METROPOLITAN NY CHAPTER
Refrigeration Service Engineers Society

Continued Education for the HVAC/R Industry

"Better Service Through Knowledge"

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Common Mistakes to Avoid On a Service Call

Avoiding mistakes while servicing refrigeration equipment is vital for any service company to be profitable. Not only do mistakes erode the profit margin on service calls, they can also cause a contractor to actually lose money on the call and lose a good customer. It is difficult to eliminate all mistakes. But it is possible to minimize the number of mistakes made and eliminate making some of the relatively common ones, such as these:

Not checking for a refrigerant leak at a service port after removing your service gauges. Many times the valve stems or the valve itself will leak. This may go unnoticed and cause refrigerant to leak out of the system. It is a good practice to always replace the caps on any service port removed during a service call. This will serve two purposes: 1) if the valve is leaking the cap might be enough protection to correct the leak; and 2) if left uncapped the port could rust over on outdoor systems and cause the next technician on the job to be unable to install his service gauges.

Not checking the condition of the evaporator coil. By examining the condition of the evaporator, many times a service technician can tell if the coil is full active, iced over, or starved for refrigerant. This will aid him in finding the correct problem. For example, if a technician is troubleshooting a system and finds a low suction pressure reading, he may assume that the system is low on charge. However, if he were to check the condition of the evaporator he would see that the coil was iced over, causing the low suction pressure. If the technician assumes the system is low on charge and adds refrigerant to the system, not only will he not have solved the problem, but he most likely will have caused another problem.

Relying only on reading the suction pressure of a system and ignoring the discharge pressure. This shortcut can surely lead to misdiagnosing a system's problem. An abnormal suction pressure can be the result of several different problems. By looking only at the suction pressure a technician cannot truly determine the exact cause of the problem—he must look at both the suction and discharge pressures.

Not marking the system with the new refrigerant on a refrigerant conversion. After converting a system to a new refrigerant, it is important to mark the system with the new type. This will let the next technician on the job know that the refrigerant has been changed over and what the new type is. If the new refrigerant is not marked on the equipment, the next technician may not know that the refrigerant has been converted, and this could lead to problems if he needs to add refrigerant to the system. If he unknowingly adds the wrong refrigerant, the entire charge will need to be removed and the system recharged with the correct refrigerant.

Being too aggressive when de-icing an evaporator coil. A common service call for a technician is for an iced-up evaporator. As part of the repair process the coil will need to be de-iced. Being too aggressive when defrosting the coil could easily cause a leak in the coil. Never use an ice pick or a metal object to de-ice a coil. The best way to de-ice a coil is with water; however this is messy and not always practical. A heat gun also works well but care should be taken not to overheat any items close to the evaporator.

Not checking the voltage of a replacement component before installing it. When changing out a component a technician must verify the replacement component is the right voltage. Many times technicians are given components with the wrong voltage at a supply house, or they pick up the wrong component at their shop. This mistake can be costly, especially when installing a replacement compressor. Installing the wrong compressor is not easy to rectify. The service technician will most likely need to remove the wrong replacement and install the correct one, which will require extra time and material, for which he will not get paid.

Damaging the threads of a bolt, nut, or flare nut. Working with older equipment involves working with older nuts, bolts, and flare nuts. When taking these items off and putting them back on, care should be taken not to force them—as this could easily damage the threads. If the threads do not easily fit on by hand, find out why before taking a wrench to them. Once the threads are damaged the piece will need to be replaced. This is especially important when working with the bolts on a compressor. If these bolts become damaged, the technician may be forced to change out the whole compressor to repair the problem.

TEST YOUR KNOWLEDGE
Split System Installations

Answer the following questions as they relate to split system installations.

1. Split-system air conditioners, which have a fixed-orifice, can be correctly charged by measuring the _____.
   a. subcooling of the refrigerant at the outlet of the condenser
   b. superheat of the refrigerant at the suction line access valve
   c. discharge pressure of the system
   d. suction pressure of the system

2. When evacuating an air conditioning system, it is recommended to run the vacuum pump until a _____ micron level is achieved.
   a. 500
   b. 1000
   c. 1500
   d. 5000

3. When checking the refrigerant charge of a system you should let the system run approximately _____ minutes.
   a. 1 to 2
   b. 10 to 15
   c. 25 to 30
   d. 60 to 70

4. On attic installations the secondary drain should be piped to:
   a. directly to a sewage drain
   b. the bathroom sink
   c. a visible location where any dripping water serves as an early warning to the customers that the primary drain is clogged
   d. primary drain line

5. Horizontal suction lines should be::
   a. pitched towards the evaporator
   b. pitched towards the compressor
   c. trapped every 20 feet
   d. attached to the supply air plenum

6. *True or False*. A low-ambient temperature controller is a head pressure control device that is activated by a temperature sensor.

7. *True or False*. Locating a condensing unit under a porch is a good idea.

8. *True or False*. It is good practice to mount the condensing unit on wooden skids or concrete blocks.

9. *True or False*. A vacuum gauge can be used to tell if there is a refrigerant leak in the system.

10. *True or False*. When running refrigerant lines, they should be attached directly to the supply air duct.

11. *True or False*. When installing an uncased coil, baffles may need to be installed around the coil.

12. *True or False*. When running refrigerant tubing, care should be taken to avoid allowing any dirt or debris into the tubing.

Money

It can buy you a house, but not a home.
It can buy you a bed, but not sleep.
It can buy you a clock, but not time.
It can buy you a book, but not knowledge.
It can buy you a position, but not respect.
It can buy you fame, but not happiness.
It can buy you medicine, but not health.
It can buy you blood, but not life.
It can buy you sex, but not love.

So you see, money isn't everything.
And it often causes pain and suffering.

I tell you this because you are my friend, and as my friend, I want to take away your pain and suffering . . .
So send us all your money!

ANSWERS TO TEST YOUR KNOWLEDGE:
1) b; 2) a; 3) b; 4) c; 5) b; 6) True; 7) False; 8) False; 9) True; 10) False; 11) True; 12) True

COMING EVENTS

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(You Thought You Knew It All)

Dan Holohan (Who??)

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If you have any suggestions or requests for Future programs, please let us know!

METROPOLITAN NEW YORK CHAPTER, RSES

For Information Call: Stan Hollander, CMS (718) 232-6679

How Lucky Can We Get???

We are privileged to have Dan Holohan as our "Speaker Extraordinaire" at our November educational program. As most of your know, Dan is an industry renowned "guru", speaker, and author of many heating related articles and books. His seminars are highly sought after, sold out, and recognized throughout the country. **This program should not be missed**.

Wednesday October 10th, 2012 at 7:30pm

at

RICCARDO'S

21-01 24th Avenue, Astoria NY 11102

Boiler Venting Procedures, Applications & Related Accessories

by

Don Plathe—Plathe Associates

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EDUCATIONAL PROGRAM
Wednesday October 10th, 2012
at 7:30pm
SEE DETAILS—THIS PAGE

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