



Frequently Asked Questions

Following are just a few of the many frequently asked questions posted on the Bell & Gossett website.

Q How do you properly lubricate a B&G Series 100 booster? The B&G maintenance manual says to add 1/2-teaspoon of oil at the beginning of the heating season. How much oil should I use in order not to over-oil the booster bearings? How about the motor?

A First, the instruction manual refers to 1/2-teaspoon at the initial installation. For ongoing maintenance purposes in a typical residential hydronic heating application, the Series 100 should get about 6-8 drops in the bearing assembly and 3-4 drops in each of the motor ports twice a year. If the pump is being used for continuous duty or if it is in a really hot equipment room, you will want to oil more often...every couple of months.

For illustrated instructions on "How To Oil Your Series 100 Pump," visit the B&G website.

Q What is the formula to figure how much pressure is required to circulate water in a multi-story building?

A In a closed loop hydronic heating system, the pump does not need to "lift" the water. The pump only needs to overcome the friction losses associated with being circulated through the pipe and throughout the radiation. The required pump head (pressure that the pump must overcome to get circulation) is dependent upon the system piping. The following is a general "Rule of Thumb" that contractors have been using for years.

Pump Head:

- 1) Measure the longest run of pipe in feet (out and back)
- 2) Add 50% to this
- 3) Multiply this by 0.04
- 4) That's the pump head

Flow Rate (gpm):

Divide the boiler Btu rating by 10,000 to get the required flow rate (gpm)

Example:

Longest pipe run is 20 feet up to the second floor + 60 feet around the upstairs loop (through radiation) + 20 feet back to the boiler in the basement.

- 1) longest pipe run = 20 + 60 + 20 = 100 feet
- 2) add 50% = 100 + 50 = 150 feet
- 3) 150 feet X 0.04 = 6 feet
- 4) Required pump head = 6 feet

Boiler Rating is 120,000 Btu/h

- 1) 120,000 / 10,000 = 12 gpm
- 2) Flow rate = 12 gpm

Looking at the pump curves for residential pumps, we see that a B&G Series 100 Booster will meet this requirement. Keep in mind that this is a guideline for residential systems, not an exact science. Contact your local B&G Representative for further information.

Q I am installing a residential hydronic system that is using conventional copper fin baseboard with seven independent zones covering about 5000 Sq. Ft of space. I would like to know the benefits/drawbacks of zoning with individual circulators versus valves. To use circulators would appear to be the more involved method and more costly due to relays, controls, flow valves etc. It would seem like using circulators

might give you a more consistent flow rate through any given zone at any one time. My intention is to not use a primary loop because I am using a boiler that has a built in loop and valve to protect against low return temperature. In a system with many zones like this, where some zones may be too short to give the 20 deg. temp drop between supply and return, does this present any type of problem to the system?

A You're right in observing that zone pumps require some extra components, but that method offers a lot of advantages in your project. With seven valves operating against a single pump, there's a real possibility of high velocity noise if only one zone were calling for heat and all the rest were closed. Zone pumps would avoid that situation.

Also, don't ignore the primary-secondary method just because you already have a primary loop to protect the boiler. Just think of extending the idea into three loops: the boiler, the distribution, and the zone loops. Larger systems have used this idea successfully for years. Your local B&G Representative knows this stuff inside and out. Give them a call for additional help, or visit our website.



B&G Series 100® Booster

To view more FAQs, go to www.bellgossett.com, click on "Knowledge Base", and then enter a key word in the search box.