



HVAC Tech Note #14 – March 2004

Thermostatic Steam Traps and Water Hammer

Most thermostatic steam traps are balanced-pressure traps. They have a bellows filled with an alcohol/water mixture that has an atmospheric boiling point lower than water. As the steam pressure in the trap changes, however, the boiling point of the mixture in the trap bellows changes with it. These traps will always discharge condensate at about 20 °F lower than the temperature of the steam at the inlet to the trap.

If the steam pressure/temperature is high, say 10 psig and 240 °F, the traps will discharge condensate at about 220 °F. This condensate will flash back to steam in atmospheric condensate return lines and cause problems, one of them being water hammer.

So, if you've got thermostatic traps and water hammer, try turning the steam pressure down. All that's required in most steam terminal units is 1 psig (215 °F).

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