What are Brushed Vacuum Motors?

Brushed vacuum motors are based on a universal motor design, which uses a wound rotor and stator in series with one another. Universal motors are most commonly found in smaller, corded appliances, and have high speed and good starting capability. The workhorse of many applications, these motors have a high horsepower-per-pound ratio and are generally less expensive than their brushless counterparts.

Moisture Protection

Our Lamb® brushed motors use a revolutionary air seal technology where a fan creates a localized pressure to push moisture-laden air away from the bearings. In addition, a PTFE washer goes up against the shaft and right below the bearings on their pressure side to create a physical sliding seal.

Speed

Their design has become more economical and material-savvy, which has allowed the standard speed to increase to between 30,000 and 40,000 RPM. Some designs even exceed 50,000 RPM.

Bypass vs Thru-Flow

In bypass motors, the working air is independent from the cooling air with a separate fan used to direct cooling air over the armature and field. In thru-flow motors, the working air travels through the fan system and is discharged directly over the motor windings as it exits.

Determining the Ideal Design for Brushed Vacuum Motor

Since there are a variety of brushed vacuum motors available, there are certain questions you should ask to determine the ideal design for your application. Some of these questions include:

- What type of air will be picked up?
- What are the cooling requirements?
- What will be the operating point?
- What type of voltage?
- What is the use case?
- What other features do you need?

To learn more about Universal Motors, read our white paper Not Your Grandfather's Universal Motors. . . Anymore.

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