I'm working on a 90%-plus Goodman gas furnace with a condensation trap on the outside of the cabinet. I replaced the trap because it had a hole and was leaking. Now the two drain lines coming from my vent and combustion chamber are blowing air bubbles into the trap causing water to spill on the floor. I ran a snake up and down the exhaust vent and couldn't find any restriction. I'm at the end of my ideas.

From the description, the collector box appears to be under positive pressure. That should never be the case. If the bubbling was related to a vent issue, the pressure switch would shut down the unit, so that is not a possible answer. Is it possible the trap was not piped correctly, causing the collector box to be pressurized? Are we sure that there was a hole in the trap to begin with and it wasn't just the same issue that appeared after the repair? With a full trap and with only the unit fan running do bubbles appear? If so, I would suspect a breached heat changer as the cause of the collector box pressurization and the cause of the bubbling.

I'm stumped. I'm working on a Goodman 60,000 Btuh furnace model #GMSS920603BNAA. The unit trips on its rollouts after 8-12 minutes of run time. I checked the intake, flue and the inlet gas pressure is good. Outlet gas pressure set to 3.25-in. w.c., though it was originally 3.85 when I arrived. I replaced both rollouts and all three burners. The burners appear to be perfectly level and have zero signs of a rollout. I believe the temperature was 315°F-350°F on trip. I am using natural gas with intake pulling from the basement and a 2-in. flue running 12-ft. CO went to max on my combustion test. The unit is two years old. Any suggestions?

Based on the given information we can come to a possible conclusion. With a measured temperature of about 350°F at the time of tripping, and a 3.25-in. w.c. measurement of the natural gas pressure on the manifold it is apparent that we have two issues. First, the high carbon monoxide levels in the flue gas tells me that the fuel/air mixture is not correct. Either we have too much fuel and not enough air or the opposite, too much air and not enough fuel. Since the roll out temperature limit is also tripping, I believe that is an indication of the former, too much fuel and not enough air.

What could cause that? There are three possible reasons.

1. The burners are over-firing, either due to higher than normal manifold pressure or because the orifices are too large. The over-firing is unlikely. If this was the reason, I would expect it trip quickly and does not add up with the time delay mentioned.

2. Secondly the house is so tight that using house air for combustion isn't sufficient. While I would normally expect the pressure switch to trip if insufficient air is being exhausted, I would still recommend piping the intake outside to eliminate this possibility.

3. A defective pressure switch in conjunction with a venting issue or draft inducer issue, such as a dirty blower wheel or failing motor.

Question 1 from Brent Earnest of Kimberly, Alabama. Question 2 from David Roberts of De Soto, Missouri. Answers provided by Jeffrey A. Smith, J.A. Smith Heating & Air Conditioning Inc.