

TECHNICAL INFORMATION COMMUNICATION



**United
Technologies**

Building & Industrial Systems

Quality and Continuous Improvement

Number: TIC2015-0019

Date: 10/23/2015

Title: Piston Metering Device Not Seating

Product Category: Fan Coils

Products Affected

Multi-Family Horizontal (Pancake) Ceiling Hung Fan Coil Units

Situation

The factory has received field reports of fan coils with the piston type metering devices not seating properly due to excessive debris in the piston body. This will cause low head pressure with high suction pressure and little to no superheat. Often excessive condensation is observed flowing off the compressor and out from under the unit on to the condenser pad.

Technical Information

The following information applies to A/C units only:

The factory qualified a Neoprene O-ring that will force the piston to stay in the fully seated position.

The O-Rings can be purchased at: **The O-ring Store** 7am-3pm Pacific Mon-Fri | 208-413-6377

Part number: C70104 Neoprene Rubber O-rings

http://www.theoringstore.com/index.php?main_page=product_info&products_id=16429

WARNING: DO NOT substitute this part specification for any other material!

Cleaning the piston and body and installing the O-ring:

Start by pumping the refrigerant system down.

- 1.) Attach a standard refrigerant gage set to the liquid and suction service valves.
- 2.) Close the liquid service valve and pump down the system using standard procedures.
 - a. Prepare the suction service valve for closing quickly with a service valve wrench.

Helpful Tips: When pressures between liquid and suction lines are close to being equalized the compressor will make unusual / excessive sounds as the scroll plates separate. This is normal. The suction gage will measure approximately 20 PSIG.

WARNING: DO NOT operate the scroll compressor into a vacuum!

- 3.) Stop the compressor when you hear rattling by disconnecting power quickly close the suction service valve. Recover the refrigerant that remains in the line set down to 5 PSIG.

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.

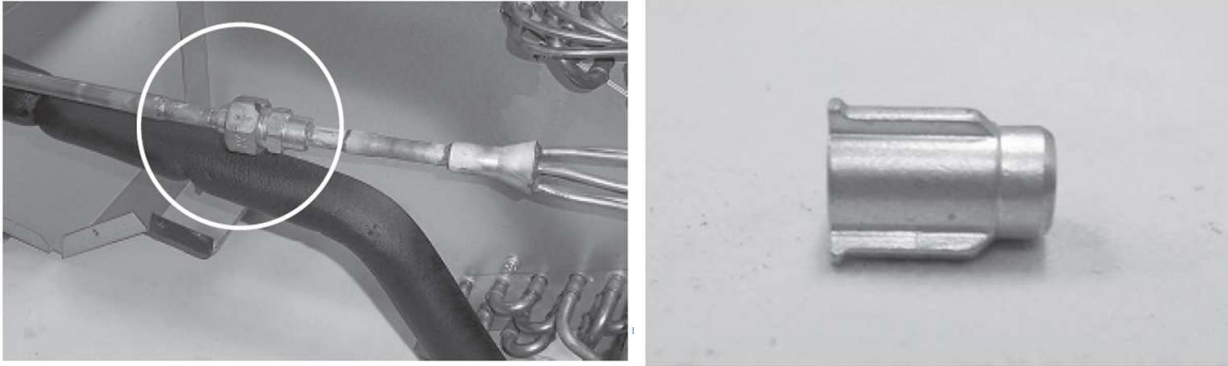
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- 4.) Use two 8" adjustable wrenches to remove the nut from the piston body. **Use the backup wrench!**



- 5.) Clean all debris found in the piston body with a Q-tip then clean the piston with a rag.

Note: The injection of Zerol Ice additive has not been found to be an effective way clean the debris from the piston/body and allow the piston to seat. It is however a very good product for manually cleaning the parts.



- 6.) Place the piston back in the piston body then add the specified O-ring behind the piston.
 7.) Put the nut back on the piston body finger tight. With the backup wrench in place turn the nut 1/4 turn. Do not over tighten the nut.
 8.) Leak check the piston body with nitrogen. Evacuate the refrigerant line set.
 9.) Open the liquid and suction service valves to release the stored refrigerant. Use the superheat method, found in the outdoor units installation instructions, to check the refrigerant charge.

Piston Sizes and Part Numbers for Ceiling Hung Fan Coils

Unit size	Piston Part Number	Piston Number
018	201600800978	50
024	201600800873	56
030	201600800874	67
036	201600801081	70

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