

METROPOLITAN NY CHAPTER Refrigeration Service Engineers Society

Continuing Education for the HVAC/R Industry

“Better Service Through Knowledge”

March 2015

WWW.METRONYRSES.ORG



Filter Bypass

Refrigeration systems that have been severely contaminated normally require multiple filter/drier change-outs to aid in the clean-up process. When this is necessary, a removable core filter/drier is usually installed in the system and then only the core within the filter/drier body is changed out.

Changing out the core normally requires shutting down the system, removing the refrigerant from the filter/drier by either isolating the refrigerant in another part of the system or recovering the refrigerant completely from the system, then pulling a vacuum on the open section of the system, replacing the refrigerant, and turning the system back on. This is normally a time-consuming method especially when several cores will need to be replaced.

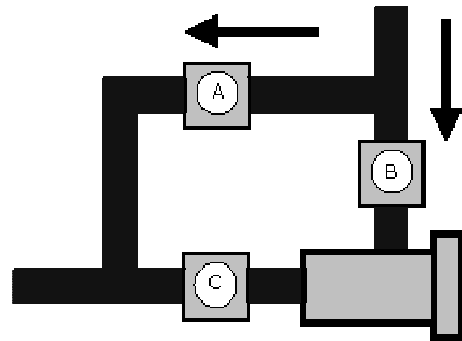
Another method is to install a filter bypass arrangement with three shut-off valves around the filter/drier. Now changing out the core only requires opening valve “A” and closing valves “B” and “C”. The system can be left in operation and only a very small section will need a vacuum pulled on it. This method makes multiple filter/drier changes quicker for a technician.

Below is a procedure to use when changing out the core of a filter/drier when this piping arrangement is used.

- With the system running, close valve “B”. Make sure valve “A” is also closed (it should already be closed).
- Allow the system to pump the refrigerant out of the filter/drier. There should be a 1/4” access fitting on the body of the filter/drier allowing a technician to monitor the process.
- When the pump out is complete, close valve “C”.
- Open valve “A”.
- Remove the end cap of the filter/drier and then remove and replace the core.
- Replace the end cap and pull a vacuum on the body of the filter/drier.
- Once an adequate vacuum level is obtained, open valves “B” and “C” and close valve “A”.

Note: Dangerous hydraulic pressure may develop if hand valves “B” and “C” are closed and the filter-drier is full of liquid. If there is a possibility of inexperienced personnel closing these valves without pumping down the line, a pres-

sure relief valve should be installed between valve “C” and the outlet of the filter/drier.



Refrigerant Cylinders

RHVAC technicians regularly handle various types of refrigerant cylinders. These cylinders can cause injury to a technician if mishandled, so keep these safety guidelines in mind:

- Use only DOT approved cylinders for the recovery of refrigerants from a system.
- Do not overfill refillable refrigerant cylinders to more than 80% of their internal volume. Be sure to use some means of determining when a cylinder has reached its 80% fill capacity. Weighing a recovery cylinder during the recovery process is a popular method of determining when the cylinder is full.
- Disposable cylinders are not reusable. Disposable cylinders must be transported in the original cartons.
- Always transport refrigerant cylinders in an upright and secured position to prevent movement during transportation.
- Recovery cylinders must be re-tested every five years. Do not use a recovery cylinder which has not been re-tested within the 5-year required period.
- If the cylinder looks damaged, do not use it. Any dents, rusting locations or gouges may indicate an unsafe condition.
- Do not warm refrigerant cylinders above a temperature of 130°F.



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By

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