Electric Manipulator Arm

CSIP will launch a Five-Function Electric Underwater Manipulator Arm, ARM 5E, at Ocean Business stand H2. The all-electric arm has been designed to compete with hydraulic arms on the market but offers several advantages. ARM 5E has a minimum lift capacity of 25kg and can be mounted in the same footprint as a conventional hydraulic arm but does not require the use of a skid, valve pack or hydraulic pump. This saves weight and allows greater vehicle manoeuvrability.

Like hydraulic arms, the 5 Function Electric Arm can be used for clearing debris, turning valves and cutting but has more incremental movement, allowing for greater accuracy and more precision in operation. ARM 5E uses a digital positioning feature to achieve accuracy of 0.5mm and the computer control electronics use position feedback to detect where the arm is at all times. ARM 5E also features a learning function which stores the manoeuvres performed by the arm and combines with a memory function for repeated actions.

A keynote of the design is its modularity, if a part should break, spares can be used to repair the arm or a specific modular section can be flown out and fitted on site rather than returning the arm to a central repair base. Rated for use at depths down to 3000 metres, the new electric arm has a radius of 1.044m reach and a slew of 120° and is constructed of HE30 hard anodised aluminium, 316 stainless steel and nickel aluminium bronze.

The electric motors are brushless and will operate in oil, all the actuator and junction box voids are therefore oil-filled and pressure compensated to 0.4 Bar above ambient, with 7500 metre rated seals. In the unlikely event of a seal breach, oil may leak out but water cannot leak in. The surface control unit is user-friendly and comprises a joystick for left/right (slew) controls and up/down movement. A twist function operates jaw rotate and a thumbwheel controls the jaw open/close.

ARM 5E will be launched at Ocean Business, Stand H2, and visitors are welcome to view a demonstration.

https://www.hydro-international.com/content/news/electric-manipulator-arm