

METROPOLITAN NY CHAPTER Refrigeration Service Engineers Society

Continued Education for the HVAC/R Industry

“Better Service Through Knowledge”

February 2009

WWW.METRONYRSES.ORG



MOTOR “RULES OF THUMB”

- 1 Always check the capacitor before replacing a Permanent-Split Capacitor motor.
- 2 Before dismantling, scratch an arrow on the case of the bad motor indicating direction of rotation.
- 3 The number of similar coils visible in the stator winding equals the number of poles.
- 4 Matching ampere rating is usually more accurate than matching horsepower.
- 5 An underpowered replacement is more likely to cause problems than overpowering.
- 6 On multi-speed motors, always connect the common (white) lead to the power line first.
- 7 Cycling on overload is probably a mis-applied motor. Current draw should not vary from the nameplate amps by more than 10% or less than 25%.
- 8 Do not carry a motor by its leads—they are easily damaged.
- 9 Speed and voltage of the replacement motor must always match the speed and voltage of the replaced motor.
- 10 Multi-speed motors will only indicate speed variations when loaded. When run without a load, all speeds will be the same.
- 11 If there is no smell of burning varnish or overload tripping, motor temperature is probably okay.
- 12 A permanent-split capacitor motor can replace an equivalent shaded-pole motor since it is twice as efficient and its amp draw is about 1/2 as great. Shaded-pole motors should not be used to replace permanent-split capacitor motors.
- 13 Do not by-pass thermal protectors to eliminate nuisance trips. Review the application.
- 14 Always “discharge” a capacitor when removing from an installation by placing a resistor across the terminals.
- 15 Do not substitute ball-bearing motors for sleeve-bearing motors if noise will be a issue.
- 16 A motor with a shorted capacitor can still start and run, but will operate as if seriously overloaded.
- 17 An overloaded motor always runs hot, slow, and draws more than nameplate amps. Reading the motor current draw with an amp meter is the most accurate method of identifying an incorrect replacement.
- 18 Green is **always** the ground wire.
- 19 Never connect the line voltage to two “speed” leads.

KNOW YOUR OILS

CFC

R-11 -	Mineral or Alkybenzene
R-12 -	Mineral or Alkybenzene
R-13 -	Mineral or Alkybenzene
R-113 -	Mineral or Alkybenzene
R-114 -	Mineral or Alkybenzene
R-500 -	Mineral or Alkybenzene
R-502 -	Mineral or Alkybenzene

HCFE

R-22 -	Mineral, Alkybenzene or Polyol Ester
R-123 -	Mineral or Alkybenzene
R-401A -	Alkybenzene or Polyol Ester
R-401B -	Alkybenzene or Polyol Ester
R-402A -	Alkybenzene or Polyol Ester
R-402B -	Mineral, Alkybenzene or Polyol Ester
R-408A -	Mineral, Alkybenzene or Polyol Ester
R-409A -	Mineral, Alkybenzene or Polyol Ester

HFC

R-134a -	Polyol Ester
R-404A -	Polyol Ester
R-407A -	Polyol Ester
R-407B -	Polyol Ester
R-407C -	Polyol Ester
R-410A -	Polyol Ester
R-507 -	Polyol Ester

TEST YOUR KNOWLEDGE

1. The leakage of air around windows, doors and cracks in a house is called:
a) an air inlet b) infiltration c) a by-pass d) psia
2. One cubic foot of natural gas has a BTU content of:
a) 100 b) 25,000 c) 1,000 d) 250
3. How much air is needed to burn 1,000 Btu's?
a) 100 cu.ft. b) 10 cu.ft. c) 1,000 cu.ft. d) 1 cu.ft.
4. On a residential low pressure forced-water boiler, the pressure reducing valve would be factory set at:
a) 20 lbs. b) 15 lbs. c) 12 lbs. d) 50 lbs.
5. The most difficult style of house to heat is probably the:
a) two story b) ranch style c) split level d) none
6. Delayed gas ignition maybe caused by:
a) a defective thermostat c) a blown fuse
b) an unvented pressure regulator d) an improperly located pilot
7. How can a low voltage thermostat be used in an electrical resistance heating system?
a) use a low voltage power circuit
b) use a low amperage circuit
c) use a relay
d) use a parallel circuit
8. The temperature of steam at 5 psig would be:
a) 212°F b) 180°F c) 230°F d) 205°F
9. The temperature of steam at 5 inches of Hg would be:
a) 212°F b) 260°F c) 230°F d) 205°F
10. How much heat does one pound of steam release as it is condensed to water at 212°F?
a) 144 Btu b) 212 Btu c) 1000 Btu d) 970 Btu
11. What would you expect to find inside an extrol tank?
a) an air pocket b) a hard rubber ball
c) a vacuum d) a rubber diaphragm full of air
12. What is the color of a correctly adjusted natural gas flame?
a) orange b) red c) yellow d) blue
13. What is the sensible heat of dry air?
a) 0.24 Btu/cu.ft. b) 0.24 Btu/lb.
c) 0.32 Btu/cu.ft. d) 1.43 Btu/lb.
14. Which instrument is used to measure outlet grille air velocities?
a) anemometer b) barometer
c) manometer d) draft gauge

14.a 13.b 12.d 11.d 10.d 9.d 8.c 7.c 6.d 5.c 4.c 3.b 2.c 1.b
Answers to Test Your Knowledge

CARDS YOU'LL NEVER SEE AT HALLMARK

*"I've always wanted to have someone to hold, someone to love.
After having met you, I've changed my mind."*

"Looking back over the years that we've been together, I can't help but wonder: What the heck was I thinking?"

"As the days go by, I think of how lucky I am that you're not here to ruin it for me."

"As you grow older, Mom, I think of all the gifts you've given me. Like the need for therapy..."

*"Thanks for being a part of my life!
I never new what evil was before this!"*

*"Money is tight, times are hard,
here's your @#\$/& Christmas card!!!"*

"Congratulations on your promotion. Before you go, I would like you to take this knife out of my back. You'll probably need it again."

"Someday I hope to get married, but not to you."

"I just want you to know that I'm sorry for what happened, especially since you survived."

*"Happy Birthday!
You look great for your age ... almost lifelike!"*

"I always wanted to be rich, powerful, and well respected. While I'm dreaming, I wish you weren't so damn ugly."

"When we were together, you always said you'd die for me. Now that we've broken up, I think it's time you kept your promise."

"I knew the day would come when you would leave me for my best friend. So here's his leash, water bowl and chew toys."

*"We have been friends for a very long time,
let's say we call it quits."*

"I'm so miserable without you, it's almost like you're here."

*"Congratulations on your new bundle of joy.
Did you ever find out who the father was?"*

*"If you didn't have any money, I'd still love you.
And miss you very much."*

 <p>HVAC/R Parts Supplies Equipment</p> <p>27-01 BROOKLYN QUEENS EXPRESSWAY WEST WOODSIDE, NY 11377</p> <p>FAX (718) 274-4972</p> <p>Large Local Stock Free Catalogue</p> <p>718-545-4896 WHOLESALE ONLY</p>	 <p>SEALED UNIT PARTS CO., INC.</p> <p>P.O. BOX 21 2230 LANDMARK PLACE ALLENWOOD, NJ 08720 USA (732) 223-6644 FAX: (732) 223-1617</p>	 <p><i>Support Services for the HVAC Contractor</i></p> <p>HVAC Water Treatment</p> <p>Specialty Cleaning Pipe • Duct • Coil</p> <p>HVAC Antifreeze</p> <p>Lab Services</p> <p>Indoor Air Quality</p> <p>718-361-6666 www.csiontheweb.com</p>	 <p>UNITED REFRIGERATION INC. Refrigeration, Air Condition- ing, Heating, Supplies, Equipment & Parts</p> <p>Jim Herlinger Branch Manager 51-05 59th Place Woodside, NY 11377-7408</p> <p>Tel: 718 476-2600 Fax: 718 476-2648 Branchv2@uri.com</p>	<p>HALSEY SUPPLY CO. INC.</p> <p>FOR ALL YOUR</p> <ul style="list-style-type: none"> AIR CONDITIONING REFRIGERATION EQUIPMENT PARTS SUPPLIES <p>EPA-CERTIFICATION TESTING</p> <p>241 HALSEY STREET BROOKLYN, NY 11216</p> <p>(718) 574-4774 FAX (718) 574-4778</p>
--	---	---	--	--

Wednesday February 11th, 2009 at 7:30pm
at
RICCARDO'S
21-01 24th Avenue, Astoria NY 11102

New RSES eLearning On-Line Classes

By
Stan Hollander, CMS - Educational Director
Metro NY Chapter

<p>SEE US 1st</p>  <p>WHOLESALE DISTRIBUTORS Refrigeration/AC/Heating</p> <p>BROOKLYN (718) 257-4039 99-03 Foster Ave.</p> <p>JAMAICA (718) 526-0330 139-29 Queens Blvd.</p> <p>MT. VERNON (914) 668-3631 551 S. Columbus Ave.</p> 	<p>Fire Ice Mechanical Inc.</p> <p>HVAC/R Service Contractors</p> <p>KURT J. EGGERT</p> <p>Vogt Tube-Ice Authorized Dealer/ Sales & Factory Certified Technicians Goldenrod Distributor;</p> <p>The Newest in Water Treatment Technology Air Conditioning & Refrigeration</p> <p>Tel (718) 631-1503 Fax (718) 279-4686</p>	 <p>COMPRESSORS</p> <p>UNITED REBUILDERS, INC. (URI)</p> <p>405-A Allentown Drive Allentown, PA 18109 (484) 223-3265 (800) 964-0888 FAX (484) 223-3260</p>	 <p>49-70 31st STREET L.I.C., NY 11101 Phone: 718-937-9000 Fax: 718-392-1296 1-800-937-9000</p> 	 <p>WEDDINGS OUR SPECIALTY Special Attention Given To Dinner Dances • Company Parties Cocktail Parties • Business Meetings Fund Raisers • Fashion Shows Engagement Parties • Christenings Special Discounts Given to Senior Citizens</p> <p><i>Riccardo's by the bridge</i></p> <p>21-01 24th Avenue, Astoria, NY 11102 718 721-7777 ANTHONY M. CORBISIERO RICHARD F. CORBISIERO</p>
--	--	---	---	---

METROPOLITAN NEW YORK CHAPTER, RSES

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

WE NOW HAVE OUR OWN WEBSITE: WWW.METRONYRSES.ORG CHECK IT OUT

ATTITUDE

The longer I live, the more I realize the impact of attitude on life. Attitude, to me, is more important than facts. It is more important than the past, than education, than money, than circumstances, than failures, than successes, than what other people think or say or do. It is more important than appearance, giftedness or skill. It will make or break a company . . . a church . . . a home. The remarkable thing is we have a choice every day regarding the attitude we will embrace for that day. We cannot change our past . . . we cannot change the fact that people will act in a certain way. We cannot change the inevitable. The only thing we can do is play on the one string we have, and that is our attitude . . . I am convinced that life is 10% what happens to me and 90% how I react to it. And so it is with you . . . We are in charge of our Attitudes. ~Unknown

COMING EVENTS

- “RSES eLearning” On-Line Classes Primer
- Pricing Guidelines
- Scroll Compressors
- Back to the Basics
- Defrost Controls

PLACE LABEL HERE

