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renovations, additions and the

Ductless Mini-Split

a match made in **HOME COMFORT HEAVEN**

Finally, a home comfort system made for the home makeover.

The “glamorous” part of many renovation or addition projects is in the designing of the room itself and selecting the interior design elements—not in the selection of the heating and cooling system. Contractors will tell us many things—“Let’s schedule an appointment to discuss your HVAC options; it’ll be really fun”—is not one of them.

But once the curtains are hung and the carpet is installed, what you’re left with in the sweltering summer is a room that is perfectly comfortable. Or not.

The fact is, selecting the right HVAC system for your new or revamped room is almost as important as selecting the right contractor. Once the project is complete and the final bill is paid, it’s your family that experiences the room temperature day after day. On blistering days or bitter ones, whether or not the right system was selected will be obvious.

You have more options than you think when it comes to heating and cooling. You can tie into your existing ductwork *if* you already have central air and *if* your existing equipment can handle the increase in load without compromising whole-house comfort. You can add central air if it fits your budget. Or consider many other options such as electric or hydronic baseboard heating or floor or ceiling radiant. Or, dare we say it; pick up a window unit or two.

But if, after you’ve discussed these options with your contractor, you are left thinking “there has to be another way,” you are right.

Consider ductless mini-splits.

There’s another option

Ductless mini-split systems solve the problem of cooling and/or heating a space when adding ductwork is impractical or too expensive. They also replace noisy window rattlers if that is what you currently use in your home, or were considering for your new room.

A mini-split is a heat pump and air

conditioner that provides the comfort of central air but not the installation cost, messy installation or long-term maintenance costs. They combine an outdoor condenser with an indoor air handler and fit virtually anywhere. Ductless mini-splits are simple to install by qualified contractors and are economical to operate.

Mini-splits are ideal for renovation and addition projects such as sunrooms, bedrooms, family rooms, workshops, home offices and entertainment rooms. Basically, a mini-split is a small central air unit with the flexibility of cooling and heating one room or more.

With a mini-split you gain something you cannot effectively get from many

What is a Ductless Mini-Split?

A ductless mini-split is a heat pump or air conditioner that uses no ductwork. The system is split into two parts: the indoor air handler (or evaporator) and the outdoor condensing unit.

heating/cooling systems: *zoning*. The indoor units are generally wall mounted (some ceiling types exist). This allows the unit to remove heat efficiently. Air conditioners are designed to remove heat, not to add cold. Because mini-splits are mounted high on an interior wall, where warm air concentrates, the heat exchange is more efficient than other cooling methods.

Automatic swing louvers and multiple fan speeds allow you to control the amount and direction of the airflow, to maximize comfort. And because there is no extensive duct work, which leads to energy loss and external air exchange, the mini-split can “shoot” 45-degree air right into the room or space. Bottom line: a more temperate space in a shorter timeframe and that translates to lower energy costs.

Easy installation means lower overall costs. The evaporator (indoor, wall mounted unit) is connected to the outdoor condensing unit by copper tubing and electrical wiring that is passed through a 2 1/2” - 3” hole. In fact, most mini-split systems are installed in half the time it takes to install central air. This makes mini-



splits a popular choice for many addition and renovation projects because the cost savings can be diverted to other project components without compromising home comfort.

Mini-Split, Maxi-Benefits

There are many benefits to choosing ductless mini-splits for your cooling and heating needs in addition to the zoning that allows you to cool or warm only the areas that you want. Ductless minis are quiet. Manufacturers have carefully designed indoor units to have virtually noiseless louver motion and air distribution. While the noise of a window unit or central air system turning on and off, or even running, may interrupt daily living, a mini-split will not.

They are extremely energy efficient. Long lengths of ductwork associated with central air result in higher energy bills. Typical duct systems lose 25% to 40% of the heating or cooling energy. (Homes with ducts in a highly protected area may lose less.) Distribution losses



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consider going MINI when you...

- don't have ductwork but want the comfort of central air
- are adding a room but don't want the expense (and mess) of central air
- want to get rid of your window air conditioners
- have a new room in which the comfort level is not comparable to other rooms
- have warm or cool spots in your home even with central air (such as a bedroom over an un-insulated garage)
- live in an older or antique home



The whisper-quiet mini-split is ideal for media and entertainment rooms. The indoor air handler is visually and audibly unobtrusive in this newly converted above-garage space.

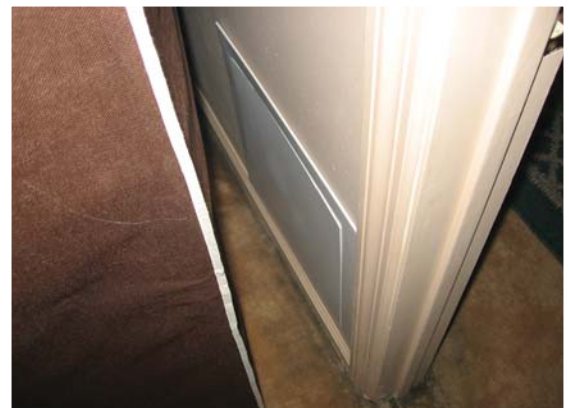
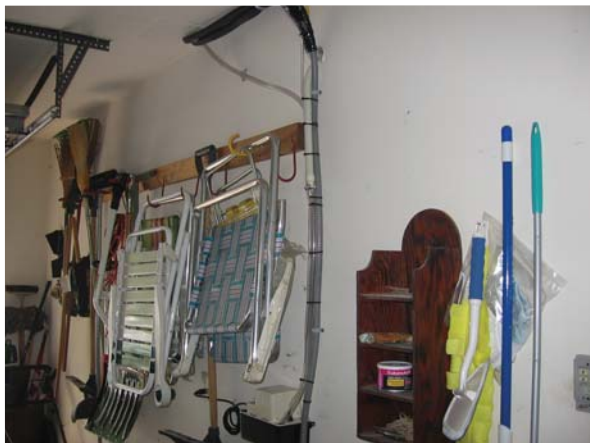


Installation of ductless systems is faster and easier than many other types of home comfort systems. Ease of installation translates to lower cost for the homeowner.

Although ductless systems are easy to install, the work must be done by a professional contractor. Here, the contractor is connecting the outdoor condensing unit to the copper tubing which will carry refrigerant to the indoor air handling unit. Shown below is the installation of the air handler.



Access panels and condensation lines (shown) are generally housed in out-of-the-way locations such as a garage.



Access panel from garage to a second floor mini-split.

Questions to Ask Your HVAC Contractor

Can you compare a mini-split system to central air or other heating/cooling options that might be right for my home?

Are mini-splits more or less energy efficient than other systems? What is SEER?

Which brands should I consider and why?

When the temperature drops, can the unit still provide adequate warmth?

What is the warranty?

How long does it take to install a mini-split? What is the cost comparison vs. central air?

What are the long-term maintenance needs and costs?

for ductless systems are about 1 to 5%.

They also help improve indoor air quality. Many units have an electronic plasma filtration device that absorbs odors, smoke, pollen and other indoor air pollutants. Many manufacturers are also "going green" with their mini-split products. Some use R410A in their systems, an environmentally friendly refrigerant that prevents the depletion of the ozone layer. And although most units are wall hung inside, they are unobtrusive visually.

Find the Right Contractor

Although ductless systems are the fastest growing segment of the heating and cooling industry, not all contractors offer this as an option to their home improvement customers. Because the savings associated with mini-splits can be great, both up front and long term, it's recommended to either ask your contractor about this option or find one who is already an authorized dealer for one of the main manufacturers. Major brands include Fujitsu (Halcyon brand), Mitsubishi (Mr. Slim) and LG.

On average, installation of a ductless system is roughly half that of a central air system. This translates to lower installation costs and lower materials costs that are passed along to the homeowner. Remember,

because of the system's efficiency, you aren't compromising comfort so don't associate lower cost with lower comfort.

Make the Best Long-Term Choice

Choosing your heating and cooling system may not be where you want to focus your energy when you're planning your home improvement project. But it's the decision you'll be most reminded of during many kinds of weather. Conscientious contractors will offer you a wide variety of options

in many different price ranges. Most options will, indeed, fit your needs and provide true comfort.

The mini-split option is a new one for many contractors and homeowners alike. Because this is an important decision, and mistakes are costly, take the time to explore your options and ask questions. And remember, when it comes to home improvement, second opinions often lead to top-notch results.

R&A

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