



## SERVICE INFORMATION

### Johnson Controls

Unitary Products  
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Norman, Oklahoma 73069  
1/877-874-7378

**Date:** December 18, 2008

**YS-051-08**

**To:** All York Distributors  
All York Branches  
All Field Service Supervisors

**Subject: Pressure Switches YP9C, YM9M, TG9S & GG9S**

We have received a number of product reports from the field regarding water being found in the pressure switches or the pressure switch tube connected to the inducer on the new 33", condensing, 95%+ AFUE furnaces. We are continuing our research in the lab as well as conducting field site investigations in order to find and resolve the root cause of this issue. As an interim step, we have identified a number of items that can be checked that will remedy most, if not all of the reported field complaints.

As we started to receive these product problem reports, we began our investigation by testing a number of furnaces in different configurations to attempt to duplicate the reported failure conditions. The initial problem appears to result from a blockage of the rain gutter, which causes water to overflow the rain gutter, and to accumulate inside the inducer, which may then enter the pressure switch. This appears to be the root cause of the problem. The only way we can duplicate this problem in the lab is by blocking the condensate drainage through the rain gutter, or by blocking the bleed hole (Figure 5) in the pressure switch. The impact of blocking the bleed hole is still being reviewed with the switch manufacturer. We do not believe that the water being found in the switch itself is the root cause of the problem, but is an effect resulting from the initial issue.

To improve the robustness of the furnace, we have made a change in the routing of the main pressure switch black square hose that connects the main pressure switch to the inducer on all models. This change was made effective on November 17, 2008. The new routing will ensure against any water getting into the pressure switch from the inducer, regardless of furnace orientation. See attached photo (Figure 1). This routing can be duplicated in the field to alleviate this issue by using a field-supplied 9 inch length of 3/16" tubing. Twelve inch lengths are available through Source1, P/N S1-02815878000. This will also eliminate the need for the field practice of physically moving the pressure switch to a higher location inside the furnace.

Please find below a list of items to check for in the event of a no-heat call where the control board shows a '3' red flash code:

- 1) Remove the rain gutter hose from the rain gutter and the condensate pan to check for blockage or water accumulation. We have received reports where there is debris (dirt, sand, PVC pipe shavings, etc) trapped inside the rain gutter or inside

- the condensate pan itself. It is always good practice to deburr both the inside and outside of all cuts in the PVC piping.
- 2) Check that the rain gutter hose runs downhill from the rain gutter to the condensate pan. In cases where the inducer has been rotated due to application, the rain gutter hose may have to be trimmed in order to accomplish this. See Figures 2 and 3 for reference.
  - 3) When checking the rain gutter, make sure that the vent pipe has not been inserted past the stops on the rain gutter, blocking the condensate flow out of the rain gutter. This can be observed when the rain gutter hose is removed from the rain gutter and then shining a flashlight in the rain gutter drain opening. The end of the PVC pipe should be even with the TOP of the rain gutter drain opening.
  - 4) The orientation of the rain gutter can also impede the flow of condensate. Ensure that the rain gutter coupling is properly oriented on the inducer, with both rain gutter drains pointing straight out towards the front of the furnace, regardless of the furnace configuration.
  - 5) Make sure that the blocked condensate pressure switch hose (Figure 1) is connected to the correct port on the condensate pan. If not, the condensate pan can fill with water allowing it to enter the inducer, which may cause the furnace to shut off. Refer to the installation instructions and/or the Quick Reference Guide for proper hose connections.
  - 6) Ensure that no external trap is installed or is formed by the routing of the drain hose. With the design of the internal condensate trap built into the condensate pan, any external trap becomes a double trap, which will result in improper operation of the furnace.
  - 7) The external condensate drain line attached to the furnace cabinet will flow better if an open tee is installed in the condensate line. This is the same as all other plumbing drains in the home. This vent needs to be approximately the same height as the internal trap. Reference Figure 4 for proper height and location.
  - 8) Ensure all unused ports on the condensate pan are capped to prevent internal traps from being formed.
  - 9) Make sure that the bleed ports on the pressure switch have not been covered over by any of the pressure switch tubing when installed, as that may result in improper operation of the furnace. See figure 5 for bleed port location.
  - 10) Do not make any penetrations through the blower deck. During the cool-down of the furnace the combustion blower will shut down and the circulating blower will continue to run. During this time, the negative pressure from the circulating blower can pull moist air back through the vent system and pressure switch tubing by way of the pressure switch bleed hole. The only time penetrating the blower deck is allowed is for the drain hose provided it is properly sealed using the factory provided right-angle hose fitting and O-ring (see Figures 6 and 7). All other wiring or accessory connections should be made through the sides or back of the casing. This also prevents any water that could be on the blower deck from following the path of the wires directly to the control board or any other electrical components.
  - 11) Make sure the vent terminations are per the installation instructions. A misapplied vent termination can cause reverse flow through the furnace in the off cycle, pushing moist air back through the vent system and pressure switch tubing by way of the pressure switch bleed hole.

For a field installed unit, this YS letter will provide for a 1 hour labor credit at the dealer's registered DOA labor rate to allow for rerouting the pressure switch hose.

For units in distributor inventory, this YS-SP letter will allow for the rerouting of the pressure switch hose on all condensing furnaces built prior to November 17, 2008. A fair and reasonable allowance for the application will be provided. Contact Mark Freund at 405-419-6609 for prior authorization to submit the billing for reworking your inventory.

If you have checked all of the above items and you are still getting water in the pressure switch or the pressure switch tubing, then please contact your local branch or distributor service manager, who will then seek additional factory involvement.

We are continuing the investigation into resolving this issue in all aspects. Thank you for your considerations and we will communicate additional our findings as they become available.

*Mark Freund*

*Robert Cabrera*

Mark Freund  
Manager, Residential Field Service

Robert Cabrera  
Director, Indoor Products Engineering



Figure 1: New routing of the EPDM hose in all single-stage furnaces as of 11/17/2008



Figure 2: Correct Rain Gutter Hose Routing

Figure 3: Incorrect Rain Gutter Hose Routing



Figure 4: External Short Drain Tee



Figure 5: Pressure Switch



Figure 6 – Proper sealing for blower deck penetration

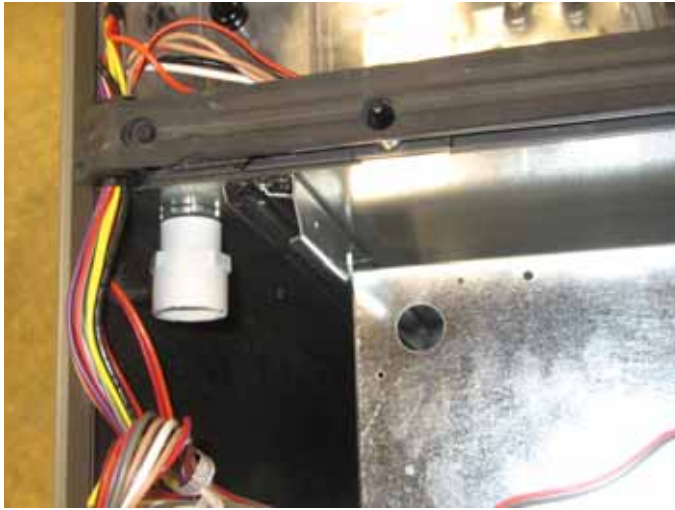


Figure 7 – Proper connection for blower deck penetration