

## The Top-Ten Dumb Things Contractors Do With Steam Heating Systems

### Just in From the Main Office in Chicago, Illinois

**# 10. They come to believe they're just working on a part of the system.** You're never working on just a part of a steam system. When you touch one part, you affect all the other parts. Always try to back up and see the *system*. You may be there just to replace the boiler, but the people are going to be calling *you* when that new boiler won't heat their building. Think big!

**#9. They remove the insulation.** Steam is a gas that quickly condenses into a liquid when it hits cold pipes. Surprised? If a pipe is insulated, the steam is five times less likely to condense. Whoa! And that's why there's insulation on the pipes. If you want the steam to reach those far-off radiators, you have to insulate those pipes.

**#8. They don't figure the time it takes to clean the system.** Steam systems are wide open to the atmosphere, and that means they are constantly corroding. That corrosion works its way down into the boiler and causes the water line to bounce and surge. This, of course, leads to water-level problems and equipment failure. If you're installing a new boiler, you'd be wise to figure into your price the time it's going to take to clean that system. If you don't figure it into your price, you'll get to do it for free.

**#7. They pretend the vacuum pump isn't important.** By using a vacuum pump, the original engineer was able to undersize every pipe, valve and fitting in that building. He got away with this because he had a pressure-to-vacuum differential across his system. The steam moved quickly from the boiler to the radiators. Without the vacuum pump, though, you're forced to run higher-than-normal pressure. That leads to uneven heating, high fuel bills, water hammer and equipment failure. If there's a vacuum pump and it's broken, we can help. Domestic Pump makes a fine line of vacuum pumps, and our rep will be glad to accompany you to that problem job.

**#6. They line-size steam traps and PRVs.** Why do contractors do this? Because it looks cool! The trouble is, it doesn't work so well. We can't think of a single situation where the steam traps or pressure-reducing

valves should be the same size as the lines they're piped into. They will *always* be smaller. If you line-size a trap or a PRV, it will just barely open during operation. That leads to "wire-drawing" (erosion of the metal seat), and premature death. If you're not sure of the size, call your McDonnell & Miller/Hoffman rep.

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**#5. They oversize the replacement boiler.** Oversized boilers short-cycle. This leads to high fuel bills, equipment failure and angry customers. The only correct way to size a replacement steam boiler is to measure all the radiation in the building. The boiler's ability to make steam has to match the system's ability to condense steam. Don't size a new boiler based on the size of the old boiler. That boiler may date from the days of coal firing. And if it does, there's a good chance it's twice as large as it should be. Why leave all that money on the job? Don't be lazy; go measure those radiators.

**#4. They don't think like air.** Where there is air, steam will not go. You should *always* walk through the system and imagine yourself as air. Could *you* get out of those pipes? If you can't get out, neither can the air. Trapped air leads to uneven heating and high fuel bills. Air is one of the simplest problems to diagnose. Ask your counterman to show you the complete line of Hoffman air vents. Each box holds a solution.

**#3. They install one-pipe steam vents on two-pipe steam radiators.** When thermostat radiator traps fail, the steam moves

into the return lines and pressurizes them. That traps air in the radiators, keeping them from heating. If you install an air vent on that two-pipe radiator, the air will get out, and the radiator will heat, for sure! But since there's steam in the return lines (because of the failed traps), the condensate won't get back to the boiler until the end of the cycle. That leads to severe water hammer and water level problems at the boiler. If you want your steam traps to last longer, ask your counterman about Hoffman Bear Traps. We build them for the long run.

**#2. They try to use just one steam trap for the whole system.** Steam traps belong on every two-pipe system that has dry returns, and on any system that has a condensate- or boiler-feed pump. The traps keep the steam from entering the return lines, and that goes a long way toward balancing the steam distribution. If you try to get by with just one big trap at the inlet to the condensate- or boiler-feed pump, you'll have a building that never heats well.

**#1. When they get frustrated, they raise the steam pressure.** Most buildings will heat beautifully with two-psi steam pressure or less. The steam pressure you need varies with *pipe size*, not building size. The correct steam pressure for the job was set on the day the original engineer sized the piping system. If you find you have to run the pressure higher than two psi, you probably have trapped air or failed steam traps.

**#1A. (A Bonus!) They don't call their McDonnell & Miller/Hoffman rep!** Who knows more about steam heating than the representatives for McDonnell & Miller/Hoffman? We've been in the business since the days when this stuff was first thought up. Hey, we helped think it up! If you're having a problem, do the smart thing and call us first.

**Compliments of:**