



Pioneering device could double the number of human organs available

In a world first, a donated human liver has been 'kept alive' and successfully transplanted.

Since transplants commenced organs have been preserved and transported in cold ischemic storage. The organs during this stage are not functioning and at risk of being damaged and becoming unusable. A technology developed at Oxford University, using maxon motor brushless DC motors and gearheads, could preserve a functioning liver outside the body for 24 hours which would dramatically increase the numbers of organs available for transplant. About 700 liver transplants are carried out in the UK each year, but more than 100 patients die each year while on the waiting list.

Professor Constantin Coussios (of the Institute of Biomedical Engineering), Professor Peter Friend (Director of the Oxford Transplant Centre), and colleagues have been researching the technology since 1994. In 2008 the spin-out company OrganOx was formed, through the University's technology transfer firm Isis Innovation, in order to commercialise the Oxford research. OrganOx, headed by CEO Dr Les Russell, developed the device that is now being trialled at the liver transplant centre at King's College Hospital. maxon motor uk have been involved in the development since its inception. Each OrganOx system incorporates 3 maxon EC-max 22 brushless DC motors with GP22C planetary gearheads with ceramic axles. Ian Bell, a Senior Sales Engineer from maxon motor, explained 'The motors drive the pumps propelling vital fluids through the liver. A key requirement for the system is reliability with power consumption, size and weight also being a consideration as the device is portable. The system must run continuously and maxon brushless motors offer tens of thousands of hours running life and the ceramic axle gearbox offers about twice the life of the conventional steel axle.'

Many approaches to improving outcomes with cold ischemic storage have been explored to date but none have demonstrated consistent clinical benefits over cold storage. Wayel Jassem, transplant surgeon said: "I was impressed to see how quickly each liver started to function following the transplant. This technology has the potential to be hugely significant and could save lives."

It is too early to draw any firm conclusions as to the benefits of 'warm liver' transplantation and it may be several years before liver specialists can tell whether the technique has proven benefits. Further trials are due to take place at King's College Hospital, the largest liver transplant centre in Europe, and in other European countries.

maxon have a vast amount of experience in the medical device field with over 55% of maxon motor's production devoted to the sector.

maxon motor provides, as standard, a batch-traceable number on every motor to fully complement its ISO 9001 certification. Amongst the many quality standards maxon holds is the medical accreditation ISO 13485, for its ceramic and sub-10mm motor division, as well as EN9100 for the aerospace market.

About maxon motor

maxon motor is the world's leading supplier of DC motors, brushless motors, gearheads and controllers. We offer high quality, innovation, competitive pricing and highly specialised solutions.

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Communication
Surveillance cameras
Automotive
Consumer applications

maxon's motors, gearheads, encoders, brakes and controllers are all perfectly compatible and offer an almost unending number of possible combinations. The maxon modular system gives the ideal combination for the required application.

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