



SERVICE AND APPLICATION NOTES

C-15-03
April 23, 2015

Update — TXV Operation and Performance in Residential Air Conditioner and Heat Pump Systems

AFFECTED PRODUCT:

Air Conditioning and Heat Pump systems using a thermal expansion valve (often abbreviated as TEV, TXV, or TX valve) coupled with Copeland compressors with compressor serial number range of 13K through 14H. An example of the compressor serial number is 14HXXXXXX where the first two-digits are the year and the next letter is the month indicating the year and month of production.

OVERVIEW:

Reports from the field and testing in our lab indicate that in some cases, systems with thermal expansion valves may exhibit reduced capacity and low suction pressure, resulting in reduced and/or lack of cooling.

Lennox has continued its diligence in working with our suppliers, testing laboratories and manufacturing locations to determine the root cause of the TXV issue described above and in the previous service and application notifications; C-14-05 - Potential Contaminants Affecting TXV Operation and Performance in Residential Air Conditioner and Heat Pump Systems and C-14-06 - Update on TXV Operation and Performance in Residential Air Conditioner and Heat Pump Systems.

DETERMINATION:

Our testing has confirmed that a change in a rust inhibitor is the primary contributor to this problem. The compressor manufacturer has since reverted back to the original rust inhibitor in their production.

SOLUTION:

In conjunction with Copeland, Lennox has been testing different resolutions for this industry issue. This testing has identified a “curative” approach for our air conditioning and heat pumps built with the affected compressors. Units built with Copeland compressors, compressor serial numbers starting with 13K through 14H, are affected by this notification. To determine if a Lennox unit has the affected compressor, go to DaveNet® and under the “Partner Resources” tab select Technical Service. Enter the Lennox unit serial number in the search field and click the “Search” button. The result will be displayed as “Included” or “Not Included”. Please refer to the illustrations included with this mailing.

Lennox and Copeland have tested a system additive that has proven to be effective in resolving the issue without compromising system reliability. At this time, Lennox will support the use of the Zerol® Ice additive in systems exhibiting reduced capacity, low suction pressure and either reduced and/or lack of cooling. The addition of this additive to the system will not void the manufacturer’s warranty. An injector tool will be required to introduce the Zerol® Ice into the system. The injector is available for purchase from Lennox, part number Y6630.

RECOMMENDED FIELD “CURATIVE” ACTIONS:

We recommend the following field action:

Confirm system outdoor equipment serial number has the affected compressor and is “Included” by going to DaveNet® and under the “Partner Resources” tab select Technical Service. Enter the Lennox unit serial number in the search field and click the “Search” button. The result will be displayed as “Included” or “Not Included”. If the system has a TXV that is exhibiting reduced capacity and/or the indoor coil is experiencing frozen coil problems, be sure to check for plugged indoor filters, low refrigerant charge, and system restrictions before considering the recommended field “curative” fix below.

1. After reviewing the instructions provided with the injection tool and/or viewing the video at <http://www.nucalgon.com/products/oils/acrenew-injector> inject 4 ounces of the Zerol® Ice into the system. (Maximum of 4 ounces per systems up to 5 tons.)

NOTE - The effectiveness of Zerol® Ice in the system will depend on system run time, capacity, installation practices and the application. Immediate results may not be seen until the additive has had sufficient time to circulate throughout the system.

2. IMPORTANT: If available, apply the sticker that comes on the top of the Zerol® Ice bottle to the unit next to the service valves. This will notify others that Zerol® Ice has been added to this system.
3. If you have a unit with a TXV superheat issue that does not have the affected compressor and is “Not Included”, please contact your local district representative or Lennox Technical Support at (800) 453-6669.

Sincerely,
Lennox Technical Support

OD Unit Serial Number Search for Affected Copeland Compressors

Go to the "Partner Resources" tab, select "Technical" and select "Technical Service"

The screenshot shows the DaveNet website interface. At the top left is the LENNOX logo and the DaveNet logo with the tagline "No Boundaries™". To the right are links for "Store Locator" and "Community", and a search bar. Below this is a main navigation bar with tabs: "Equipment", "Parts & Supplies", "Warranty", "iComfort", "Partner Resources", and "My Cart". A secondary navigation bar below that includes "Overview", "Learning", "Sales", "Marketing", "Financial", "Technical", "Premier", "News", "Events", and "Quick Order". The "Partner Resources" and "Technical" tabs are circled in red. Below the navigation is a "Technical Tools" section with the heading "Stay innovative" and a sub-heading "Need product manuals, wiring diagrams, capacity information, and system selection help? Look no further! At Lennox, we provide the technical tools that will help you select, install and service Lennox products." This section is divided into two columns: "Technical Tools" and "Technical Documents". The "Technical Tools" column lists: "Smart Select", "AutoCAD Templates", "Revit Templates", "Guide Specs", "Unit Controller Software", "Prody Update Firmware Files", and "Technical Service" (circled in red). The "Technical Documents" column lists: "Technical Publications", "Installation Instructions", "Service Literature", "Product Specifications", "Application and Design Guidelines", and "User Manuals". On the right side of the page, there is a "DaveNet Community" section with a "Learn More" button, and a "Fully Qualified Technicians in just 4 Weeks" section with a sign-up prompt.

Enter Outdoor Unit serial number into the serial number field and click "Search". Result will display whether the unit is Included or Not Included in the program.

The screenshot shows the DaveNet website interface. At the top left is the LENNOX logo and the DaveNet logo with the tagline "No Boundaries™". To the right are links for "Store Locator" and "Community", and a search bar. Below this is a navigation bar with "Equipment", "Parts & Supplies", "Warranty", "iComfort", and "Partner Resources". A "My Cart" icon with a "0" is on the right. Below the navigation bar is a secondary menu with "Overview", "Learning", "Sales", "Marketing", "Financial", "Technical", "Premier", "News", and "Events". The "Technical" tab is selected. The main content area is titled "Technical Service" and contains the heading "Potential Contaminants Affecting TXV Operation and Performance in Residential Air Conditioner and Heat Pump Systems with Copeland compressors." Below this is a paragraph: "Please enter outdoor unit serial number in the Lookup Field to verify if unit is included in the Program. If included, Please click the link to review Service and Application Note C-14-07." A green callout box with a red border contains the text: "This serial number is included in the program. Please review the Service and Application Note by clicking the link below." Below the callout is a search form with the text "Please enter the serial Number" and a "Search" button. Below the form is an example: "eg: Serial Number:xxxxxxxx" and a link: "View the Service and Application Note".

The screenshot shows the DaveNet website interface, identical to the one above. The main content area is titled "Technical Service" and contains the heading "Potential Contaminants Affecting TXV Operation and Performance in Residential Air Conditioner and Heat Pump Systems with Copeland compressors." Below this is a paragraph: "Please enter outdoor unit serial number in the Lookup Field to verify if unit is included in the Program. If included, Please click the link to review Service and Application Note C-14-07." A pink callout box with a red border contains the text: "This serial number is NOT included in the program." Below the callout is a search form with the text "Please enter the serial Number" and a "Search" button. Below the form is an example: "eg: Serial Number:xxxxxxxx" and a link: "View the Service and Application Note".