Gearmotors rated for 28.5 N-cm (40.4 oz-in) continuous torque

In the field of Concentrated Solar Power (CSP), Parabolic Trough Collector (PTC) technology is one of the most widely used, and Dunkermotor's new Bifurcated Wormetary gearmotors are designed to meet that application's requirements, while offering several unique benefits. Dunkermotor, now part of AMETEK Precision Motion Control, has further refined its unique Wormetary gearing to provide dual high-torque outputs from a single, efficient gearmotor. The motor itself is a special long-life brush motor design with 60 volt input and rated for 28.5 N-cm (40.4 oz-in) continuous torque. It features IP65 environmental protection along with a unique condensation prevention membrane to further prolong life.

The innovative Dunkermotor Bifurcated Wormetary gearing combines a right angle worm gear to turn the corner with a pair of efficient planetary gearboxes for a total reduction ratio of 529:1, without an undue sacrifice in efficiency. Overall reductions up to 50,000:1 can be achieved with the Wormetary configuration.

The gearboxes share the load through beefy 25mm output shafts and each side is rated for a continuous output torque of 160 N-m (1,416 in-lbs) and peak outputs of 320 N-m (2,832 in-lbs). One benefit of the Wormetary configuration, compared to worm gearing alone, is that at an overall ratio of 80:1 the new configuration is 2.5 times more energy efficient.

For the CSP application, the Wormetary gearing is non-backdrivable, which is a

benefit in the presence of wind loading. With planetary gearing in its output stages, the load is spread over many contact points around each gear, thus offering much greater protection from shock loading than helical gears used in other high efficiency right angle gearmotors.

"The Wormetary gearing offers the high-reduction ratios needed for Parabolic Trough Collectors' low-speed operation. Their dual output shaft configuration is ideally suited for this type of CSP application. It also lends itself well to certain Linear Fresnel Collector applications where it can replace special slew drives," notes John Morehead, Dunkermotor vice president, business development.

"With Dunkermotor's configurable modular system we can just as easily supply Bifurcated Wormetary solutions with our intelligent servo and brushless dc motors. The intelligent servo motors feature integral control capabilities ranging from 4-quadrant digital speed or positioning to master electronics, including CANopen, Profibus and EtherCAT fieldbus connectivity."

The low-voltage (12-60 volt) brush and brushless motors are available in frame sizes from 42 to 80 mm, with power up to 530 Watts (0.71 hp) and are part of a modular system that includes motors, gearing, controls, fieldbus interfaces, encoders and brakes.

To meet customers' international use requirements, Dunkermotor's brush DC, brushless DC and Intelligent Brushless DC, iBLDC, motors have received not only UL and cUL certifications for the United States and Canada but also CE and CCC certifications for the European and Chinese markets.

http://www.dunkermotor.com [1]

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