Slotless Brushless DC Servo Motors Deliver High Efficiency

The Pittman family of slotless brushless DC servo motors offers a number of key performance advantages, compared with conventional motors featuring slotted stator construction, and are used to power a wide range of applications for the medical/biotech, semiconductor processing, business and computer equipment, and automation industries, among others.
The motor’s slotless design minimizes magnetic cogging, or reluctance torque. The result is enhanced servo efficiency and extremely smooth and quiet motion. Slotless motors also exhibit low inductance and high current bandwidth that provides precise control, especially during rapid acceleration in demanding incremental motion applications. In addition, their excellent winding heat transfer abilities promote high thermal efficiency and transient load capacity.

Pittman slotless brushless DC motors (Series 3400, 4400, and 5400) are available in three frame sizes (NEMA 14, 17, and 23) and incorporate 3-phase slotless stators, 4-pole rotors, and neodymium magnets as standard. Depending on model, the motors can achieve maximum continuous torque up to 43 oz-in. All versions feature internal Hall-sensor feedback motor commutation, high starting torque, and variable speed control with appropriate drive electronics.

Other standard features include rugged construction, shielded ball bearings, and precision-ground hardened stainless steel shafts. Among available options are gearboxes, encoders, drives, and brakes. Modifications to the motor shaft, winding, and mechanical mounting allow for customization to suit application-specific requirements.

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