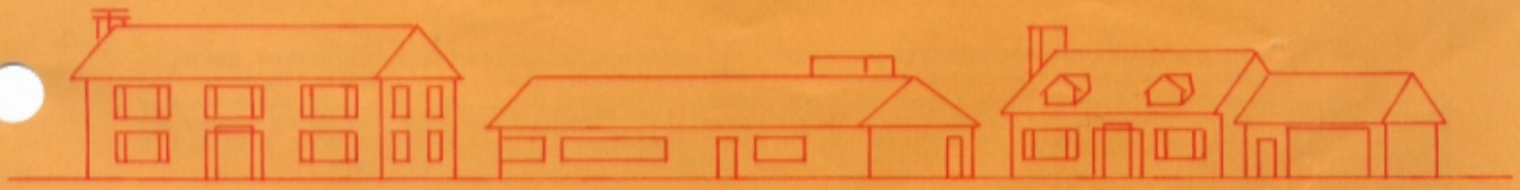
Bulletin A-108-T
Revision 2



Compression Tank

EX-ES Air Valve

A NEW AIR CONTROL BOOSTER PACKAGE

Quiet Dependable Circulation PLUS Built-in Positive Air Control

A NEW CONCEPT FOR AIR CONTROL

THE B & G AIR CONTROL BOOSTER PACKAGE offers a new concept in air control. This startling new concept combines two of the most important requirements of Hydronic System Design —quiet vibrationless operation plus positive air control.

UNIQUE IN AIR SEPARATING—The pump incorporates a unique air separating feature, eliminating the need for an air separator at the boiler. Water entrained air bubbles are effectively separated within the pump and directed to a collection chamber on the front of the pump body. The compression tank is directly connected to the air collection chamber through the EX-ES air valve allowing free air to rise to the tank. *The air control Booster and EX-ES Air Valve Package reduces tank size by 50% over conventional tank sizing methods.*

The pump body is designed to permit pumping right or left, up or down and still allow the compression tank to be connected directly to the top of the air collection chamber. The pump body also has tappings to permit installation of the pressure reducing valve or city water fill connection, thermometer or pressure-temperature gauge.

OUTSTANDING FEATURES—One of the outstanding features of the Air Control Booster Package is its ability to purge air from a piping system without separate purging or venting —a real time saving feature for the installing contractor. If the static height (highest point) of the system is less than 7 feet above the pump body, it is not necessary to manually purge or vent. Systems with more than 7 feet of static height above the pump should be purged or vented in the conventional manner.

The pump can be installed on the supply pumping away from the boiler, see Figure 1, or on the return pumping into the boiler, see Figure 2. In either case, the compression tank located at the pump suction, effectively pressurizes the system and allows the full head of the pump to be reflected across the system piping and boiler. This aids in driving any air entrained in the system back to the Air Control Booster where this air is separated from the water and directed to the tank.

In addition to its unique air separating feature, this pump offers all the other vital points of B & G quality design. The quiet vibrationless motor, bearing bracket assembly, leak proof mechanical seal and noise dampening coupler are interchangeable with the standard #75 to #150 B & G Booster.

USED ON ZONE CONTROL SYSTEMS—The Air Control Booster Package can be utilized on zone control systems as illustrated in Figure 3, combined with B & G model TEV Zone Control Valves. It can also be used on one, two or three zone systems combined with standard B & G Boosters, see Figure 4. When used on multiple pump systems, pump must be located on the zone closest to the boiler outlet. Other considerations are: pump should be located on the zone most frequently used, pump should be located on the zone with the greatest flow, and pump should be located on the zone with the highest water temperature.

Many trouble jobs caused by lack of or improper air control have been effectively corrected by the addition of the Air Control Booster Package. When using this package for corrective measures (reusing an existing compression tank) or where the tank cannot be directly supported from the pump, the installation should be piped as illustrated in Figure 5.

AIR CONTROL BOOSTER PACKAGE PERFORMANCE GUARANTEE

B & G Air Control Booster Package consists of B & G Air Control Booster and EX-ES Air Valve.

The Air Control Booster Package is guaranteed to prevent the accumulation of air in heating and cooling units and prevent noises caused by entrained air in piping.

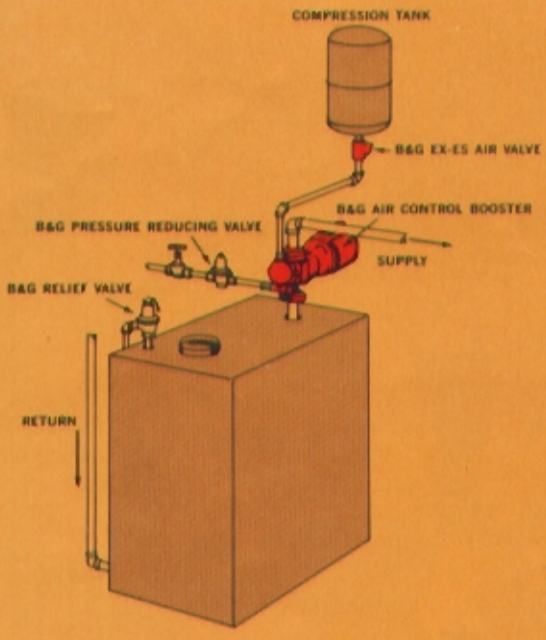


Figure 1
B & G AIR CONTROL BOOSTER PUMPING OUT OF BOILER

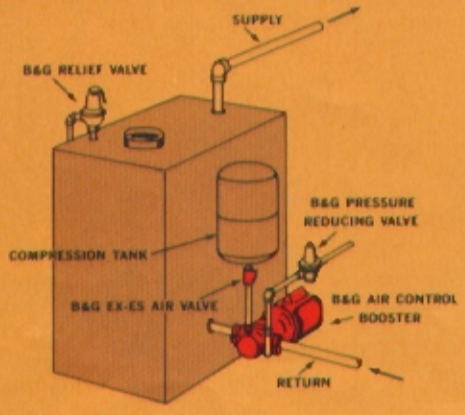
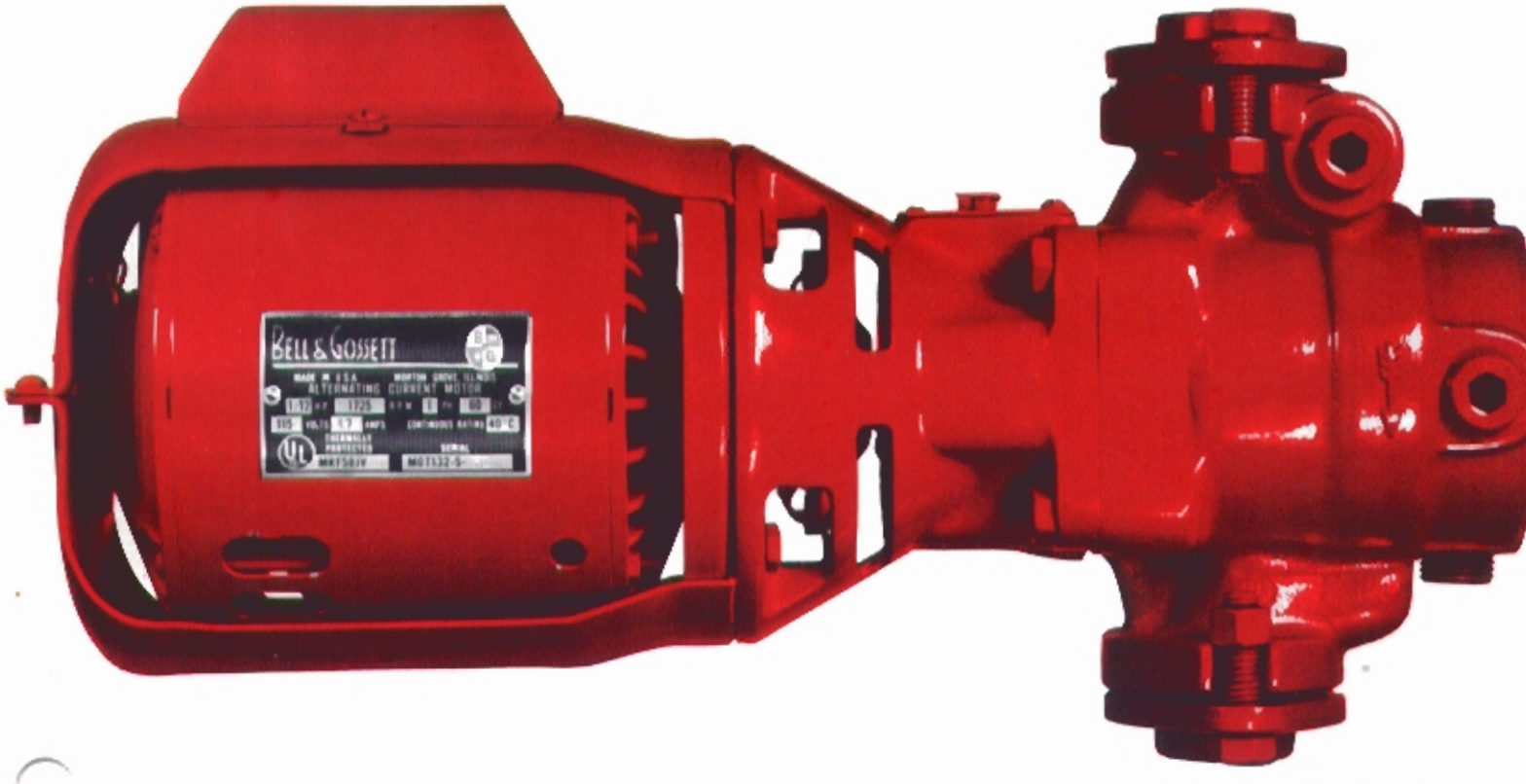


Figure 2
B & G AIR CONTROL BOOSTER PUMPING INTO BOILER

Figure 3
B & G AIR CONTROL BOOSTER USED WITH MODEL TEV ZONE VA



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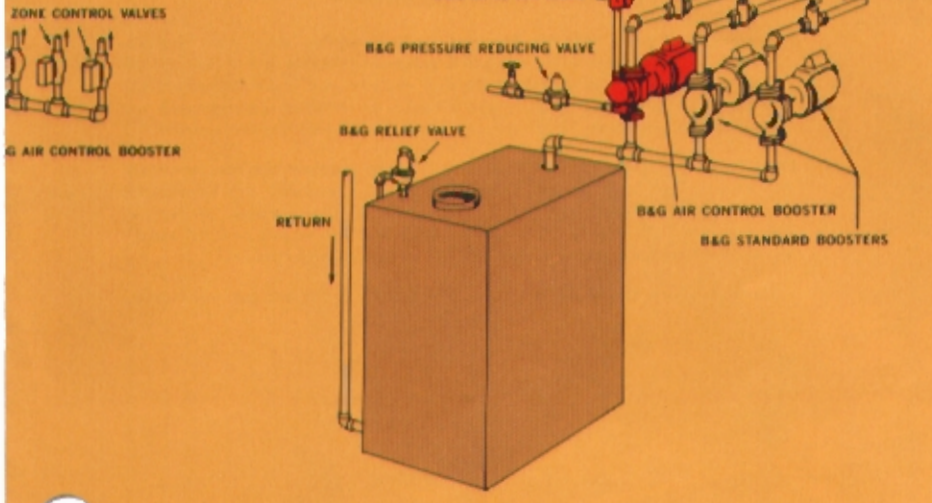


Figure 4
B & G AIR CONTROL BOOSTER
ON ZONE PUMP INSTALLATION

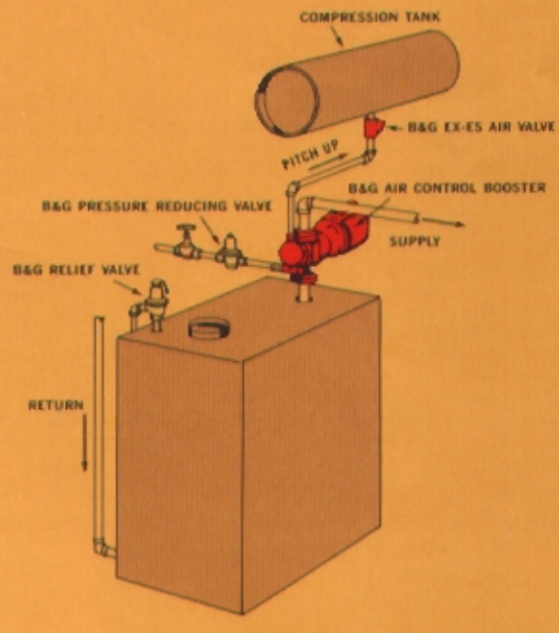


Figure 5
B & G AIR CONTROL BOOSTER
WITH CEILING MOUNTED TANK

SEVEN VITAL POINTS OF THE AIR CONTROL BOOSTER

1 Quiet, Vibrationless B & G Motor

The prime requisite of a forced hot water heating pump is *quiet operation!* In this respect, the B & G Booster is completely outstanding.

Motors are built in the B & G plant to rigid specifications. Sizes up to No. 150 are now equipped with a smaller motor —1/12 H. P. instead of 1/6 H. P.—*but have exactly the same capacity as previously!*

2 The Super-finished Shaft

From the beginning, B & G engineers recognized the importance of shaft design and material. The B & G Booster shaft is big—*oversized*—affording large bearing surfaces. It is not just a length of drill rod, but made of special alloy steel, polished to a mirror finish.

Note the thrust collar—an integral part of the shaft. It prevents end-thrust movement, a deadly enemy of seal and motor bearings. This collar receives a special heat treatment which enables it to stand up under heavy wear.

Perhaps no other feature contributes so much to overall efficiency and long life.

3 The Long Bronze Bearings

Bronze, sleeve-type bearings are extra long, to maintain the shaft in exact alignment and to assure smooth, quiet operation. They are machined with a diamond boring unit—precise workmanship which pays off in dependable performance.

4 The Seal Assembly

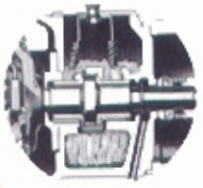
This Seal is positive protection against water leakage into the bearings and has a long record of failure-proof operation. The extremely hard material of which the Seal is made and its ingenious method of assembly assure long service.

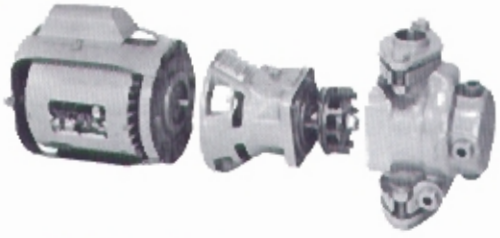
5 The Noise-dampening Coupler

The arms of the Booster Coupler are held together with springs —a design which dampens vibration and noise. Since elimination of noise is a primary consideration in heating pump construction, this flexible coupling is a notable feature of the B & G Booster. It has such a successful record it is used on all B & G heating pumps.

6 The Oil Lubrication System

The oiling system of a B & G Booster is very simple and extremely effective. Oil is carried up by wool wicking from a reservoir and keeps the shaft and bearings in a continuous bath of oil.



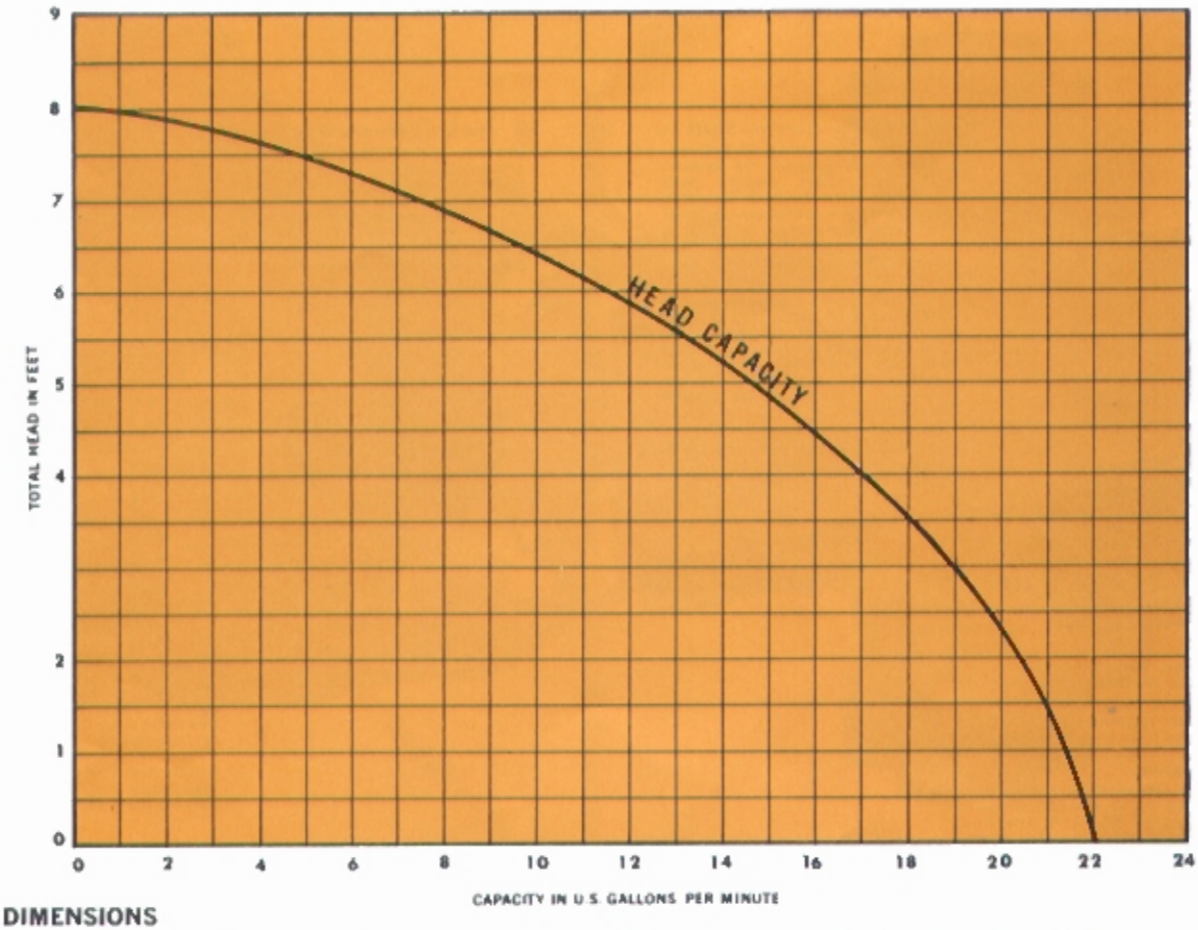


7 Easily Serviced

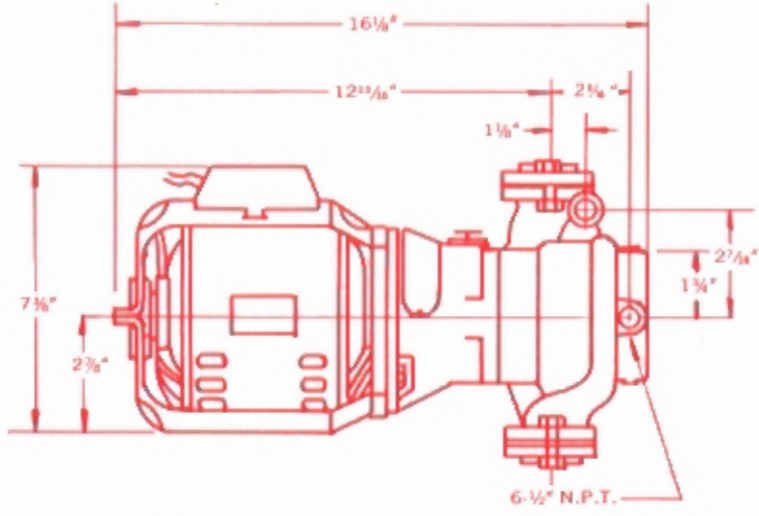
By removing a few bolts, the Booster can be separated into three parts, permitting servicing without breaking pipe connections.

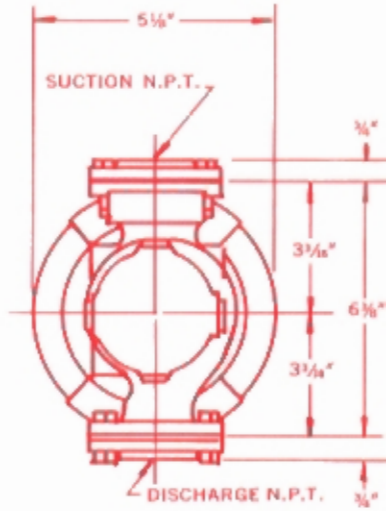
Johannson gauges are used in the construction and assembly of *B & G Boosters.* This use of precision instruments assures accuracy of fit, simplified servicing and complete interchange of parts from one pump to another.

CAPACITY CHART B & G AIR CONTROL BOOSTER



DIMENSIONS





SPECIFICATIONS

SIZE NUMBER	PIPE SIZE	MOTOR H.P. AND CURRENT CHARACTERISTICS
ACB- ¼	¼" FLANGED	1/12 H.P. 115 Volt, 60 Cycle, Single Phase
ACB-1	1" FLANGED	
ACB-1¼	1¼" FLANGED	
ACB-1½	1½" FLANGED	

EX-ES Air Valve

The Airtrol Control Booster should always be used as a package, in conjunction with an EX-ES Air Valve. This will allow tank size to be reduced by 50% over conventional tank sizing methods. Even if tank size is not reduced, serious trouble could result should the air level in the tank drop to the Booster. The EX-ES Air Valve will prevent this and provide automatic and *guaranteed* air control.

GUARANTEE AND LIABILITY

ITT Fluid Handling Division, International Telephone & Telegraph Corporation, warrants that all BELL & GOSSETT products furnished by it for a period of one year after date of shipment from its factory to be free from defects in material and workmanship, subject only to the following:

1. Manufacturer's liability under this warranty (and under any other warranty express or implied, statutory or otherwise) is limited to repair or, at Manufacturer's option, replacement of all parts which are shown to have been defective when shipped, and then only if Manufacturer is notified of such defects within such warranty period and such defective parts are promptly delivered to its factory at 8200 N. Austin Avenue, Morton Grove, Illinois, transportation charges prepaid. Manufacturer's liability hereunder shall not be enforceable until such equipment has been fully paid for. Except to the extent expressly assumed herein, Manufacturer's liability for incidental and consequential damages is hereby excluded to the full extent permitted by applicable law. Manufacturer's liability as stated herein cannot be altered or enlarged except by a writing signed by an officer of Manufacturer.

2. Replacement parts will be invoiced in the regular way with invoices subject to adjustment after the parts claimed defective are examined at our factory. ITT Fluid Handling Division reserves the right to make such changes in details of design, construction or product arrangement as shall, in its judgment, constitute an improvement over former practice.

RETURNED GOODS: Written permission must be obtained before returning any material for any reason. Material returned for credit will be subject to factory inspection. In-warranty product, in original cartons, of current design will be subject to a rehandling charge less freight originally allowed. All material must be shipped with transportation charges prepaid.

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

BELL & GOSSETT MORTON GROVE, ILL. 60053 ITT
Fluid Handling Division, International Telephone and Telegraph Corporation

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