



## SERVICE AND APPLICATION NOTES

October 3, 2014  
CU-14-02

### **Potential Contaminants Affecting TXV Operation and Performance in Commercial Air Conditioner and Heat Pump Package Units (Copeland Compressor Models)**

#### **Affected Product:**

**“Affected Unit Date Ranges from Nov. 2013-Sept. 2014 (Serial# Ranges from 5613L-5614J)”**

- All TSA/TPA 072 - 240 MODELS
- All Strategos
- All Emergence 3-6 ton models
- Emergence 7.5-12.5 ton models (except LC/LGH120H)
- Emergence 13-30 ton models (except LC/LGH180H & LC/LGH240H)
- All Emergence 35-50 ton models
- Landmark models 2-25 ton models (except KC/KGA060S, 120S, 120H, 180H, & 240H)
- Raider 12.5 ton

#### **OVERVIEW:**

LENNOX has seen an increase in Thermal Expansion Valve (TXV) warranty claims year to date for the above models listed. The problem has been identified as residue buildup on the TXV from one of the components. Other manufacturers and suppliers have issued service announcements and notifications indicating industry-wide TXV issues across a variety of TXV manufacturers. Service technicians are also noticing issues due to TXV failures, and are currently replacing the TXV and driers to resolve the problem.

#### **DETAILS OF FAILURE MODE:**

Failed TXV's returned to our labs and torn down have a black foreign substance on the valve seat and pin that is restricting refrigerant flow and creating low suction pressures. Laboratory analysis indicates that the black substance is formed from contaminants that are introduced into the system by a sub-tier supplier. Our findings and competitor findings do not indicate that the TXV is the source of the issue. Lennox will continue to work with the sub-tier supplier to come up with an alternative solution besides replacing the TXV and drier.

**RECOMMENDED ACTION:**

While we are working diligently to determine an alternative solution, we recommend the following steps when you see an unusual TXV failure:

Remove all refrigerant from the system.

1. Replace the TXV (for heat pump models, replace both indoor and outdoor TXV's)
2. Replace the liquid line drier for that particular circuit.
3. Use *Best Practices* when installing or opening a system and replacing components.
  - a. Use nitrogen when brazing
  - b. Pressure test for leaks
  - c. Evacuate system
4. Charge the system with HFC-410A and verify the operation of system.

**CONCLUSION:**

We will continue to take the proper actions to determine if a better solution can be found, and will share information with you as we learn additional details on this TXV issue. We apologize for the inconvenience. Please contact Lennox Technical Support at 1-800-4Lennox for additional information or questions.

Sincerely,

Lennox Technical Support