

Small spindle drives are now also available in wearproof ceramic. Two new complete systems composed of spindle, axial bearing, and gearhead.

With the GP 8 S and GP 16 S spindle drives, maxon motor is expanding the program and simultaneously launching the ceramic spindle. The ceramic spindle is an extraordinary product, with several advantages.

The GP 16 S with ceramic spindle joins the ranks of the existing 16 series spindle drives. With its unique metric M6 ceramic spindle, it transmits up to 315 N in short-term operation. These axial forces are compensated by axial ball bearings in the gearhead's output stage. The variety of reduction ratios possible in the integrated planetary gearhead makes the spindle drive suitable for highly dynamic applications such as focusing systems or valve and flap adjustment.

The small 8 mm GP 8 S spindle drives come standard equipped with metric steel spindles or ceramic spindles. The M3 x 0.5 mm spindle is designed for feed forces of up to 32 N in short-term operation. Two pre-loaded ball bearings serve as the axial bearing. Due to the extremely compact design, the GP 8 S spindle drives achieve a very high force/volume ratio, a characteristic highly desirable for collimators, dosing pumps, and many other applications.

Spindles made of high-tech ceramic – better than steel!

maxon ball screws made of zirconium dioxide (ZrO₂), a high-performance ceramic, feature many advantages over conventional steel spindles or expensive ball screws, advantages that can be critical for your application. For instance, the ceramic spindle has nearly negligible slip-stick effect, so start up is smooth and free of jerking. Due to the outstanding sliding characteristics and the high wear-resistance of the ceramic spindle, it's possible to achieve high speeds and also allows for highly dynamic, precise movements. The life span of the ceramic spindle is several times that of steel spindles, assuming that a suitable threaded nut is selected. Ceramic spindles can be used in high-temperature applications, as well as in magnetically inductive environments. For example, a ceramic spindle will not interfere with the magnetic field in an MRI scanner. The biocompatibility of the material makes ceramic spindles of particular interest for medical engineering.

Length of the media release: 2292 characters, 359 words

This media release is available on the Internet at: www.maxonmotor.com

maxon motor ag

Brünigstrasse 220

Postfach 263

CH-6072 Sachseln

Tel: +41 (41) 666 15 00

Fax: +41 (41) 666 16 50

E-mail: info@maxonmotor.com

Internet: www.maxonmotor.com



Figure 1: Ceramic version of the GP 8 S spindle drive with RE 8 motor, Ø 8 mm.



Figure 2: Ceramic spindles in various sizes with thread nuts.