This month’s troubleshooting problem involves a two-year-old, 4-ton heat pump that was originally repaired during the summer in response to a “no cooling” complaint. At that time, a failed reversing valve was replaced. The service record shows that a new filter-drier was installed, the system was evacuated to 500 microns and the refrigerant charge was added by weight according to the manufacturer’s specifications. There is no information on an evaluation of the system’s performance after the repair.

There were also two subsequent service calls in response to the customer’s complaint within a week that the system was not performing properly after the repair. The service record shows that in both of those situations, refrigerant was added to the system. Now, with the system operating in the heating mode, the customer is calling again for service. Their description of the problem is that the unit is not keeping the building at a comfortable temperature and that it seems to be running constantly.

Based on the information in the service record, you decide to accomplish an initial evaluation of the refrigeration system in the heat mode by checking the indoor return- and supply-air temperatures. You determine that the system is unable to achieve an acceptable Delta T. Next, you perform a test on the reversing valve (see Figure 1), checking the temperature of the discharge line at approximately 5 in. from the point where it enters the valve body. You then repeat the procedure on the connection leading to the indoor coil. Your test shows a differential of 13°F.

**Your troubleshooting question is:**
> What mistake was made during the original repair of this equipment?

The answer to this month’s problem will be published in the February 2016 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
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in which the question you are answering was published and your answer to: Jordan Brandes, Associate Editor, RSES Journal, 1911 Rohlwing Road, Suite A, Rolling Meadows, IL 60008-1397; email troubleshooting@rses.org; or fax to 847-297-5038. Make sure your answer is submitted by Dec. 31, 2015.

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.

And the winner is...
The answer to the October 2015 Troubleshooting problem, “A Gas Furnace That Will Not Fire,” is: There is an open winding in the induced draft motor and it needs to be replaced. The winner of the monthly drawing (from among 14 correct responses) is Michael Labanz of Westfield, IN. The winner should call 520-625-6847 or email Johnson to facilitate shipment of their prize. Drawing must be claimed by Feb. 28, 2016.

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.

WINNER

Michael Labanz
Westfield, IN
is the winner of the October 2015 Troubleshooting Challenge.