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Dry-Charged Condenser Unit Installation Best Practices

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In the HVAC/R industry there's no secret about the R-22 dry charged condensing units. Due to the definition of the condensing unit being a component, and the "loophole" in the Clean Air Act stating that manufacturers can continue to make R-22 components, technicians can purchase and install dry-charged condensing units instead of converting to R-410A systems. While these units have lower Energy Efficiency Ratings (EER), when compared to the more advanced new R-410A systems, the lower initial cost to the homeowner makes this a common alternative to a full system change out, especially when the air handler and indoor coil are in good shape. In spite of the rising cost of R-22, more than three-quarters of a million dry charge units were installed in 2011. Sources suggest that in some cases, the installation of these replacement R-22 dry charged condensing units was performed improperly.

If the homeowner is not switching to an R-410A system, the reason for the equipment change must be considered when determining the service practices required. If the homeowner is simply replacing an operating R-22 condensing unit, then the line set and the indoor air handler need not be flushed, unless the new dry charged unit uses POE or some other synthetic oil instead of mineral oil. Check this, since many new compressors are being shipped with POE, PAG or PVE synthetic oil.

If there was a moisture or acid problem, then the remaining components must be flushed. Remember, never flush an expansion device or filter drier, these components must be removed prior to any flushing operations. Flushing the line set with a high-quality refrigerant flushing solvent, such as Qwik **System Flush**®, will ensure that acid, water and residual oil does not interfere with the performance or life of the new system. Never use a mineral oil or water based flushing solution, for obvious reasons.

Of course, flushing after a compressor burnout is a widely known practice. A compressor burnout spreads highly acidic charred oil throughout the system. If not removed by system flushing, this acidic oil and other decomposition contaminates will circulate throughout the system and immediately begin to damage new components. After flushing, install both liquid line and suction line filter driers, leak check the system, and perform a triple evacuation to a vacuum level of at least 300-500 microns before charging. After the system is charged and operating, if there is suspicion that residual acid may still remain, use a 2-second acid test kit, like Qwik**Check**® to quickly test for acid. If acid is detected, a non-neutralizing acid treatment, such as Qwik**Shot**® should be added to accelerate the transport of residual acid or any remaining moisture you might have missed, and get it to the filter driers for removal as soon as possible.

Using these steps will ensure that the homeowner can get many years of useful life from their new "component" installation. These useful service tips, and many more like them, can be found at **www.qwik.com** or by visiting **http://www.qwik.com/education-and-training/**. Always consult manufacturer instructions when using their products, and follow their recommendations to the greatest extent possible.