

New Autoclavable brushless DC motor range and sterilisation cycles.

There are many different benchmarks in the marketplace for the sterilisation capabilities of devices. maxon motor explain the cycle and testing process for Autoclavable brushless DC motors.

maxon motor develop brushless DC motors that can be sterilised for medical and dental applications. Recently released is the new ECX range of motors with sterilisation capability on 13,16,19 and 22mm diameter versions. The new range of motors complement the existing 4 pole sterilisable 30mm brushless 150W motor and offer high speed capability up to 120,000rpm. maxon motor test the brushless motors to either 1000 autoclave cycles or 2000 cycles depending on the product. For motors with hall sensors fitted the motor is typically cycled through 1000 autoclave cycles and without hall sensors 2000 cycles. Gearheads are available with additional shaft seals. With the additional seal they are tested to 2000 cycles and without, 1000 cycles. Another new product that offers a completely sterilisable positioning system for the first time is an encoder rated and tested for 1000 cycles.

The maxon motor internal autoclave testing is carried out with the autoclave with a vacuum phase. The motors are unpacked and mounted without any additional protection. Three vacuum cycles are made at the beginning to ensure the internals of the motor become damp. The sterilisation atmosphere is built up with steam which remains constant for 18 minutes at 134°C, 100% humidity and 2.3 bar of pressure. The unit is then cooled to 70°C and dried. Each individual autoclave cycles takes approximately 1 hour. After 100 cycles the motors are removed from the autoclave and visually checked and motor operation is checked. Following this the motor is then removed after 250 cycles and visually checked in addition to data acquisition of the running data, motor noise, vibration and electrical strength test at up to 500V DC. Typical batch test cycles are conducted with 10 pcs and the tests are repeated with design changes. Internal testing of the motors to 2000 cycles takes approximately six months.

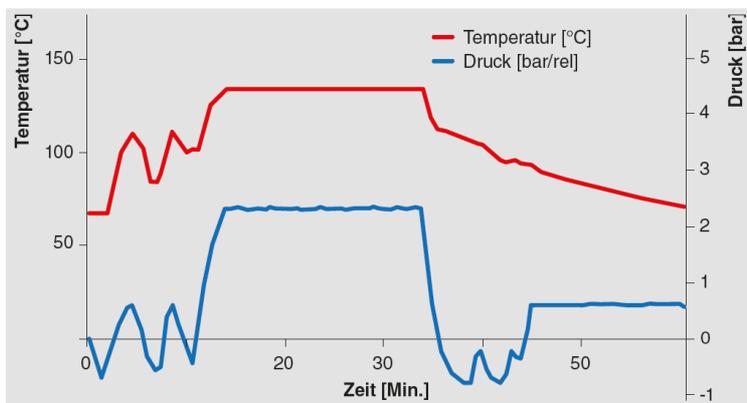
Contact maxon motor Australia for assistance with Autoclavable brushless DC motor options tel +61 2 9457 7477.

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The media release is available on the internet at: www.maxonmotor.com.au



Autoclavable brushless DC motor
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