

CYGNUS
INSTRUMENTS

Cygnus DIVE

**WRIST-MOUNTED UNDERWATER MULTIPLE ECHO
ULTRASONIC DIGITAL THICKNESS GAUGE**

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



Features

The latest innovation from the pioneers of the digital multiple echo ultrasonic thickness gauge, the Cygnus DIVE is designed for the professional diver and is accurate, reliable and easy to use. Worn on the diver's forearm, it gives an invaluable free hand while performing thickness surveys.

Made from a tough glass-filled resin, the Cygnus DIVE can withstand the knocks and bumps of the diving environment. A large bright colour TFT screen displays the thickness measurements in big numbers that really stand out - choose the display colour that suits you.

Simple Operation

Like all Cygnus products, the Cygnus DIVE has been designed for easy operation. There are no gates to set up, no gain to adjust - just turn on and go. There are two buttons for quick and easy menu navigation using one hand, from here you can access all the functions of the gauge guided by intuitive, clear menus.

Rechargeable Batteries

Power is supplied by a replaceable, rechargeable Lithium-Ion battery pack that gives up to 10 hours continuous operation.

Measurement Technology

The Cygnus DIVE uses the trusted Multiple Echo Technique first developed by Cygnus 30 years ago. With minimal surface preparation, the Cygnus DIVE will measure metal thickness through paint and other coatings. The Multiple Echo Technique ensures only genuine, verified thickness measurements are displayed.

Ultrasonic Probe

The ultrasonic probe is connected to the Cygnus DIVE by a coiled double jacket cable and rugged locking connector. The coiled cable will extend up to 1 metre (3 ft) in length for reaching around structures. A replaceable membrane ensures long probe life.

Deep Coat

The Deep Coat function allows the Cygnus DIVE to measure metal thickness through coatings up to 20 mm (3/4") thick.



Large, bright colour TFT screen



Intuitive, clear menus



Coiled double jacket cable

A-Scan Display

To assist with the verification of thickness measurements, and to help locate suitable ultrasound reflectors on badly corroded metal, the Cygnus DIVE can display an A-Scan graph of the ultrasound received.

When a multiple echo thickness measurement is detected the ultrasound peaks used are clearly marked to aid measurement confirmation.

Surface View

The A-Scan graph can be viewed at the surface on a computer using Cygnus DIVElink software and the A-Scan graph is also recorded when data logging thickness measurement points.



Data Logging Option

The Cygnus DIVE can store up to 5000 thickness measurement points in internal flash memory.

Auto-Log

Thickness measurements are recorded using an Auto-Log feature that saves each stable measurement - this means no 'log' button for the diver to press.

A-Scan Graph

Along with the thickness measurement, a copy of the A-Scan graph is also saved.

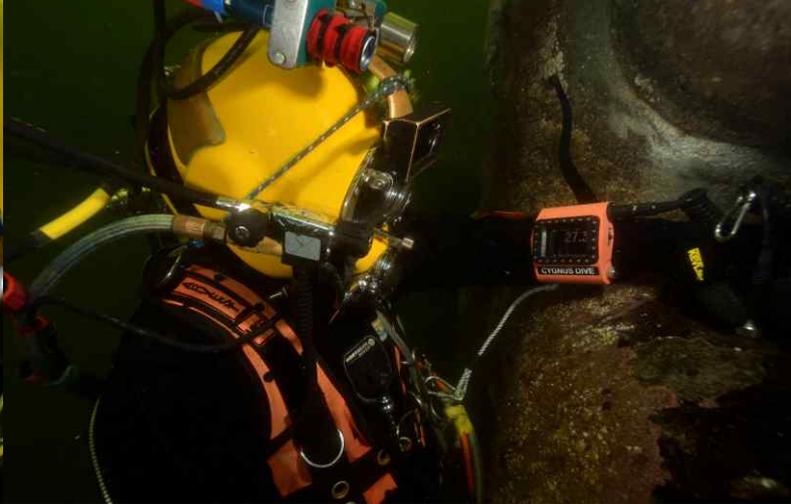
Reporting

Data logged measurements are easily transferred from the Cygnus DIVE to a computer using the DIVElink software supplied. From there a paper report can be produced or the thickness measurements can be exported to a spreadsheet.

Grouping

Measurements can be split into groups by simply starting a new group via the DIVE's easy to use menu.





Top Side Repeater (TSR) - Optional

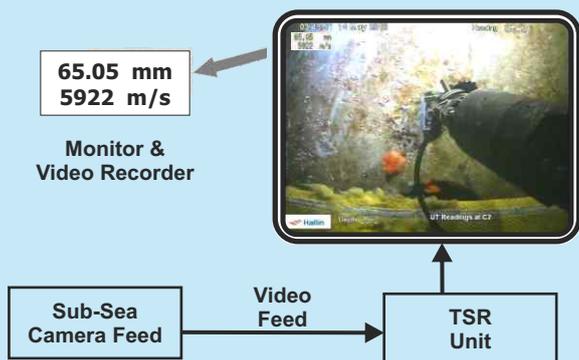
The Top Side Repeater is a small display unit that can be used to display the thickness measurements sent from the Cygnus DIVE gauge to the surface.



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.

Kit includes data and video cables.



DIVELink Software Option

Cygnus DIVELink software provides a top side view of thickness measurements, A-Scan graphs and instrument status on a computer.

Data Logging

DIVELink can be used to record thickness measurements as part of a thickness survey. The operator can choose to log the thickness measurements taken by the diver, or using the A-Scan graph estimate the thickness and record this value instead - useful when gauging on heavy corrosion.

Instrument Status and Control

DIVELink allows an operator to see the battery status of the Cygnus DIVE. The material velocity, unit and Deep Coat settings can also be changed from the surface.



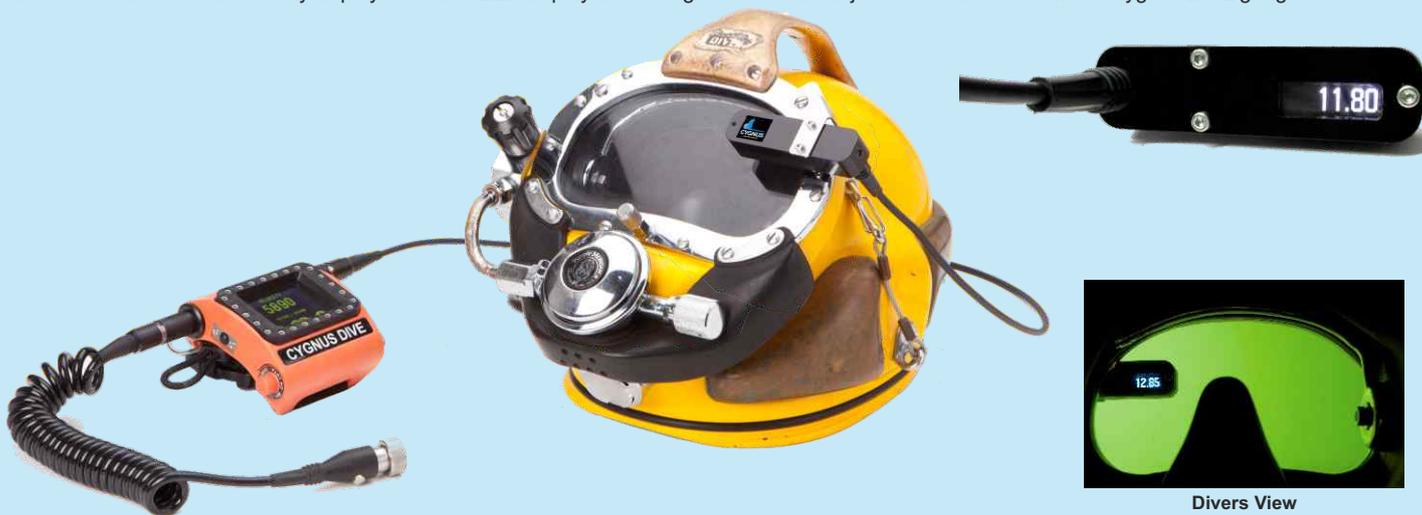
Optional HelmetView™

Often divers face taking thickness measurement surveys in black or limited visibility water so Cygnus developed HelmetView™.

A small remote display is mounted just in front of the lens on the diver's helmet using the accessory screw, a short cable then plugs in to the Cygnus DIVE's top side data connector.

Thickness measurement values are then clearly visible to the diver - even if they can't see any further.

Thickness measurements are clearly displayed on an OLED display and its brightness can be adjusted from the menu on the Cygnus DIVE gauge.



Divers View

Specifications

Measurement Range in Steel	3 mm - 250 mm (0.110" - 9.995") with 2.25 MHz probe 2 mm - 150 mm (0.065" - 6.000") with 3.5 MHz probe 1 mm - 50 mm (0.045" - 4.000") with 5.0 MHz probe
Accuracy	0.1 mm (0.005") when calibrated in accordance with Cygnus Instruments Calibration Procedures
Resolution	±0.05 mm (±0.002") High <100 mm ±0.1 mm (±0.005") Low
Battery Life	Rechargeable Lithium-Ion Battery pack, 10 hours
Display	2.4" Colour TFT with LED Backlight 320 x 240 pixels
Size	105 mm x 110 mm x 35 mm (4.1" x 4.3" x 1.4")
Weight	Complete Gauge 905 g (2 lb.)
Operating Temp.	-10°C to +50°C (14°F to 122°F)
Depth Rating	IP68 Rated to 300 m (984 ft) continuous immersion in sea water
Receiver	Automatic TCG, 1 to 10 MHz Bandwidth 10 Bit Digitiser 60 MSPS
Data Storage (Data Logging Version)	32 Mb Flash Memory (5000 Measurement Points)
Data Output	RS-485 Half Duplex to DIVElink
Compliance	BS EN 15317:2007
Warranty	3 years on DIVE gauge, 6 months on probe

Kit Contents

- Cygnus DIVE Gauge
- 2 Rechargeable Batteries
- Fast Charger
- Ultrasonic Probe (2.25 MHz)
- User Manual
- Spare Membranes
- Membrane Key
- Test Block.



Options and Accessories

Data Logging

Adds Data Logging features to the DIVE gauge including DIVElink software for data transfer.

HelmetView™ Display

Remote display with fixing bracket for Kirby Morgan® helmets with an accessory mounting point.

Top Side Repeater

The Cygnus Top Side Repeater is a self contained remote display unit that can relay the thickness measurement values to the surface. There is also an option to overlay the thickness measurements on a composite video signal for survey video recording purposes.

DIVElink Software

Allows remote display of thickness measurements on a computer via two-wire serial data link and also data logging facility on the surface.

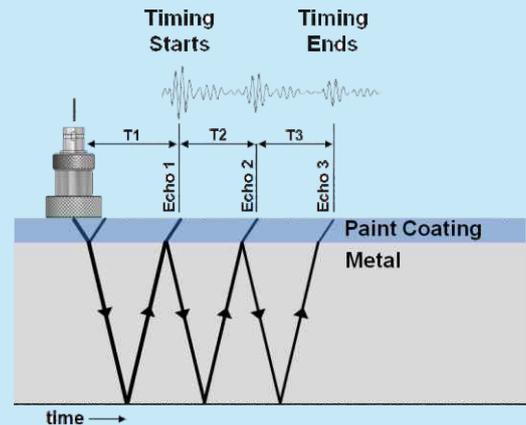
Umbilical Cables - Surface Display

Cygnus can provide umbilical cables to connect the Cygnus DIVE gauge to surface equipment. Custom lengths can be accommodated up to 500 m (1,640 ft).

Benefits of Cygnus Multiple Echo

- Measures remaining metal thickness of corroded and coated structures
- 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 echos. The time of T1 (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).



For more products, please visit www.cygnus-instruments.com



CB07UK ISS 2