

# MOHAWK Inspection ROV System



Sub-Atlantic's fully electric MOHAWK remotely operated vehicle is a small compact, high performance professional ROV system which can be used for a variety of underwater tasks including observation, survey, NDT inspections and tooling.

- High Reliability, Easy Maintenance
- Sub-Atlantic AC Propulsion Thrusters
- Multiple Camera and Sensor Interfaces
- 1000 msw / 3280 fsw Depth Rated
- Auto-Heading and Depth (Optional Auto-Altitude)
- Plastic Open Frame Design
- Live Boat or TMS Operation
- 35 kg / 77 lb Payload
- Manipulator Options
- Tooling Skid Options

This small, professional inspection ROV delivers exceptionally high thrust in all directions from Sub-Atlantic's reliable AC power thruster system. Mohawk provides high quality video for inspection work but also has the capabilities for running underslung tool packages such as tree valve torque tools, high pressure water jetting pumps and small hydraulic or electric manipulators. Mohawk is rated at 1000 msw / 3280 fsw standard but can be easily upgraded to 2000 msw / 6560 fsw. Mohawk uses a small diameter main lift cable which reduces the Launch and Recovery System requirements and vessel deck space.

## Live Boat or TMS Operation



The Mohawk can be free-flown in 'live boating' mode or with our cage type TMS systems (see TMS datasheet). We also offer a range of Launch and Recovery Systems (LARS)

## Compact Control

Surface equipment consists three basic units:

- Surface Control Unit (SCU) in an 8U x 19" rack mount configuration.
- Transformer Power Unit (TPU) incorporating transformer in a floor mounted cabinet
- Hand Control Unit (HCU) which is lightweight and portable.

The components are generally installed in a ISO control cabin supplied by customer or Sub-Atlantic.



The HCU (top), SCU (left ) and TPU (right) are compact for operation in small control spaces. The three units are linked by interconnecting cables with plugs and sockets

As an alternative, the HCU and SCU can be supplied mounted in a 19 in. rack mount flight case complete with two 9" colour monitors. An additional spare slot can accommodate a video recorder. The rear case panel fixes to the base during operation to locate the HCU.



## Mohawk System Specification

### ROV General Specification

Depth Rating.....	1000 msw (3280 fsw ) standard (deeper options)
Payload: .....	35 kg (77 lb) lead ballast
Height.....	620 mm (24.4 in.)
Length.....	930 mm (36.6 in)
Width .....	770 mm (30.3 in)
Mass in Air.....	165 kg (364 lb)
Max. Thrust @ 0 Knots with zero voltage losses:	
Forward .....	80 kgf (110 lbf)
Reverse.....	68 kgf (88 lbf)
Lateral.....	60 kgf (61 lbf)
Vertical.....	30 kgf (61 lbf)
Max.Velocity/Operational Current (zero tether excursion):	
Forward.....	1.5 m/s (3.0 Kt)
Reverse.....	1.5 m/s (3.0 Kt)
Lateral.....	1.25 m/s (2.5 Kt)
Vertical.....	0.75 m/s (1.5 Kt)
Turning Rate.....	120 Degrees per Second (approx)
ROV Power Requirements .....	440 Vac 3 ph 50/60 Hz 8 kVA

### Surface Equipment General Specification

#### SCU

Height.....	355 mm (14.0 in.)
Width .....	483 mm (19.0 In.)
Depth.....	450 mm (17.7 In.)
Mass.....	12 kg (27 lb)
SCU Power Requirements.....	220/240 Vac 50/60 Hz 2 kVA

#### TPU

Height.....	650 mm (25.6 in.)
Width .....	630 mm (24.8 In.)
Depth.....	505 mm (19.9 In.)
Mass.....	(approx.)50 kg (330 lb)

#### HCU

Height.....	160 mm (6.3 in.)
Width .....	480 mm (18.9 In.)
Depth.....	230 mm (9.1 In.)
Mass.....	1.5 kg (3 lb)

#### Flight Case Option with 2 x 9" monitors & 8U control module

Height (operation).....	980 mm (38.6 in.)
Height (transport).....	800 mm (31.5 in.)
Width .....	520 mm (20.5 In.)
Depth (operation).....	720 mm (28.3 In.)
Depth (transport).....	550 mm (21.7 In.)
Mass.....	66 kg (145 lb)
SCU Power Requirements.....	220/240 Vac 50/60 Hz 2 kVA

#### Tether and Main Lift Cable Dimensions

Tether (standard).....	19.5 mm / 0.77 in. diameter
Main Lift Umbilical (standard 3000 Volt system) .....	25.4 mm / 1.0 in. diameter

## Reliable Thrusters

Mohawk is propelled by five Sub-Atlantic CTE01 thrusters incorporating AC electric motor arranged in the following configuration:-

- 4x single propeller thrusters in a vectored configuration producing high all round thrust & speed
- 1 x twin propeller vertical providing near to equal up & down thrust.
- Power to each thruster is through an integral lead and moulded plug for attachment to electronics enclosure.



*Sub-Atlantic's CTE01 reliable brushless AC thruster develops 29 kgf (64 lbf) of static thrust. The design of the housing allows the stator to be easily replaced in the field.*

## Electronic Pod and Telemetry

- Fibre-Optic telemetry system providing 3 x video, 4 x RS232 & 2 x RS485. Capacity can be doubled using two FO telemetry cards.
- Vehicle Communication utilises 1 x RS485 channel. Uplink/Downlink includes 16 analogue channels and 32 digital switch channels all with 12 bit resolution.
- All electronics are located in an aluminium alloy housing rated to 1000 msw / 3280 fsw with some free space for additional devices.
- Housing centre section incorporates all the electrical connectors for the various ROV components and optional sensors.
- Vacuum and water ingress alarms.
- Options to 2000 msw / 6560 fsw.

## Lighting

- 3 off 250-Watt halogen lamps, dimmer controlled on 2 circuits

## Camera Facilities

- Tilt unit on upper deck..
- 3 simultaneous video channels.

## Junction Box

- An oil filled junction box is used for termination of the copper and fibres in the tether.

## Vehicle Power Outlet

- 440 / 220 Vac and various dc supply voltages are available to run tools and sensors. Additional power supplied can be added as required.

## Frame

- High impact resistance & buoyant polypropylene.
- Central load frame in aluminium alloy.
- Optional bullet for live boating.



*The Mohawk is more than an inspection ROV. Here, it is shown fitted with a 1600 Nm tree valve torque tool skid. This operation is normally carried out using a work-class ROV.*

## Buoyancy

- Single module with closed cell microspheres,
- Rated 2000 msw (6560 fsw).

## Surface Equipment

SCU (Surface Control Unit)

- 2 off 15" Colour monitors
- Light dimmers
- Automatic depth & heading control (altitude optional)
- Tether/Umbilical turns counter
- Video overlay system
- Earth leakage protection system

HCU (Hand Control Unit)

- 2 x control joysticks
- Light dimmer controls
- Camera and Tilt controls
- Digital switches
- Auto-function control
- Joystick trims
- Thruster power trims and isolations
- TMS tether pay in/out

TPU (Transformer Power Unit)

- 3000 Volt transformer
- Line insulation current monitor
- Main lift cable entry gland

## Tether

- The Mohawk uses an 19.5 mm / 0.77 in. diameter tether.

## Main Lift Umbilical

- Sub-Atlantic ROVs use a common 25.5 mm / 1.0 in. diameter umbilical suitable for all our open frame vehicles, simplifying spares and interchangeability between systems.

## Sensors & Equipment

The Mohawk ROV system will support a range of sensors and equipment, typically:-

- Cameras, Sonar's, Oceanographic Sensors,
- Small hydraulic and electric hydraulic manipulators
- Tool skids, small HPU's and valve packs, torque tools, etc.

## Tether Management System

Available in three sizes, Sub-Atlantic's cage type TMS is renowned in the industry for ruggedness, reliability and simplicity.

- Size 1 suitable for Mohawk
- 250 metres capacity of 19.5 mm / 0.77 diameter tether
- Stainless steel telescopic frame allowing underslung tool skids on ROV
- Fully electric, single drive motor

Refer to Cage Type TMS data sheet.

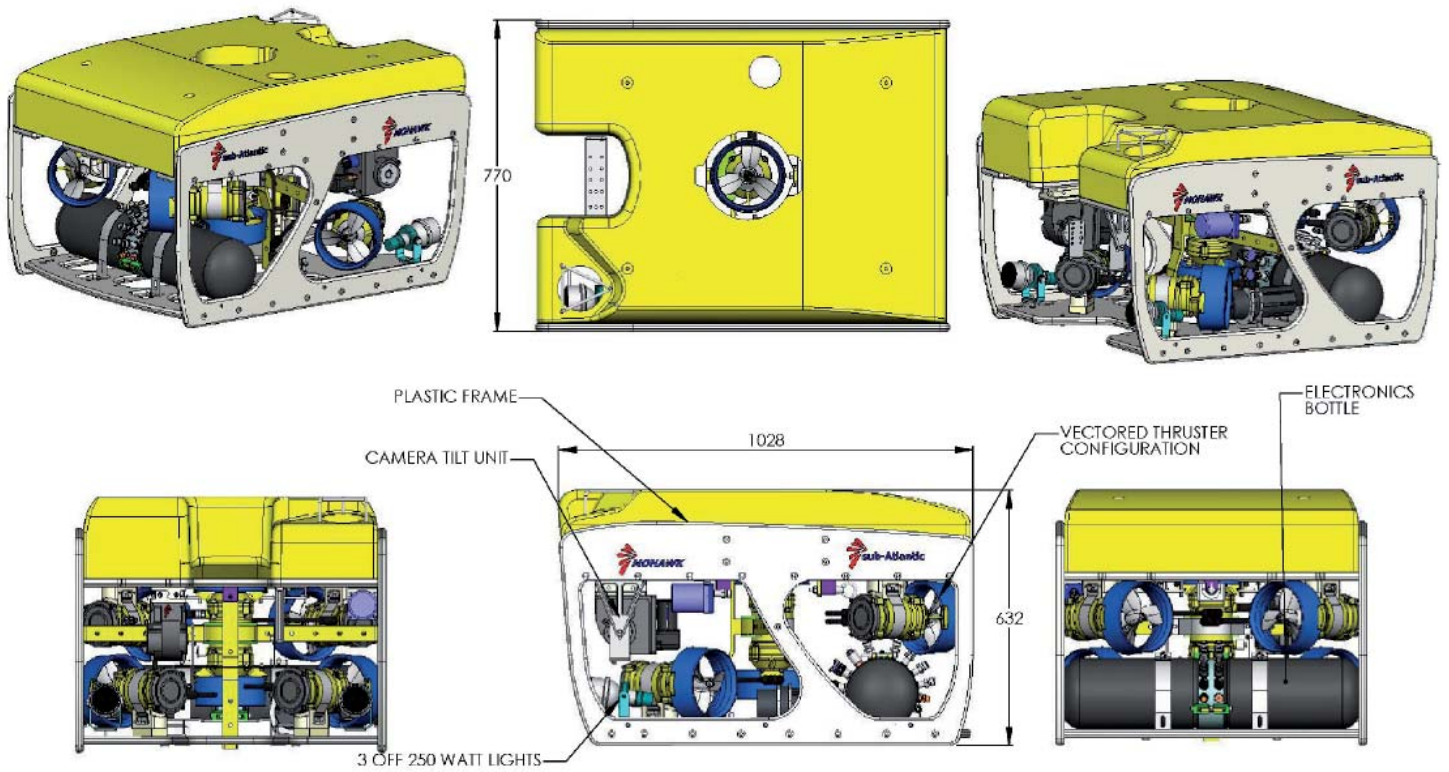


## Launch & Recovery Systems

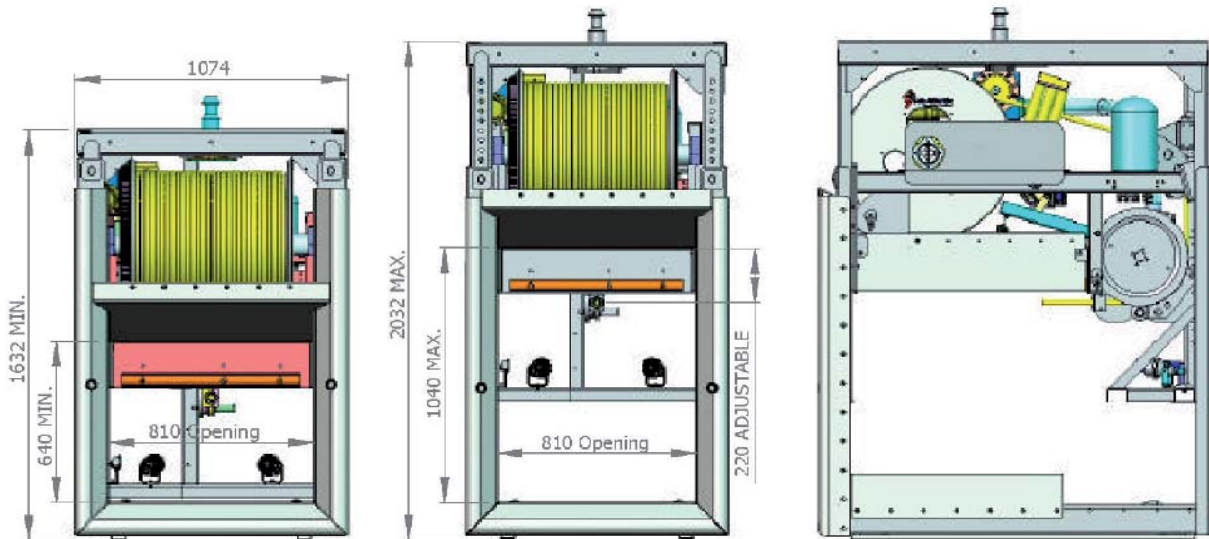
Launch and recovery systems can be supplied to different depth requirements and formats such as A-frame or jib crane.

## Control Cabins

- Various sizes and configurations available
- A60 and Zoned specifications
- Workshop options



**Mohawk ROV Dimensions**



**Size I TMS Dimensions**

*The specification details are illustrative for marketing purposes only. Actual equipment may be different as a result of product improvement or other reasons. Specific interface and performance information should be reconfirmed at time of order placement.*



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