

msac MANUFACTURERS' SERVICE ADVISORY Council HOTLINE

The Manufacturers' Service Advisory Council provides expert answers to your technical questions.

Boiler Pressure

A few days ago I dumped my boiler and added new water. The pressure and temp obviously dropped to zero. Then I added new water and lifted up on the fill valve to increase the pressure, but pressure would not increase on the gauge key so I kept adding water hoping it would rise and eventually the relief would blow with the pressure still at zero. So I dumped the boiler again and filled it but this time never lifted up on the fill valve. I let it run and heat up and the pressure eventually started to increase, pressure eventually settled out at 25-30psi. I do believe my pressure was at this before I dumped the boiler; my question is why is the pressure not increasing when I use the fill valve but increases only after heating? I'm stumped.

This is my visualization of what I think is happening and an attempt to explain it based on the science of what the water is doing. When you

say "lift up" on the fill valve, can we assume this is a boiler with a continuous water make up supply? If it is not necessary to turn off the system and let the pressure drop to add water, then the water supply line should

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be at a pressure higher than 30 psi. Without knowing any more detail about the construction of the boiler, I would have to assume two things based on your description:

1. The relief valve setting is somewhere above 30 psi; and
2. Just adding water to your boiler when cold will not liquid fill the boiler volume, and therefore it is not generating enough pressure to register

on your pressure valve. If the boiler is connected to steam piping, for example, the water could travel some great distance through the system until it finally filled the collective volume and backed up enough pressure to the boiler. When you restarted the boiler, the pressure rose to 25-30 psi, which corresponds to a water temperature of 265-275°F. It is the steam above the water that is filling the rest of the volume and then showing pressure on the valve.

Question from Pepe Silvia from Detroit, Michigan. Answer from Jim Lavelle, Technical Sales Manager, National Refrigerants, Inc.

**RSES Journal is looking
for TECHNICAL QUESTIONS
to ask MSAC Members!**

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1. Visit www.rses.org/msacquestion.aspx and fill out the online form.
2. Email your question to msac@rses.org.

Please be specific when referencing products or equipment—give manufacturer name, model number, serial number and year of manufacture when possible. Answers will be sent as quickly as possible and published in an upcoming issue of *RSES Journal*.