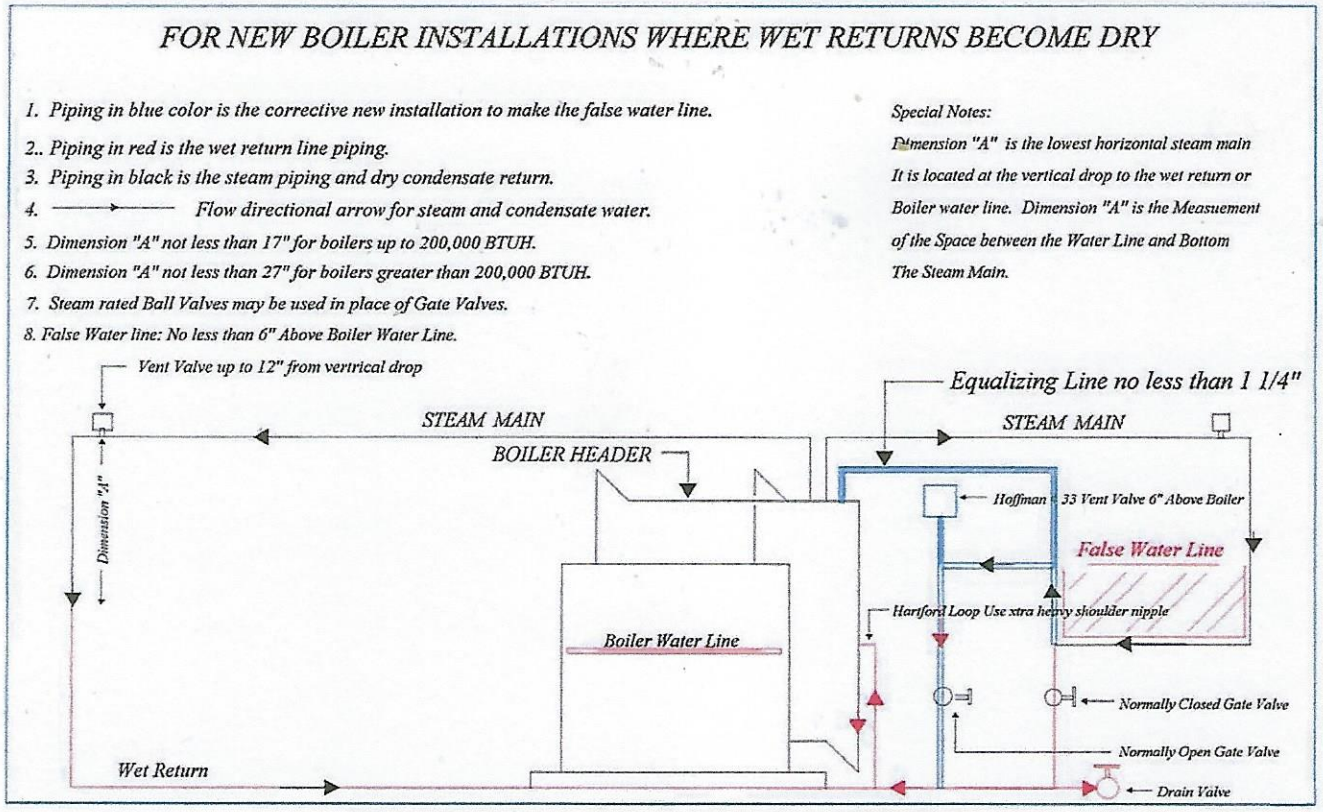


## *Banging in the Dry Return*

Banging in a dry return can occur when a blockage happens in the wet return portion of the return line or if the bottom water side of the boiler is blocked. To remove the problem, disassemble the piping, and flush and drain the return pipe and the inside bottom of the boiler's water passages until all the debris is removed.

A dry return may be back pitched or the boiler does not have a proper dimension "A." If the return is back pitched, regrade the pipe. A thumb rule: for boilers less than 100,000 BTUs, dimension "A" should not be less than 18 inches, and with boilers above 100,000 BTUs, no less than 27 inches. If the "A" dimension cannot be met, a temporary fix, such as installing a horizontal swing check valve in the wet return before the Hartford loop, can prevent boiler water from backing out of the boiler. Remember, the condensate was not getting back into the boiler because the boiler's pressure was greater than the static head pressure. A check valve can cause a problem. When the check valve jams closed, no water will return to the boiler. A proper fix is to install steam traps where needed, and a condensate tank and pump to separate the return piping from the steam piping and the boiler from the piping system.

When boilers are replaced, occasionally, the new boiler waterline is lower than the old boiler waterline, and parts of the original wet return become dry. The false waterline can alleviate that problem.