

# TYPES OF AIR CONDITIONERS

## **Operating Principle**

The basic types of air conditioners are room air conditioners, split-system central air conditioners, and packaged central air conditioners.

## **Room Air Conditioners**

Room air conditioners cool rooms rather than the entire home. If they provide cooling only where they're needed, room air conditioners are less expensive to operate than central units, even though their efficiency is generally lower than that of central air conditioners.

Smaller room air conditioners (i.e., those drawing less than 7.5 amps of electricity) can be plugged into any 15- or 20-amp, 115-volt household circuit that is not shared with any other major appliances. Larger room air conditioners (i.e., those drawing more than 7.5 amps) need their own dedicated 115-volt circuit. The largest models require a dedicated 230-volt circuit.



## **Central Air Conditioners**

Central air conditioners circulate cool air through a system of supply and return ducts. Supply ducts and registers (i.e., openings in the walls, floors, or ceilings covered by grills) carry cooled air from the air conditioner to the home. This cooled air becomes warmer as it circulates through the home; then it flows back to the central air conditioner through return ducts and registers.

A central air conditioner is either a split-system unit or a packaged unit.

### ***Split System***

In a split-system central air conditioner the main components include:

- an outdoor metal cabinet that contains the condenser and compressor;
- an indoor cabinet that contains the evaporator.

- In many split-system air conditioners, the indoor cabinet also contains a furnace or the indoor part of a heat pump. The air conditioner's evaporator coil is installed in the cabinet or main supply duct of this furnace or heat pump.

If your home already has a furnace but no air conditioner, a split-system is the most economical central air conditioner to install.

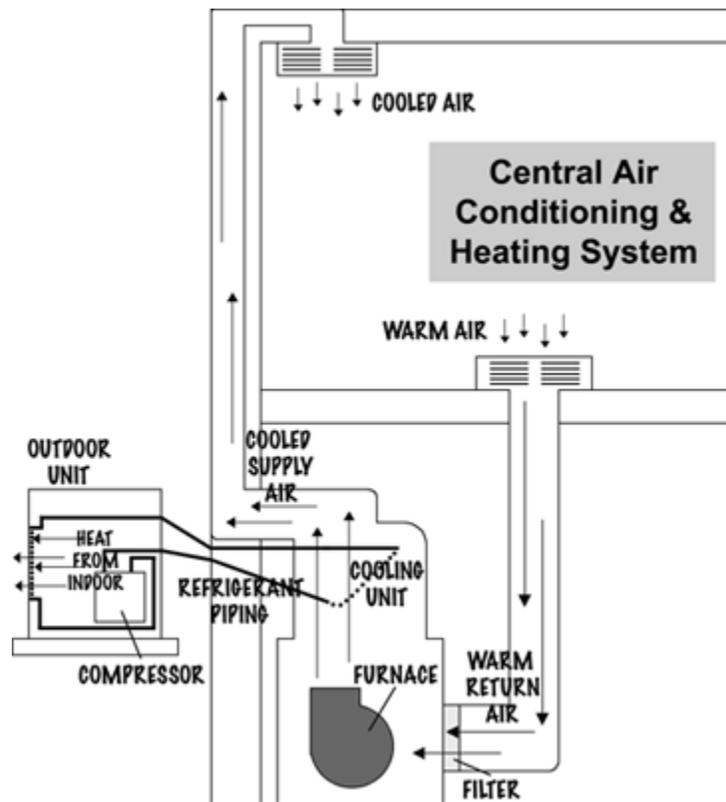
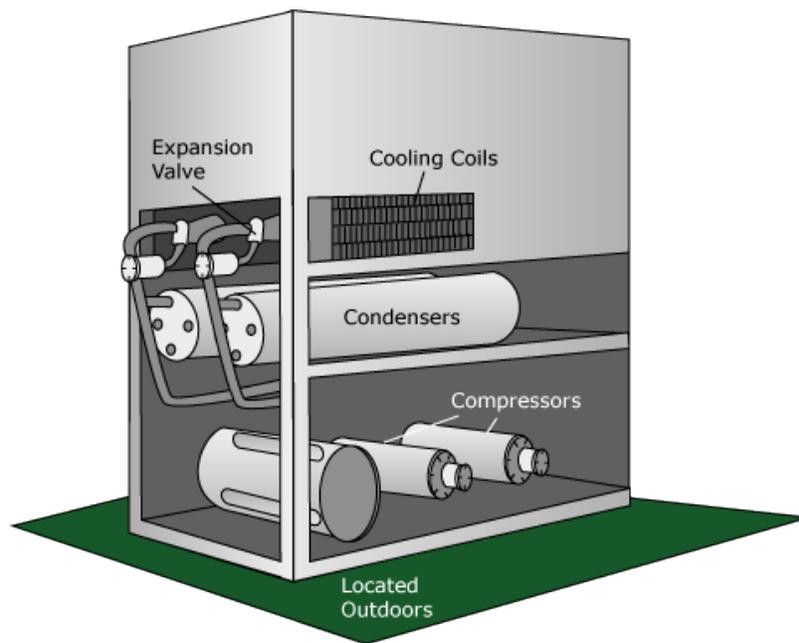


Illustration of a split air conditioning system

## *Packaged Units*

The packaged central air conditioner is usually located outdoors and consists of one cabinet that contains the evaporator, condenser, and compressor. The cabinet is usually placed on a roof or on a concrete slab next to the house's foundation. The packaged air conditioner is connected to the indoor air supply and return ducts through the home's exterior wall or roof.

Since these air conditioners often include electric heating coils or a natural gas furnace, this combination of air conditioner and central heater eliminates the need for a separate furnace indoors. This type of air conditioner is used to cool and heat homes as well as small commercial buildings



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