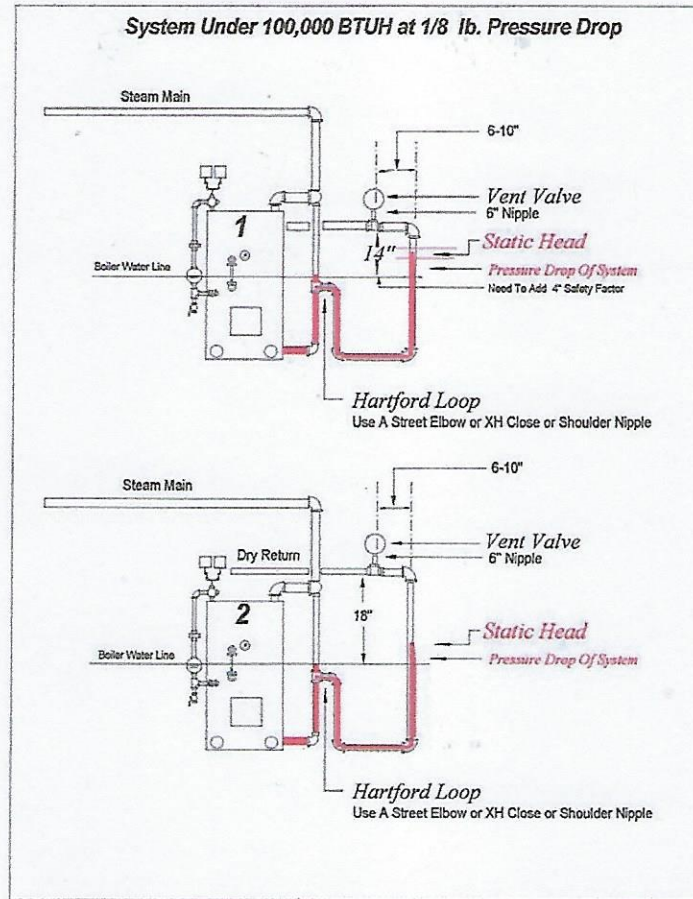


Vent valve manufacturers recommend that a steam main vent valve should be installed 6 to 10 inches from the end of the steam main and 6 inches above the steam main. When vent valves are installed as shown on page 4, the main vent valve will be out of the shock area and may not be subjected to water hammering.



THIS THE  
PIPING  
CONFIGURATION  
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FALSE WATER LINE  
IGNORE THE  
100,000 BTU'S  
AS THIS IS  
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ON SMALL  
HEATING SYSTEMS

Boiler 2 shows where the main vent valve should be installed on a dry return or end of a steam main. Most importantly, the dimension marked 18 inches (dimension "A") is the minimum height a dry return or the end of a steam main pipe can be put above the boiler waterline. Look at boiler 1. Here the dry return is just above the top of the boiler, but below the top of the boiler jacket. Dimension "A" is set at 14 inches, and when the boiler is in operation, boiler water will rise in the vertical drop at the end of the dry return. The height clearance between the water level in the vertical drop and the bottom of the pipe is marginal (see red highlighting). Wherever possible, add 4 inches to the 14 inches to assure that water will not collect in the steam main and damage the vent valve.

Sometimes, the boiler pressure is too high. When a boiler's pressure is too high, the steam velocity may increase and decrease rapidly. Fast-changing steam velocity can make the water in the boiler bounce. Boiler water bouncing can make the water in the vertical drop of the dry return or steam main bounce, and boiler water can be forced into the end of the steam main. Some of that water can enter the vent valve and the valve will spit water or become damaged. To cure the problem, lower the steam pressure or reposition the vent valve, and if damage occurred to the vent valve, replace it.