

METROPOLITAN NY CHAPTER Refrigeration Service Engineers Society

Continued Education for the HVAC/R Industry

“Better Service Through Knowledge”

May 2009

WWW.METRONYRSES.ORG



A Message from our President

CONGRATULATION TO THE CLASS OF '09

This year we changed our RSES Educational Program to what we believe is more useful training. Our RSES “Technical Institute-I” Course had 18 graduates. On behalf of the Chapter, I would like to congratulate these students for the successful completion of a difficult course. They met twice a week for 9 weeks in an intensive course that covered 36 Lessons. It takes dedication and a desire to learn to devote that amount of time over a short period. We will be presenting these students with their Certificates and Patches at our May 13th meeting. I would encourage all our members to come to the meeting to congratulate these technicians on a job well done.

On behalf of all our Chapter Officers, I hope you all have a busy, successful and, most of all, a **safe** summer season.

See you there,
Drew Garda, President

SCHOOL PLANS CONTINUING EDUCATION

Our chapter is planning on continuing, as well as expanding, our school program to include both Technical Institute Course I for the newcomers, in addition to Course II for our recent participants to continue their training to the next level.

Keep checking our website and mailings for future updates.

How Electricity Really Works

A sheet of paper crossed my desk the other day and as I read it, realization of a basic truth came to me. So simple! So obvious we couldn't see it! Leo Martin of Hiawatha Division had discovered how power circuits work. He says that smoke is the real thing that makes power circuits work because every time you let the smoke out of something electrical, it quits working. He claims to have verified this with thorough testing.

I was flabbergasted! Of course! Smoke makes all things that are electrical work. Remember the last time smoke escaped from a transformer? Didn't it quit working? I sat and smiled like an idiot as more of the truth dawned. I remembered when I had witnessed the awful destruction of a 4KV breaker and bus at Sunnyvale. The breaker and bus leaked out so much smoke that the breaker and bus stabs actually melted and quit working.

Yes, I now know that Leo's theory is in fact truth. It's the conductor that carries the smoke from one device to another. It starts at our power plants where stuff is burned to produce smoke. The smoke we see coming from the stacks is the excess smoke that the system doesn't need. The smoke is then sent down the conductors to transformers around the system. Transformers are big and require a lot of smoke to work properly. That's why the conductors are so big. If these conductors spring a leak, it lets the smoke out of everything and then nothing works.

I plan on spending more time with Leo on some of his other theories.

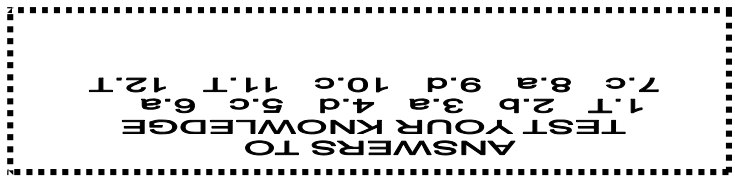
TEST YOUR KNOWLEDGE

Air Conditioning

1. True or False. The density of air decreases at higher elevations.
2. _____ is the volume of a substance per unit of mass.
 - a. Specific gravity
 - b. Specific volume
 - c. Superheat
 - d. Specific humidity
3. The specific volume of saturated water vapor at 70°F is:
 - a. 868 cu.ft./lb.
 - b. 8 cu.ft./lb.
 - c. 1868 cu.ft./lb.
 - d. 80 cu.ft./lb.
4. _____ is the measurement of the grains of moisture per pound of dry air.
 - a. Specific gravity
 - b. Specific volume
 - c. Superheat
 - d. Specific humidity
5. _____ is the temperature at which water vapor starts to condense from air.
 - a. Superheat
 - b. Boiling point
 - c. Dew point
 - d. Melting point
6. _____ is a device that measures the wet-bulb temperature of the surrounding air.
 - a. Sling psychrometer
 - b. Hydrometer
 - c. Anemometer
 - d. Hygrometer
7. The temperature measured with an ordinary thermometer is called:
 - a. wet-bulb
 - b. dew point
 - c. dry-bulb
 - d. none of these
8. _____ is the total heat content of a substance.
 - a. Enthalpy
 - b. Superheat
 - c. Subcooling
 - d. Latent heat
9. _____ is the amount of moisture, by weight, present in one cubic foot of a substance.
 - a. Critical temperature
 - b. Absolute zero
 - c. Absolute temperature
 - d. Absolute humidity
10. _____ is the increase in temperature of a vapor above its saturation temperature.

- a. Specific gravity
- b. Specific volume
- c. Superheat
- d. Specific humidity

11. True or False. The pressure of a saturated vapor will increase with an increase in its temperature.
12. True or False. The relative humidity of a quantity of air will gradually decrease if it is heated without adding moisture.



Troubleshooting Aid for a Thermostatic Expansion Valve System

SYMPTOM	POSSIBLE CAUSE
Low Suction Pressure High Superheat	<ol style="list-style-type: none"> 1. Moisture, dirt, wax 2. Undersize valve 3. High superheat adjustment 4. Gas charge condensation 5. Dead thermostatic element charge 6. Wrong thermostatic charge 7. High evaporator pressure drop (no external equalizer) 8. External equalizer location 9. Restricted or capped external equalizer 10. Low refrigerant charge 11. Liquid line vapor 12. Low pressure drop across valve
High Suction Pressure Low Superheat	<ol style="list-style-type: none"> 1. Oversized valve 2. TEV seal leak 3. Low superheat adjustment 4. Poor thermal contact of sensing bulb 5. Sensing bulb installed in a warm location 6. Wrong thermostatic charge 7. Moisture, dirt or wax 8. Incorrect location of external equalizer
Low Suction Pressure Low Superheat	<ol style="list-style-type: none"> 1. Low load 2. Poor air distribution 3. Poor refrigerant distribution 4. Improper compressor-evaporator balance 5. Evaporator oil logged 6. Flow from TEV affecting another's bulb

 <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><i>Supco</i></p> <hr/> <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> <hr/> <p>HVAC Water Treatment</p> <hr/> <p>Specialty Cleaning Pipe • Duct • Coil</p> <hr/> <p>HVAC Antifreeze</p> <hr/> <p>Lab Services</p> <hr/> <p>Indoor Air Quality</p> <hr/> <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 • EPA-CERTIFICATION TESTING <p>241 HALSEY STREET BROOKLYN, NY 11216</p> <p>(718) 574-4774 FAX (718) 574-4778</p>
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COMING EVENTS

Heat Recovery Venting
Business & Pricing Guidelines
Scroll Compressors
Back to the Basics
Defrost Controls

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

<p>SEE US 1st</p>  <p>WHOLESALE DISTRIBUTORS Refrigeration/AC/Heating</p> <p>BROOKLYN (718) 257-4039 99-03 Foster Ave. JAMAICA (718) 526-0330 139-29 Queens Blvd. 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>Suva®</p>	 <p>WEDDINGS OUR SPECIALTY</p> <p><i>Special Attention Given To</i> Dinner Dances • Company Parties Cocktail Parties • Business Meetings Fund Raisers • Fashion Shows Engagement Parties • Christenings <i>Special Discounts Given to Senior Citizens</i></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>
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METROPOLITAN NEW YORK CHAPTER, RSES

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

Wednesday May 13th, 2009 at 7:30pm

at

RICCARDO'S

21-01 24th Avenue, Astoria NY 11102

Energy Recovery Ventilation – Putting Green Technology to Work

1) Air-to-Air Energy Recovery Ventilation – what is it?

- Ventilation - the proven (and required) IAQ solution
- Reducing demand on heating and cooling equipment
- Standards exist; ASHRAE 62, IMC, and LEED

2) Understanding the Technologies - ERV and HRV

- Types of Air-to-Air recovery equipment
- ARI testing results
- Products available, core advantages

3) Getting Practical – serving building owners

- Common Applications
- Sizing, selection, and design tools
- Installation & Maintenance pointers

PLACE LABEL HERE

MEETING
Wednesday May 13th, 2009
at 7:30pm
SEE DETAILS THIS PAGE

