Brush-Commutated DC Servo Motors Exhibit Improved Power Density

Pittman “8540 Series” brush-commutated DC motors compare favorably with similarly sized conventional counterparts by exhibiting improved power density from bonded neodymium magnets and offering higher-performance power solutions in a compact and lightweight design. Typical applications for this family of motors range from data storage and medical equipment to semiconductor processing and automation machinery, among others. These motors are available in three lengths (2.114 in., 2.585 in., and 3.057 in.) weighing from 4.66 oz. to 7.55 oz. Depending on model, they can achieve continuous torque from 2.5 oz-in to 8.3 oz-in without heat sink. Speed, voltage, current, and torque characteristics can be varied and a selection of standard windings enables optimized performance tailored to particular application needs.

The brush system for Pittman 8540 Series motors delivers reliable and consistent performance over a longer life due to robust brass brush tracks that keep brushes aligned, constant-force springs that provide optimum brush pressure, and larger brushes offered in a choice of materials (including standard graphite).

The motors exhibit very low magnetic cogging (or reluctance torque) due to an optimized magnetic flux profile promoting smooth operation and precise positioning control in servo applications. They are equipped with pre-loaded ball bearings to accommodate high speeds, radial and axial shaft loads, and temperature extremes. A newly developed bearing support system and related construction techniques yield inherently more balanced 7-slot armatures and help minimize vibration and audible noise.

Complementary products include gearboxes, encoders, and brakes, and motors can

be customized with various shaft configurations, leadwire assemblies, and transmission components (gears, pulleys, or sprockets). All Pittman 8540 Series motors incorporate an integral header allowing for use of a wider choice of lead connection configurations and easier installation.

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