METROPOLITAN NY CHAPTER
Refrigeration Service Engineers Society

Continuing Education for the HVAC/R Industry

"Better Service Through Knowledge"

November 2017

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EMPIRE KEYSTONE ASSOCIATION BETTER SERVICE THROUGH KNOWLEDGE

Crankcase Pressure Regulators (CPR)

Crankcase pressure regulators (CPR) are a common accessory added to many low temperature refrigeration applications such as walk-in and reach-in freezers.

They are designed to prevent the compressor's motor from overloading when the crankcase pressure rises above its designed working pressure.

On many low temperature applications this can occur during or after a defrost cycle, or after a normal shutdown period. The CPR is an outlet pressure regulator and will not allow the crankcase pressure to rise above a predetermined level.

Typically the CPR is installed in the suction line between the compressor and the evaporator. Normally there are no other components installed downstream, between the outlet of the CPR and the compressor. This is to ensure that the outlet of the CPR senses the true crankcase pressure of the compressor.

It is not recommended that this type of regulator be used on a system that also uses a maximum operating pressure (MOP) type of expansion valve. The use of both of these valves on the same system may cause longer pull-down times.

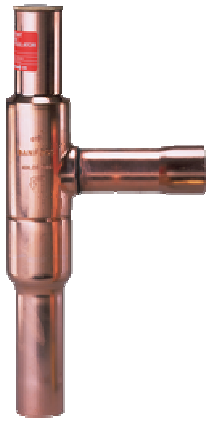
This, however, may be overcome if the pressure settings of both valves are sufficiently spread apart.
When using a CPR on a system that is also using a discharge bypass valve for capacity control, the pressure setting of the CPR must be higher than that of the bypass valve.

The typical CPR is a *close-on-rise* regulator. The outlet pressure (crankcase pressure) of the valve is the *closing force* within it. The opposing *opening force* within the valve is an interior spring. These two forces oppose each other to regulate the port size within the valve. The interior spring is adjustable to apply a maximum opening force.

If the pressure applied at the outlet of the valve (crankcase pressure) is above the spring force, the valve will close down. The inlet pressure of the CPR has no effect of the operation of the valve. The inlet pressure is applied equally to both the underside of its bellows and the top of its valve seat disc, canceling out the effect of the inlet pressure.

The selection of a CPR is based on five basic system conditions: 1) refrigerant; 2) refrigeration capacity of the system; 3) design suction pressure of the system; 4) maximum crankcase pressure recommended by the compressor manufacture; and 5) pressure drop across the valve at design load conditions. Once these conditions are known, a valve can be chosen from the manufacturer's selection table.

These valves should not be selected based on the line size of suction line since a manufacture may use the same line size for many different capacities.



The adjustment of a CPR should be done on start-up when the evaporator pressure is normally at its highest level. Some valves will have a pressure tap on the inlet port in order to allow a technician to measure the pressure there.

When adjusting these valves, the pressure setting should be low enough to protect the compressor, but not so high as to penalize the system's capacity or pull down time. Always refer to the compressor and/or system manufacturer's instructions when adjusting these valves.

HAVE YOU VISITITED INTERNATIONAL'S WEBSITE, LATELY??

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There's a lot of information there for you, including exclusive member benefits and information.

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HVACR TECHNICAL TRAINING

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SATURDAY, November 18, 2017

8:30am – 5:00pm

FULL DAY with Hot Lunch served

Location:

Riccardo's Catering
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These programs utilize lecture, field examples, computerized demonstrations, handout materials and encourages audience participation. A certificate of completion will be mailed to all participants.

The cost for full program, including morning & afternoon refreshment breaks and full service, hot sit-down lunch is:
$130 - ($105 for RSES & OESP members)

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R.S.E.S.
REFRIGERATION SERVICE ENGINEERS SOCIETY
METROPOLITAN NY CHAPTER

For Further Information Call:
Stan Hollander @ 718 232-6679

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SERVICING HVAC SYSTEMS SEMINAR 11/18/17

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MAKE CHECKS PAYABLE TO: METRO NY RSES (or call 718 232-6679 w/info)
MAIL CHECKS ALONG WITH THIS REGISTRATION FORM (***DETACHED***) TO:
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COMING TOPICS

Blower Basics

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(to be rescheduled)

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

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In the unlikely event of scheduled meeting cancellations, announcement will be posted on our web site

Wednesday Nov 8th, 2017 at 7:30 pm

at

RICCARDO'S

21-01 24th Avenue, Astoria NY 11102

Ball Valves, Filter Driers and Fittings: Proper Selection & Brazing Techniques

By

John Foster & Mark Paternoster, NDL Products & Turbotorch

PRESIDENT'S MESSAGE

IT ONLY TAKES A MINUTE

Yes, it only takes a minute to email in a meeting or seminar topic. Stan Hollander CMS is always looking for interesting and informative speakers. Just give me one minute RIGHT NOW. Think about a topic you would like to know more about. Is it what is happening with the refrigerants this coming year? Will R407C units still be available? Are you interested in how wireless is being used to connect technicians and the owner with the equipment. We have covered a lot of topics dealing with product. How about other aspects of your business. Do you want to know more about offering your customers financing? How about placing a lien on a job you did not get paid for? There must be a lot of topics that we can cover. We just need you to let us know what interests you.

Just email Stan at: educationaldirector@metronyrses.org

Also please review the enclosed seminar notice. ***"Servicing HVAC Systems"*** should be a good refresher to seasoned technician and a great help to new technicians.