



HVAC Tech Note #2 – January 2003

Improving the Performance of Small Direct Drive Squirrel Cage Fans

Small direct-drive forward-curved squirrel cage fans are widely used in packaged HVAC units. If you have an installation that's short of airflow, here's a tip that may get you out of a jam. These small wheels have different performance curves with motors of different horsepower, even though the nominal rpm is the same. This is because larger horsepower motors will have less slip, and will run closer to the motor nameplate rpm; higher rpm equals more airflow. Since most fractional hp motors of the type used on these fan wheels are universal motors with the same frame size, a simple motor switch may overcome the shortfall in fan performance. If you can get an OEM fan curve, you should be able to determine this. Check to make sure the wheel does not already have the largest horsepower it is rated for and that the electrical components used to control the motor are adequate for the higher amperage draw of the larger motor.

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