MyHomeWorks

Central Air Conditioner

Equipment Description

The central air conditioner unit consists of two pieces of equipment: An indoor fan/cooling coil and an outdoor fan/heat removing coil. These two pieces are connected with copper tubes that transfer heat from inside the home to the outdoors. The indoor fan/cooling coil collects moisture and drains it outside.

Loss Scenario

A dusty cooling coil air filter is the most common and easily fixed problem with central air. A dusty cooling coil air filter causes the house temperature to rise well above the thermostat setting and the unit runs longer to produce the same cooling effect. The filter(s) are located on the inlet to the air return duct work. To achieve the highest efficiency, change air filters every two months during the cooling season. Dirty air filters will not allow cooled and moisture-controlled air to recycle between the living space and the air conditioning heat exchanger.

If your central air unit does not provide cooled air within five minutes of being turned on, the air conditioner may have lost its refrigerant charge, or the compressor or the condenser or air circulation fan may have failed. Seek a diagnosis from a qualified professional. In most cases, the fan failure is determined to be the problem.

Size and Carbon Footprint

Air conditioner sizes vary, usually between 18,000 British Thermal Units (BTUH) per hour and 60,000 BTUH. Air conditioning is a big energy user and a 60,000 BTUH conditioner operated for an average summer of 1,000 hours equates to 17,500 kilowatts-hours, resulting in production of approximately 26,700 lbs of CO_2.

HCFC Refrigerant Phase Out – The refrigerant used in most air conditioning systems built prior to 2009 contain a chlorofluorohydrocarbon which is reported to be a contributor to ozone depletion. Qualified technicians will be able to maintain and repair these older systems throughout their useful lives, but it is no longer legal to manufacture or import into the United States any chlorofluorohydrocarbon-based refrigerant. This is driving up the cost of repair for these systems.

Maintenance Tips

Always disconnect the power before performing any maintenance activity.

- Remove and replace the indoor filter every two months during the cooling season for the most energy efficient operation.
  - Check the owner's manual for instructions to access the filter.
  - Purchase replacement filters from a local hardware store, home supply store, or online.
- Clean the outdoor fan/heat removing unit at least twice a year during the cooling season.
  - Remove all leaves, seedlings and weeds from the fan and from the surfaces of the coils with a light brush and or a shop vac.
  - Cut back all plants a minimum of three feet in all directions from the exterior of the refrigeration unit.

Loss Prevention Tip

- Semiannual service by a qualified professional is recommended to keep your air conditioner operating at the lowest cost, and reduce your chances of service interruption.

Energy Conservation Tips

- Installing systems that use an HFC refrigerant known as R-410a, is an excellent investment. These new systems operate at higher pressures and efficiencies. Replacing older equipment can save as much as 80 percent in energy costs.
- Install a programmable thermostat and operate air conditioning only when the house is occupied or soon-to be-occupied.
- Use window shades on sunny exposures to limit heat.
- Locate (or relocate) the thermostat to the area that is most frequently occupied to minimize over-cooling of less-used spaces.
- Use the "fan only" option when temperatures permit, to provide filtered air and conserve energy.