Ductless Advancements Spur Interest

Contractors, Consumers More Apt to Consider Mini-Split Solutions

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Ductless technology is gaining ground in the HVAC marketplace. What began in the U.S. as a niche technology is seemingly setting its sights on mainstream application.

"Almost every contractor in the industry is now selling some version of a ductless product," said Bryan Rocky, director of residential product management, unitary products group, Johnson Controls Inc. "Those who are not [selling ductless products] will most likely add a ductless unit to their product offering to accommodate certain applications over the next few years. The popularity of ductless units is increasing in add-on/replacement installations, and contractors today are less reluctant to quote ductless products than they were a few years ago."

With the growing acceptance and increasing evolution of ductless technology, new trends are emerging in this product sector.

Application Advancements

In examining ductless application trends, there are two primary factors to consider. The first is the location of the unit in the home or building. According to Daikin North America LLC, places

such as add-ons, sunrooms, and hot and cold spots are continuing to top the list of ductless installations. The company also noted, however, that it is beginning to see more ductless units installed in primary living spaces and is expecting an increase in this trend in the near future.

"In the coming few years, we expect more and more consumers to consider ductless technology as the primary heating and cooling source for their homes," said John Clements, director of ductless products, Daikin North America LLC. "We are also seeing a significant increase in the number of multi-split systems installed for multiple zones and entire homes."

According to representatives of Fujitsu General America Inc., creating multiple heating and cooling zones inside homes or buildings is growing in popularity.

"Multi-zones represent 25 percent of the average distributor's mini-split sales," said Roy Kuczera, senior vice president, Fujitsu General America Inc. "The multifamily housing segment has become a hot application for mini-splits, allowing tenants to cut down on their utility bills. According to Freddie Mac, in the next two years, additional rental households will be twice the 30-year annual average."

Farther down the road, manufacturers are also expecting an increase in the types of locations that ductless units are applied. Nick Shin, ductless portfolio manager, Ingersoll Rand, said, "In the next five years, we'll see builders using ductless in hotels, office buildings, and some home construction."

Toshiba-Carrier reps explained that ductless systems are innovative for multiple applications and that they see them replacing the window units so commonly used by homeowners, renters, and small businesses.

"We want living and working spaces to have the ability to expand. With ductless, this will be a possibility and likely a trend," said Meredith Emmerich, general manager, ductless split systems, Toshiba-Carrier. "Ductless is a minimally invasive, cost-effective solution to heating and cooling needs without adding ductwork or increasing the capacity of the installed system."

The second factor to consider is the regional location of the unit. Outdoor ambient temperatures play a role in ductless equipment performance, and officials at Mitsubishi Electric US Cooling and Heating Division pointed out that improvements in low ambient heating technology are on the rise. These improvements are allowing ductless heat pumps to function in low ambient outdoor temperatures.

"This capability is significant for two reasons: it means that ductless zoning technology is a viable solution for residences across the country, even in colder climates like the Midwest and New England, where heat pumps were not previously considered the best option," explained Mark Kuntz, vice president of marketing and engineered solutions, Mitsubishi Electric US Cooling and Heating Division. "Second, hyper-heating technology frequently eliminates the need for supplemental heating, making the ductless zoning system the only system needed for total comfort control."

Ingersoll Rand's Shin agrees that the next phase of cutting-edge ductless technologies will include low-ambient temperature operations.

"We are talking about super low-ambient operations in the minus 20? or minus 30?F outdoor working conditions range," he said. "This will allow for operations as heat sources in colder northern climates and Canada."

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Accessorizing Ductless

Physical and regional location options are improving with ductless units, and Daikin is expecting that some of the indoor unit aesthetics and accessories will improve, as well.

"North American consumers place a lot of emphasis on the design and aesthetics of indoor units," said Clements. "Future models could focus on improved or minimalized appearance of the indoor units."

Kuntz noted that customers will likely seek out options that provide more controls of their systems.

"We'll see a rise in the number of solutions created to increase the ease in which end users can interact with their HVAC systems through mobile devices and whole-home automation systems," he said.

Another accessory item for the growing ductless trend could fall in the lines of IAQ. According to Rocky, there are few filter options available for ductless units.

“I think we will see growth over the next few years in the addition of IAQ products to the ductless market,” he said. “I expect we will see considerably more activity around IAQ products for ductless units.”

Service and Installation

Advancements in ductless technology aren’t only bringing the product into larger markets and providing new accessories for end users, but they are also bringing contractors and technicians new trends to watch for when installing and servicing ductless units.

Protection measures, such as error codes that alert technicians if an installation is incorrect, are becoming more accessible in the ductless market, as well as various other HVAC sectors.

“These protection measures allow the technician to make corrections on-site, preventing callbacks or future service calls,” said Kuczera. “Mobile applications and online diagnostic tools aid in onsite troubleshooting, as well, providing the knowledge of how to service and fix equipment based on the error codes provided.”

Rocky said the staff of Johnson Controls’ Unitary Products Group pointed out that although they aren’t aware of a ductless service contract, the company thinks there will soon be opportunities for contractors to start selling service plans for ductless equipment.

“Given the nature of ductless units, servicing them is becoming more of a plug-and-play approach,” said Rocky. “If a unit breaks, it is simply replaced. Typically, with a service contract, the contractor will come to a customer twice a year to check the air filter, duct static, and refrigerant charge, all services that ductless units do not require. Still, I think the opportunity is coming.”

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