



FREQUENCY

The frequency rating of a power supply determines in part the speed at which the motor will run. Frequency controls the RPM of the rotating magnetic field which is what the rotor follows. The formula for calculating motor RPM is: $RPM = (120)(\text{Frequency})/\text{Number of poles in the motor}$. Note, 120 is a constant value.

MOTOR TYPES

The most commonly encountered air-moving motors are Permanent-Split Capacitor and Shaded-Pole types. On the outside, these two motor types look very much alike. Sometimes, it may be necessary to disassemble the motor to be replaced to properly identify its type. This is easily accomplished by removing the thru bolts or clips, and tapping the end shields off of the motor shell.



SHADED-POLE (SP)

FACT Used where low cost and low starting torques are required. They are used to drive blowers, bathroom ventilators, range hoods, attic ventilators, down draft blowers, fan coils, etc.

FACT A Shaded-Pole motor can be recognized by the readily identifiable individual stator coil windings and the single copper band (shaded coil) formed around one side of each stator pole.

FACT Shaded-Pole motors rotate toward the shading band.



CAPACITOR START

FACT A higher starting torque motor than the split phase motor. It is constructed similar to the split phase motor. The key exception is that the capacitor start motor has a capacitor in series with the start winding to increase the start torque. The capacitor is usually visible and mounted on motor frame. Used in hard-to-start applications such as compressors and pumps.