



Cygnus 4+ General Purpose Multi-Mode Ultrasonic Thickness Gauge

New generation of ultrasonic thickness gauges incorporating Multiple-Echo, Echo-Echo and Single-Echo measuring modes



"Simplicity through technology"

NEW CYGNUS 4+ GENERAL PURPOSE MULTI-MODE THICKNESS GAUGE

The NEW Cygnus 4+ is a small and tough multi-mode ultrasonic thickness gauge which features an A-scan display and simple to use sequential data logging.

Designed for the harshest of environments, with a simple to use keypad, intuitive menus and a colour LCD display which can be viewed in all lighting conditions.

The twin shot injection moulded enclosure has a soft but durable TPE outer skin which is comfortable to hold and protects against bumps while the hard internal shell offers maximum strength and environmental protection certified to the demanding US MIL STD 810G standard.

The unit still relies on Multiple-Echo to provide simple and accurate measurements, with the added benefit of Echo-Echo and Single-Echo using twin crystal probes for extreme corrosion. Echo-Echo for measurements on painted metals but with heavy back wall corrosion / pitting and Single-Echo for measurements on uncoated surfaces with heavy front face and/or back-wall corrosion and attenuative materials such as cast metals or plastics / composites.



KEY FEATURES

- Multiple-Echo for reliable, accurate through coating measurements
- Single-Echo and Echo-Echo measuring modes with twin crystal probes for extreme corrosion and back wall pitting
- A-scan display
- MSI™ (Measurement Stability Indicator) used in Single-Echo and Echo-Echo measurement modes
- Simple linear data logging
- Large bright colour LCD screen with back light
- Deep-coat mode, measure through coatings up to 20 mm thick
- Wrist mountable
- Min/max measurement limit functions with visual and vibrate alert
- Intuitive easy to use menu
- Extremely rugged enclosure – shock and impact to US MIL STD 810G
- Environmental sealing to IP67 – US MIL STD 810G
- Cygnus echo strength bars to assist quick measurements
- Buttons integral with the TPE moulding and designed for minimum 100,000 depressions.

DATA LOGGING KEY FEATURES

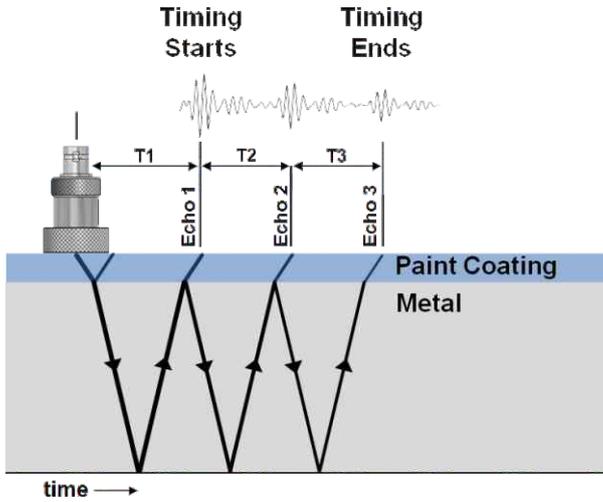
- Versatile data logging which allows measurements and A-scans to be saved
- 5,000 measurement points (including A-scan) per record
- Records are saved to a removable SD card
- Selectable auto-log feature
- Records easily transferred via gauge USB port to Cyglink software where they can be exported to a CSV file or a PDF report.

All Cygnus thickness gauges are supplied with a 3 YEAR Cygnus Gauge Warranty as standard



MULTI-MEASURING MODE

Multiple-Echo uses three back wall echoes and measures remaining metal thickness while ignoring coatings. All measurements are error checked using 3 return echoes to give repeatable, reliable results. Accepted by all major classification societies. Uses single crystal probes for linear accuracy (and no probe zero required).



Cygnus Multiple-Echo Diagram

Echo-Echo uses two back wall echoes and measures remaining metal thickness while ignoring coatings up to 1 mm thick using twin crystal probes for improved detection of back wall corrosion and pitting.

Single-Echo uses one back wall echo, measures remaining metal thickness on uncoated surfaces and is ideal for areas with extreme front face or back wall corrosion and pitting. Effective on highly attenuative materials such as cast metals, plastics and composites.

MEASUREMENT STABILITY INDICATOR (MSI™)

This feature helps ensure only stable measurements are displayed in Echo-Echo and Single-Echo modes. Displayed measurements change from red to green and a vibrate alert indicates a stable and accurate reading.

CYGLINK SOFTWARE

CygLink is a Windows® application which is used to transfer information from the Cygnus 4+ thickness gauge to a computer. The information can then be used as a PDF report or CSV file which can be analysed, stored and exported.



CygLink Software Screenshot

CYGNUS PROBES AND CABLES

Cygnus Stainless Steel INOX Probes (Single Crystal Probes)

The INOX probes have an updated ergonomic design and easier to read frequency, identification and serial number. All frequencies of INOX probes have a black face and a colour coding system to identify probe frequencies. Used in Multiple-Echo mode, these probes require no zeroing, have a high linear accuracy, are ideal for general thickness gauging, for use on pipes and have replaceable wear membrane for long life.



S2C, S3C & S5C Probes

Cygnus Stainless Steel INOX Probes (Twin Crystal Probes)

Used in Echo-Echo and Single-Echo modes for a focussed ultrasound beam for improved measurability on extreme back wall corrosion and pitting.



T5B Probe



T7A Probe

Cygnus Cables

Using standard industry connectors the probe lead uses a custom made over moulded cable that offers superior flexibility and resistance to oils and ultraviolet light. The cable will not stiffen after exposure to ultraviolet light.

STANDARD KIT CONTENTS

Cygnus 4+ ultrasonic thickness gauge; padded carry case; operating manual; adjustable neck strap and loops; wrist strap; accessory pouch; spare membranes; surface and membrane couplant; test block; 3 x AA batteries; mini USB - USB cable and instruction manual optional Krusell® belt clip.

SPECIFICATION

Materials	Sound velocities between 2000 m/s - 9000 m/s - covers virtually all common engineering materials		
Accuracy	±0.1 mm or 0.1% of thickness measurement, whichever is greatest, when calibrated in accordance with Cygnus Instruments calibration procedure		
Resolution	Multiple-Echo mode - 0.1 mm or 0.05 mm Single-Echo and Echo-Echo modes - 0.01 mm		
Probes	Single crystal probes: • 6 mm - 5 MHz (S5A) • 13 mm - 2.25 MHz (S2C (standard)), 3.5 MHz (S3C) or 5 MHz (S5C) • 19 mm - 2.25 MHz (S2D)	Twin crystal probes: • 5 mm - 7.5 MHz (T7A) • 8 mm - 5 MHz (T5B (standard)) • 13 mm - 2 MHz (T2C (for attenuative materials such as cast metals, plastics and composites))	
Measurement Range in Steel	Single crystal probes: • 3 mm - 250 mm with 2.25 MHz probe (S2C/D) • 2 mm - 150 mm with 3.5 MHz probe (S3C) • 1 mm - 50 mm with 5 MHz probe (S5C/A)	Twin crystal probes in Single-Echo: • 3 mm - 200 mm with 2 MHz probe (T2C) • 2 mm - 150 mm with 5 MHz probe (T5B) • 1 mm - 50 mm with 7.5 MHz probe (T7A)	Twin crystal probes in Echo-Echo: • 5 mm - 50 mm with 2 MHz probe (T2C) • 4 mm - 50 mm with 5 MHz probe (T5B) • 3 mm - 25 mm with 7.5 MHz probe (T7A)
Connector	Twin Lemo 00		
Power	3 x AA batteries		
Battery Life	10 hours minimum		
Electronics	Dual channel pulser		
Display	2.4" quarter VGA LCD		
Size	132 mm x 82 mm x 34 mm		
Weight	300 grams (inc. batteries)		
Operating Temp.	-10°C to 50°C		
Data Logging	Capacity for up to 5000 points including A-scans		
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.		
Environmental Rating	IP67 MIL STD 810G Method 501.6 (high temp +55°C) MIL STD 810G Method 502.6 (low temp -20°C) MIL STD 810G Method 507.6 (humidity 95%) MIL STD 810G Method 512.6 (immersion - 1 metre for 30 mins)		
Shock and Impact	MIL STD 810G Method 514.7 (vibration - 1 hour each axis) MIL STD 810G Method 516.7 (shock 20g - 11ms half sine shock pulse, 40g 11ms in each axis) MIL STD 810G Method 516.7 (26 drops - transit drop 1.22 m)		
Compliance	CE, British Standard BS EN 15317:2013 (specification for the characterisation and verification of ultrasonic thickness measuring equipment)		
Environmental	RoHS, WEEE compliant		
Warranty	3 years on gauge and 6 months on probe		

**Specifications are subject to change*

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