

The Mini-Split Heat Pump

If you are considering residential or small commercial space conditioning options, mini-split or ductless heat pumps provide a great value in heating and cooling. Since these systems are ductless, the conditioned air is forced straight into the living space without the need of a complex, expensive, often leaky, duct system. Mini-splits have been used in Europe and Asia since the 1970s and have recently began to gain popularity in the USA. These systems are very efficient and should be considered during new room additions and when upgrading older heat pumps, especially when duct replacement is required.

Ductless mini-split systems consist of two main components: the outdoor compressor/condenser and the indoor air-handling unit, also called the head. The power cable, refrigerant tubing, and condensate drain link the indoor and outdoor components. The indoor unit blows warm air from your home over cold evaporator coils. During winter, heat is moved into the home. Conversely, during summer, heat is moved out of the home. These systems use hyper-heat technology, which enables the unit to heat the house with outside air temperatures down to minus 13, without the use of expensive supplemental heat strips.

These systems have some distinct benefits like size, efficiency, and flexibility, but mainly the fact that they are ductless.

From a service and maintenance perspective, ductless mini-split units have a reputation of reliability. Proper maintenance will insure that you are getting the most out of your system. To properly maintain mini-split heat pumps, an annual service, preferably in the fall, is recommended and might be required for warranty validity. Mini-splits utilize sophisticated components to provide space conditioning for the home. It is important to hire a reputable HVAC contractor who specializes in maintenance of ductless systems for the best results. Procedures that should be performed are:

1. Airflow check, make sure the air filter inside the indoor air-handling unit is removed and cleaned and inspect the outdoor cabinet for airflow obstructions. The filter should be cleaned monthly by the homeowner.
2. Deep clean the coils to eliminate debris and contaminants to help eliminate mold and mildew growth. Clean coils are very important and have a large impact on energy efficiency.
3. Refrigerant lines, coils, and connections are inspected for leakage.



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4. Electrical connections are inspected.

A few drawbacks to the mini-split are appearance and design. Some people do not like the appearance of the indoor head. Also, qualified installers can be harder to find. Proper installation is key since oversizing and improperly located inside air handlers can cause short cycling, which wastes energy because it does not allow proper humidity control. Also, an oversized HVAC system costs more to purchase and operate.

When time to upgrade or purchase new HVAC equipment, don't forget to consider mini-split heat pumps. South River EMC offers a \$200 Energy Star heat pump rebate for units 17 SEER or higher installed by a professional HVAC contractor. For an application, go to sremc.com and look under "rebates & efficiency." For more information, contact one of the Advise Guys at adviseguys@sremc.com.

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