METROPOLITAN NY CHAPTER
Refrigeration Service Engineers Society

Continuing Education for the HVAC/R Industry

"Better Service Through Knowledge"

****

November 2014

WWW.METRONYRSES.ORG

RSES® The HVACR Training Authority Metropolitan New York Chapter

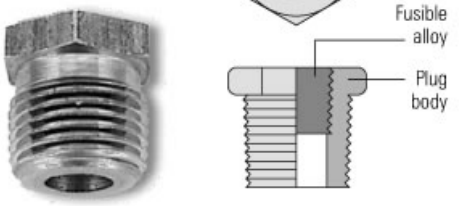
EMPIRE KEYSTONE ASSOCIATION BETTER SERVICE THROUGH KNOWLEDGE

Relief Valves

A safety device used on many refrigeration systems is the relief valve. Relief valves are used to release abnormally high pressure inside a vessel before that pressure causes the vessel to erupt. There are three general types of relief valves:

- fusible plug;
- rupture disc;
- pressure relief.

A one-time relief valve, sometimes called a "fusible plug," is normally constructed from a fitting with a drilled hole filled in with a low temperature solder. At a specific temperature the solder will soften and pressure within the vessel will cause the solder plug to "blow-out". The rupture disc contains a thin disc of metal designed to rupture at a certain pressure. Neither the fusible plug nor the ruptured disc reseal after opening. Consequently, all the refrigerant is discharged from the storage vessel or protected part of the system, should they open. These relief devices would then have to be replaced.



Pressure relief valves are spring-loaded valves normally encased in a brass body with a neoprene seat. They are designed to automatically reset once the pressure inside the vessel reaches a safe level. They will be located on a section of the vessel where refrigerant vapor is located. This allows only the vapor to be released from the vessel, rather than any liquid refrigerant.

Some pressure relief valves will also have a thread connection on the top to allow piping to be attached to it so the released refrigerant can be vented out of the building or mechanical room where the vessel is located.

A popular type of pressure relief valve is the spring-loaded or "pop" type. When pressure rises above the spring setting refrigerant will initially begin to seep through. When enough flow develops the piston will pop open, allowing full discharge. The pop□type relief valve has its advantages, including simple design, low initial cost, and high discharge capacity.

There are limits on the length of discharge pipe from a safety pressure relief valve. The limits are based on pipe size and relief valve discharge capacity in pounds of air per minute. Pressure relief valves are designed to re-close as the pressure is reduced. However, the valve may not completely reseal.

Manufacturers generally recommend replacement after it has been opened. Failure to reseal tightly is generally due to an accumulation of dirt and foreign matter that attaches to the valve seat disc while the valve is discharging. For this reason, it is impossible to predict the reliability of the relief valve resealing after it has discharged in service.

All relief valves must comply with the ASME Code for Unfired Pressure Vessels. Discharge rates are certified by the National Board of Boiler and Pressure Vessel Inspectors. A code symbol is stamped on relief valves indicating this certification. It includes the letters "UV" in a clover leaf design. The letters "NB" are stamped directly below this symbol. The pressure setting and capacity are also stamped on the valve.

The exact number, location, and type of relief devices required are set forth in detail in the American Standard Safety Code for Mechanical Refrigeration. Local codes vary somewhat in this respect, and should also be considered in designing an installation.

Never eliminate or seal off a relief valve as they serve a very important safety function in the systems we service, maintain and install. Without these safety devices serious harm could occur to those working around these systems.

Never, NEVER, ***NEVER*** place a new pressure relief valve on top of a leaking relief valve to stop the leak. This could potentially double the pressure at which it will blow off.

COMING TOPICS

High Velocity Air Conditioning

Portable Air Conditioning When & Where You Need It

Low Temp Radiant Heat

Ice Machine Servicing and Troubleshooting

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

Metro NY Chapter RSES HVAC Training Courses

The Metropolitan New York Chapter RSES will offer the RSES Technical Institute Courses – 1, 2 & 3 on Tuesday & Thursday evenings, starting January 13th, 2015 in Long Island City, New York

Dates*: For 11 weeks on Tuesdays & Thursdays

1/13 & 1/15	1/20 & 1/22	1/27 & 1/29
2/3 & 2/5	2/10 & 2/12	2/17 & 2/19
2/24 & 2/26	3/3 & 3/5	3/10 & 3/12
3/17 & 3/19	3/24 & 3/26	

Dates Tentative – Subject to Change

Time: 6:00 PM – 10:00 PM

Location: Long Island City High School
14-30 Broadway
Long Island City, NY 11106

Cost for Course *1, 2* or *3*:
$849.00 for RSES members
$949.00 non-RSES members (also includes 1 year membership in RSES)

Includes: Technical Institute course manual, course tuition, Certificate of Completion after passing final exam, 72 hours toward NATE Recertification, for those eligible.

Register by January 5th by calling, mailing or Emailing the form below

FOR ADDITIONAL INFORMATION VISIT:
http://www.metronyrses.org
or Email: school@metronyrses.org
or Phone Stan Hollander: 718 232-6679
by Mail: Metro NY Chapter RSES
Attn: Stan Hollander, 1837 61st Street, Brooklyn, NY 11204
–Checks and Charge Cards Welcome –
Please make checks payable to "Metro NY RSES"

TRAINING COURSE OVERVIEWS

TECHNICAL INSTITUTE COURSE *1*

This course begins with a comprehensive introduction to refrigeration and air conditioning. Topics covered include: basic physics, major system components including hermetic, semi-hermetic and open compressors, condensers, evaporators and refrigerant metering devices. It also covers the fundamental concepts of electricity and magnetism as they pertain to resistors, resistance, conductors, power supplies, circuit protection devices and transformers. Detailed information on lessons and content for Course 1 can be found at:
http://metronyrses.org/ti1.html

TECHNICAL INSTITUTE COURSE *2*

Beginning with tools-of-the-trade this course covers refrigeration system accessories, desiccants and driers, defrosting methods, refrigeration system controls and piping. It also includes instruction on compressor replacement and system evacuation, electric motors in refrigeration systems, motor capacitors and protectors, thermostats, relays, contactors and starters, test equipment and troubleshooting, pressure and enthalpy diagrams, psychrometrics, heat transfer and estimating heat loads, residential air conditioning, humidification and a review of safety codes. Detailed information on lessons and content for Course 2 can be found at:
http://metronyrses.org/ti2.html

TECHNICAL INSTITUTE COURSE *3*

Begins with comprehensive introduction to heat pump theory, including watersource heat pumps. Topics covered include computer-room environmental control, economizers, fans and blowers, air filtration and distribution evaporative condensers and cooling towers, water treatment, multiple-rack systems, hydronics, troubleshooting, controls and controls components, pneumatic relays, typical control applications, and control maintenance. Detailed information on lessons and content for Course 3 can be found at:
http://metronyrses.org/ti3.pdf

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REGISTRATION FORM

Name:_____ Company:_____
Address:_____ City: _____ State:____ Zip:_____
Email: _____ Phone: _____
Check / Credit Card Number: _____ Exp:_____
Name on Credit Card: _____
Which course are you registering for? Technical Institute Course *1, 2* or *3* Choose ONLY ONE ____
Are you a *current* RSES Member: If Yes, RSES Membership Number: _____

Please register by January 5th - space is limited.
Check or Credit Card Accepted for Payment
Make check to "Metro NY RSES" and mail w/ registration to: Metro NY RSES, Attn: Stan Hollander, 1837 61st Street, Brooklyn, NY 11204
To register by Email submit this form with Credit Card information to school@metronyrses.org

METROPOLITAN NEW YORK CHAPTER, RSES

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

Adding Oil to a Refrigeration System

If the oil level of a compressor is low, caution should be taken before adding oil to it. If the system has been in operation for some time and the oil level within the compressor was adequate at one time, where did the oil go?

If the oil did not leave the system due to a major refrigerant leak, it is trapped somewhere in the system, usually in the evaporator or suction line. Simply adding more oil to the compressor is not the answer. This can actually cause more harm than good.

The problem with simply adding oil to the compressor is two-fold. First, the cause of why the oil became trapped out in the system needs to be identified. Otherwise the additional oil added will also become trapped out in the system and the oil level in the compressor will be low again. Secondly, it is possible the trapped oil will return to the compressor and now the compressor will be overfilled with oil. This is also not good for the operation of the compressor as it could also lead to internal damage.

Before adding oil to any compressor always ask the question; "Where did the oil go?"

Wednesday November 12th, 2014 at 7:30pm

at

RICCARDO'S

21-01 24th Avenue, Astoria NY 11102

Portable Air Conditioning When & Where You Need It

By

Oscar Bula—SpotCoolers, Inc.

PLACE LABEL HERE

EDUCATIONAL PROGRAM
Wednesday November 12th, 2014
at 7:30pm
SEE DETAILS—THIS PAGE

RSES
The HVACR Training Authority
Metropolitan New York Chapter
Refrigeration Service Engineers Society
241 Halsey Street
Brooklyn, NY 11216