



# How a Heat Pump Air Conditioner Works

This energy-efficient HVAC system is growing in popularity among U.S. consumers. Understand how they work to better serve your customers.

## Facts + Figures

### 3 types of heat pumps



Air-to-air



Water



Geothermal

# 15%

of U.S. households used heat pumps as of 2015

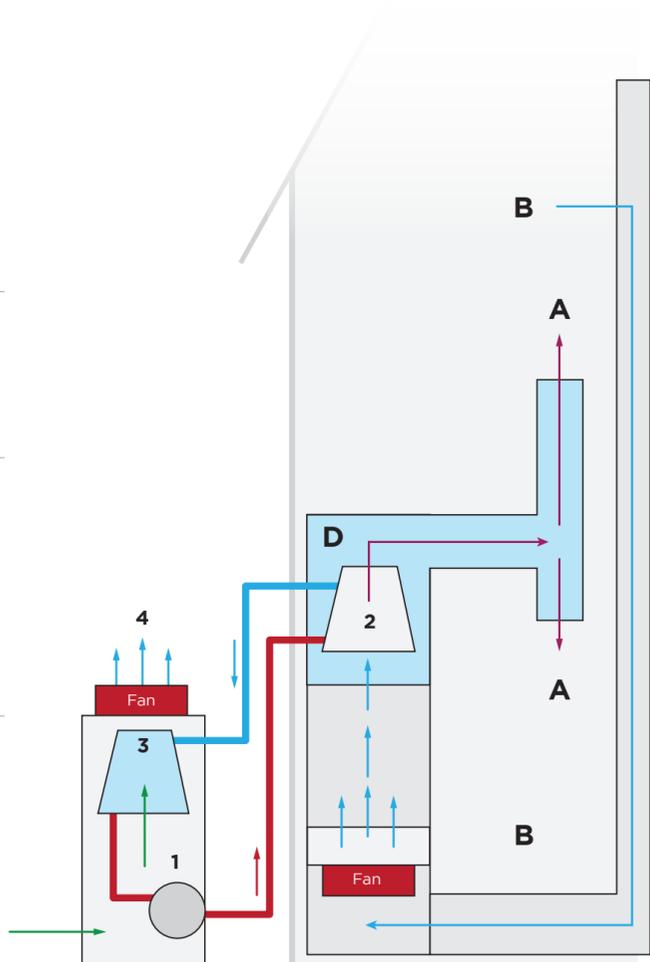
Most Common: Air-to-air

## An Overview of the Heating Process

### Air-to-Air Heat Pump

#### Air Flow Cycle

- A** Let's start with the warm air coming out of the ductwork
- B** After warming the room, the air returns into the ductwork
- C** The return air goes through a filter to remove dust/pollen and is moved through the ductwork by a fan
- D** The filtered air passes over the heat exchanger and the process repeats



#### Refrigerant Flow Cycle

- 1** The compressor in the outdoor unit pumps refrigerant coming from the outdoor coil after it has been warmed by the outdoor air
- 2** The warm, high pressure refrigerant is then pumped through the indoor coil where heat is transferred to warm up the indoor air as the fan moves the indoor air across it
- 3** The cooled refrigerant then returns to the outdoor unit
- 4** The refrigerant is warmed by outdoor air moving over the coil and the process repeats