

PRODUCT INFORMATION

BULLETIN

GAS FIRED STEAM BOILER

OVER THE YEARS, IT HAS BEEN OUR EXPERIENCE THAT MANY QUESTIONS EXIST IN REGARDS TO STEAM BOILERS AND THEIR INSTALLATION, SERVICE, AND MAINTENANCE. THIS BULLETIN IS INTENDED TO ANSWER THE MOST COMMONLY ASKED QUESTIONS AS WELL AS ADDRESS THE MOST COMMON ERRORS ASSOCIATED WITH THE INSTALLATION OF A REPLACEMENT STEAM BOILER.

1. It is crucial with today's steam boilers that the pipes connecting the new boiler to the old system, the "**Near Boiler Piping**", be done in such a manner that it aids in the proper operation of the boiler. Proper Near Boiler Piping will 1) insure that water free steam exits the boiler and enters the main piping 2) maintain equal pressures between the supply and return of the boiler 3) prevent water from draining from the boiler in the event of a return pipe leak.

Piping a steam boiler as suggested in the boilers **Installation and Operating Manual** will insure proper operation of your new steam boiler. If water quickly disappears from the boilers sight glass, or banging noises come from the pipes, or the radiators aren't heating properly, improper Near Boiler Piping may be the problem. Refer to the boilers instruction manual for proper boiler piping

2. Proper cleaning of a steam boiler at the time of its installation and sometime there after is as important as proper piping. A new steam boiler should be thoroughly cleaned at the time of the installation, and depending on the amount of "dirt" in the old system and the amount of oils from the pipe dope or flux used when installing the boiler, cleaning after 2-4 weeks of operation is recommended.

"**Blowing Down**" and "**Skimming**" the boiler are necessary for proper operation. After a period of time, sediment and sludge from the old steam system will work their way back to and settle in the bottom of the boiler. Blowing Down will force the sediment and sludge from the bottom of the boiler. Along with the sediment and sludge are the oils from the pipe dope and/or flux used when piping the boiler. Unlike the sludge and sediment, the oil will rise to the waters service. Skimming the boiler is the only way to remove this oil. Refer to the boilers instruction manual for proper method of skimming and blowing down the boiler.

3. If on an initial call for heat, the boiler fires and runs for a period of time (approx. 2-5 minutes) without heating the radiators before it shuts off, **increasing the thermostats anticipator setting** will cause the boiler to run longer allowing the steam to make it to the radiators.

Taking an amp reading at the thermostat connection may only result in a reading of approximately .6 Amp. If this is the case, it may still be necessary to set the anticipator at its highest setting (**typically 1.2**). This will allow the boiler to run longer on each cycle. This may be necessary in order for the steam to reach the radiators. By doing so, the boiler will not be allowed to short cycle, resulting in a more efficient heating system.

4. If after installing a replacement steam boiler, the radiators furthest from the boiler fail to heat properly, try lowering the pressure switch setting. The pressure switch is adjustable from .5 to 9.0 pounds with a differential of 1-5. The main adjustment is accomplished by adjusting the screw on top of the switch. The differential is adjusted by first removing the cover and secondly by tuning the differential wheel to the desired setting. Try a main setting of .5 with a differential of 1.

Low pressure steam moves through pipe more quickly than high pressure steam. High pressure steam pushes against the inside of the pipe causing friction. This slows down the steam. Maintaining a low steam pressure will allow the steam to travel to the furthest points in the system without being held back by friction against the piping.

5. If after lowering the steam pressure setting, the radiators furthest from the boiler still don't heat properly, the radiator air vents and the main system air vent may need to be replaced. It is always a good idea to replace the vents when installing a new boiler. The old vents may be leaking or no longer working properly. With the new boiler making steam much more quickly than the old one, proper venting is much more crucial.

The old boiler made steam slowly and steadily. The steam moved through the system slowly allowing air to vent at a slow pace. The new boiler is making steam quickly. This steam is racing down the pipes on its way to the radiators. If any of the radiator vents, or worse yet the main vent, is venting the air at too slow of a pace, the steam will make it to some of the radiators sooner than others resulting in uneven heating.

SUMMARY CHART

	<u>SYMPTOMS</u>	<u>PROBLEM</u>	<u>SOLUTION</u>
1	Water quickly disappears from water gauge glass.	Improperly sized or improperly piped equalizer.	Revise the "Near Boiler Piping".
2.	"Banging" pipes.	Water Mixed With steam.	Revise the "Near Boiler Piping", Note: Be sure to use 2 supply risers and never pipe the supply tee between the risers.
3.	Surging water line.	Oils on the waters surface.	Clean boiler by Blowing Down and Skimming.
4.	Boiler cycles on and off frequently.	Incompatible anticipator setting.	Adjust thermostat anticipator to 1.2.
5.	Radiator(s) furthest from Boiler not heating.	Steam not making it through entire system.	Pressure to high. Air vent not working. To small a boiler.
6.	Radiator heating unevenly.	Air not being evenly vented.	Replace radiator and main air vents.

ALWAYS REFER TO THE INSTALLATION MANUAL