



# Offshore Maritime Subsea Advanced Technologies Inc.

**The CHEROKEE ROV system specification**



## Performance/Dimensions

**Depth Rating:** 1000 meters standard    3281 feet

**Payload:**        50 kg (110 lb.) of lead ballast

**Dimensions:**

Height:            800 mm                    31.5"

Length:            1325 mm                  52.2"

Width:             800 mm                    31.5"

Mass in Air:      240 kg                    529 lb.

**Thrust @ 0 Knots (Bollard Pull):**

Forward:           873 N                    89 kgf                    196 lbf

Reverse:           598 N                    61 kgf                    134 lbf

Lateral:            441 N                    45 kgf                    99 lbf

Vertical:           441 N                    45 kgf                    99 lbf

**Maximum Velocity/Operational Current:**

Forward:           >1.5 m/s                >3.5 Kt.                >5.8 ft/s

Reverse:           >1.0 m/s                >2.5 Kt.                >4.1 ft/s

Lateral:            >0.75 m/s              >1.5 Kt.                >2.5 ft/s

Vertical:           >0.75 m/s              >1.5 Kt.                >2.5 ft/s

**Turning Rate:** 120 Degrees Per Second



## Control System

The system incorporates a Surface Control Unit (SCU) which communicates with the vehicle electronics which are housed in two separate one-atmosphere enclosures located on the vehicle.

The SCU incorporates: -

- 2 off 9" colour monitors
- Fixed/remote pilot's control console & joystick
- Light dimmers
- Automatic depth & heading control (altitude optional)
- Tether/Umbilical turns counter
- Video overlay system
- Earth leakage protection system

SCU power requirements: 220/240 VAC, 50/60 Hz, 2 kVA

The CHEROKEE vehicle electronics are housed in two stainless steel housings, one incorporating the thruster drive systems, light dimmers, the other containing the telemetry system, compass, depth transducer, tilt and camera controls. The housings also have spare electrical connectors to provide power and control for user interfaced equipment.

ROV power requirements: - 440 VAC 3 phase and neutral 50/60 Hz 10 kVA

## Telemetry System

**Downlink** 8 analogue channels, 12 bit resolution (4 used for thruster controls).  
16 digital switch channels.

**Up-link** 8 analogue channels, 12 bit resolution, 16 digital switch channels.  
Telemetry baud rate - 50K, Communication link - RS485

## Lighting

3 off 220 VAC, 250 or 500 Watt halogen lamps, dimmer controlled, mounted on frame and camera tilt unit rated to 48 N.m (36 lb.ft) torque.

## Camera System

The system comes with 1 off SIT camera, 1 off Colour camera, 2 off VCR, s as standard. With additional DVD and HDD recorders now also as standard.

## Propulsion System

The vehicle is propelled by four Sub-Atlantic thrusters incorporating AC electric motor, propeller(s) and nozzle(s), arranged in the following configuration: -

- 2 off single propeller axial at the rear of the vehicle producing high forward thrust & speed
- 1 off twin propeller lateral providing equal right & left thrust.
- 1 off 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 the Main Electronics Enclosure.

## Frame

The CHEROKEE frame is manufactured from marine grade tubular aluminium, welded to form a sealed structure incorporating the following features: -

- Weight of the frame in water is close to zero (neutral)
- Pressure & leak test facility
- Hard anodized & electrostatic paint coated
- Protected by rubber protection fenders
- Integral mounting blocks for easy fitting of additional equipment
- Ballast rail for quick attachment, removal and adjustment of ballast weights
- Lift point

## TMS / Garage

The TMS is a TOPHAT Bailing arm system on top of a garage section to enable much easier launching and recovering, and also allows for the Garage to be landed on the Seabed or other structures required.

- A compensated oil filled Junction Box for the Tether/Umbilical connection
- A compensated oil filled 1.5 KVA 440V 3 Phase motor and gearbox
- Chains driven bailing mechanism
- A drum capable of carrying 140m of 20mm Tether
- A 1 atmosphere control unit which gives variable speed control
- 2 X 500W Lights switchable on/off

An optional fitted HPU to the Garage can turn the TMS into a working platform



## Launch & Recovery system



The LARS consists of:

- A skid with an umbilical winch on it which can carry 500m of 40mm diameter umbilical.  
Length 4050mm by width 2438mm
- 37 Way Electrical Slip Rings
- An 11KW HPU
- A GUERRA M60.90A2 Crane
- A sheave Wheel with hydraulically operated latching mechanism

## Optional Equipment



The CHEROKEE ROV system will support the following additional equipment which is available as options to the standard specification: -

- Industry Standard Cameras
- High Definition Sonar Systems
- Pipe Tracking Systems
- Profiling Sonar
- Side Scan Sonar
- Bathymetric and Oceanographic Sensors
- CP and Wall Thickness Probes
- Hydraulic Tools & Power Pack
- Compact Manipulator Systems
- Cable Cutter (with hydraulic pack)