CSIRO Ocean and Atmosphere flagship overcome engineering challenges with the assistance of maxon DC motors.

Maxon DC motors provide controlled actuator movement where traditional mechanical linkages fail.

When a motor needs to run at the end of a 3000m long fiber optic cable you need to be assured of its quality, efficiency and reliability. This is why CSIRO engineer Matthew Sherlock turned to maxon motor for assistance when the existing mechanical linkages on their ocean floor core sampling device were shown to be unreliable. The RE range of DC motors are a “coreless” motor that do not use a laminated stack in the design. It uses the maxon rhombic winding that gives a zero cogging (no mechanical detent) motion for smooth actuation. The rhombic winding also provides the smallest possible air gap between the magnet and return because there is no overlap of the winding wires commonly seen in skew wound rotors. This combined with the lack of iron cores where eddy currents would normally form, gives the motor design the high efficiencies required for umbilical or battery applications. To achieve the required torque the motor is coupled with a planetary gearhead and to increase the efficiency and lifespan the gearhead is fitted with ceramic axles. Within the instrument the motors function is the close the sample tubes after it is lowered to the sea floor to collect soft substrate, capturing the sample for analysis at the surface.

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