

TECHNICAL INFORMATION COMMUNICATION



Quality and Continuous Improvement

Number: TIC2013-0010

Date: 10/30/2013

Title: New 35" Condensing Furnace Condensation

Product Category: Heating Products

Products Affected

New 35" condensing gas furnaces

Situation

The factory has been notified of instances where condensation is entering the furnace cabinet and dripping onto the gas valve and/or inducer motor resulting in no heat. In some situations, cabinet insulation is absorbing the condensation and sheet metal parts are rusting. There are two general sources of condensation: combustion air pipe and evaporator coil.

Technical Information

The furnace Installation Instructions currently encourage use of a running tee or External Trap Kit on the combustion air pipe if excessive moisture is possible, see Figure 1 and 2.

NOTICE

OPTIONAL CONFIGURATION FOR COMBUSTION AIR INLET PIPE

In applications where there is a risk of excessive moisture entering the combustion air inlet pipe, a moisture trap may be added to the inlet pipe to help prevent moisture from entering the furnace from the combustion air inlet pipe. See Fig. 52.

When sizing venting systems, the equivalent length of the optional inlet pipe moisture trap must be taken into account.

Figure 1: Notice from Installation Instructions
Optional Combustion Air Inlet Trap

Optional Combustion Air Inlet Moisture Trap

As an option to prevent moisture from trickling into the furnace vestibule, a trap can be installed in the intake air pipe near the furnace. Connecting a drain line to the trap is optional as trace amounts of moisture will evaporate into the intake air stream. If the combustion air inlet is located near a moisture exhaust duct, or there are other concerns of excessive moisture being drawn into the combustion air inlet, it is encouraged to connect a drain line to the trap.

The trap can be constructed from a running tee of the same diameter of the intake air pipe with **EITHER** a removable cap attached to a 6-inch long pipe connected to the tee or the External Vent Trap Kit to help prevent contaminants from entering the furnace. See Fig. 52.

Figure 2: Excerpt from Installation Instructions
Running Tee Option

To prevent further condensation failures, **it is now mandatory to install a drain or External Trap Kit when the furnace is installed in an upflow configuration with the combustion air pipe attached to the top plate.** Changes to the Installation Instructions will follow. **For detailed information on drain and trap options see TIC2013-0014.**

If a drain or trap on the combustion air pipe is not desired, the combustion air pipe MUST enter the side of the cabinet.

Only trained and qualified personnel should design, install, repair and service HVAC systems and equipment. All national standards and safety codes must be followed when designing, installing, repairing and servicing HVAC systems and equipment. It is the responsibility of the Dealer to ensure local codes, standards, and ordinances are met.

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Condensation dripping from the combustion air pipe in a direct vent configuration can be an indication of one or more of the following problems. Please make a reasonable effort to correct the following conditions:

- 1) Home depressurization (improper ventilation) and unsealed furnace cabinet.
- 2) Improper vent and combustion air system design and/or termination location.
- 3) Unapproved holes in the blower shelf or furnace cabinet.
- 4) Unbalanced duct system.

Condensation dripping from the suction line is an indicator that the suction line is not sealed to the evaporator coil cabinet or insulated as required.

TIC2013-0014 contains detailed information on each of the condensation sources referenced above.

Drilling holes in the blower shelf is strictly prohibited, except when using the Internal Vent Kit accessory (KGAD0101BVC). The blower compartment is under a vacuum (negative pressure) and can pull combustion products into the circulating air stream.

Do not install a field fabricated shield between the combustion air pipe opening and burners. It disrupts the flow of combustion air to the burners and results in degraded furnace operation.

References

New 35" 90% Gas Furnace Installation Instructions