

BLOWER WHEELS AND FAN BLADES

In many applications, Fasco PSC and Shaded-Pole motors are directly driving either a fan blade or a blower wheel. While both devices move air, a restriction to the air flow in a blower has an opposite effect on the same motor driving a fan blade. When a fan blade operates in the open (free air), the load on the motor is the least. As the air flow system or the filters become clogged, the load on the motor increases and the fan slows down. When the motor is driving a squirrel cage blower, the load on the motor decreases as the system becomes clogged and the blower speeds up.

FACT In every replacement of a motor and blower, the rotation must be identified and matched. All Fasco replacement motors have a rotation arrow marked on their nameplates. If possible, scratch an arrow on the shell of the motor being replaced to indicate the direction of motor rotation. Do this before you remove the motor or blower.

FACT Where it is impossible to determine motor rotation, the fan blade can be used. Hold the fan blade in a horizontal position, hub end up. If the blade curves down to the left, it is CW and if it curves down to the right, it is CCW when looking at the shaft end of the motor.

FACT Blower rotation is often marked on the blower wheel itself. If not, the cups of the blower fins push the air, and that is the direction of rotation.

FACT Dust build-up on a fan blade, blower wheel or rotor fin can help determine the motor rotation. The majority of dust will be on the leading edge of the fins or blades.

FACT It is desirable for a replacement propeller to have the same number of blades and pitch as the original propeller. Measure the pitch on the spider lobe, not on the wings themselves. The shape of the wing is also important. Do not interchange a pedestal fan blade that has rounded wings with a condenser fan blade that has squared wings unless you are sure it is a performance match. Two fan blades with different wing construction can vary widely in the horsepower requirements that are needed to spin them.



FACT An increase in static pressure can be caused by a clogged furnace filter. This will make a blower unload and increase in speed but deliver less air. This generally results in less air over the motor for cooling. The motor will also draw less than nameplate amps.

FACT Air output in a furnace cannot be increased by just changing motor speed.

FACT When replacing motors with fan blades mounted to them, it is a good time to inspect the blade. Check for bends, missing rivets, cracks in the blades or the hub assembly that may have appeared over its years of service. When replacing these blades, simply take note of the pitch of the wings, the diameter, original rotation, the bore, the hub, and the number of wings.

