

GROSCHOPP INC. INTRODUCES AN UPDATED BRUSHLESS DC MOTOR

Groschopp Inc. introduces an updated [Brushless DC \(BLDC\) motor](#) and several [garmotor combinations](#). Due to the lack of wear components, the BLDC motor is considered to be a maintenance-free, high reliability motor with a life of 20,000 hours or more. Typically only the bearings will limit a brushless motor's life. With an outside square dimension of 73.3 mm (2.88 in) to 90.2 mm (3.55 in) the brushless motor is available in two sizes and a variety of voltages, 12, 24 and 163VDC/115VAC, offering broad torque and speed ranges.

Characteristics:

- Variable speed or torque operation
- High efficiency between 65% – 85%
- High starting torque
- 20,000+ hours life
- No maintenance
- High power density
- Totally enclosed, non-ventilated
- Continuous rated speeds 2,600 to 3,800 rpm
- Continuous rated torque of 1.8 to 10.8 in-lb

Brushless DC motors also work well with a variety of gearboxes. Groschopp catalog combinations include: right angle worm, planetary, parallel shaft, and right angle planetary reducers. The garmotor combinations are tested and optimized using a custom interface designed to ensure the motors and gearboxes function flawlessly as one unit. The interface eliminates the need to purchase a motor and gearbox separately, eliminating design and assembly time.

Similar in performance to a Permanent Magnet brush-type motor, the speed of a brushless DC motor is proportional to the voltage supplied and the torque is proportional to the current supplied, but a BLDC motor does not require brush replacement of a typical PMDC motor. Compared to AC Induction motors, BLDC motors possess a higher starting/stall torque and more horsepower in a comparable frame size. Generally, a smaller motor can be specified due to high efficiencies and the increased power density of the BLDC motor, allowing a robust motor to be integrated in a small area.

The BLDC motor is designed using standard 120° Hall Effect switches; a control is required for the BLDC motor to commutate. With the use of a proper control the motor can achieve highly customized performance characteristics. Optional feedback devices are available including incremental and absolute encoders.

Brushless DC motors work well with both variable speed and intermittent duty applications such as pumps, packaging machines, rotary gate arms and food applications.

“The demand for BLDC motors is growing, particularly for low-voltage applications, said Brent Wielenga, Groschopp’s Application Engineer. In addition to being highly efficient, the brushless motor design lends itself to minimal maintenance and long life, perfect for a variety of applications.”

Design Objective	Groschopp Brushless Motor Strengths
Quiet	Minimal mechanical and electrical noise Dynamically balanced rotor to eliminate vibration
Maintenance-free	No brushes to wear out or replace Good for rugged and high-vibration applications
Easy to Control	Depending on motor control parameters, acceleration, velocity and torque are easily controlled
Feedback	Motors are provided with 120° Hall effect switches which can achieve +/- 5% speed regulation.*
Small & Lightweight	High power density to size ratio

** With the application of a properly selected control*

As with many Groschopp products, the Brushless motor and gearbox combinations are available through Groschopp's FastTrack™ department with a variety of customized options such as shaft size, mounting configurations, brakes, power cords and bolt hole patterns. The gearmotors can also be modified for severe environment applications that involve extreme heat, dust or water.

For over 70 years, Groschopp Inc. has delivered expert technical assistance, superior product performance, quality-honed workmanship and industry experience in the manufacture of highly engineered fractional horsepower electric motors and gear motors for OEM and distribution products. With products designed and manufactured in the USA, Groschopp offers a full line of AC, DC, brushless DC and universal motors that can be combined with right angle worm, planetary, right angle planetary or parallel shaft gearboxes. (An ISO 9001:2008 registered company.)

###

To learn more about Groschopp Inc. or their updated Brushless DC motor and gearmotor combinations, contact Jennifer Dorhout at 712.722.4135 or visit us on the web at: www.groschopp.com. We're located at 420 15th St. NE, Sioux Center, IA 51250-2100 USA.