Ducted Systems Technical Services: Service Tips Letter

Letter: ST-009-23

Date: February 14, 2023

To: Field Service Techs and Installers

Subject: **Pilot Adjustment On 3-6 Ton Package Units**

Product/s: 3-6 Ton Packaged York (Small Sunline), Luxaire (Small Optimum), Coleman (Small Apex), JCI (Series 5), (FJ, Champion, TempMaster)

Summary: This letter is a revised update from ST-066-10 regarding verification and testing of pilot pressure during installation or startup.

Dear valued customer:

Over the many years of this product's release, some customers have reported issues with rollout trips, soot-coated pilot tubes and flame sensors, and no light conditions. We wish to remind customers that pilot pressure verification should always be performed when installing, starting up, or replacing the gas valve. We currently receive our gas valves from our vendors preset to accommodate incoming gas pressure at 7.0” W.C. for natural gas and 13” W.C. for propane. Pilot pressure is directly influenced by incoming pressure and must be verified because incoming pressures will vary from site to site and product. Each gas valve should be viewed as an individual entity and all pilots should be checked on a site during installation regardless of incoming pressure.

The pilot light is directly impacted due to its non-regulated pressure using only a needle adjustment and orifice that is directly fed from the incoming pressure.

There are numerous ways to verify proper pilot pressure. The outlined method in the unit’s installation manual is advised but alternatives could be used based on the training, experience, and certification level of the HVAC technician.

Note: Johnson Controls advises that when working with propane or natural gas components it is critical to ensure all components are correctly sealed, operational, and verified that no leaks are present prior to leaving the site.

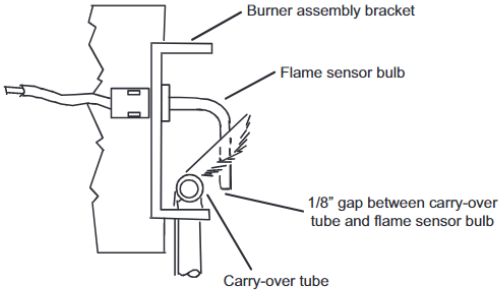

Figure 25: Proper Flame Adjustment

Pilot Checkout

The pilot flame should envelope the end of the flame sensor. To adjust pilot flame, (1) remove pilot adjustment cover screw, (2) increase or decrease the clearance for air to the desired level, (3) be sure to replace cover screw after adjustment to prevent possible gas leakage.

Put the system into operation and observe through complete cycle to be sure all controls function properly.

The current pilot assembly has been used successfully for many years when properly verified and tested at installation. The image above can be utilized as a reference directly from the IOM for the proper envelope of the flame sensor.

To adjust the pilot flame accurately, you can remove the pilot adjustment cover screw (Take care to avoid losing the small gasket located beneath the screw). Remove the pilot tube from the gas valve, and tee into the pilot tube and gas valve pilot tube port with a properly sealed tubing adapter and manometer.

Turn the inner adjustment screw clockwise to decrease until the pilot goes out and then counterclockwise to increase pilot pressure until ignition occurs.

Once ignition occurs, perform one ¼ turn counterclockwise for incoming pressure fluctuation assistance.

Shut down the equipment, reinstall the pilot tube, and replace the cover screw after adjustment to prevent possible gas leakage and verify equipment operation.
With the use of a manometer, you can adjust, set, and record your pressure with minimal effort and time across multiple products of the same BTU input.

If unsure of how to verify or perform any of the above methods, it is advised to close the gas supply and contact your local support or Product Technical Services at 877-874-7378 before continuing. All tools should be inspected for proper seals and calibration in accordance with their manufacture prior to use. Damage or Injury can occur if safety guidelines are not followed for personal, equipment, or property.

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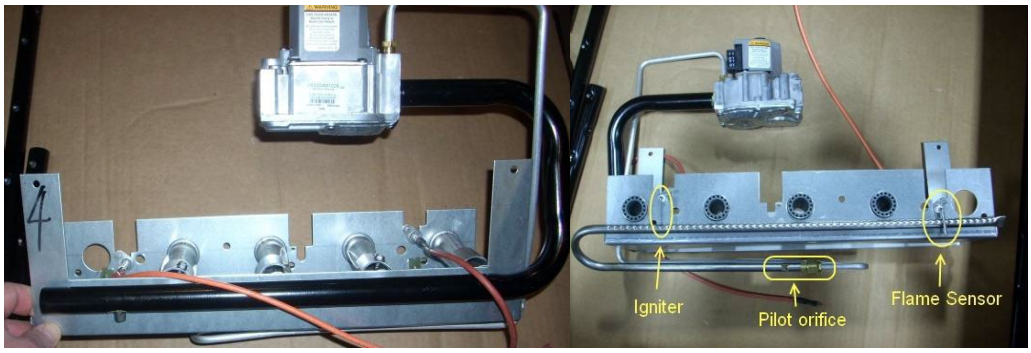
Example: 4 tube Burner Assembly



Example: Installed tee and pilot pressure measurement