

New from maxon: BLDC motor EC 19 and planetary gearhead GP 19 M.

High power up to 120 W, speeds up to 100,000 rpm, sterilizable 1000 times.

The new brushless drive with a diameter of 19 mm has been specially designed for high speeds and features low heat development and extremely quiet and low-vibration running. This little powerhouse has applications in centers for miniaturized processing, hand-held tools and medical technology. When combined with planetary gearheads, many possible variations are available for applications in these key markets.

With its modular construction, this new brushless DC motor is available in three performance classes: the cost-optimized EC 19 at 60 Watt, the strong and high-speed EC 19 at 120 Watt and the sterilizable high-end version EC 19 at 120 Watt. The internals of the drives are responsible for their individual characteristics:

- The EC 19 at 60 W is equipped with a magnetic circuit that is designed for speeds of up to 80,000 rpm. The maximum continuous torque is 12 mNm and the motor contains no Hall sensors.
- The EC 19 at 120 W has been designed for speeds of up to 100,000 rpm and delivers a high continuous torque of 24 mNm. Versions with and without Hall sensors are available.
- The EC 19 Sterilizable at 120 W may be sterilized in an autoclave 1000 times. With a maximum permissible speed of 100,000 rpm and 24 mNm continuous torque, this drive also withstands high temperatures and harsh steam cycles. This is achieved through careful selection of materials and through protection of the components such as in the hermetically sealed rotor magnet.

With maxon motor's winding technology, it is possible to offer various voltage versions. The stator has been designed without slots. Therefore, no cogging torque occurs resulting in excellent control properties and extraordinarily smooth running. Together with an optimally balanced rotor, low-noise and low-vibration operation is easily achieved.

maxon's new sterilizable planetary gearhead, the GP 19 M is ideal for applications requiring very high speeds – input speeds of up to 40,000 rpm. To accommodate such high speeds, the toothing and materials have been especially designed to minimize friction. A key demand placed on the material is 1000 sterilization cycles. The gearhead contains a special shaft seal. Worth noting is the no-need to disassemble the drive unit for the sterilization process.

The new 19 mm drives are particularly suitable for surgical and dental devices, such as arthroscopic shavers and bone drills. There is also a focus on respirators and CAD/CAM spindle drives.

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

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Figure 1: EC 19 High Power 120 W brushless DC motor. Diameter 19 mm, length 58 mm, with or without Hall sensors.



Figure 2: Sterilizable planetary gearhead GP 19 M with a maximum permitted continuous torque of 0.315 Nm and suitable for a motor speed of 40,000 rpm.