

METROPOLITAN NY CHAPTER
Refrigeration Service Engineers Society

Continuing Education for the HVAC/R Industry

“Better Service Through Knowledge”

November 2025



Find us on Facebook
Metro NY RSES



EDUCATIONAL MEETING

WEDNESDAY, November 12th, 2025

Dinner at 6:00pm

At TAVERNA KOS 41-19 23rd Ave., Astoria

**THIS IS THE PROGRAM POSTPONED FROM
LAST MONTH**

**Heat Pump Water Heaters and
Heat Pump HVAC**

- Advantages and Opportunities
- Applications

Hydronic Solutions from Bosch

- Combi boilers

Presented by:

Tim Warnecke, Technical Lead—Platsky HVAC

A MESSAGE FROM OUR CHAPTER PRESIDENT

Your chapter's primary purpose is the education of its members. We do this through educational articles in our meeting notices. This Newsletter is received by all members. We also have an expert educational speaker at each meeting. If you have a topic you would like presented, contact Rich at RichBrunoNY@aol.com. Our meetings are an opportunity to ask questions and also make contact with other owners and technicians who may be able to help you in the future. We also maintain a Facebook page where you may post questions and hopefully get answers to help resolve your problem. Finally, our membership has a wealth of experience. Interacting with other contractors gives you a chance to discuss problems you may encounter.

I hope you will join us at our November 12th meeting.

Drew Garda

President, Metropolitan NY Chapter, RSES

POTENTIAL MOTOR OVERLOAD

When servicing HVAC/R equipment, technicians are sometimes required to increase the airflow of a system. This may be necessary in order to correct some type of system problem or to achieve the designed airflow upon start up.

An easy method for increasing the airflow on a centrifugal blower application is to increase the RPM of the drive motor. There is a direct relationship between the RPM of the motor and the CFM of airflow delivered by the fan system. If you increase the fan's RPM by 10% you increase the CFM delivered by 10%. However, there is a potential problem with this easy solution. There is also a relationship between the CFM of airflow produced and the required brake horsepower of the drive motor. As the CFM is increased the required brake horsepower will increase by the cube of the CFM increase. For example, if the CFM is increased 50% the required brake horsepower will have increased by approximately 300%. This increase can easily overload a motor and cause it to fail. Any time a service technician increases the RPM of a motor in order to increase CFM capacity of the fan system, he must make sure the motor can handle the increase. A technician can calculate the projected required brake horsepower by using this formula:

$$\text{BHP}_{\text{new}} = (\text{CFM}_{\text{new}}/\text{CFM}_{\text{old}})^3 \times \text{BHP}_{\text{old}}$$

For example, if the original airflow equals 1000 CFM and it needs to be increased to 1400 CFM, and the original calculated horsepower requirement of the motor is .5 HP (the horsepower requirements may need to be calculated separately since the nameplate HP does not always equal the required horsepower), the new horsepower requirement is:

$$\begin{aligned}\text{BHP}_{\text{new}} &= (1400/1000)^3 \times .5 \\ \text{BHP}_{\text{new}} &= 1.4 \text{ HP}\end{aligned}$$

If the original motor is not rated at 1.4 HP or higher, the motor will be overloaded.

An easy way for a technician to ensure a motor is not overloaded is to measure the amperage draw of the motor. As long as the motor does not go 10% beyond its rated amperage draw, it will work satisfactorily, and will not become overloaded.

A motor should also be checked to see that it is not underloaded. The current draw should not fall

below 25% of its rated amperage draw. If the existing motor cannot be adjusted to provide the necessary CFM requirements within the operating limits of the motor, the motor should be replaced with one that is suitable for the required application and CFM requirements.

Any time a technician replaces a fan motor he/she should also check the amperage draw of the **installed** replacement motor, under actual operating conditions, before leaving the job. This will ensure that the motor has been properly sized for the application and will not be underloaded nor overloaded. The motor should be tested under a full load condition. *This may require the technician to close all the access doors to the unit* and then measure the amperage draw. Sometimes this is hard to do, but will give a **true** indication of the amperage draw of the motor. If possible, the motor should be rechecked after approximately two hours of operation, as most motor problems develop within this time frame, as it heats up.

Want to be a better technician?
KEEP ON LEARNING!

Lock-out/Tag-out

When working on electrical circuits, safety should always be first on your mind. Electrical circuits should always be de-energized before repairing or replacing any electrical component or wiring. De-energize the circuit at the system's disconnect and then follow standard "Lock-out/Tag-out" procedures.

Lock out the circuit by placing a padlock on the disconnect, which will prevent anyone from inadvertently energizing the circuit while you are working on it.



Place a tag on the disconnect so any other building or maintenance personnel know the system is being serviced and who de-energized the circuit and the system. When following the basic "Lock-out/Tag-out" procedure always follow the guidelines set forth by the agency having jurisdiction.

Before working on any electrical circuit, always verify with a voltmeter that the circuit is truly de-energized. The disconnect may appear to have disconnected the voltage, but there may be an internal defect in the disconnect that may cause one or more of the hot legs to remain energized.

JOHNSTONE HVAC/R
Parts
Supplies
Equipment

27-01 BROOKLYN QUEEN
EXPRESSWAY WEST
WOODSIDE, NY 11377
718-545-4882

845 EAST 138TH STREET
BRONX, NY 10454
718-482-3707

**LARGE
LOCAL
STOCK**

ON-LINE CATALOGUE

TRADEFIX
NORTH'S BUILDING & REMEDIAL PRODUCT

Learn more about our
Technician, Licensed Products
and our Monitor Program at
800-TRADEFIX



H&L
HEATING SUPPLY, Inc.
COMMERCIAL • INDUSTRIAL •
RESIDENTIAL

AUTHORIZED DEALER OF
• HONEYWELL • MCDONNELL MILLER •
• FIREYE • HEAT TIMER •
• FUEL WATCHMAN •
• BELL AND GOSSETT • ASCO •
• POWERFLAME BURNERS •
• T.A.C. BUILDING AUTOMATION •
• ECLIPSE GAS BOOSTER •
• SIEVENS GAS TRAINS •
• BRUNNEN •

BRIAN T. O'NEILL
BRIAN@HLHEATINGSUPPLY.COM

1100 CONEY ISLAND AVENUE
BROOKLYN, NY, 11230
(718) 859-2424
FAX (718) 859-5727

**TAVERNA
KOS**

**QUALITY
GREEK HOME
STYLE FOOD**

41-19 23RD
AVENUE
ASTORIA, NY
11103
718-728-3325

HALSEY SUPPLY
CO. INC.

FOR ALL YOUR
•
AIR CONDITIONING
REFRIGERATION
•
EQUIPMENT
PARTS SUPPLIES
•
EPA-CERTIFICATION TESTING

686 FLUSHING AVENUE
BROOKLYN, NY, 11206
(718) 574-4774
FAX (718) 574-4776

RA
RATHE
ASSOCIATES

**EXPECT MORE
& GET IT.**

REPRESENTING THE
INDUSTRY'S FINEST
MANUFACTURERS

**CERTIFIED FACTORY
TRAINING BY
INDUSTRY EXPERTS**

LOOK TO US FOR ALL YOUR
PLUMBING, HEATING & HVAC NEEDS

NY 631.822.1200
NJ 201.738.4535 • TX 321.822.1400
ratheassoc.com

COMING TOPICS

Mini-Splits & Inverters

Covid-19 effects on HVAC/R industry

Upselling The Job

*Handling Customers Who are
"Educated" on the Internet*

*High Quality Compressor
Remanufacturing*

If you have any suggestions or requests for FUTURE
EDUCATIONAL PROGRAMS, please let us know!

THIS
SPACE
AVAILABLE
FOR
ADVERTISING

DAIKIN COMFORT TECHNOLOGIES NORTHEAST

ABCO + USG + Comfort Systems

REFRIGERATION SUPPLIES & EQUIPMENT

Long Island City 718-937-9000 • Bronx 718-401-1001
Brooklyn 718-257-5700 • Manhattan 212-929-8400
Staten Island 718-273-0200 • DalkinNortheast.com

BOHN **COPELAND** **Russell**

Chemours

HEATCRAFT **KRAMER**

Thank
you for
Supporting
our
Advertisers

WHOLESALE DISTRIBUTORS

Sid Harvey's

**Refrigeration • A/C • Heating
Parts, Equipment & Supplies**

BROOKLYN: 718-257-3347
LONG ISLAND CITY: 817-745-0830
MT. VERNON: 814-688-3631
COMMERCIAL ENGINEERING: 631-485-0472

85+ LOCATIONS NATIONWIDE | WWW.SIDHARVEY.COM