

Micro DC motor perfectly adapted.

This very small DC micromotor has morphed into a perfect application solution. It is in fact, a brushed DC motor, planetary gearhead and magnetic encoder customised to suit the application.

Being only 10mm diameter it requires close inspection to notice the unique changes that have been made to the motor solution. Through extensive and vigorous testing the design engineers for the end application have individually examined and “tweaked” almost every feature. The first prototypes delivered used a standard maxon RE10 motor and GP10 planetary gearhead. It was found that the extremely space constrained location where the motor is mounted required the assembly technicians to tightly bend the cables where they exited the digital encoder. This caused strain on the solder terminations of the encoder PCB. maxon quickly implemented the customers following request for a resin to be applied at the cable exit to assist with strain relief. This assisted to an extent by making the motor design more robust however it was what is commonly referred to as a “band-aid solution”. Further testing revealed the true cause of the cable strain came about because of an unspecified cable exit angle with relation to the customer fitted custom front flange for the motor. Also further exacerbated by the screw on mounting assembly between the motor and gearhead that allowed for various angle of orientation that were torque dependent. This in a small number of occasions caused the cable to interfere with other components in the machine. A solution offered by maxon motor Australia was that at the point of motor fabrication, the front motor mounting flange and customer drive element be laser welded in place. This is difficult enough to achieve given the motors micro dimensions but additional drastic changes had to be made to facilitate the customisation. This being a completely redesigned gearbox with a stainless steel construction to enable welding of the flange to the motor body. A special jig was constructed to hold the motor and encoder cable exit in specific orientation with the front flange whilst welding takes place to ensure consistent part relationship. Thus, over time maxon motor have morphed a standard catalogue motor and gearhead into a perfectly suited custom solution.

Contact maxon motor Australia at their Sydney office on Ph: +61 2 9457 7477.

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



*Custom micro DC motor,
gearhead and encoder ©
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