

TECH TIPS

November 10, 2017



PROPANE FURNACE CONSIDERATIONS

With winter rapidly approaching, technicians will be out in full force repairing, installing, and performing maintenance on all types of heating equipment.

Many of the calls we receive here at American Air this time of year have to do with propane (LP) furnaces. With that in mind I wanted to share some tips when working with this equipment. Some of these recommendations will apply to natural gas as well. As with most of our “Tech Tips” these considerations are manufacturer specific. Always refer to the installation and accessory instructions of the equipment manufacturer you are working with.

Gas Pressure: This should be checked on every call. Recommended incoming gas pressure for LP is between 11” - 13” WC. Manifold gas pressure is recommended to be between 9.8” – 10” WC depending on furnace model.

In some instances, technicians may experience burn-back at the orifice. This is also referred to as “candling”. A visual indicator of this occurrence is when flame can be seen at the orifice. The reason for this is generally fuel content and quality. To correct this, a technician can turn the manifold gas pressure up. It is recommended that you do not exceed 11” WC. Be aware that because the burn is now more “rich”, temperature rise must be checked to make sure the furnace is operating within manufacturer specifications. This information is found on the furnace data plate. Technicians should also know that this may cause louder furnace operation.

A combustion analyzer should be used when making these adjustments. A technician may discover that adjusting the manifold gas pressure up or down can drop carbon monoxide readings, resulting in a cleaner burn. Stay between 9” - 11” WC. and keep CO levels below 100ppm when doing this. The content and “customization” of propane affects performance of the equipment as well as long-term reliability, which is why these adjustments are critical to furnace and burner cleanliness as well as life expectancy.

Venting Termination: High carbon monoxide readings, excessive burner corrosion, and premature primary/secondary heat exchanger failures can be caused by the recirculation of flue gases. Remember the 12” rule, which is the minimum clearance above the highest anticipated snow line and the minimum separation between the bottom of the combustion air intake and exhaust. These pipes should be away from any obstructions and should not be installed under decking.

Low Gas Pressure Cutoff: Luxaire propane conversion kits include a low gas pressure switch that ensures adequate pressure for proper combustion. This is mandatory for all propane conversions. 120V is provided to the flame sensor from the flame rod terminal on the control board. The LP pressure switch opens when the pressure drops to 6" w. c. which breaks the flame rectification circuit and shuts the furnace down for loss of flame.



Stainless Steel Burners: Burner failure is a common problem with propane. The burners on a natural gas fired furnace will rust out as well given enough time. A propane fired furnaces' burners generally fail sooner because the heat from combustion at the end of the burner is higher. As a result, the aluminization leaves the burner sooner. The exposed material is then susceptible to the environment and will rust. The fuel content also plays into this as propane is adjusted locally by its distributor.



It is important when replacing a propane furnace to offer a stainless-steel burner option to customers up front. For one, they will offer reliability beyond stock burners, which in turn means fewer breakdowns. Second, burners are not covered under standard warranty, as they are considered maintenance items that should be cleaned routinely during a heat tune-up.

LUXAIRE Stainless-steel Burner Kit for Propane (6 burners in kit)
PN# S1-32926889000 (LIST PRICE: \$167.00) "Made in USA"

LUXAIRE Stainless-steel Burner Kit for Natural Gas (6 burners in kit)
PN# S1-32924441000 (LIST PRICE: \$268.00) "Made in USA"



****NEW**** LUXAIRE Propane Conversion Kit with Stainless Steel Burners (for Single and 2-Stg Furnaces)
PN# S1-1NP0820 (LIST PRICE: \$177.00)

If you have any questions regarding this TECH TIP, please feel free to contact me at the office at 800-830-0853, mobile phone 610-241-5839 or via email at patmoran@americanairdist.com.

Thanks!

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