

## 5 Function Manipulator

The HLK-50010 is a 5 function rate-controlled manipulator making use of an HLK-25000 jaw rotate offering continuous rotation on the wrist and a jaw opening range of 154mm (6") and a soft line cutting capability of 19mm (3/4") from the back side of the jaw plates.

This manipulator was specifically developed for use on observation to light duty work class vehicles to provide manipulation capabilities and is ideal for applications such as jetting and brushing operations, debris clearance, valve turning and bolt torqueing, rope cutting, cable repair, biological and geological sampling, archaeological work, transponder and probe installation, salvage and recovery.



## Features

- 5 degrees of freedom manipulator
- Compact and lightweight at 18.2kg (40lb) in water
- Lift of 80Kg at full reach
- Continuous wrist rotate and a jaw opening of 154mm (6")
- Incorporates a 19mm soft rope cutter

World leader in electric underwater robotics

## Technical Specifications

### General

|                    |   |
|--------------------|---|
| Degrees of Freedom | 5   |
| Control Type       | Rate Controlled                                 |
| Materials          | 316 Stainless Steel, 6082 Aluminium, HDPE       |
| Seal Materials     | Nitrile/NBR/Buna-N, PTFE                        |
| Product Finish     | Hard Anodised, Painted                          |
| Ports              | 1/8" BSPP (ISO 1179)<br>7/16" SAE (SAE J1926-1) |
| Dimensions         | Refer to Drawing                                |
| Weight in Air      | 25.2kg (55.4lb)                                 |
| Weight in Water    | 18.2kg (40lb)                                   |
| Maximum Reach      | 922mm (36")                                     |
| Wrist Travel       | Continuous                                      |
| Jaw Opening        | 154mm (6")                                      |

### Hydraulic Performance

|                          |   |
|--------------------------|---|
| Max. Working Pressure    | 140bar (2000psi)  |
| Flow                     | 0.5lpm to 6lpm (0.13gpm to 1.58gpm)   |
| Fluid Type               | Mineral: DIN 51524, ISO 11158, ISO 6743-4<br>Synthetic: Panolin Atlantis, HLP-Synth |
| Viscosity                | 16cSt to 220cSt. VG 22-32 Recommended   |
| Fluid Temperature        | 5-60°C (41-140°F)   |
| Cleanliness Requirements | ISO 4406:19/17/14, NAS 1638:8, AS4059:9A/8B/8C                                      |

### Performance

|                            |                                    |
|----------------------------|------------------------------------|
| Wrist Torque               | 60Nm @ 140bar (44lbf.ft @ 2000psi) |
| Jaw force                  | 690N @ 140bar (155lbf @ 2000psi)   |
| Soft Rope Cutting Diameter | 19mm (3/4")                        |
| Lift at Full Extension     | 80kg (176lb)                       |

### Environmental

|                       |                       |
|-----------------------|-----------------------|
| Operational Depth     | 6000msw (19,680ft)    |
| Operating Temperature | 5-60°C (41-140°F)     |
| Storage Temperature   | 0-70°C (32-158°F)     |
| Humidity              | 0% to 100% Condensing |