A Package Unit That Is Not Cooling

By Jim Johnson

The equipment in this month’s troubleshooting problem is a 3.5-ton package unit that has a gas heating system, but the customer’s complaint is not related to it keeping warm. The outdoor ambient temperature is 97°F and the equipment is not cooling (see the schematic diagram in Figure 1).

When you arrive on the rooftop, you find that the only component operating is the indoor blower motor. You also find that the compressor is hot and off on overload. The outdoor fan motor is humming but the blade is not moving. A check of the dual capacitor used for the outdoor section components shows 60 MFD on the hermetic section and 5 MFD on the outdoor fan motor section.

Since the capacitor test results are within manufacturer’s specifications, you proceed to replace the failed outdoor fan motor, and find that the OEM replacement motor is not identical to the original. The alternate wiring directions for the replacement motor are shown in Figure 2.

Your troubleshooting question is:

Since the replacement motor mounts shaft down, fastened to the underside of the condenser section cover, which of the 3-wire hookup options do you choose for this repair?

The answer to this month’s problem will be published in the September 2015 issue of RSES Journal.

If you have the answer to this question, submit your name, home address, a day and evening phone number, the month in which the question you are answering was published and...
Laura Newman, Tarzana, CA, is the winner of the May 2015 Troubleshooting Challenge. All correct answers will be entered into two drawings. The monthly drawing will be for a copy of Johnson’s video training program, “A Heat Pump That's Not Delivering Any Air,” and the quarterly drawing will be for a Fieldpiece LT-17A digital meter. The answer to the May 2015 Troubleshooting problem, “An Air-conditioning System that Will Not Cool Enough,” is: The tests that showed an extreme temperature drop and the higher-than-normal static pressure, proved that the indoor coil is restricted. The winner of the monthly drawing is Laura Newman of Tarzana, CA. The Winner should call 520-625-6847 or email Johnson to facilitate shipment of their prizes. Drawing must be claimed by Sept. 30, 2015.

Jim Johnson, Director of Training, Technical Training Associates, develops technician training workshops, DVDs, audio books and e-books, many of which are available at the RSES online store. For information on Jim’s DVD training program, “Schematic Symbol Fundamentals and Translating What They Mean”, visit www.techtrainassoc.com, write PO Box 2259, Green Valley, AZ 85622-2259 or email jim@techtrainassoc.com. Mastercool’s Twin Turbo Refrigerant Recovery Machine allows for maximum recovery capacity while at the same time decreasing size and weight. This revolutionary design features a double piston compressor and cooling by the largest fan and condenser in the market.

WINNER
Laura Newman
Tarzana, CA
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