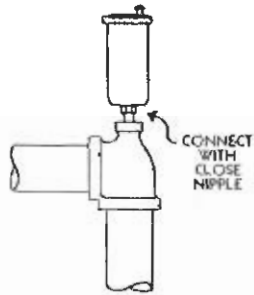
Unit Number	Water leaving unit, °F	½ Lb.					2 Lbs.					5 Lbs.					10 Lbs.					Max. Overall Dimensions	Openings		Approx. Supt. Wt. Lbs.
		180	200	180	200	210	180	200	210	220	180	200	210	220	225	Length	Dia.	Head	Shell						
		Emission, BTU per sq. ft. Rad.	150	180	150	180	200	150	180	200	225	150	180	200	225					240					
C12	SQ. FT. RAD.	157	41	212	72	32	266	105	54.3	21	392	177	107	57.5	30.8	32 1/4"	7"	2"	2"	90					
	MBH PD	23.6	7.5	31.8	13	6.4	41.8	16.9	9.3	4.73	57.4	31.9	21.5	13	7.4										
C13	SQ. FT. RAD.	323	85	445	148	66	550	214	108	4.3	787	365	222	119	70.5	34 1/4"	7"	2"	2"	105					
	MBH PD	48.5	15.3	65.6	26.7	13.2	82.3	38.6	21.7	9.7	118	65.6	44.4	26.7	16.9										
C14	SQ. FT. RAD.	874	166	805	289	130	1068	416	215	84	1450	670	410	222	154	56 1/4"	7"	2"	2"	120					
	MBH PD	95	30	121	52	26	160	75	43	19	218	121	82	50	37										
C15	SQ. FT. RAD.	970	260	1310	450	200	1850	690	335	129	2390	1060	675	360	242	68 1/4"	7"	2"	2"	135					
	MBH PD	146	47	191	81	40	248	117	67	29	359	191	135	81	58										
C16	SQ. FT. RAD.	1410	372	1910	645	290	2400	940	490	191	3440	1590	995	515	350	80 1/4"	7"	2"	2"	150					
	MBH PD	212	67	287	116	58	361	169	98	43	516	287	199	116	84										
C17	SQ. FT. RAD.	1940	510	2620	890	395	3280	1280	660	258	4750	2180	1320	712	394	92 1/4"	7"	2"	2"	165					
	MBH PD	291	92	392	160	79	492	231	132	58	712	392	264	160	94.5										
C18	SQ. FT. RAD.	2530	670	3410	1155	515	4200	1680	875	333	6130	2840	1730	925	504	104 1/4"	7"	2"	2"	180					
	MBH PD	380	193	512	208	103	628	302	173	78	920	512	346	208	121										
C22	SQ. FT. RAD.	428	128	650	220	98	812	317	165	62	1160	540	325	176	94	105 1/4"	11"	3"	1 1/2"	210					
	MBH PD	71.8	23.1	97.5	39.6	19.8	122	57	33.1	14	174	97	65	39.6	22.7										
C23	SQ. FT. RAD.	1060	284	1452	495	220	1820	718	370	142	2800	1210	735	395	242	45 1/4"	11"	3"	1 1/2"	225					
	MBH PD	161	51	218	89	44	273	128	74	32	390	218	147	89	58										
C24	SQ. FT. RAD.	1915	505	2582	880	390	3250	1242	660	253	4640	2160	1305	703	475	57 1/4"	11"	3"	1 1/2"	240					
	MBH PD	296	91	388	158	78	487	224	132	57	695	388	261	158	114										
C25	SQ. FT. RAD.	2990	810	4050	1378	615	3500	1925	995	395	7260	3370	2040	1100	730	69 1/4"	11"	3"	2"	255					
	MBH PD	449	146	607	248	123	765	358	205	89	1090	607	410	248	175										
C26	SQ. FT. RAD.	4320	1140	5800	1970	875	7270	2850	1475	574	10420	4810	2930	1575	1060	81 1/4"	11"	3"	2"	265					
	MBH PD	646	205	870	354	175	1092	514	295	129	1567	870	586	354	255										
C27	SQ. FT. RAD.	5830	1550	7900	2680	1200	9950	3900	2010	776	14220	6570	4010	2140	1460	93 1/4"	11"	3"	2"	280					
	MBH PD	876	279	1184	482	240	1492	732	402	175	2338	1184	802	482	350										
C28	SQ. FT. RAD.	7220	1920	9750	3320	1475	12240	4820	2490	960	17600	8120	4930	2660	1875	105 1/4"	11"	3"	3"	300					
	MBH PD	1083	345	1461	598	295	1837	868	498	216	2640	1461	986	598	450										
C33	SQ. FT. RAD.	1780	461	2360	800	357	2960	1160	600	233	4240	1965	1190	640	343	47 1/4"	15"	4"	2 1/2"	350					
	MBH PD	282	83	354	144	71.5	445	209	120	52.5	636	354	238	144	101.6										
C34	SQ. FT. RAD.	3120	821	4210	1430	635	5260	2070	1080	422	7880	3600	2120	1145	622	59 1/4"	15"	4"	2 1/2"	380					
	MBH PD	468	148	632	258	127	790	373	217	95	1138	632	424	258	149										
C35	SQ. FT. RAD.	4920	1300	6650	2260	1050	8350	3280	1695	667	11920	5540	3355	1810	1260	71 1/4"	15"	4"	2 1/2"	410					
	MBH PD	737	234	997	407	201	1252	591	339	150	1787	997	671	407	303										
C36	SQ. FT. RAD.	6940	1845	9280	3180	1422	1180	4630	2390	938	16850	7750	4750	2540	1380	83 1/4"	15"	4"	2 1/2"	440					
	MBH PD	1041	332	1393	572	285	1770	834	479	211	2530	1493	950	572	431										
C37	SQ. FT. RAD.	9520	2520	12820	4360	1960	16180	6350	3280	1146	23100	10700	6510	3490	1890	95 1/4"	15"	4"	2 1/2"	470					
	MBH PD	1429	454	1925	786	392	2425	1142	656	255	3465	1925	1302	786	454										
C38	SQ. FT. RAD.	12550	3330	17000	5770	2560	21250	8350	4325	1672	30400	14150	8570	4620	2470	107 1/4"	15"	4"	2 1/2"	500					
	MBH PD	1880	999	2545	1038	512	3190	1503	865	376	4560	2545	1713	1038	594										
C43	SQ. FT. RAD.	4880	1300	6600	2250	985	8340	3260	1695	650	11050	5800	3340	1800	975	51 1/4"	19 1/2"	6"	4"	710					
	MBH PD	732	234	991	405	193	1250	587	337	146	1780	991	668	405	274										
C44	SQ. FT. RAD.	8670	2300	11200	4000	1780	14750	5780	3090	1155	21000	9320	5925	3200	1765	63 1/4"	19 1/2"	6"	4"	770					
	MBH PD	1300	415	1680	720	356	2210	1040	600	260	3160	1680	1185	720	523										
C45	SQ. FT. RAD.	13600	3610	18350	6340	2800	23100	9060	4680	1815	33000	15300	9300	4955	2670	75 1/4"	19 1/2"	6"	4"	830					
	MBH PD	2040	650	2750	1140	560	3460	1632	936	408	4950	2750	1880	1140	640										
C46	SQ. FT. RAD.	19600	5200	26500	9000	4020	33200	12950	6750	2920	47600	22000	13400	7200	3860	87 1/4"	19 1/2"	6"	4"	896					
	MBH PD	2940	935	3970	1620	804	4980	2335	1350	585	7140	3970	2680	1620	927										
C47	SQ. FT. RAD.	26600	7050	36200	12220	5460	45360	17800	9200	4000	65000	30200	18250	9800	5260	99 1/4"	19 1/2"	6"	4"	950					
	MBH PD	4000	1270	5430	2200	1092	6800	3200	1840	800	9760	5430	3650	2200	1263										
C48	SQ. FT. RAD.	34600	9215	47060	15900	7125	58200	23100	12000	5200	84250	39200	23700	12790	6830	111 1/4"	19 1/2"	6"	4"	1010					
	MBH PD	5200	1950	7050	2860	1425	8800	4160	2400	1040	12640	7050	4740	2860	1840										
C49	SQ. FT. RAD.	43000	11750	59700	20200	9050	74600	29400	15200	5975	106500	49750	30100	16200	8660	123 1/4"	19 1/2"	6"	4"	1070					
	MBH PD	6410	2115	8960	3640	1810	11200	5280	3040	1345	18000	8960	6030	3640	2080										
C410	SQ. FT. RAD.	54060	14430	73700	24800	11950	92400	36200	19750	7250	13120	73600	37200	19500											

For complete installation information see B & G Handbook

MISCELLANEOUS SPECIALTIES

AUTOMATIC AIR VENT

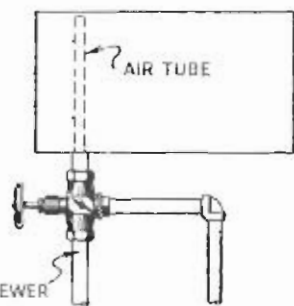
An improved valve for automatically and positively removing air from the piping of any type of hot water heating system. *When installing, use a close 1/8" nipple.* Weight 1 lb. At slight additional charge, a copper overflow connector can be furnished. For overflow pipe from the connector use 1/4" O. D. copper tubing.



Method of connecting B & G Automatic Air Vent.

AIR CHARGER AND TANK DRAINER

Five minutes' time and a simple twist of a valve handle each year will assure the owner of an "air charged" tank. No more water-logged tanks - *complete simple operating instructions come packed with each valve.* Size 1/2" with 1/4" tapping for vent tube. Packed single, weight 2 1/2 lbs. (Air Tube and piping not furnished with valve.)



Installation of Air Charger and Tank Drainer.

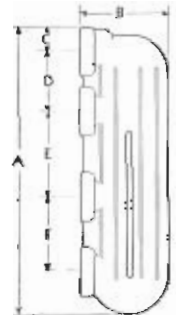
COMBINATION ALTITUDE, PRESSURE AND THERMOMETER GAUGE



This instrument combines a sensitive, accurate indicating hot water thermometer and a combination gauge reading in lbs. pressure per square inch and feet of altitude. Thermometer reading is from 80° to 250° Fahrenheit—normal pressure range 0 to 30 lbs.—altitude range 0 to 70 feet. Packed single; weight 1 lb.

FIREPOT COIL HEATER

The simplest kind of a water heater - thousands in use. Can be installed in all warm air furnaces and coal-fired heating boilers.



For dimensions of Fire Pot Coil Heater, see table.

Number	Description	Capac. Gal.	Dimensions in Inches						Tapping	Packing	Approx. Ship. Weight
			A	B	C	D	E	F			
30	CAST IRON	30	11 7/8	3 3/4	1	2 1/2	3 1/2	3	1/4" OR 1"	6 TO BOX	37 LBS.
42	CAST IRON	42	12	4 1/2	1	2 1/2	3 1/2	3		6 TO BOX	47 LBS.
66	CAST IRON	66	12 7/8	5 1/2	1 1/2	2 1/2	3 1/2	3		3 TO BOX	47 LBS.
30	BRASS	30	11 7/8	3 3/4	1	2 1/2	3 1/2	3	1/4" OR 1"	6 TO BOX	37 LBS.
42	BRASS	42	12	4 1/2	1	2 1/2	3 1/2	3		6 TO BOX	47 LBS.
66	BRASS	66	12 7/8	5 1/2	1 1/2	2 1/2	3 1/2	3		3 TO BOX	47 LBS.

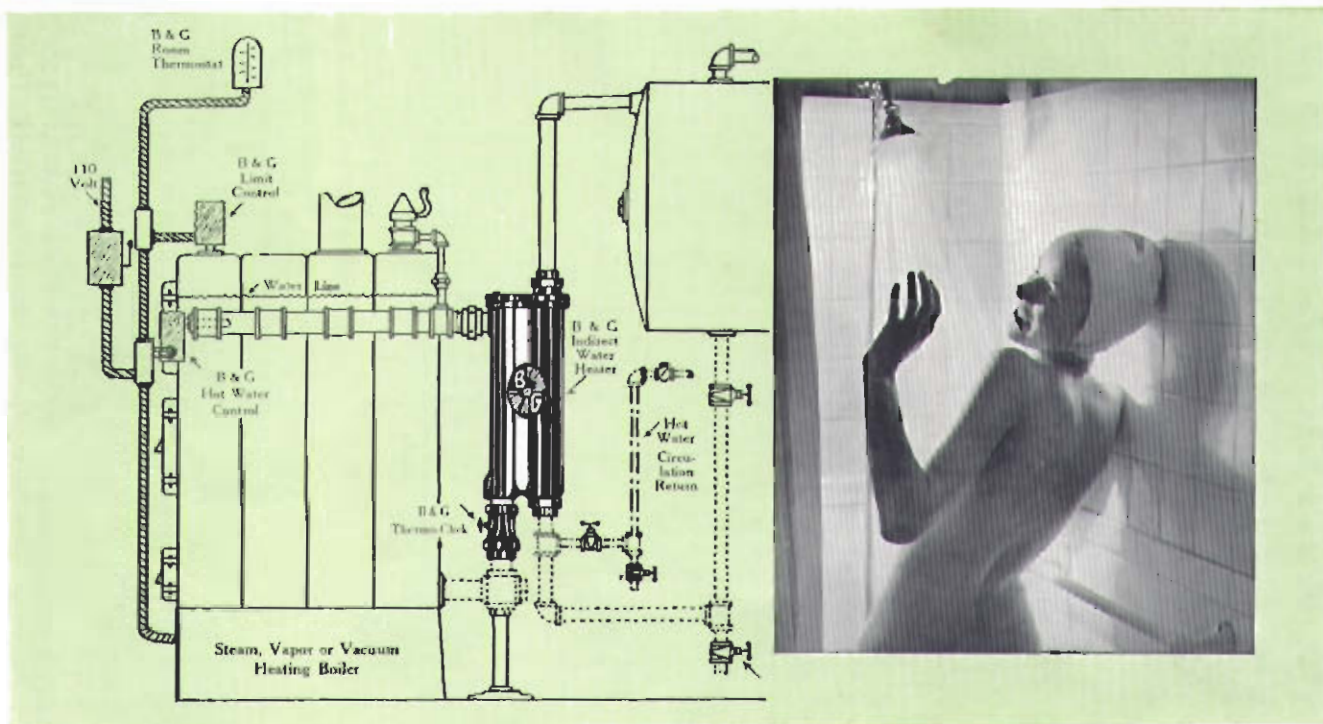


HAVE YOU A COPY OF THE B & G HANDBOOK?



A complete manual of instruction covering the design and installation of modern service water heating systems and forced hot water house heating systems. The B & G Handbook is simplified, easy to follow and based on accepted engineering practices. Write on your business stationery for your copy.

WHY INDIRECT HEATING OF DOMESTIC WATER IS THE MOST ECONOMICAL WAY



One boiler heats both house and domestic water - saving up to 75% of water heating costs because of greater efficiency

Water heaters in general usage are divided into three classifications—(1) units which are in effect miniature separately fired boilers, (2) gas and electric units, and (3) Indirect Heaters.

Of the three, Indirect Heaters have established an air-tight superiority in economy and convenience of operation. Years of record keeping show hot water costs reduced from 50 to 75% when Indirect Heaters have replaced other types.

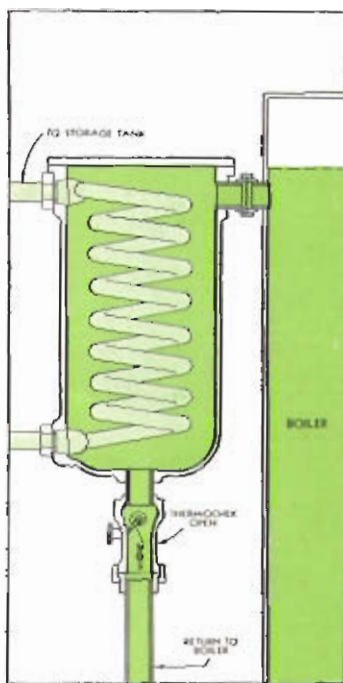
Indirect Heaters utilize the house heating boiler as the source of heat, in summer as well as winter. As shown in the illustration, water from the heating boiler circulates through the Heater Shell, thus heating the domestic water flowing through the copper tubing. With proper controls installed, the Heater will supply ample quantities of hot water the year around.

How B & G Indirect Heaters Save Money

During the winter, the heating boiler is in constant use. Only a small fraction of the heat generated is used in heating the domestic water. When a storage tank is used, on coal-fired boilers, hot water is accumulated during the night hours, when boiler heat is normally wasted.

In summer a similar economy is achieved. Remember that a large boiler is usually much more efficient than a small one. Once brought up to the proper temperature for domestic water heating, it can be maintained at that degree on very little fuel. A few operations daily of the automatic firing device are sufficient; or if the boiler is hand fired, rubbish and garbage, plus a little fuel will keep plenty of hot water on hand.

Continuous use of the heating boiler is just like exercise—it prevents the costly deterioration which occurs when the boiler is idle

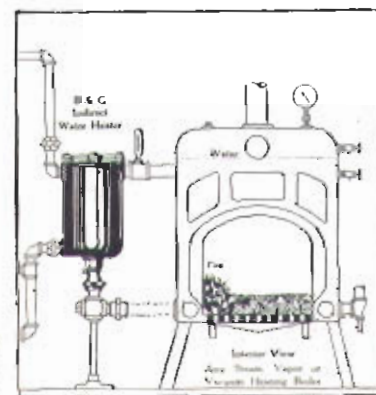


for long periods. Internal circulation of the boiler is also improved by the use of an Indirect Heater, thus increasing efficiency and reducing fuel consumption.

Radiators can't heat up in Summer

On automatically-fired steam installations, boiler water is kept below the steaming point (212°) by a limit control in the boiler, which keeps the water at approximately 180°. Hot water systems are similarly controlled by Flo-Control Valves which prevent circulation of hot water to the radiators unless heat is called for by the room thermostat.

A year around supply of hot water is thus obtained at amazingly small expense.



QUICK SIZING CHART FOR B & G WATER HEATERS

Sizing an Indirect Water Heater calls for a degree of good judgment in addition to the usual calculations. Neighborhoods, classes of people and type of building are all factors which affect the amount of hot water used. Generally speaking, the number of bedrooms in a house or apartment indicates the maximum tenancy to be expected, and, therefore, is a sound guide in

figuring hot water requirements. Buildings of mixed occupancy, such as stores with living quarters above, obviously require a special calculation.

The sizing chart below is based on number of bedrooms and, except in unusual situations, can be safely followed.

FOR INSTALLATIONS LARGER THAN SHOWN BELOW, SEE YOUR LOCAL B & G REPRESENTATIVE OR WRITE BELL & GOSSETT CO.

Number of Bedrooms	B & G Indirect Heater		B & G Tankless Heater		B & G Super Tankless Heater		B & G Tank & Heater		B & G Thermo-Voir		Unitem Submerged Heater ★						
	Boiler Water Temp.		Without Water Mixer		With Water Mixer		Boiler Water Temp.		Boiler Water Temp.		With Storage Tank		Tankless		Boiler Water Temp.		
	212°	200°	180°	212°	200°	180°	212°	200°	180°	212°	200°	180°	212°	200°	180°	212°	180°
1	No. 5/ NO. 70	No. 90	No. 14	No. 14	No. 14	No. 14	No. 14	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40
2	No. 80	No. 120	No. 16	No. 16	No. 16	No. 16	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40
3	No. 120	No. 180	No. 20	No. 20	No. 20	No. 20	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40
4	No. 150	No. 200	No. 20	No. 20	No. 20	No. 20	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40
5	No. 200	No. 300	No. 30	No. 30	No. 30	No. 30	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40
6	No. 250	No. 400	No. 30	No. 30	No. 30	No. 30	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40
8	No. 400	No. 500	No. 30	No. 30	No. 30	No. 30	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40
10	No. 500	No. 600	No. 30	No. 30	No. 30	No. 30	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40
15	No. 600	No. 800	No. 30	No. 30	No. 30	No. 30	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40
20	No. 800	No. 1000	No. 30	No. 30	No. 30	No. 30	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40
30	No. 1000	No. 1200	No. 30	No. 30	No. 30	No. 30	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40
40	No. 1200	No. 1600	No. 30	No. 30	No. 30	No. 30	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40
50	No. 1200	No. 1600	No. 30	No. 30	No. 30	No. 30	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40
70	No. 1600	No. 2000	No. 300	No. 300	No. 300	No. 300	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40
100	No. 2000	No. 2500	No. 1600	No. 1600	No. 1600	No. 1600	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 25	No. 25	No. 40	No. 40	No. 40

★ Based on tank being located above top of heater. Use larger heater if tank is lower. If tank must be smaller than listed above, use larger heater for faster recovery.

COMMERCIAL AND INDUSTRIAL INSTALLATIONS

- Restaurant For each 200 people fed during peak meal, capacity required equals 15 bedrooms.
- Drug Store For 20 feet of soda fountain, capacity required equals 12 bedrooms.
- Barber Shop For each chair, capacity required equals 3 bedrooms.
- Beauty Shop For each operator, capacity required equals 4 bedrooms.
- Country Club For each shower, capacity required equals 5 bedrooms. Figure restaurant and living quarters as noted above.
- Office Building For each doctor, dentist, or other single office, capacity required equals 1 bedroom.
- Factory Building For each shower, capacity required equals 5 bedrooms. Each 2 hot water fixtures should be figured as 1 bedroom.

★ INSTRUCTIONS

- for sizing Unitem Submerged Heaters
- 1st. Determine from table above, the number of sq. ft. of copper heating surface required to take care of Domestic hot water load.
 - 2nd. Measure length of boiler where heater will be installed, also distance between wall and front or rear of boiler. Frequently this distance will limit the length of heater which can be used.
 - 3rd. Determine from type of boiler and its construction, the type and size of heater which can be used. If in doubt, write the Bell & Gossett Co., Morton Grove, Ill., being sure to give manufacturer's name and catalog number of boiler.
 - 4th. From page 22 select the Heater unit containing the required amount of copper heating surface as estimated under 1st step.

DOMESTIC WATER HEATING SYSTEMS

INDIRECT HEATERS

For complete installation information see B & G Handbook



Double Coil Heater



Single Coil Heater

WHERE TO USE

Any steam, vapor or hot water heating boiler can be equipped with this type of Indirect Heater. With the proper electrical controls, the Heater will furnish an ample supply of hot water *winter and summer*, at savings as much as 50 to 75% over other methods where a separate water heating unit is required.

This Heater is particularly well adapted to installation on cast iron sectional boilers, where it is not possible to install an internal submerged heater. It should be used with a storage tank of suitable capacity.

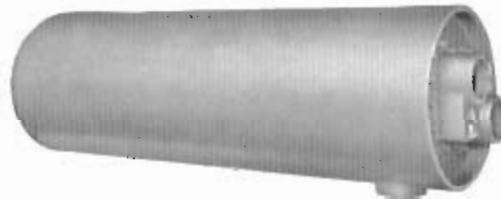
For best results, storage tank should be horizontal and as close to the ceiling as possible. On steam boilers, install with top of heater close to the water line. On hot water heating systems, keep top of heater level with or above top of boiler. If tank is low or small, heater size should be increased for faster recovery.

FEATURES OF CONSTRUCTION

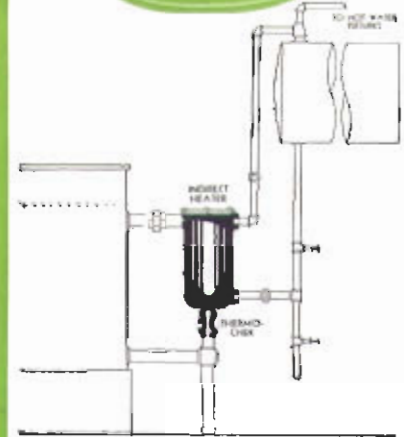
The B & G Indirect Heater is offered in vertical single and double coil units and in horizontal models where larger capacities are required. The jacket is of sturdy construction, while the tubes, heads and all parts in contact with domestic water are of rust-proof copper or bronze. Coils are easily removed.

The generous heating surface built into B & G Indirect Heaters assures large capacity and quick recovery.

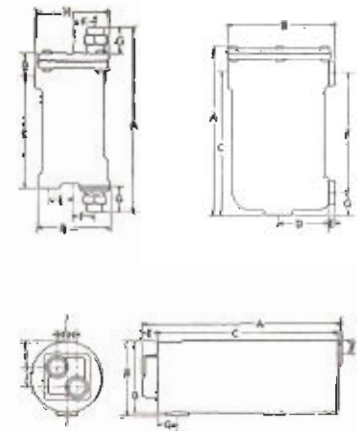
Shell working pressures, 15 lbs. steam—30 lbs. water.



Horizontal Tubo Heater



Typical Application of B & G Indirect Heater.



FOR DIMENSIONS SEE TABLE BELOW

SIZES, CAPACITIES AND DIMENSIONS

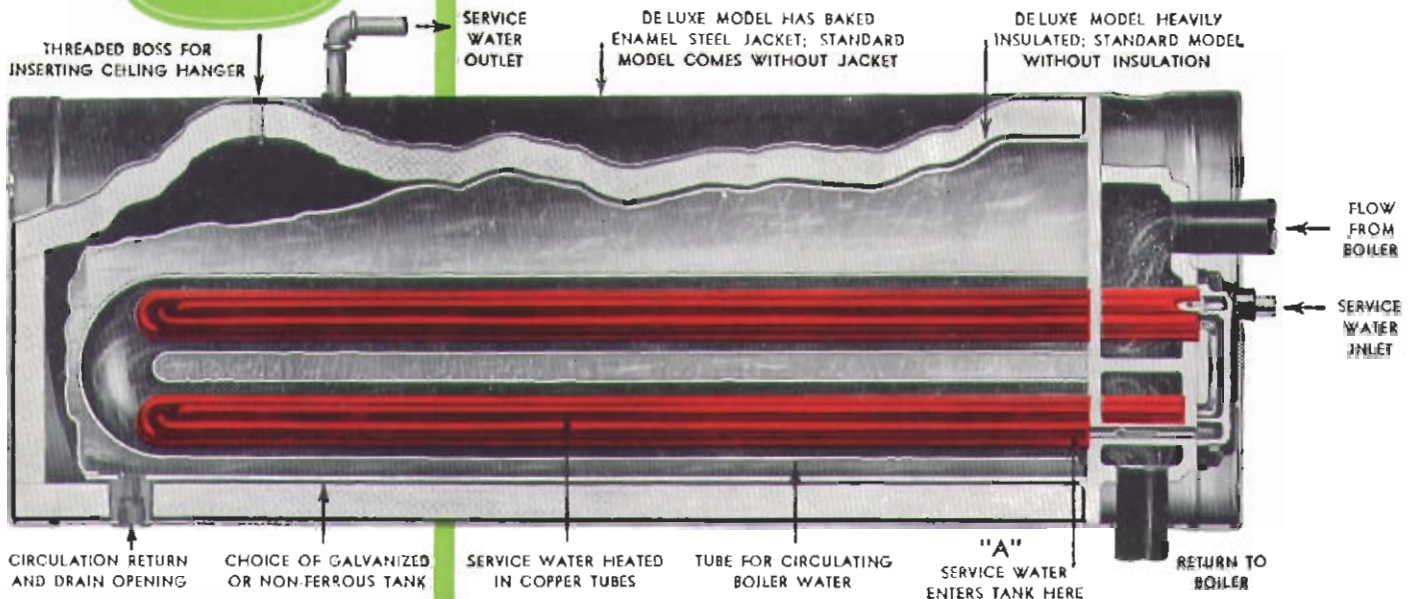
For recommended heater sizes see page 16

For year around hot water supply on all automatically fired installations, select heater size on 180° boiler water temperature.

DESCRIP-TION	Heater Number and Size	CAPACITIES—Gals. in 3 Hours Heated from 40° to 140° With Domestic Water in Coil				DIMENSIONS IN INCHES										Boiler Conn. Inches	Service Water Conn. Inches	Approx. Ship. Wt. Lbs.	
		Boiler Water At 212°	Boiler Water At 200°	Boiler Water At 180°	Steam of 1 Lb. Gauge Pressure	A	B	C	D	E	F	G	H	I	J				
SINGLE COIL HEATERS <i>Equipped with 2 heavy brass unions and removable coils.</i>	30	30	29	18	50	11 1/2	5 1/2	6 1/2	1 1/2	1 1/2	1 1/2	1 1/2	5				1	1 1/2	12
	40	40	33	24	80	12 1/2	5 1/2	7 1/2	1 1/2	1 1/2	1 1/2	1 1/2	5			1	1 1/2	13	
	52	52	42	31	104	14 1/2	5 1/2	9 1/2	1 1/2	1 1/2	1 1/2	1 1/2	5			1	1 1/2	15	
	70	70	57	43	140	16 1/2	5 1/2	11 1/2	1 1/2	1 1/2	1 1/2	1 1/2	5			1	1 1/2	17	
	90	90	74	55	180	19 1/2	6 1/2	12 1/2	2 1/2	2 1/2	1 1/2	2 1/2	7 1/2			1	1 1/2	39	
	100	100	82	61	200	20 1/2	6 1/2	14 1/2	2 1/2	2 1/2	1 1/2	2 1/2	7 1/2			1	1 1/2	43	
120	120	98	73	240	23 1/2	6 1/2	16 1/2	2 1/2	2 1/2	1 1/2	2 1/2	7 1/2			1	1 1/2	47		
150	150	123	92	300	25 1/2	6 1/2	19 1/2	2 1/2	2 1/2	1 1/2	2 1/2	7 1/2			1	1 1/2	52		
DOUBLE COIL HEATERS <i>Removable Coils</i>	160	160	131	98	320	12 1/2	10 1/2	9 1/2	4 1/2		6 1/2	2 1/2				2	1 1/2	61	
	200	200	164	122	400	15 1/2	10 1/2	11 1/2	4 1/2		9 1/2	2 1/2				2	1 1/2	72	
	300	300	246	183	600	20 1/2	16 1/2	16 1/2	4 1/2		13 1/2	2 1/2				2	1 1/2	94	
	400	400	328	244	800	24 1/2	20 1/2	20 1/2	4 1/2		17 1/2	2 1/2				2	1 1/2	101	
	500	500	410	305	1000	27 1/2	23 1/2	23 1/2	4 1/2		20 1/2	2 1/2				2	1 1/2	122	
HORIZONTAL TUBE HEATERS <i>Removable Coils</i>	600	600	492	366	1200	26 1/2	13 1/2	21 1/2	12 1/2	3 1/2	2 1/2	4 1/2	1 1/2	3 1/2	3 1/2	3	3	98	
	800	800	656	488	1600	29 1/2	13 1/2	25 1/2	12 1/2	3 1/2	2 1/2	4 1/2	1 1/2	3 1/2	3 1/2	3	3	100	
	1000	1000	820	610	2000	32 1/2	13 1/2	28 1/2	12 1/2	3 1/2	2 1/2	4 1/2	1 1/2	3 1/2	3 1/2	3	3	102	
	1200	1200	984	732	2400	47 1/2	18 1/2	45 1/2	16 1/2	2 1/2	3 1/2	6 1/2	2 1/2	6 1/2	3 1/2	4	4	217	
	1600	1600	1312	976	3200	54 1/2	18 1/2	52 1/2	16 1/2	2 1/2	3 1/2	6 1/2	2 1/2	6 1/2	3 1/2	4	4	238	
	2000	2000	1640	1220	4000	62 1/2	18 1/2	60 1/2	16 1/2	2 1/2	4 1/2	6 1/2	2 1/2	6 1/2	3 1/2	4	4	260	
2500	2500	2050	1525	5000	71 1/2	18 1/2	68 1/2	16 1/2	2 1/2	4 1/2	6 1/2	2 1/2	6 1/2	3 1/2	4	4	290		
3000	3000	2460	1830	6000	81 1/2	18 1/2	78 1/2	16 1/2	2 1/2	4 1/2	6 1/2	2 1/2	6 1/2	3 1/2	4	4	320		
FOR MARINE SERVICE <i>Brass instead of cast iron shell. Tested to 125 lbs.</i>	41	40	33	24	80	12 1/2	5 1/2	7 1/2	1 1/2	1 1/2	1 1/2	1 1/2	5			1	1 1/2	13	

THE THERMO-VOIR

For complete installation information see B & G Handbook



SUCCESSOR TO THE INDIRECT WATER HEATER ON OIL AND GAS-FIRED INSTALLATIONS

The Thermo-voir is the most notable contribution ever made to low-cost domestic water heating. It provides a means of utilizing stand-by heat loss from both steam and hot water boilers, furnishing a supply of hot water literally inexhaustible.

For the first time it is possible to indirectly heat domestic water economically with gas-fired and the new type of high heat absorption boilers. Heat that used to go up the chimney is fully utilized by the Thermo-voir to heat domestic water.

WHERE TO USE

Wherever an indirect heater can be used, the Thermo-voir, within the limits of its capacity, will do a more economical job. It combines the speed of tankless heating with the advantages of a storage tank system. In most cases, its capacity is limited only by the ability of the boiler to furnish heat.

WHY IS THE THERMO-VOIR DIFFERENT?

As shown in the illustration above, the Thermo-voir is really two heaters in one. Hot water from the boiler circulates through the U-Bend tube, heating the city water stored in the reservoir five times faster than the average indirect heater because it is that much larger. It gets the heat out of the boiler and up in the container quickly and traps it there.

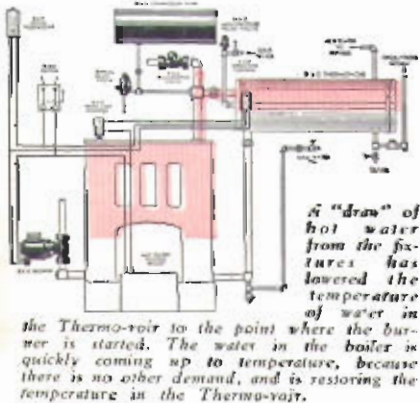
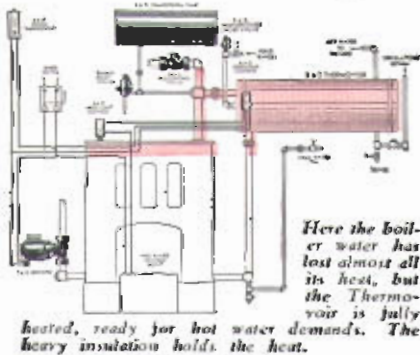
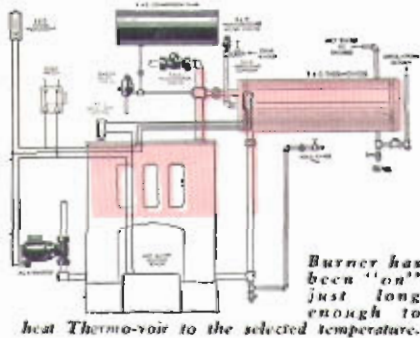
When a "draw" occurs, city water entering the inlet is pre-heated by passing it through two series of copper tubing within the U-bend tube. After circulating through the series tubing it enters the reservoir at "A".

Thus, if a long heavy draw exhausts the hot water in the reservoir, the two series of copper tubing act as instantaneous heaters. While the stored water is being drawn off, the burner catches up with the load and the "long pull" draw is on an instantaneous basis.

SOAKS UP HEAT LIKE A SPONGE DOES WATER

The Thermo-voir achieves its economy in this way: In the past, indirect water heating has been based on always keeping the heating boiler at a temperature sufficiently high to heat the domestic water. During summer operation, if there is little demand for hot water, there is obviously a considerable stand-by heat loss.

In the ordinary Indirect Water Heater installation, the burner is controlled by a limit switch in the boiler. With the Thermo-voir Heater, the burner is controlled by a limit switch in the Thermo-voir itself! The control in the boiler acts only as a safety high limit control.



THE THERMO-VOIR

For complete installation information see B & G Handbook

To follow through a typical operating cycle in summer, let us assume that both boiler water and the water in the Thermo-voir are at 70°. The burner starts and operates until the hot water circulating from the boiler has heated the water in the Thermo-voir to the predetermined degree.

The burner is then shut off by the limit switch in the Thermo-voir, but hot water from the boiler continues to rise into the Thermo-voir, using heat which would normally be dissipated as stand-by loss. Heat is thus trapped up above the boiler. This is the big feature of the Thermo-voir and the reason for its amazing economy!

THERMO-VOIR PERMITS BOILER TO COOL

In the ordinary system, if no domestic water is used for a long period, the burner continues to start automatically when the boiler water cools a little. This means that fuel is being expended to no purpose.

But—with a Thermo-voir installed, the boiler is permitted to cool off almost completely, if there is no demand for domestic water. Because of the storage feature of the Thermo-voir, as many as 12 hours in the "off" period have been recorded before the domestic hot water supply became depleted sufficiently to start the burner.

SOLVES THE PROBLEM OF INDIRECT WATER HEATING WITH FIN-TYPE BOILERS

Heretofore, the economies of Indirect Water Heating could not be obtained with modern boilers having small water content and extended heating surfaces. The high heat absorption of these boilers means that they lose heat equally fast during the idle periods of the burner. Consequently, with an old style Indirect Water Heater, the burner is started so frequently that economical operation is prevented.

The great heat absorptive qualities of the Thermo-voir, however, greatly reduce this stand-by loss of the modern boiler. For example, the Thermo-voir has conclusively demonstrated its desirability for gas-fired installations as evidenced in tests made by one of the largest gas utilities.

INSTALLATION ON STEAM BOILERS

The Thermo-voir may also be used on steam boilers, as illustrated in the two diagrams to the right. In both examples, the Thermo-voir is connected below the water line of the boiler, but the position of the Thermo-voir itself is different. In the lower diagram, the Thermo-voir is raised so that it is above the water line. This position has two advantages: first, circulation of boiler water is more rapid, thus increasing the capacity of the heater; second, the Thermo-voir may be suspended from the ceiling, saving the cost of a pipe stand.

The ample reservoir of this unit holds a reserve supply of hot water, while its large prime heating surface acts as an instantaneous heater in the event of a long, steady "draw." Its compact size, plus the fact that it eliminates the need for a storage tank, makes the steam Thermo-voir ideally suited for installation where space is cramped.

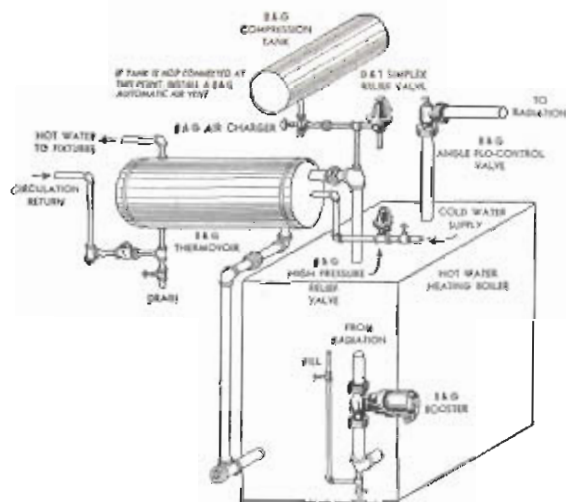
AVAILABLE IN STANDARD AND DE LUXE MODELS

The head, tubes and reservoir of the Thermo-voir are all of the best materials, carefully fabricated and assembled. The reservoir is tested at 300 lbs.—working pressure 127 lbs., and meets exacting Code requirements.

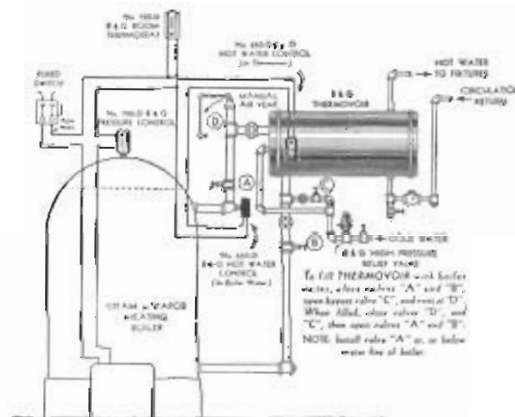
The Thermo-voir has a galvanized tank and is available either with or without jacket and insulation as shown in the table below.

SIZES, CAPACITIES AND DIMENSIONS

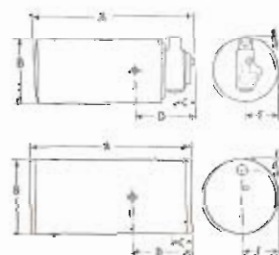
For Recommended Heater Sizes, See Page 16



Thermo-voir on hot water boiler—low position.



Thermo-voir on steam boiler.



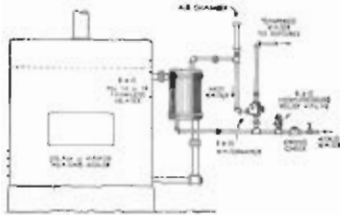
For dimensions, see table below.

Number	Construction	CAPACITIES IN GAL. PER HR. (UP—140°)		DIMENSIONS IN INCHES						PIPING CONNECTIONS		Approx. Shipping Weight, lbs.
		Boiler Water Temperature		Openings for hanger rods are 1/8" with a half thread						Boiler	Service Water	
		212°	180°	A	B	C	D	E	F			
W25	GALVANIZED WITHOUT JACKET OR INSULATION	390	185	32 3/4	13	4 1/4	16 1/4	1 3/4	6 1/2	2"	3/4"	220
JW25	DELUXE GALVANIZED WITH JACKET AND INSULATION	390	185	58	115	4 1/4	16 3/4	2 1/4	7 1/2	2"	3/4"	325
W66	GALVANIZED WITHOUT JACKET OR INSULATION	475	225	69 3/4	186	4 1/4	16 3/4	2 3/4	8	2 1/2"	3/4"	240

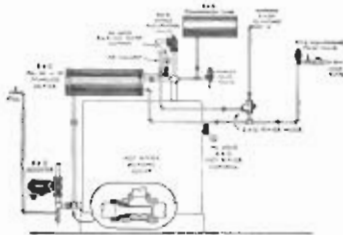
For complete installation information see B & G Handbook

DOMESTIC WATER HEATING SYSTEMS

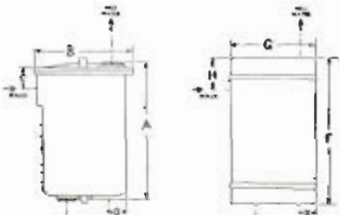
TANKLESS HEATERS



No. 14 or 16 Heater on steam boiler



No. 20 or 30 Heater on hot water boiler



No. 14 or 16 Standard Heater

No. 14 or 16 DeLuxe Heater



No. 20 or 30 Standard Heater



No. 20 or 30 DeLuxe Heater

FOR DIMENSIONS SEE TABLE BELOW



No. 14 and 16 Heater



No. 20 and 30 Heater

WHERE TO USE

The B & G Tankless Heater is designed to meet the need for a heater of unusual capacity which can be installed in basements lacking space for storage tanks—or where service water conditions would make it necessary to use expensive copper or other non-ferrous tanks. It likewise saves the cost of a storage tank, pipe, fittings and stand. The use of a B & G Watermixer is recommended on all tankless heater installations. In hard water territories, a water-softener will prevent liming.

This heater also solves the problem of keeping the basement clear for use as a recreation room. It fits snugly to the boiler and its smart enameled jacket in no way detracts from the appearance of the room.

Where pressure is higher than 40 lbs., it is advisable to install a reducing valve in the cold water supply to the heater.

Boiler Load

For residential use, where hot water is drawn in comparatively small quantities, little load is placed on the boiler. Remember, however, that when the water "draw" is more or less constant, as in restaurants, a heavy load is placed on the boiler. Care must be taken that the boiler has sufficient capacity to handle this load.

FEATURES OF CONSTRUCTION

1. TEMPERATURE CONTROL—Can be equipped with B & G Thermocek, which reduces lime and sediment deposits in heater tubes by controlling temperature of service water during the heating season.
2. LARGE CAPACITY IN SMALL UNIT—The ingenious construction of this heater provides hot water delivery that is amazing when the size of the unit is considered.
3. LIGHT WEIGHT—Exceptionally light and easily handled, yet is extremely rugged.
4. NON-CORROSIVE AND RUST-PROOF—Only copper and bronze are used on all parts in contact with service water.
5. RAPID HEAT TRANSFER—Ample space around each tube permits free and rapid circulation of boiler water and effects a high rate of heat transmission.
6. BAKED ENAMEL JACKET—At slight extra cost, the De Luxe unit is completely enclosed in a steel jacket, handsomely finished in two tones of enamel.
7. REMOVABLE COILS—The coils can be quickly and easily removed by simply unscrewing the bolts in the head and loosening the lock nuts on the coil.

SIZES, CAPACITIES AND DIMENSIONS

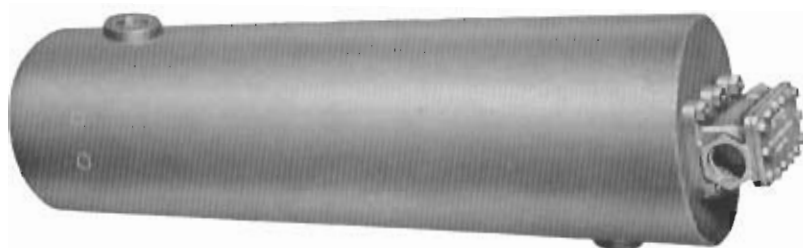
For recommended Heater Sizes, see Page 16

Number	CAPACITIES IN GAL. HEATED FROM 40° F. TO 140° F.						Heating Surface In Square Feet	DIMENSIONS IN INCHES								Coil Openings In Inches	Shell Openings In Inches	Approximate Shipping Weight in Lbs.	
	BOILER WATER AT							STANDARD HEATER (Without Jacket)				DE LUXE HEATER (With Jacket)						With Jacket	Without Jacket
	212° F.		200° F.		180° F.			A	B	C	D	E	F	G	H					K
	Per Hr.	Per Min.	Per Hr.	Per Min.	Per Hr.	Per Min.													
14	280	4.7	210	3.5	140	2.3	14	15 ¹ / ₂	11 ¹ / ₂	2 ¹ / ₂	1 ⁷ / ₈		17 ¹ / ₂	12 ¹ / ₂	4 ¹ / ₂	2 ¹ / ₂	2 ¹ / ₂	90	75
16	320	5.3	240	4.0	160	2.7	16	15 ¹ / ₂	11 ¹ / ₂	2 ¹ / ₂	1 ⁷ / ₈		17 ¹ / ₂	12 ¹ / ₂	4 ¹ / ₂	2 ¹ / ₂	2 ¹ / ₂	94	80
20	400	7.3	300	5.0	200	3.3	20	31 ¹ / ₂	11 ¹ / ₂	3 ¹ / ₂	4 ¹ / ₂	11 ¹ / ₂	31 ¹ / ₂	12 ¹ / ₂	3 ¹ / ₂	4 ¹ / ₂	2 ¹ / ₂	121	98
30	600	10.	450	7.5	300	5.0	30	41 ¹ / ₂	11 ¹ / ₂	3 ¹ / ₂	4 ¹ / ₂	11 ¹ / ₂	43 ¹ / ₂	12 ¹ / ₂	3 ¹ / ₂	4 ¹ / ₂	3	154	125

*On automatically fired jobs, it is advisable to size the heater on the 150° boiler water rating.

DOMESTIC WATER HEATING SYSTEMS

SUPER TANKLESS HEATERS



WHERE TO USE

In apartment buildings, hotels and other buildings requiring a large volume of hot water, the B & G Super Tankless Heater gives excellent results. This heater can be installed below the water line and circulated with a pump, (as shown in the illustration at right), or installed to circulate by gravity. In the latter case, the pipe sizes indicated by shell openings in the table below must be used.

In hard water territories, it is advisable to install a water softener to prevent liming of the heater coils.

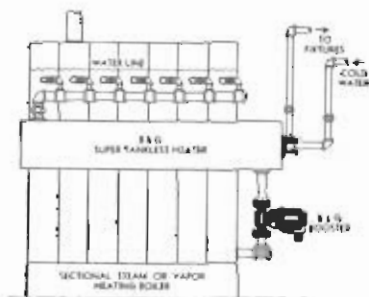
TAX ON BOILER

Where water "draw" is more or less constant, as in large buildings, a heavy load is placed on the boiler. Be sure that the boiler has sufficient capacity to handle the load.

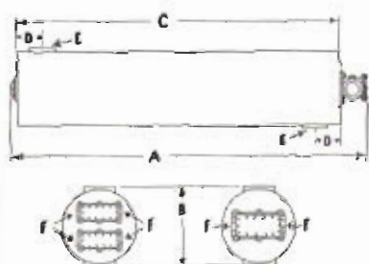
FEATURES OF CONSTRUCTION

- Small boiler connections.** The B & G Booster Pump circulating the boiler water through the B & G Super Tankless Heater makes small connections possible. Thus all piping can be cut on the job and the use of smaller pipe assures a lower material and labor cost.
- Temperature Control.** Automatic temperature control of the domestic water is provided by installing a B & G No. 650-D Hot Water Control in an opening in the Heater casing. This control automatically operates the Booster Pump to maintain boiler water in the heater at a constant temperature.
- Large Capacity.** Skillful designing has made possible a large capacity in a comparatively small, compact unit.
- Easy to Clean.** Removable front plates are provided on the head of each copper coil element. It is also recommended that tees instead of ells be installed in the supply and return boiler connections to aid in the flushing of boiler mud from the casing and piping.
- Removable Coils.** The Coils are quickly and easily removed by simply unscrewing the nuts from the studs which hold the head in the casing.
- Easy to Install.** Unit can be installed at any convenient height below water line. The Booster Pump makes it possible to locate the Heater on the floor and in a corner of the boiler room without affecting the output of the Heater. All connections from the boiler must have proper pitch to prevent air pockets.
- Rust-Proof.** Only copper and bronze are used in all parts in contact with service water.
- Rapid Heat Transfer.** Rapid circulation of boiler water is assured by the Booster Pump. Ample space around each tube permits free and unrestricted circulation, thus effecting a high rate of heat transmission.

For complete installation information see B & G Handbook



B & G Super Tankless Heater installed below water line and circulated with B & G Booster Pump.



For dimensions see table below.

SIZES, CAPACITIES AND DIMENSIONS

For recommended Heater Sizes, see Page 16

Number	CAPACITIES—GALLONS PER H.R. 10° TO 140°		Heating Surface In Sq. Ft.	Pump Size	DIMENSIONS IN INCHES						Approx. Shipping Weight Lbs.
	Boiler Water 212°	Boiler Water 180°			A	B	C	D	Shell Opening—E	Service Water Opening—F	
7-1237	329	164	16.45	1 1/2"	94	8 1/2"	85	5	4"	1 1/2"	241
7-1238	376	188	18.80	1 1/2"	106	8 1/2"	96	5	4"	1 1/2"	270
7-1239	419	210	20.95	1 1/2"	118	8 1/2"	110	5	4"	1 1/2"	300
7-12310	470	235	23.50	2"	130	8 1/2"	122	5	4"	1 1/2"	332
7-12311	517	259	25.85	2"	142	8 1/2"	134	5	4"	1 1/2"	367
7-12312	565	282	28.20	2"	154	8 1/2"	146	5	4"	1 1/2"	398
10-1638	500	251	25.04	2"	105	11 1/2"	98	5	5"	1 1/2"	400
10-1639	565	282	28.18	2"	117	11 1/2"	110	5	5"	1 1/2"	433
10-16310	625	313	31.30	2 1/2"	129	11 1/2"	122	5	5"	1 1/2"	475
10-16311	690	344	34.43	2 1/2"	141	11 1/2"	134	5	5"	1 1/2"	512
10-16312	755	378	37.82	2 1/2"	153	11 1/2"	146	5	5"	1 1/2"	549
10-2438	750	376	37.60	2 1/2"	105	11 1/2"	98	5	5"	2"	423
10-2439	845	423	42.30	2 1/2"	117	11 1/2"	110	5	5"	2"	469
10-24310	940	470	47.00	2 1/2"	129	11 1/2"	122	5	5"	2"	514
10-24311	1040	517	51.70	3"	141	11 1/2"	134	5	5"	2"	559
10-24312	1130	564	56.40	3"	153	11 1/2"	146	5	5"	2"	606
17-2438	1500	752	75.20	3"	105	19 1/2"	98	5	6"	2"	644
17-2439	1690	846	84.60	3"	117	19 1/2"	110	5	6"	2"	710
17-24310	1880	940	94.00	3"	129	19 1/2"	122	5	6"	2"	772

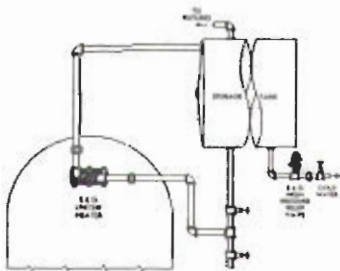
*When heater location is below water line of boiler, a pump must be used to circulate water between heater and boiler. Installation of the pump permits smaller pipe and fittings than when heater is located above water line and circulated by gravity. Shell openings shown in above table are for gravity circulation when heater is located above water line.

UNITEM SUBMERGED HEATERS

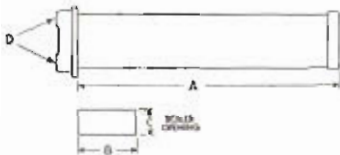
For complete installation information see B & G Handbook



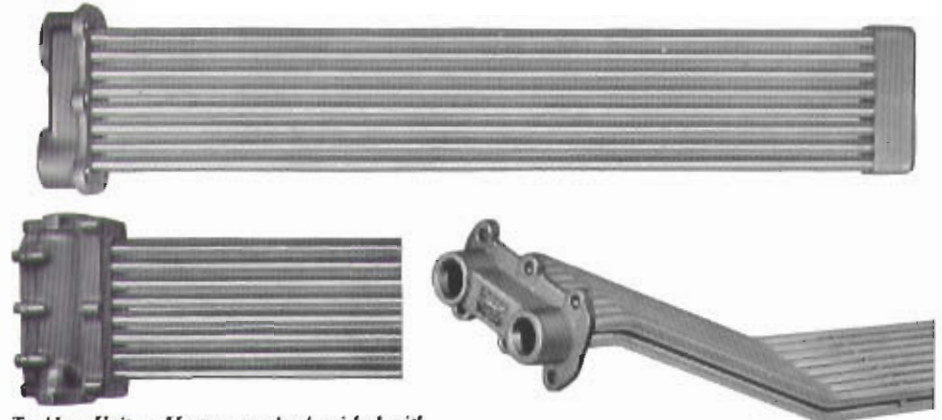
Unitem Heater installed below water line of steel boiler, for tankless operation.



Unitem Heater connected to storage tank.



For dimensions of Unitem Heater see table below



Tankless Unitem Heaters can be furnished with removable plate on head at slight extra cost.

Offset Unitem.

WHERE TO USE

Unitem Heaters are for use in either steam or hot water steel boilers of any size or make. When installed in steam boilers they are placed below the water line; hence, it is not necessary to have steam pressure on the boiler in order to obtain a continuous supply of domestic hot water. These heaters have an excellent record for economy in forced circulation hot water heating systems, with thousands now in operation in apartments, schools and industrial plants. This heater can be installed for either tank or tankless operation. A different style head is required for each type—see table below. Always check the length of boiler.

FEATURES OF CONSTRUCTION

The Unitem Heater consists of an assembly of copper tubes joined to a bronze partitioned head which is either bolted or screwed into the front or rear of the heating boiler. Domestic water comes in contact only with rustproof copper and bronze. For tankless operation, the patented partitioned head compels the service water to travel several times through the tubes before being discharged into the building supply line. Hence, transfer of heat is very rapid, assuring hot water at the fixtures in spite of heavy "draws." For tank installations, the water travels twice through the unit.

SIZES, CAPACITIES AND DIMENSIONS

In ordering, be sure to specify make and catalog number of boiler and whether the heater is to be used for tank or tankless installation. Be sure that the space between boiler and wall is sufficient to allow for insertion of heater. Where heater is installed in smoke chamber, cover heater head and all piping in smoke chamber with good asbestos cement.

For recommended heater sizes see Page 16.

Number and Size of Tubes	Number For Tankless Operation	**TANKLESS OPERATION—MULTIPLE-PASS.			Number For Operation with Storage Tank	OPERATION WITH STORAGE TANK—2-PASS.			DIMENSIONS These figures Apply to both Tank and Tankless Heaters				Approx. Shipping Weight Lbs.	
		CAPACITY—Gallons per Hour 50° to 150° Temperature Rise				CAPACITY—Gallons per Hour 50° to 150° Temp. Rise—When Bottom of Tank is Level with or Above the Heater			Heating Surface in Sq. Ft.	Length	Size of Opening which must be cut in Boiler			Service Water Openings
		Boiler Water 210°	Boiler Water 200°	Boiler Water 180°		Boiler Water 210°	Boiler Water 200°	Boiler Water 180°			A	B			C	D
TWELVE ¾" TUBES	T1235	350	212	140	S1235	224	188	140	11.75	5'	4"	3 1/2"	1"	43
	T1236	423	254	169	S1236	268	226	169	14.10	6'	4"	3 1/2"	1"	49
	T1237	493	296	197	S1237	312	263	197	16.45	7'	3"	2 1/2"	1"	53
	T1238	564	338	226	S1238	358	300	226	18.80	8'	3"	2 1/2"	1 1/2"	58
	T1239	628	362	251	S1239	398	335	251	20.95	9'	3"	2 1/2"	1 1/2"	66
	T12310	705	422	282	S12310	447	376	282	23.50	10'	3"	2 1/2"	1 1/2"	74
	T12311	775	465	310	S12311	492	414	310	25.95	11'	3"	2 1/2"	1 1/2"	78
	T12312	846	508	338	S12312	536	452	338	28.20	12'	3"	2 1/2"	1 1/2"	92
SIXTEEN ¾" TUBES	T1635	469	282	188	S1635	298	250	188	15.65	5'	7 1/2"	2"	1 1/2"	67
	T1636	563	338	225	S1636	357	300	225	18.78	6'	7 1/2"	2"	1 1/2"	82
	T1637	657	394	263	S1637	417	350	263	21.91	7'	7 1/2"	2"	1 1/2"	93
	T1638	751	450	300	S1638	476	400	300	25.04	8'	7 1/2"	2"	1 1/2"	112
	T1639	845	506	338	S1639	535	450	338	28.17	9'	7 1/2"	2"	1 1/2"	115
	T16310	939	564	376	S16310	595	500	376	31.30	10'	7 1/2"	2"	1 1/2"	126
	T16311	1032	610	413	S16311	655	550	413	34.43	11'	7 1/2"	2"	1 1/2"	132
	T16312	1135	680	454	S16312	720	605	454	37.82	12'	7 1/2"	2"	1 1/2"	138
TWENTY-FOUR ¾" TUBES	T2436	846	508	338	S2436	535	450	338	28.2	6'	7 1/2"	2 1/2"	2"	107
	T2437	987	592	395	S2437	625	525	395	32.9	7'	7 1/2"	2 1/2"	2"	120
	T2438	1128	676	451	S2438	715	600	451	37.6	8'	7 1/2"	2 1/2"	2"	135
	T2439	1269	760	508	S2439	805	675	508	42.3	9'	7 1/2"	2 1/2"	2"	151
	T24310	1410	845	564	S24310	890	750	564	47.0	10'	7 1/2"	2 1/2"	2"	165
	T24311	1551	930	620	S24311	985	830	620	51.7	11'	7 1/2"	2 1/2"	2"	179
	T24312	1692	1015	677	S24312	1070	905	677	56.4	12'	7 1/2"	2 1/2"	2"	195

When a B & G Booster is used to circulate water between tank and heater, select the heater on tankless ratings.

**Tankless heater systems rated on service pressure up to 40 pounds. Where higher pressure, use 20% larger heater for each 10 pounds pressure increase. Specify city water pressure when ordering. Double above capacities for heaters submerged in steam at 5 pounds pressure.

Patent Nos. 1,651,875—1,796,509—1,508,471—1,511,056—1,804,397.

UNITEM HEATERS - cont.

For complete installation information see B & G Handbook

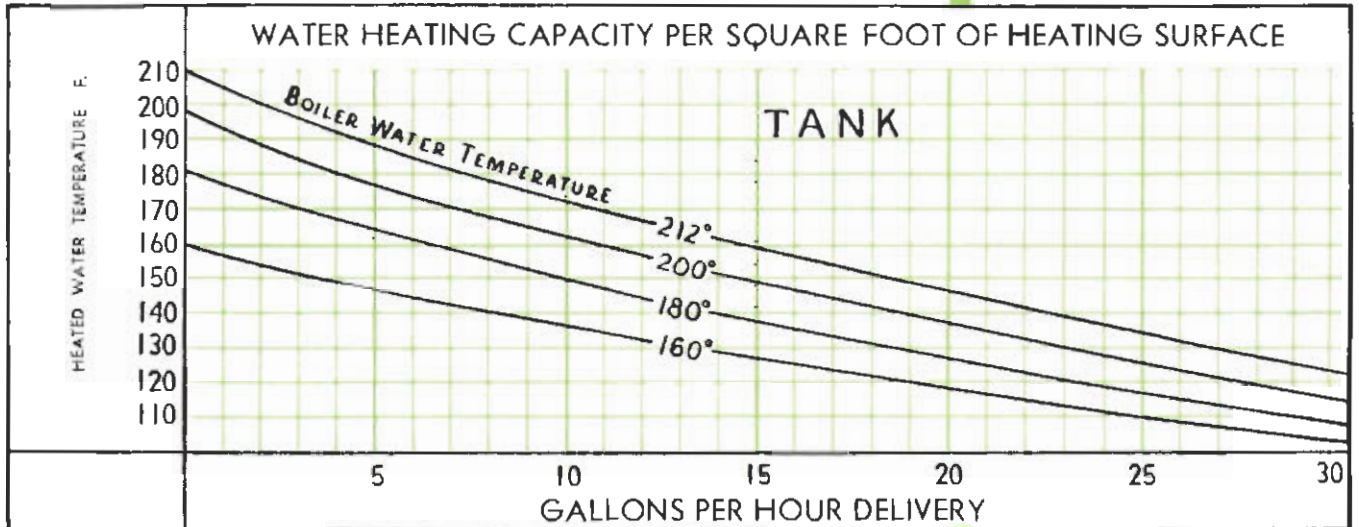
HOW TO FIGURE UNITEM CAPACITIES AT VARIOUS BOILER TEMPERATURES

Unitem water heating capacities—at any desired boiler water and service water temperature—can be quickly calculated from the charts below. These charts are based on the capacity of one square foot of Unitem heating surface. For example, if, on a Unitem tank installation, it is desired to carry a boiler water temperature of 200° and to deliver service water to the storage tank at 150°, the upper chart shows that the heater will produce 16 gallons of hot water per square foot of heating surface.

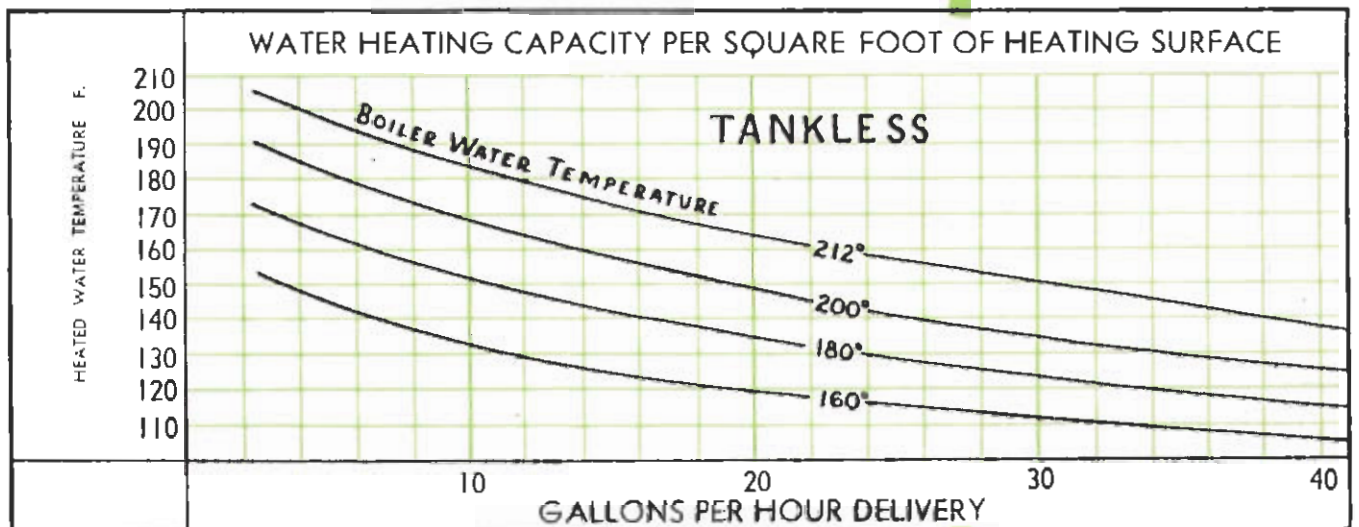
Hence if hot water requirements are estimated to be 320 gallons per hour, a heater with 20 square feet of surface is necessary. (320 gals. required ÷ 16 gals. per sq. ft. heating surface = 20 sq. ft. of heating surface.) Referring to Page 22 under "Sizes and Capacities" and taking the closest size, this is shown to be a No. S1239 Unitem, with a length of 9 feet. Capacities of Unitem tankless units are figured in the same manner, using the lower chart.

ALWAYS CHECK THE LENGTH OF BOILER

STORAGE TANK UNITEM HEATERS



TANKLESS UNITEM HEATERS

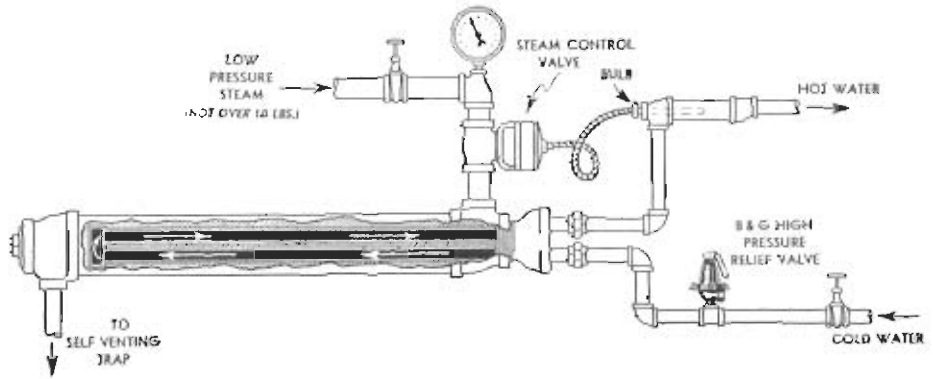


ALWAYS CHECK THE LENGTH OF BOILER

For complete installation information see B & G Handbook

DOMESTIC WATER HEATING SYSTEMS

UNITEM HEATERS FOR STEAM



For Tankless Connection Submerged in Steam

WHERE TO USE

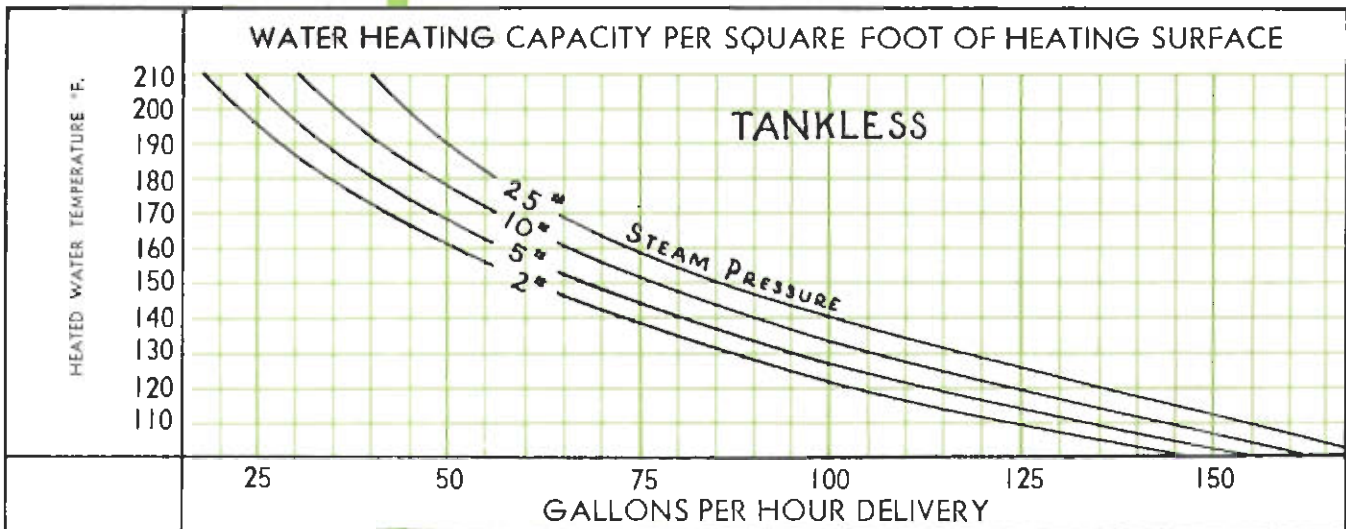
Screwed Head Tankless Type Unitem Heaters can be built up into a heater for use with low or high pressure steam. The Unitem Heater is screwed into a casing made up of regular pipe and fittings. Only two tees, a plug and a piece of pipe, as illustrated above, are required. Assembly of the unit can be made on the job and a steam economical heater obtained for this kind of service.

Most tankless water heater loads are intermittent and for this reason, it is suggested that not greater than a 10 lb. steam pressure be used. For constant load, such as required for processing work in factories, higher steam pressures can be used satisfactorily.

To maintain hot water at a constant temperature, connect a B & G Watermixer, described on Page 28, in the hot water line to fixtures. If steam pressures higher than 10 lbs. are connected to the casing, use an automatic reducing valve in the steam line.

In localities supplied with water high in lime content, it is recommended that the water be passed through a good water softener, to eliminate as much as possible any precipitation within the heater.

USE THIS CHART AS EXPLAINED ON PAGE 23.



SIZES, CAPACITIES AND DIMENSIONS

	Number	CAPACITIES	Sq. Ft. of Heating Surface	Length	Thread On Screwed Head	Service Water Inlet and Outlet Conn's.	Approx. Shipping Weight Lbs.
FOUR 1 1/2" TUBES	48	FOR CAPACITIES AT VARIOUS STEAM PRESSURES, SEE CHART ABOVE	10.4	8'	3 1/2"	1 1/2"	29
	49		11.7	9'	3 1/2"	1 1/2"	32
	410		13.0	10'	3 1/2"	1 1/2"	35
	411		14.3	11'	3 1/2"	1 1/2"	38
FOUR 1 1/2" TUBES	210		15.7	10'	4"	2"	57
	211		17.2	11'	4"	2"	62
	212		18.8	12'	4"	2"	66

TANK & HEATER

For complete installation information see B & G Handbook

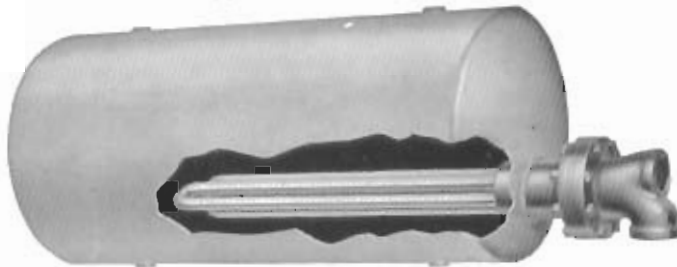
An excellent heater for hard water territory

BOLTED TYPE HEAD

1" OD Copper Tubes

WHERE TO USE

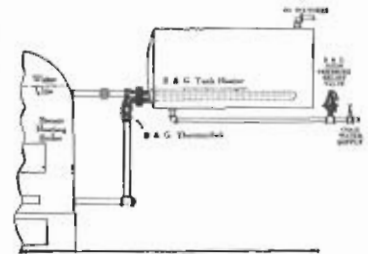
The B & G Tank and Heater offers many advantages, as it both heats and stores the water in the same unit. It can be operated by passing either steam or hot water through the coil and is an excellent heater for hard water territories. Large capacity in compact space makes this heater particularly suitable for boiler rooms with low head room.



lar of the heating unit welded into the head of the tank. Heating coils are of 1" O. D. copper tubing. Two outlets at top and bottom of tank provide for easy connection of hot and cold water lines. This heater embodies the same fine materials and workmanship found in all B & G Water Heaters.

FEATURES OF CONSTRUCTION

Tanks are of galvanized welded steel (127 lbs. working pressure—300 lb. test) with the col-



Tank and heater connected below water line of steam boiler

SIZES, CAPACITIES AND DIMENSIONS

For recommended Heater Sizes, see Page 18

Number	Tank Capacity Gallons	CAPACITIES GAL. IN ONE HOUR					DIMENSIONS					Approx. Shipping Weight Lbs.
		Heated from 50° to 150° Below Water Line			Heated from 50° to 180°F. Steam of 1 Lb. Gauge Pressure	Heated from 50° to 150°F. Steam of 2 Lb. Gauge Pressure	TANK			HEATER		
		Boiler Water 212°	Boiler Water 200°	Boiler Water 180°			Width	Length	Tank Openings	Heating Surface in Sq. Ft.	Inlet and Outlet Conn's.	
40	40	80	70	50	130	160	16"	48"	4-1"	6	2"	158
52	52	80	70	50	130	160	16"	60"	4-1"	6	2"	165
66	66	80	70	50	130	160	18"	60"	4-1"	6	2"	226
82	82	100	88	62	160	200	20"	60"	4-1 1/2"	7 1/2	2"	249
100	100	100	88	62	160	200	22"	60"	4-1 1/2"	7 1/2	2"	285
120	120	100	88	62	160	200	24"	60"	4-1 1/2"	7 1/2	2"	307
144	144	120	105	76	197	250	24"	72"	4-1 1/2"	9	2"	335
180	180	180	164	110	290	370	30"	60"	4-1 1/2"	14	3"	610

SCREW TYPE BRONZE HEAD

3/4" OD Copper Tubes



FEATURES OF CONSTRUCTION

This unit is used for similar purposes as the heater shown above but is equipped with a screw type head and 3/4" copper tubing. The tank is of galvanized welded steel—tested at 300 lbs.—127 lbs. working pressure.

Installation of this unit is similar to the diagram above.

SIZES, CAPACITIES AND DIMENSIONS

Number	Tank Capacity Gallons	CAPACITIES GAL. IN ONE HR.		DIMENSIONS					Diam. Screwed Head	Approx. Shipping Weight Lbs.
		Heated from 50° to 150° Below Water Line		TANK			HEATER			
		Boiler Water 212°	Boiler Water 180°	Width	Length	Tank Openings	Heating Surface in Sq. Ft.	Inlet and Outlet Conn's.		
140	40	50	25	16"	48"	4-1"	4.8	1 1/2"	2 1/2"	145
152	52	80	40	16"	60"	4-1"	6	1 3/4"	2 1/2"	162
166	66	80	40	18"	60"	4-1"	6	1 3/4"	2 1/2"	193
182	82	80	40	20"	60"	4-1 1/2"	6	1 3/4"	2 1/2"	216
1100	100	100	50	22"	60"	4-1 1/2"	7.5	2"	3"	256
1120	120	100	50	24"	60"	4-1 1/2"	7.5	2"	3"	265

HEATER UNIT

For complete installation information see B & G Handbook



Tank Heater Unit Capacities at Higher Steam Pressures

Multiply the 1 lb. steam capacity by the proper factor in table below. Example: No. 448 Heater with 1 lb. pressure delivers 130 gals. per hr. For capacity at 50 lbs. pressure, multiply 130 by 2.44 which equals 317 gals. per hr.

Press. in lbs.	10	25	50	75	100
FACTOR	1.6	1.97	2.44	2.82	3.2

TANK HEATER WITH OR WITHOUT COLLAR



The heating unit of the Uitem Tank and Heater may be purchased separately, either with or without the collar, for inserting in already installed tanks.

SIZES, CAPACITIES AND DIMENSIONS

RADIATION HEATER



Where it is desired to heat hot water radiation from an indirect heater installed below the water line of a steam boiler, this unit is recommended. The casing is of welded steel and the entire heater carefully designed to give satisfactory results for this service.

SIZES, CAPACITIES AND DIMENSIONS

TANK HEATER UNIT WITH OR WITHOUT COLLAR 1" O.D. COPPER TUBES

Number	CAPACITIES GAL. IN 1 HOUR						DIMENSIONS IN INCHES								Heating Surface Sq. Ft.	Approx. Ship. Wgt. Lbs. Without Collar
	Heated 50° to 150° F. Below Boiler Water Line			Heated 50° to 180° F. with Steam in Tubes			A	B	C	D	E	F	Head Conn's.			
	Boiler Water 212°	Boiler Water 200°	Boiler Water 180°	1 Lb. Pressure	2 Lbs. Pressure	5 Lbs. Pressure										
448	80	70	50	130	160	190	48	6 1/4	5 1/4	7	4 1/2	4	2	6	68	
460	100	88	62	160	200	235	60	6 1/4	5 1/4	7	4 1/2	4	2	7 1/2	78	
472	120	105	76	197	250	290	72	6 1/4	5 1/4	7	4 1/2	4	2	9	89	
484	140	123	87	230	288	340	84	6 1/4	5 1/4	7	4 1/2	4	2	11	100	
736	180	164	110	290	365	435	36	7 1/4	5 1/4	11	7 1/2	7	3	14	137	
748	240	212	152	400	500	590	48	7 1/4	5 1/4	11	7 1/2	7	3	19	160	
760	300	260	185	495	620	730	60	7 1/4	5 1/4	11	7 1/2	7	3	23 1/2	181	
772	360	314	227	590	740	870	72	7 1/4	5 1/4	11	7 1/2	7	3	28	202	
784	420	370	262	690	870	990	84	7 1/4	5 1/4	11	7 1/2	7	3	33	225	
1036	360	314	227	590	740	870	36	9 1/4	5 1/4	15	10 1/2	10	4	28	226	
1048	480	420	300	790	975	1160	48	9 1/4	5 1/4	15	10 1/2	10	4	37 1/2	260	
1060	600	525	375	990	1220	1460	60	9 1/4	5 1/4	15	10 1/2	10	4	47	294	
1072	715	630	445	1175	1460	1740	72	9 1/4	5 1/4	15	10 1/2	10	4	56	327	
1084	830	730	515	1360	1680	2020	84	9 1/4	5 1/4	15	10 1/2	10	4	65	360	
1096	970	840	595	1570	1950	2320	96	9 1/4	5 1/4	15	10 1/2	10	4	75	395	
1436	765	670	475	1260	1560	1860	36	12 1/4	7	19 1/2	14 1/2	14	6	60	396	
1448	1020	895	635	1680	2180	2480	48	12 1/4	7	19 1/2	14 1/2	14	6	80	458	
1460	1275	1120	795	2100	2600	3100	60	12 1/4	7	19 1/2	14 1/2	14	6	100	521	
1472	1530	1340	955	2520	3120	3620	72	12 1/4	7	19 1/2	14 1/2	14	6	120	581	
1484	1790	1570	1100	2940	3640	4340	84	12 1/4	7	19 1/2	14 1/2	14	6	140	642	
1496	2040	1790	1270	3360	4160	4960	96	12 1/4	7	19 1/2	14 1/2	14	6	160	720	
14108	2340	2180	1440	3900	4680	5580	108	12 1/4	7	19 1/2	14 1/2	14	6	180	765	

* This Also Applies to Radiation Heater.

WITH 1 1/4" O.D. COPPER TUBES

Number	CAPACITIES GAL. IN 1 HOUR						DIMENSIONS IN INCHES								Heating Surface Sq. Ft.	Approx. Ship. Wgt. Lbs.
	Heated 50° to 150° F. Below Boiler Water Line			Heated 50° to 180° F. with Steam in Tubes			A	B	C	D	E	F	Head Conn's.			
	Boiler Water 212°	Boiler Water 200°	Boiler Water 180°	1 Lb. Pressure	2 Lbs. Pressure	5 Lbs. Pressure										
5Y36	78	66	48	126	156	186	36	7 1/4	5 1/4	8 1/2	5 1/2	5	2 1/2	6	90	
5Y48	104	88	64	168	208	248	48	7 1/4	5 1/4	8 1/2	5 1/2	5	2 1/2	8	95	
5Y60	130	110	80	210	260	310	60	7 1/4	5 1/4	8 1/2	5 1/2	5	2 1/2	10	100	
5Y72	149	126	92	242	299	356	72	7 1/4	5 1/4	8 1/2	5 1/2	5	2 1/2	11 1/2	105	
5Y84	175	148	108	284	351	418	84	7 1/4	5 1/4	8 1/2	5 1/2	5	2 1/2	13 1/2	110	
5Y96	202	170	124	326	403	480	96	7 1/4	5 1/4	8 1/2	5 1/2	5	2 1/2	15 1/2	115	
8Y36	220	187	136	357	442	527	36	7 1/4	5 1/4	12	8 1/2	8	3	17	160	
8Y48	300	253	184	483	598	712	48	7 1/4	5 1/4	12	8 1/2	8	3	23	180	
8Y60	375	319	232	610	753	898	60	7 1/4	5 1/4	12	8 1/2	8	3	29	200	
8Y72	455	385	280	735	910	1083	72	7 1/4	5 1/4	12	8 1/2	8	3	35	220	
8Y84	535	450	328	860	1065	1270	84	7 1/4	5 1/4	12	8 1/2	8	3	41	240	
8Y96	610	516	376	986	1220	1460	96	7 1/4	5 1/4	12	8 1/2	8	3	47	260	
8Y108	690	583	425	1115	1380	1645	108	7 1/4	5 1/4	12	8 1/2	8	3	53	280	
12Y48	540	456	332	872	1080	1290	48	9 1/4	7	17	12 1/4	12	4	41 1/2	300	
12Y60	675	572	416	1092	1350	1610	60	9 1/4	7	17	12 1/4	12	4	52	330	
12Y72	810	688	500	1310	1625	1940	72	9 1/4	7	17	12 1/4	12	4	62 1/2	365	
12Y84	950	803	585	1535	1900	2260	84	9 1/4	7	17	12 1/4	12	4	73	415	
12Y96	1085	917	678	1755	2170	2590	96	9 1/4	7	17	12 1/4	12	4	83 1/2	450	
12Y108	1220	1035	752	1975	2440	2920	108	9 1/4	7	17	12 1/4	12	4	94	485	
12Y120	1360	1150	840	2200	2720	3240	120	9 1/4	7	17	12 1/4	12	4	104 1/2	520	
14Y60	1015	858	625	1640	2030	2420	60	12 1/4	7	19 1/2	14 1/2	14	6	78	470	
14Y72	1220	1035	752	1975	2440	2920	72	12 1/4	7	19 1/2	14 1/2	14	6	94	520	
14Y84	1430	1210	880	2310	2860	3410	84	12 1/4	7	19 1/2	14 1/2	14	6	110	570	
14Y96	1625	1375	1000	2620	3250	3880	96	12 1/4	7	19 1/2	14 1/2	14	6	125	640	
14Y108	1830	1550	1130	2960	3660	4360	108	12 1/4	7	19 1/2	14 1/2	14	6	141	700	
14Y120	2040	1730	1260	3300	4080	4870	120	12 1/4	7	19 1/2	14 1/2	14	6	157	760	

RADIATION HEATER 1" O.D. COPPER TUBES

Number	Capacities in Sq. Ft. of Radiation - Installed Below Water Line 212° Boiler Water		Head Connections Inches	Shell Connections Inches	App. Ship. Wt. Lbs.
	Water 145°-175°	Water 160°-180°			
	130 BTU	150 BTU			
B448	200	120	2	2	100
B460	252	150	2	2	110
B472	302	180	2	2	120
B484	340	210	2	2	130
B736	450	267	3	3	190
B748	600	357	3	3	210
B760	745	445	3	3	230
B772	900	535	3	3	250
B784	1050	625	3	3	270
B1036	830	495	4	4	320
B1048	1110	660	4	4	350
B1060	1400	835	4	4	380
B1072	1655	985	4	4	410
B1084	1950	1160	4	4	440
B1096	2230	1325	4	4	470
B1436	2000	1190	6	6	670
B1448	2660	1580	6	6	730
B1460	3325	1980	6	6	790
B1472	4000	2380	6	6	850
B1484	4660	2780	6	6	910
B1496	5340	3180	6	6	970
B14108	6000	3560	6	6	1030

WITH 1 1/4" O.D. COPPER TUBES

Number	Capacities in Sq. Ft. of Radiation - Installed Below Water Line 212° Boiler Water		Head Connections Inches	Shell Connections Inches	App. Ship. Wt. Lbs.
	Water 145°-175°	Water 160°-180°			
	130 BTU	150 BTU			
B8Y36	540	340	3	3	260
B8Y48	735	460	3	3	280
B8Y60	925	580	3	3	300
B8Y72	1120	700	3	3	320
B8Y84	1310	820	3	3	340
B8Y96	1500	940	3	3	360
B8Y108	1690	1060	3	3	380

DOMESTIC WATER HEATING SYSTEMS

BUILT-IN HEATERS

For complete installation information see B & G Handbook

WHERE TO USE

B & G Built-In Heaters are offered to boiler manufacturers as products of proven efficiency and trouble-free operation. A complete engineering service is available for designing and manufacturing special units for both steam and hot water boilers. These heaters are made in either coil or trombone types as illustrated.

FEATURES OF CONSTRUCTION

B & G Built-In Heaters are manufactured to order with the same high-grade materials and careful workmanship that have made the entire line of B & G Water Heaters so popular. They can be built to any capacity within the limits of the boiler and to any specialized design required. Large heating surfaces effect maximum transfer of heat, but without sacrifice of compactness.

Coil-type heaters are equipped with brass unions at the connections—Trombone-type heaters have screwed connections. All parts in contact with service water are of rust-proof copper and bronze.



Coil-Type Heater

Trombone-Type Heater



SIZES, CAPACITIES AND DIMENSIONS

Number	Capacity in Gallons Per 3 Hours From 40° to 140° with Boiler Water at 180°	Length	Service Water Conn's.	Boiler Tapping	Approx. Ship. Weight Lbs.
NP612	40	12"	1" x 1"	2 1/2"	4 1/2
NP625	80	25"	1" x 1"	2 1/2"	7 1/4

JUNIOR UNITEM HEATER

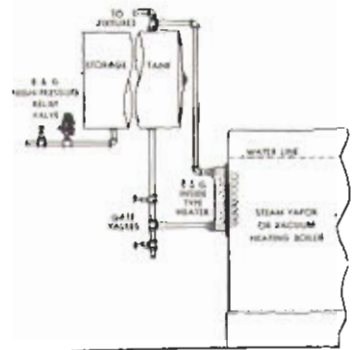


This compact, efficient unit is built of copper and bronze throughout. It is the ideal heater for many applications.

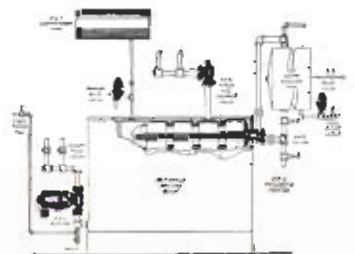
Junior Unitem is furnished with screwed head only, and can be screwed into a coupling welded into a storage tank. Or, if used as an outside type heater, it can be screwed into a casing made of pipe and fittings.

SIZES, CAPACITIES AND DIMENSIONS

Size Number	CAPACITIES IN GALLONS IN 1 HOUR WITH DOMESTIC WATER IN COIL				Sq. Ft. Heating Surface	DIMENSIONS IN INCHES					Approx. Shipping Weight Lbs.
	Heated 50° to 150° F. Below Boiler Water Line		Heated from 50° to 180° F. Submerged in Steam of 2 Lbs. Pressure	A		B	C Size Pipe Thread	D	E	F Inlet and Outlet Conn.	
	Boiler Water At 212° F.	Boiler Water At 180° F.									
6312	15	9	30	1.15	3 1/2	4 1/2	2 1/2	1	12	1 1/2	7
6324	29	18	60	2.3	3 1/2	4 1/2	2 1/2	1	24	1 1/2	10
6336	45	28	90	3.5	3 1/2	4 1/2	2 1/2	1	36	1 1/2	13
6348	60	38	125	4.75	3 1/2	4 1/2	2 1/2	1	48	1 1/2	15
8324	40	24	80	3.14	4 1/2	4 1/2	3	1	24	2	12
8336	60	37	120	4.72	4 1/2	4 1/2	3	1	36	2	15
8348	80	50	165	6.3	4 1/2	4 1/2	3	1	48	2	19
8360	100	60	200	7.85	4 1/2	4 1/2	3	1	60	2	22



B & G Coil Heater built into steam boiler

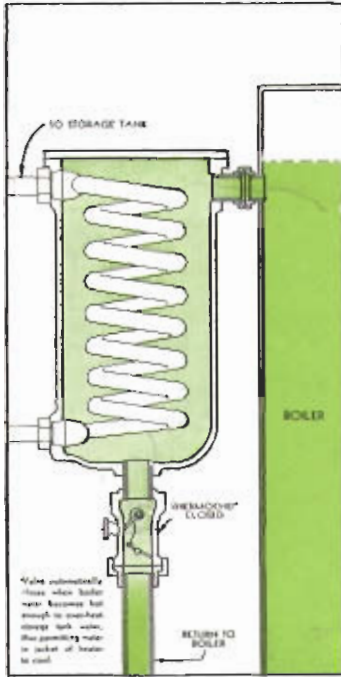


B & G Trombone Heater built into hot water boiler

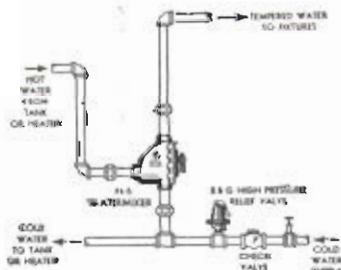


For dimensions of Junior Unitem Heater, see table below

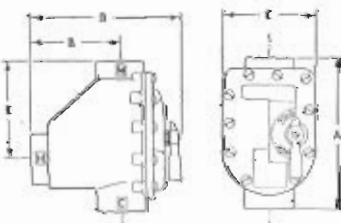
For complete installation information see B & G Handbook



For dimensions see table



B & G Watermixer with Indirect Heater



For dimensions see table

DOMESTIC HOT WATER TEMPERATURE CONTROLS

THERMOCEK

WHERE TO USE

On automatic or hand-fired heating systems where an indirect domestic hot water heater is used, the B & G Thermocek performs a very important duty. In most localities, water heated beyond 140° causes rapid formation of lime and sediment deposit in the heater coils and hot water piping throughout the building. Manufacturers of hot water storage tanks say that water temperatures above 160° cause rapid deterioration of galvanized tanks, and recommend the installation of a dependable temperature control. The patented Thermocek prevents extreme overheating by controlling the temperature of water in the storage tank.

OPERATION

The Thermocek is easily adjusted by a Temperature Regulating Handle and operation from then on is entirely automatic. It controls the circulation of boiler water through the Indirect Heater in both winter and summer.

A Thermocek permits the use of a larger heater which can be operated on lower boiler water temperature in summer, therefore more economically. This in no way conflicts with the operation of a heating system designed for high temperature water, as maximum boiler temperatures are required only for short periods during the heating season.



Number	Size	Dimensions in Inches				Approx. Ship. Wgt.
		A	B	C	D	
1 1/2	1 1/2"	5 1/2	3 1/2	3 1/2	3 1/2	4 LBS.
2	2"	5 3/4	3 3/4	3 3/4	3 1/4	5 LBS.

WATERMIXER



WHERE TO USE

The B & G Watermixer can be installed with any type of direct or indirect domestic water heater to maintain the outlet water at a uniform temperature.

PRACTICAL NEW DESIGN ASSURES UNIFORM TEMPERING OF WATER REGARDLESS OF PRESSURE DROP

The ordinary tempering valve is seriously affected by variations in pressure drop through the heater, as the correct adjustment is dependent upon a constant pressure. Since the pressure drop varies in accordance with the rate of "draw," it is obviously impossible for the conventional tempering valve to maintain a uniform water temperature at the outlet. In a small tankless heater, for example, the drop in pressure may be as much as 8 to 10 lbs.

The B & G Watermixer completely eliminates this difficulty by its new and exclusive design. A bi-metal coil, submerged in the mixed water, is employed to open and close a balanced valve. This valve is so constructed that differences in pressure drop do not affect its operation.

Number	Size	DIMENSIONS IN INCHES					Approx. Ship. Weight Lib.
		A	B	C	D	E	
1 1/2	1 1/2"	4 1/2	4 1/2	2 1/2	2 1/2	2 1/2	4
2	2"	4 3/4	4 3/4	2 3/4	2 3/4	2 3/4	4
3	3"	5 1/2	5 1/2	3 1/2	3 1/2	3 1/2	4

LIMIT CONTROLS

WARRANTY. B & G Electrical Controls proved defective in workmanship or material within fifteen months from date of shipment from the factory will be repaired or replaced free of charge, F.O.B. factory, if returned prepaid to the factory. No claims for labor will be allowed.

Bell and Gossett Co. does not assume liability for damage which may result from the use or misuse of its products, inasmuch as the Bell and Gossett Co. has no control over the installation and use of its products after they have left the factory.

Replacements. Should you damage any B & G Electrical Control so that it will not operate properly, the Bell and Gossett Co. will send a new control at a nominal charge, upon receipt of the damaged unit.

Credits. Bell and Gossett Co. will not accept any merchandise returned for credit, unless it has agreed in writing to do so.

All of the Limit Controls shown here employ the exclusive "Twin Contact" switch mechanism which assures dependable and uniform operation. Magnetic acceleration is employed so that definite snap action is insured on both opening and closing of the contacts.

B & G Limit Controls may be used for either low or line voltage application, excepting the Series 650, which is furnished with separate controls for low and line voltage. They will handle line voltage loads direct without the use of a relay. They may be used to operate 2-wire or series 10 relays.

ELECTRICAL RATINGS

At 115 or 230 Volts A. C., Limit Controls will handle motor load of 1 H. P., capacitor or R. I. Type, or $\frac{1}{2}$ H. P. if split phase or D. C. For low voltage service (20 volts) capacity is 10 amperes.

These Ratings do not apply to Series 650. See table below.

HOT WATER CONTROLS (Bi-Metal Immersion Type)

The Series 650 Immersion Hot Water Control is a universal instrument designed primarily for use as a safety limit control. It has a wide application on summer-winter domestic hot water hook-ups on both steam and hot water heating systems. The thermal element is failure-proof which permits the control to operate the burner without the need for an auxiliary high limit safety control on hot water systems. Well is provided with $\frac{3}{4}$ " pipe thread.

FOR LINE VOLTAGE

Model Number	DESCRIPTION	Switch Opens Circuit on Temp.	Temp. Range	Differential Adjustable	Motor Current Rating		Approx. Ship. Wt. in Lbs.
					R. I.	Split Phase	
650-D	DIRECT ACTING	RISE	90° TO 240°	10" TO 25"	$\frac{1}{2}$ H. P.	$\frac{1}{4}$ H. P.	2 $\frac{1}{2}$
650-D1	REVERSE ACTING	DROP	90° TO 240°	10" TO 25"	$\frac{1}{2}$ H. P.	$\frac{1}{4}$ H. P.	2 $\frac{1}{2}$
650-E	3-WIRE, SINGLE POLE, DOUBLE THROW	.....	90° TO 240°	FIXED 15"	$\frac{1}{2}$ H. P.	$\frac{1}{4}$ H. P.	2 $\frac{1}{2}$

FOR LOW VOLTAGE AND SERIES 10 CIRCUITS

Model Number	DESCRIPTION	Switch Opens Circuit on Temp.	Temp. Range	Differential Adjustable	Motor Current Rating	Approx. Ship. Wt. in Lbs.
650-A	DIRECT ACTING	RISE	90° TO 240°	10" TO 25"	20 VOLTS - 1 AMP.	2 $\frac{1}{2}$
650-A1	REVERSE ACTING	DROP	90° TO 240°	10" TO 25"	20 VOLTS - 1 AMP.	2 $\frac{1}{2}$
650-B	3-WIRE, SINGLE POLE, DOUBLE THROW	.....	90° TO 240°	10" TO 25"	20 VOLTS - 1 AMP.	2 $\frac{1}{2}$

SUPER-SENSITIVE HOT WATER CONTROLS (Volatile Filled Immersion Type)

The Series 600 Immersion Type Hot Water Controls have been specifically designed for use on modern forced hot water systems and for summer-winter domestic hot water hook-ups of all types. Experience shows that they are the fastest acting and most sensitive controls of their type on the market. They have a convenient internal differential adjustment. Well is provided with $\frac{1}{2}$ " pipe thread.

Model Number	DESCRIPTION	Temperature Range	DIMENSIONS IN INCHES				Type of Thermal Element	Approx. Ship. Wt. in Lbs.
			Height	Width	Depth	Thermal Element		
DIRECT ACTING MODELS WHICH OPEN CIRCUIT ON TEMPERATURE RISE								
600-D	HORIZ. MOUNT, WITH WELL	125° TO 240°	5	4 $\frac{1}{2}$	1 $\frac{1}{2}$	$\frac{3}{4}$ X 6	VOLATILE	2 $\frac{3}{4}$
600-D4	VERTICAL MOUNT, WITH WELL	125° TO 240°	5	4 $\frac{1}{2}$	1 $\frac{1}{2}$	$\frac{3}{4}$ X 6	LIQUID	2 $\frac{3}{4}$
REVERSE ACTING MODELS WHICH CLOSE CIRCUIT ON TEMPERATURE RISE								
600-D1	HORIZ. MOUNT, WITH WELL	125° TO 240°	5	4 $\frac{1}{2}$	1 $\frac{1}{2}$	$\frac{3}{4}$ X 6	VOLATILE	2 $\frac{3}{4}$
600-D5	VERTICAL MOUNT, WITH WELL	125° TO 240°	5	4 $\frac{1}{2}$	1 $\frac{1}{2}$	$\frac{3}{4}$ X 6	LIQUID	2 $\frac{3}{4}$

HOT WATER CONTROLS (Strap-On Type)

The Series 500 Strap-On Hot Water Controls have been specially designed to meet the need for an accurate and dependable hot water limit control. They are ideally suited for gravity and forced hot water systems, and are widely used on summer-winter domestic hot water hook-ups on steam boilers.

Model Number	DESCRIPTION	Temperature Range	Differential Adjustable	Dimensions in Inches			Approx. Ship. Wt. in Lbs.
				Height	Width	Depth	
500D - 500D4	DIRECT ACTING	110° TO 240°	10" TO 30"	5 $\frac{1}{4}$	2 $\frac{1}{4}$	2	2
500D1 - 500D5	REVERSE ACTING	110° TO 240°	10" TO 30"	5 $\frac{1}{4}$	2 $\frac{1}{4}$	2	2

PRESSURE, VAPOR AND VACUUM CONTROLS

Series 700 Controls have been designed for use as safety limit controls on all types of steam heating systems where they provide complete protection against excessive pressures.

Model Number	DESCRIPTION	Pressure Range	Differential Adjustable	Dimensions in Inches			Pipe Conn's Inches	Approx. Ship. Wt. in Lbs.
				Height	Width	Depth		
700-D	LOW PRESSURE DIRECT ACTING	0-10 LBS.	$\frac{1}{2}$ -5 LBS.	6 $\frac{1}{2}$	2 $\frac{1}{4}$	3 $\frac{3}{4}$	$\frac{1}{4}$	2 $\frac{1}{4}$
700-D1	LOW PRESSURE REVERSE ACTING	0-10 LBS.	$\frac{1}{2}$ -5 LBS.	6 $\frac{1}{2}$	2 $\frac{1}{4}$	3 $\frac{3}{4}$	$\frac{1}{4}$	2 $\frac{1}{4}$
700-D2	MEDIUM PRESSURE DIRECT ACTING	0-50 LBS.	2 $\frac{1}{2}$ -25 LBS.	6 $\frac{1}{2}$	2 $\frac{1}{4}$	3 $\frac{3}{4}$	$\frac{1}{4}$	2 $\frac{1}{4}$
700-D10	VAPOR DIRECT ACTING	0-2 LBS.	2 OZ.-16 OZ.	7 $\frac{1}{4}$	3 $\frac{1}{4}$	3 $\frac{3}{4}$	$\frac{1}{4}$	2 $\frac{1}{4}$
700-D12	VACUUM DIRECT ACTING*	10 LBS. VAC.-35 LBS.	2 $\frac{1}{2}$ -25 LBS.	6 $\frac{1}{2}$	2 $\frac{1}{4}$	3 $\frac{3}{4}$	$\frac{1}{4}$	2 $\frac{1}{4}$

*Can be used only on vacuum pumped jobs.

For complete installation information see B & G Handbook



SERIES 650
LIMIT CONTROL



SERIES 600
LIMIT CONTROL



SERIES 500
LIMIT CONTROL



SERIES 700
LIMIT CONTROL

For complete installation information see B & G Handbook

ELECTRICAL CONTROLS

RELAYS & THERMOSTATS

RELAYS—WITH BUILT-IN TRANSFORMER

The Series 5010 Relays are universal units designed to control line voltage loads by means of a low voltage, 20 Volt circuit using either Series 10, Series 20 or two-wire snap acting thermostats. Since these relays have a universal control circuit, the 5010 Relays will operate with any thermostat. The Series 5000 Relays are designed for use with a 2-Wire, snap acting thermostat only.



SERIES 5000 - 5010 RELAY

Model Number	** Line	Load Circuit	Load and Line Connections	* Therm. Circuit	R. I. Motor Rating	Height Inches	Width Inches	Depth Inches	Approx. Ship. Wt. in Lbs.
5000-D	115/60	S. POLE, S. THROW	COMMON	2-WIRE SNAP ACTION	1 H.P.	3 1/4	5 1/4	2 3/4	4
5000-J	230/60	S. POLE, S. THROW	COMMON		1 H.P.	3 1/4	5 1/4	2 3/4	4
5010-D	115/60	S. POLE, S. THROW	SEPARATE	*UNIVERSAL (TWO-WIRE SNAP-ACTING SERIES 10 OR 20)	1 H.P.	5 1/4	4 3/4	2 3/4	4
5010-J	230/60	S. POLE, S. THROW	SEPARATE		1 H.P.	5 1/4	4 3/4	2 3/4	4
5010-D1	115/60	D. POLE, S. THROW	SEPARATE		1 H.P.	5 1/4	4 3/4	2 3/4	4
5010-J1	230/60	D. POLE, S. THROW	SEPARATE		1 H.P.	5 1/4	4 3/4	2 3/4	4
5010-D2	115/60	S. POLE, D. THROW	SEPARATE		1 H.P.	5 1/4	4 3/4	2 3/4	4
5010-J2	230/60	S. POLE, D. THROW	SEPARATE		1 H.P.	5 1/4	4 3/4	2 3/4	4
5010-D4	115/60	COMBINED S. POLE, S. THROW & S. POLE, D. THROW.	5PST-COM.		1/2 H.P.	5 1/4	4 3/4	2 3/4	4
5010-J4	230/60	COMBINED S. POLE, S. THROW & S. POLE, D. THROW.	SPOT-SEP.		1/2 H.P.	5 1/4	4 3/4	2 3/4	4

**25 Cycle can be furnished at extra cost.

BI-ACTUATED (Heater Type) LOW VOLTAGE THERMOSTAT

The Series 150 Bi-Actuated (Heater Type) Room Thermostat with its Heater Element plus its sensitivity and close differential provides the ultimate in room temperature control. The Heater Element is adjustable.

This thermostat can be used only in conjunction with series 5000 and 5010 Relays.



SERIES 100 and 150 THERMOSTAT

Model Number	Application	Range	Electrical A. C. Rating	Differential Adjustable	Height Inches	Width Inches	Depth Inches	Approx. Ship. Wt. in Lbs.
150-A	HEATING	55° TO 85°	1 A. 20 V.	1° TO 5°	5	1 3/4	1 3/4	2 1/4

SUPER-SENSITIVE LOW VOLTAGE THERMOSTAT

The Series 100 Super-Sensitive Room Thermostats have been designed to provide unusually close temperature control without the need of a heater element.



SERIES 25 THERMOSTAT

Model Number	Application	Range	Electrical A. C. Rating	Differential Adjustable	Height Inches	Width Inches	Depth Inches	Approx. Ship. Wt. in Lbs.
100-A	HEATING	55° TO 85°	1 A. 20 V.	1° TO 5°	5	1 3/4	1 3/4	2
100-A4	HEATING	35° TO 65°	1 A. 20 V.	1° TO 5°	5	1 3/4	1 3/4	2

DOUBLE CIRCUIT LOW VOLTAGE THERMOSTAT

Model 25-B is a Three Wire (Series 20) Low Voltage Room Thermostat, single pole, double throw of the snap action magnetic accelerated type.

Model Number	Application	Range	Electrical A. C. Rating	Height Inches	Width Inches	Depth Inches	Approx. Ship. Wt. in Lbs.
25-B	HEATING	53° TO 95°	1 A. 20 V.	4 1/4	1 3/4	1 3/4	1 1/4

SUPER-SENSITIVE LINE VOLTAGE THERMOSTAT

Series 100 Super-Sensitive Line Voltage Room Thermostats are designed for light duty service and will handle motor loads direct up to 1/4 H. P. 115 Volts. (See specifications below). Furnished with wall plate. At 115 or 230 Volts A. C., will handle a motor load of 1/4 H. P., capacitor or R. I. type, or 1/4 H. P. if split phase. If 115 or 230 Volts D. C., will carry 1/2 ampere.

Model Number	Application	Range	Differential Adjustable	Height Inches	Width Inches	Depth Inches	Approx. Ship. Wt. in Lbs.
100-D	HEATING	55° TO 85°	1° TO 5°	5	1 3/4	1 3/4	2
100-D4	HEATING	35° TO 65°	1° TO 5°	5	1 3/4	1 3/4	2

HEAVY DUTY LINE VOLTAGE THERMOSTAT

The Series 200 Heavy Duty Bellows Type Thermostats were designed for the direct control of single phase fractional horsepower motors without the use of a relay. At 115 or 230 Volts A. C., will handle a motor load of 1/4 H. P., capacitor or R. I. type, or 1/2 H. P. if split phase. If 115 or 230 Volt D. C., will carry 1 ampere.

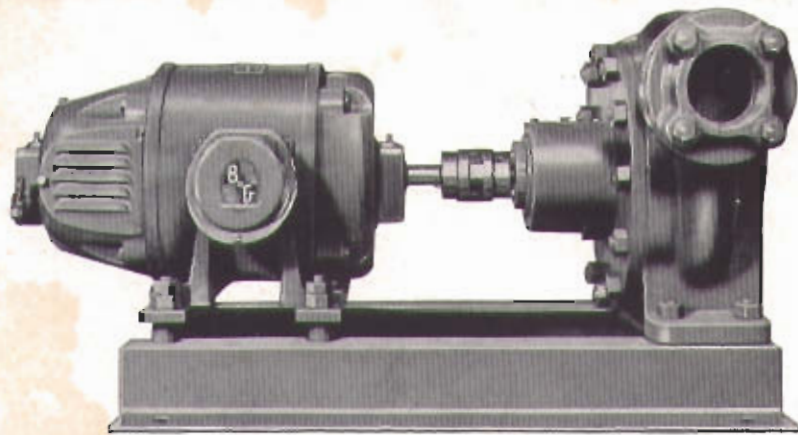
Model Number	Application	Range	Differential Adjustable	Height Inches	Width Inches	Depth Inches	Approx. Ship. Wt. in Lbs.
200-D	HEATING	55° TO 85°	1° TO 5°	5 1/2	2 1/2	2 3/4	2
200-D2	HEATING	40° TO 70°	1° TO 5°	5 1/2	2 1/2	2 3/4	2
200-D4	HEATING	70° TO 100°	1° TO 5°	5 1/2	2 1/2	2 3/4	2



SERIES 200 THERMOSTAT

HEATING SYSTEMS CIRCULATORS

For complete installation information see B & G Handbook



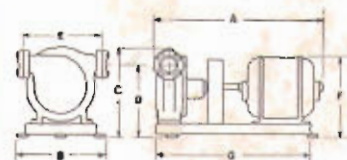
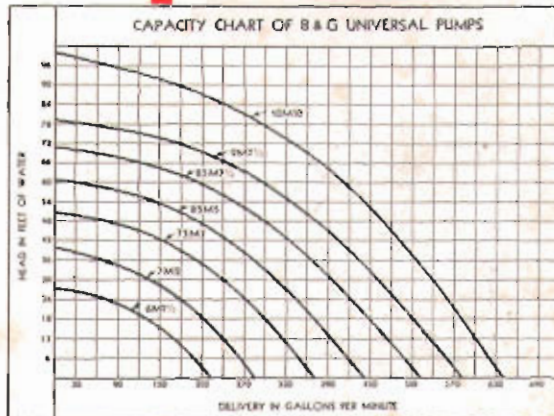
UNIVERSAL PUMP

The B & G Universal Pump is designed primarily for warm water heating systems in apartment buildings, office buildings, factories, schools, etc., where large capacities are required.

FEATURES OF CONSTRUCTION

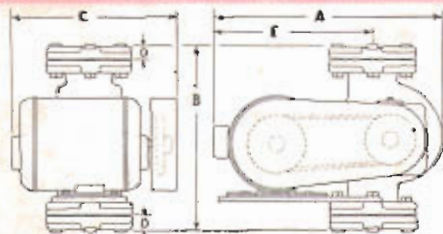
The same type of oil lubrication is used as in the regular B & G Booster, with water sealed from the pump bearings by the patented B & G Water-tight Seal. The polished machine steel shaft has an integral thrust collar which prevents end play. Long bronze bearings assure quiet operation and the entire pump is bronze fitted. Any standard motor of the same horsepower rating and NEMA mounting can be used.

The B & G Universal Pump can be purchased complete with Motor, Base and Coupling or the Pump can be bought separate. Starting switches with overload protection are not included as standard equipment but must be installed. Consult switch manufacturer.



For dimensions, see table at left

Pump No.	DIMENSIONS IN INCHES											Approx. Shpg. wt., Complete Pump, Motor, Base and Coupling	Motor Horse Power	Approx. Shpg. wt.; Pump, Base and Coupling but without Motor
	A	B	C	D	E	F	G	H	J	K				
6M1.5	21 1/2	18	17	13 1/2	15 1/2	14 1/2	27 1/2	3	8 1/2	27 1/2	420	1 1/2	310	
7M2	29	18	17	13 1/2	15 1/2	15	28 1/2	3	8 1/2	29	440	2	320	
7.5M3	30	18	17	13 1/2	15 1/2	15	29 1/2	3	8 1/2	30	460	3	320	
8M5	33 1/2	18	17	13 1/2	15 1/2	15 1/2	31 1/2	3	8 1/2	31 1/2	540	5	335	
8.5M7.5	35 1/2	18	17	13 1/2	15 1/2	16 1/2	33 1/2	3	8 1/2	34	550	7	345	
9M7.5	35 1/2	18	17	13 1/2	15 1/2	16 1/2	33 1/2	3	8 1/2	34	550	7	350	
10M10	38 1/2	18	18	14 1/2	15 1/2	18	35 1/2	3	16 1/2	36	660	10	380	



BELT-DRIVEN PUMP

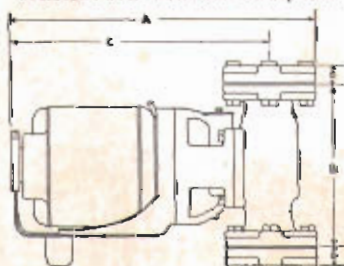
B & G Belt-Driven Pumps are made for installations where a large water delivery at a high Pressure Head is required. The unit is exceptionally compact and can be installed in the pipe line without a base.

Number	Size	Current Characteristics 1750 R.P.M. Motor 110 or 220 Volt 60 Cycle	DIMENSIONS IN INCHES					Approximate Shipping Weight, Lbs.
			A	B	C	D	E	
BDS32	3"	1/2 H.P. 1 PHASE	20 1/2	15 1/2	14 1/2	1 1/2	9 1/2	150
BDS32	3"	1/2 H.P. 3 PHASE	20 1/2	15 1/2	14 1/2	1 1/2	9 1/2	150
BDS34	3"	3/4 H.P. 1 PHASE	20 1/2	15 1/2	15 1/2	1 1/2	10 1/2	160
BDS34	3"	3/4 H.P. 3 PHASE	20 1/2	15 1/2	15 1/2	1 1/2	10 1/2	160

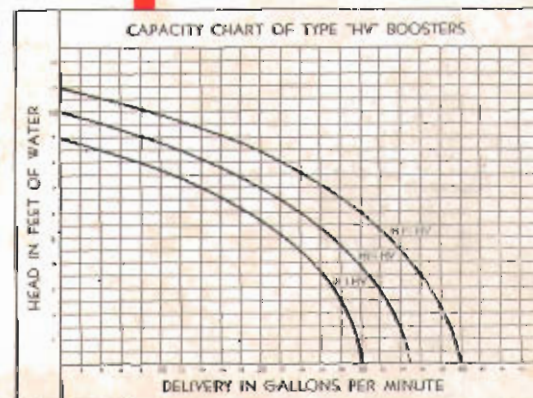
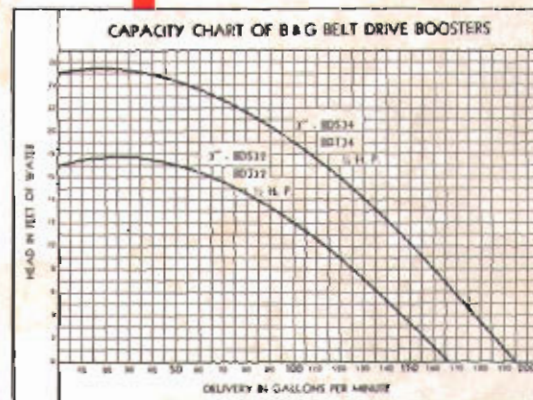
Belt-Driven Pumps not equipped with overload protection.

HIGH VELOCITY PUMP

This pump is similar to the B & G Booster Pump in every detail of size and construction with the exception of the impeller, which is larger in diameter to provide a higher Head Pressure. The pump is therefore used in circulating systems where greater than normal pressure drops are encountered. Also available with vertical motor.



Number	Pipe Size	Furnished with 110 V., 60 Cycle Single Phase Motors, equipped with Automatic Overload Protection	DIMENSIONS IN INCHES				Approx. Shpg. Wt. Lbs.
			A	B	C	D	
H1HV	1"		16 1/2	8 1/2	14 1/2	55	
H1 1/4 HV	1 1/4"		16 1/2	8 1/2	14 1/2	56	
H1 1/2 HV	1 1/2"		16 1/2	8 1/2	14 1/2	57	



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BELL & GOSSETT CO.

MORTON GROVE, ILLINOIS
(Suburb of Chicago)

GUARANTEE

Bell and Gossett Products are guaranteed only against defective material and workmanship for a period of one year and can be returned only after receiving written permission. Parts found defective upon inspection at the factory will be replaced, F.O.B. factory. The Company shall not be held liable for damages or delay caused by defective material and no claims for labor in replacing such parts will be allowed.

RETURNED GOODS

Written permission must be obtained before returning any material for credit. Material so returned will be subject to a deduction of 10% for re-handling. All transportation charges, including freight and cartage, will be paid by the shipper.

Products which are obsolete or made to special order are not returnable.