

Cygnus DIVE Underwater Ultrasonic Thickness Gauge

Divers wrist-mountable thickness gauge
with a large bright AMOLED display



"Simplicity through technology"

DESIGNED FOR THE PROFESSIONAL DIVER

The Cygnus DIVE is a wrist-mountable, simple to operate, robust underwater ultrasonic thickness gauge which provides an invaluable free hand while performing remaining metal thickness measurements.



The large, bright colour AMOLED display is easily viewable by both the diver and his camera even in the poorest visibility and the operation of the gauge couldn't be simpler, only two buttons for easy navigation of the intuitive, clear menus.

KEY FEATURES

- Wrist-mountable giving the diver a free hand
- Large, bright colour AMOLED display, highly viewable by diver and camera in poor visibility
- A-scan display to assist with measurement verification
- Auto-log data logging - option, no log button to press - stores up to 5,000 measurements with A-scans
- Multiple-Echo means no need to remove protective coatings up to 20 mm thick
- Error-checked Multiple-Echo measurements to ensure genuine, verified measurements are displayed
- Deep-coat mode to measure through coatings up to 20 mm thick
- Single-Echo and Echo-Echo modes with twin crystal probes

KEY FEATURES (CONT.)

- Probes are connected to the DIVE with a coiled double jacket cable which will extend up to 1 metre
- Pressure tested to 300 metres
- Rechargeable lithium-ion battery giving up to 11 hours continuous operation.

TWIN CRYSTAL PROBES AND SINGLE CRYSTAL PROBES

Twin Crystal Probes

Twin crystal probes measures in Echo-Echo and Single-Echo modes and is used on uncoated surfaces. This adds versatility for specific applications such as on extreme front and/or back wall corrosion, anchor chains links and plastic outfall/dredge pipes.



Single Crystal Probes

Single crystal probes use the Cygnus Multiple-Echo technique which gives three sound pulses, this ignores coatings and provides error-checked verified readings.



MEASUREMENT STABILITY INDICATOR (MSI™)

Measurement Stability Indicator (MSI™) has been built into the Single-Echo and Echo-Echo measuring modes that uses twin crystal probes. The gauge changes the colour of the thickness reading numbers from red to yellow to indicate a stable reading. Although measuring in Single-Echo and Echo-Echo modes is new to Cygnus, MSI™ ensures that Cygnus's long established philosophy of providing accurate and reliable thickness readings is carried through into the Single-Echo measuring mode.

STANDARD KIT CONTENTS

Cygnus DIVE gauge; 2 rechargeable batteries; fast charger; Multiple-Echo (through coating) probe (2.25 MHz 13mm); user manual; spare membranes; membrane key; test block; surface and membrane couplant.



HelmetView™ Display on a Kirby Morgan® Divers Helmet

OPTIONS AND ACCESSORIES

Data Logging

A data logging DIVE gauge has the capability to store 5000 measurements with individual A-scans to its internal memory. The Auto-log feature allows readings to be logged without pressing any buttons. DIVE gauges can be supplied as data logging or a standard unit can be upgraded later, remotely, without the need to return the gauge to a Cygnus Service Centre.

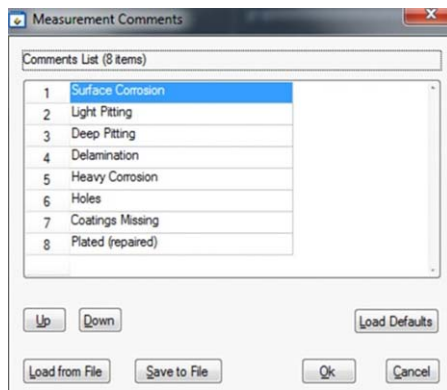
CygLink Software

CygLink is a Windows® application for PC's running Windows 7® and above. It is used for uploading data from a data logging gauge, for reporting and analysis. When used with a DIVE gauge and an umbilical cable to the surface, CygLink displays thickness measurements, A-scans at the surface. Measurements can be logged from the surface, plus gauge settings, including the velocity of sound can be controlled from the surface.



When CygLink is used to data log measurements, they can be recorded in a linear list.

Each recorded measurement can have up to 8 short pre-set text comments added to it

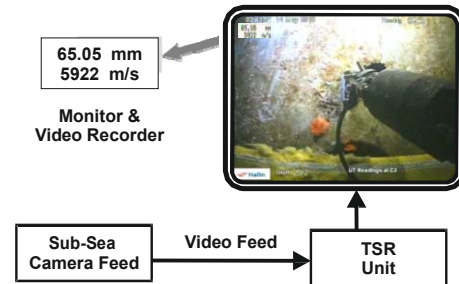


Data Reporting and Display

The data can be displayed in a Survey Report Document as a table plus A-scan charts. Plus it can be exported as a .csv file into a spreadsheet program, eg. Excel®.

Topside Repeater Remote Display Unit

The Cygnus Top Side Repeater is a remote display unit connected to the DIVE gauge with an umbilical cable. It displays the thickness measurements at the surface in real-time during the survey.



Topside Repeater with Video Overlay

The Top Side Repeater can also overlay the real-time thickness measurements on to a composite video signal, displaying it on the survey monitor screen. It will also then be recorded if there is a video of the survey, showing exact locations and their thickness measurement for future reference.

HelmetView™ Display

This is a remote display with a fixing bracket for Kirby Morgan® Helmets that have an accessory mounting point. This is designed for use in situations with extremely poor visibility and ease of viewing by the diver.

Single-Echo Mode With Twin Crystal Probes

The DIVE gauge includes a Single-Echo measuring option using twin crystal probes. We would recommend the gauge is used in the standard Multiple-Echo mode for most applications. Measuring the time delay between three consecutive backwall echoes, it provides, error-checked, verified readings through coatings up to 20 mm. However, occasionally there are specific situations where it is beneficial to use Single-Echo mode, where just one back wall echo is used. These include applications with very heavy front and back wall corrosion and anchor chain links.

SPECIFICATION

Display	2.8" quarter VGA colour AMOLED (320 x 240 pixels) Large clear thickness measurement (15 mm high numbers), viewable from all angles A-scan display with automatic X axis Battery level, signal strength, probe type, velocity Measurement mode and units indication		
Battery	Single 3.6V Li-ion 8.2 W battery 11 hours continuous measurement Low battery warning 'alert' message		
Measurements Modes	Multiple-Echo (three back-wall echoes) using single crystal (zero-degree) probes - automatically ignores surface coatings and measures only metal thickness Single-Echo (first back-wall echo) using twin crystal probes Echo-Echo (2 back-wall echos) using twin crystal probe		
Deep Coat	In Multiple-Echo mode, allows measurement to be made through thicker coatings of suitable materials of up to 20 mm thick		
Accuracy	±0.1 mm or 0.1% of thickness measurement, whichever is greatest, when calibrated in accordance with Cygnus Instruments calibration procedure		
Probes	Single crystal probes: • 2.25 MHz 13mm (standard) S2C • 2.25 MHz 19mm S2D Y 3.5 MHz 13mm S3C Y 5.0 MHz 6mm S5C	Twin crystal probes: • 2.0 MHz 13mm x 2 (for cast iron etc.) T2C • 5.0 MHz 8mm x 2 (standard) T5B	
Probe Cables	Double outer jacket in tough PU. Coloured yellow for easy locations underwater. Coiled for ease of use. Fischer S105 series connectors.		
Measurement Ranges	Single crystal probes: Y 2.25 MHz = 3.0 to 250mm Y 3.5 MHz = 2.0 to 150mm Y 5.0 MHz = 1.0 to 50mm	Twin crystal probes in Single-Echo: Y 5.0 MHz = 2.0 to 100mm Y 2.0 MHz = 3.0 to 150mm	Twin crystal probes in Echo-Echo: • 5.0 MHz = 4.0 to 50mm • 2.0 MHz = 6.0 to 50mm
Measurement Resolution	Multiple-Echo with single crystal probes - 0.1 or 0.05 mm Single-Echo and Echo-Echo with twin crystal probes - 0.1 or 0.01 mm		
Measurement Units	mm or inches		
Probe Zero	Fully automatic probe zeroing for all probes types		
V-Path Correction	Automatic V-Path correction for all twin crystal probes		
Velocity Range	2000 to 9000 m/s in 1 m/s setps		
Pulser	Twin channel 70 V spike pulser		
Receiver / Amplifier	10 MHz bandwidth, 120 dB range, automatic TCG. 60 MHz measurement time-base		
Data Logging	One-handed automatic logging of stable measurements. Capacity for up to 5000 points including 640 point A-scan data		
Data Output	RS-485 single pair, half duplex for surface connection		
Computer Software	CygLink allows remote logging and viewing of A-scan graphs. Survey and report generation to PDF file. Graphic analysis of data and statistical calculations. Designed for Windows 7 and Windows 8		
Compliance	CE, British Standard BS EN 15317:2013 (specification for the characterisation and verification of ultrasonic thickness measuring equipment)		
Warranty	3 years on gauge and 6 months on probe		

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