



## **Cygnus** ROV Mountable

Available in 2000 and 4000 msw  
Pressure Rated Models

### **MULTIPLE ECHO ULTRASONIC DIGITAL THICKNESS GAUGE**

Measures metal thickness to determine wastage or corrosion - accurately, quickly and without removing protective coatings.



## Features for ROV Mountable Gauges

- Available in two models: M5-ROV-2K 2000m (6,526 ft) depth rated and M5-ROV-4K 4000m (13,123ft) depth rated
- The Cygnus Top Side Repeater (TSR) is available as an option and has the facility to display the thickness measurements remotely and overlay them on to a video signal. This allows the measurements to be superimposed on the ROV camera's monitor screen
- Selectable Deep Coat mode for measuring through coatings up to 20mm thick
- Supplied with CygLink software to display and log thickness measurements from the ROV on a computer at the surface which can be saved to a file and printed out
- CygLink has two data logging facilities: Quick Log for simple recording of thickness measurements and Structured mode with four templates available - Single Point, Multi Point, Grid Point and Key Point
- The ROV Gauge sends thickness measurement data to the surface via an RS-422 serial link, Cygnus can supply the RS-422 umbilical cable up to 1200m (4000ft) in length. For longer distances the ROV Gauge can output data in RS-232 mode for connection to a multiplexer
- Fitted with a safety Pressure Relief Valve and Securing Eye
- Easy calibration at the surface via CygLink software or Top Side Repeater (TSR) unit
- Removable end plate for full servability with access to the Option Switches, Fuse and Status LED
- Wet mateable 'MC' style underwater connectors

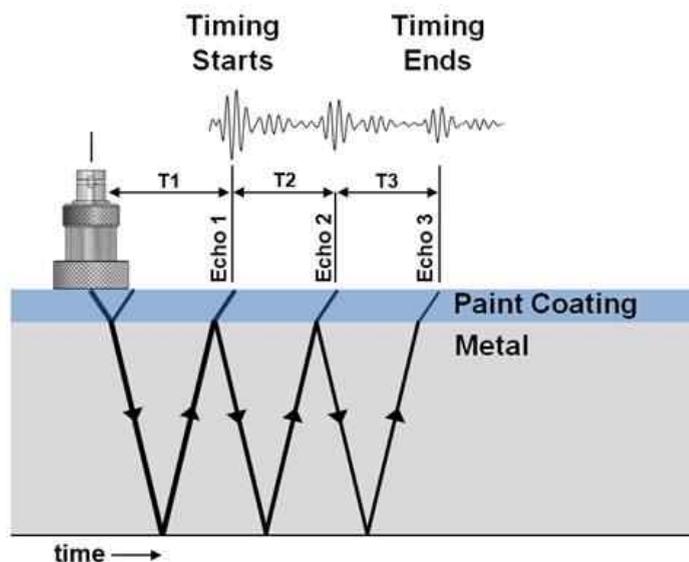
## Kit Contents

- Cygnus ROV Gauge
- Power and data cable connector
- Probe cable with marinised remote probe (5 m)
- 'K3' RS-422 to RS-232 converter
- RS-232 to USB converter
- Cyglink data logging software
- Membrane couplant for the UT probe
- Spare membranes for the UT probe
- Membrane locking ring key
- Spare O-Rings for ROV
- 15 mm (1/2") test block
- Spare 1A fuses
- 3 mm allen key
- Silicone grease
- \*\*\* Optional Topside Repeater with video overlay facility kit.



## Benefits of Cygnus Multiple Echo

- Measures remaining metal thickness on corroded and coated surfaces
- All measurements are error checked using 3 return echoes to give repeatable, reliable results
- Accepted by all major Classification Societies
- Greatly reduces inspection time and costs
- Echo strength indicator to aid measurement



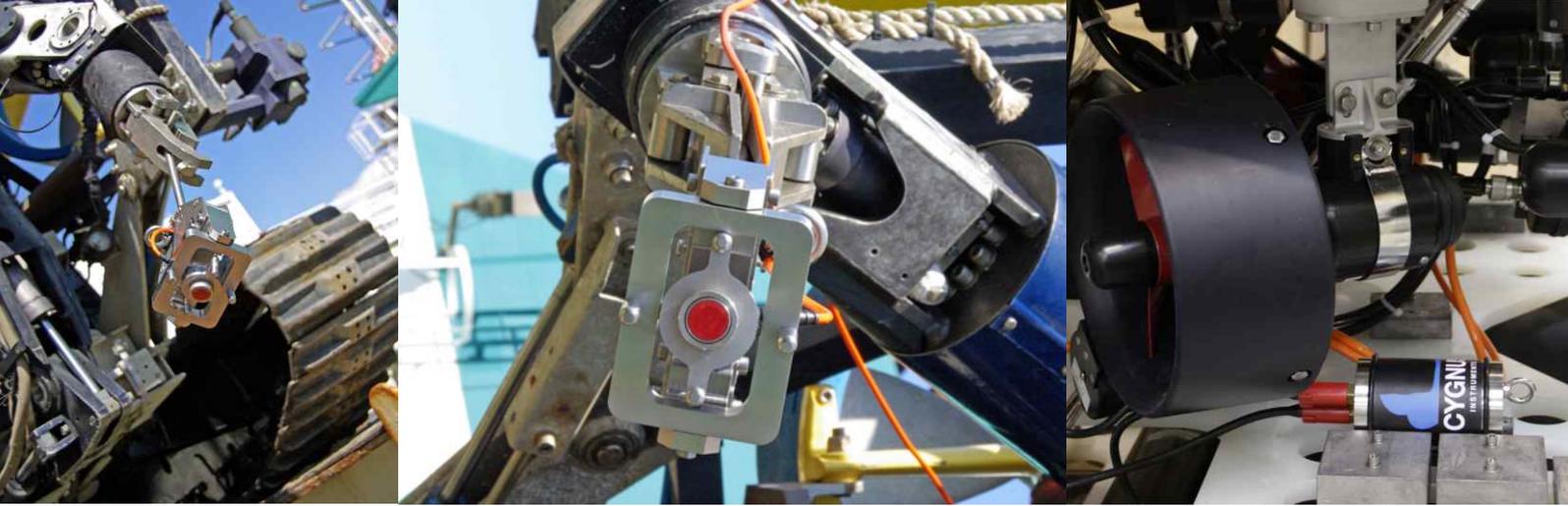
With multiple echo, readings are taken by measuring the time delay between any three consecutive backwall echoes. The time of T1 (including coating thickness) is ignored.

The times of T2 and T3 are equal to the time that it takes to travel through the metal. Only by looking at three echoes can the measurements be automatically verified (where T2 = T3).

M5-ROV-4K



M5-ROV-2K



## CygLink Software - Standard



1. Displays the last thickness measurement value
2. Displays the current computer time
3. Displays the echo strength indicator bars
4. Selects the display mode
5. Selects between mm and inch units
6. Displays the current thickness measurement
7. Displays the link status

## Calibration to a Known Thickness

The CygLink display can be calibrated to a known thickness using the gauge to measure a sample of the material that will be measured. This method ensures the velocity of sound is set for the actual material being measured rather than using a generic value.

## Setting the Velocity of Sound

The velocity of sound can be set to suit the material that will be measured, manually adjusted or set to one of the pre-defined common velocity values. By default it will be set to 5920 m/s for mild steel.

## Top Side Repeater (TSR) - Optional

The Top Side Repeater is a small display unit that can be used to display the thickness measurements sent from the ROV gauge to the surface.

Kit includes data and video cables.



## TSR Video Overlay Facility

The Top Side Repeater can also superimpose the thickness measurements on to a composite PAL or NTSC video signal to display it on a monitor screen and/or the video recording of the survey. This provides a thickness measurement that can be linked to a position or place in the video recording.



Monitor & Video Recorder



## Thickness Gauge Specification

**Materials** Sound velocity between 1000 m/s to 9995 m/s

**Measurement Range in Steel**  
3 mm – 250 mm with 2.25 MHz probe  
2 mm – 150 mm with 3.5 MHz probe  
1 mm – 50 mm with 5 MHz probe

**Accuracy** ±0.05 mm

**Resolution** 0.05 mm

**Probes** Single crystal soft-faced compression  
13 mm - 2.25, 3.5 or 5 MHz  
(Lower frequency probes offer better penetration on heavy corrosion/coatings)

**Power** 7.0 - 30 V dc @ 150 mA (max)

**Size** 238 mm x 85 mm

**Weight in Air**  
Model M5-ROV-2K = 0.975kg  
Model M5-ROV-4K = 4.100kg

**Operating Temp.** -10°C to +50°C

**Testing**  
Model M5-ROV-2K Tested to 3km Depth  
Model M5-ROV-4K Tested to 6km Depth

**Compliance** British Standard BS EN 15317:2000  
(Specification for the characterisation and verification of ultrasonic thickness measuring equipment)

**Environmental** RoHS Compliant

**Communications** RS-422 Simplex Single Pair or RS-232 TXD  
2400 or 9600 Baud  
(selectable via DIP switches)

Specifications are subject to change for product improvements

## Probe Handling Solutions

Complementing the Cygnus ROV Mountable thickness gauges, the Cygnus W1 Work Class ROV Probe Handler has been developed to offer an engineered probe-handling solution for Work Class ROV thickness gauging operations.

Details of this system and others can be found in separate brochures available on request or downloaded from our website.



For more products, please visit [www.cygnus-instruments.com](http://www.cygnus-instruments.com)



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