

R-410A Contractor Checklist

Are you ready for the R-22 phaseout going into effect January 1, 2010? The next couple of years will be challenging for the HVAC industry, as most original equipment manufacturer (OEM) product lines are being redesigned for R-410A and higher efficiency standards. It is important for contractors to take a strategic look at their business and ensure that they adequately plan for this massive transition.

Emerson Climate Technologies has developed this checklist to help stimulate ideas among contractors to prepare for the transition and evaluate some of the actions that may need to be considered.

Business considerations

Develop marketing plan for R-22 phaseout in 2010.

- Educate homeowners and end-users about how the R-22 phaseout will impact them.
- Identify multiple sources of consumer financing, due to higher prices.
- Re-address pricing, based on additional labor/material cost.

Make room in inventory to have necessary components available/in stock for systems with both refrigerants.

- Carefully manage old parts that will not work with R-410A for new installations.
- Ensure that technicians understand Copeland Scroll® compressor/component nomenclature for each different refrigerant.

Understand product differentiation and identify opportunities to upsell with efficiency, environmentally friendly refrigerants, diagnostics, indoor air quality (IAQ), comfort and modulation.

- Understand that new efficiency standards and product tiers will drive development of high-efficiency systems:
 - Educate end-users that new R-410A high-efficiency systems offer increased SEER (Seasonal Energy Efficiency Ratio) and EER (Energy Efficiency Ratio) over many older systems, allowing better control of energy usage.
- Be knowledgeable about how OEMs are redesigning residential and commercial air conditioning systems for both R-410A and higher efficiency:
 - New R-410A high-SEER units are significantly more efficient than many older systems, allowing better control of energy usage.

- R-410A products have proven field performance and reliability and are available today.
- R-410A units provide improved dehumidification, enhanced heat-pump performance and no refrigerant fractionation/glide.
- Evaluate new system warranties and investigate service-agreement opportunities.

Develop guidelines for replacing the entire system, versus the outdoor unit (compressor).

- Replacing old R-22 systems with new R-410A units can help protect customers against potentially higher costs for servicing and maintaining R-22 units.
- Installing a new R-410A unit means being able to consider the full life of the equipment, without concern over future availability of R-22 and necessary service components.
- Schedule extra delivery/installer, due to increased size of high-SEER units.
- Ensure sufficient technician workforce to handle additional time and work required.



Technical *considerations*

Ensure that technicians and sales staff are trained for the upcoming transition.

- Benefits of R-410A systems
- New technology in higher-efficiency systems, such as variable-speed motors and drives and modulating compressors
- Diagnostic equipment, such as Comfort Alert® diagnostics, that is now standard on several brand offerings
- Thermal expansion valves that are now standard on most systems
- Duct sizing/load sizing/CFM

Ensure that your technicians have the required tools and education for R-410A products and services.

- Provide them with gauges/hoses, recovery machines, refrigerant cylinders and hoses, leak-detection devices, vacuum pumps, moisture indicators, R-410A pressure/temperature charts, etc.:
 - R-410A operates at 50–70% higher pressures. System safety controls must be compatible.
 - Many R-410A units use a scroll compressor and are specially designed for the higher suction and discharge pressures of R-410A.

Understand installation and retrofit limitations and concerns presented by larger systems, such as space requirements, new coil configurations and control strategies.

- Find offerings that work in tight or unusual spaces.
- Develop a policy/practice for tight retrofits (indoor changeouts).
- Check line set and coil compatibility.
- Never start a compressor under a system vacuum.

Confirm the type of expansion device used on the high-efficiency system being installed and that it is the correct size for the indoor/outdoor combination.

- Most new air conditioning systems will have thermal expansion valves as standard equipment.
- Upon installing or servicing a unit with polyol ester (POE) oil, make sure that a new R-410A-compatible filter drier is installed anytime the system is opened:
 - Filter driers must be compatible for use with R-410A/POE oil systems.
- Vacuum alone will not remove moisture.
- Brazed-in or “sweat”-style filter driers must be cut out of the system, to avoid recontamination.

Be aware that mismatched equipment or improperly charged units may have inadequate latent and sensible capabilities for full-load and part-load operation.

- Recommend load calculations and installing matched systems with proper duct sizing:
 - Utilize the ACCA Manual J for accurate load calculations.
- Be aware that many of the R-22 retrofit replacement refrigerants can lead to a reduction in cooling capacity and energy efficiency.
- Develop changeout guidelines that include evaluation of evaporator coils and line set.

This checklist is a general guideline to assist in the transition to compliance with the 2010 R-22 phaseout regulation; it is not intended to be an exhaustive checklist.

The contractor is responsible for ensuring its compliance with the regulation.

For more information, visit CopelandScroll.com.