

# Cygnus 6+ PRO

## Multi-Mode Ultrasonic Thickness Gauge

New ultrasonic thickness gauge incorporating Multiple-Echo, Echo-Echo and Single-Echo measuring modes with unique dual display



"Simplicity through technology"

# CYGNUS' UNIQUE DUAL DISPLAY MULTI-MODE THICKNESS GAUGE

The NEW Cygnus 6+ ultrasonic thickness gauge is small, tough and accurate.

Designed for the harshest of environments with a simple to use keypad and intuitive menus. It incorporates a bright colour LCD display and an end mounted rotatable OLED display for easy viewing in hands free and rope access applications.

The twin shot injection moulded enclosure has a soft but durable TPE outer skin which is both comfortable and extremely durable while the inner shell is strong, keeping the electronics totally sealed from the outside world.

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
- Unique dual display - large bright colour LCD screen and OLED end display for hands free operations
- A-scan and B-scan display
- High temperature probe option
- Comprehensive data logging capabilities
- Bluetooth connectivity
- Min / max measurement limit functions with visual and vibrate alert
- Extremely rugged enclosure - shock and impact to MIL STD 810G
- Environment sealing to IP67 - MIL STD810G
- Deep-coat mode, measure through coating up to 20 mm thick
- Cygnus echo-strength bars assist thickness measurements in Multiple-Echo
- TPE over moulded enclosure
- Buttons designed for minimum of 100,000 depressions
- Fully sealed battery compartment (contains any leaking battery fluids)
- MSI™ (Measurement Stability Indicator) for Single-Echo and Echo-Echo modes
- Automatic probe recognition for S2C and twin crystal probes.



With end-mounted display for hands free viewing

## 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).

**Echo-Echo** uses two back wall echoes and measures remaining metal thickness while ignoring coatings up to 1 mm (0.04") 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.

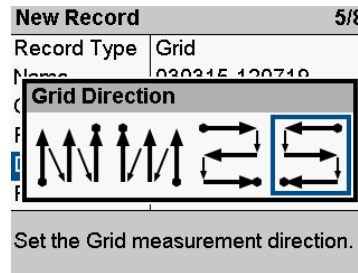


## MSI™ (MEASUREMENT STABILITY INDICATOR)

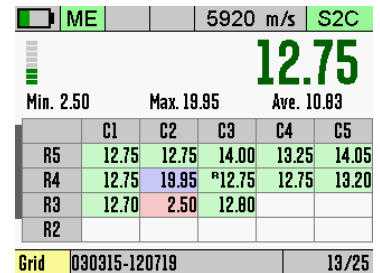
This clever technique helps ensure only stable measurements are displayed in Echo-Echo and Single-Echo modes. Displayed measurements change colour from red to green and vibrate alert to indicate a stable reading.

## DATA LOGGING

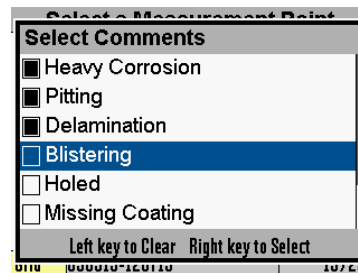
- Comprehensive data logging
- 5,000 measurement points (including A-scan) per record (soft limit of 100 records accessible from the gauge)
- 3 options for logging; Linear, Grid (16 directional options) and Templates (created to by the user)
- Choose from 8 user defined text comments to add to any measurement point
- Add up to 12 additional 'radial' measurement points around the last logged measurement point
- Easy to manage with functions to: step back; retake-last; stop and resume logging; review measurements; protect and delete records
- Data logging screen shows average, highest and lowest measurement values in the whole record
- Optional minimum and reference thickness values can be set and highlight logged measurements, i.e. red if under min. and green if between min. and ref.
- AutoLog feature can automatically log thickness measurements without pressing a button, for hands free convenience
- Records are easily transferred to a computer via USB lead or Bluetooth
- The data is uploaded into CygLink software.



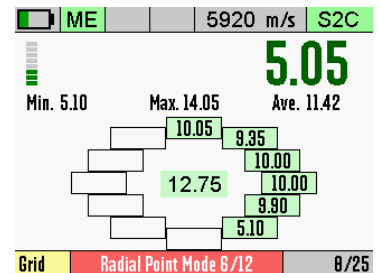
Set-up of Grid Direction



Measurement Grid



Measurement Point Comments



Radial Measurement Points

## CYGLINK SOFTWARE

CygLink is a Windows® application which is used to transfer information from the Cygnus 6+ to a computer. The information can then be analysed, stored, reports can be created and the data can be exported as a .csv file.



## CYGNUS PROBES AND CABLES

**Stainless Steel INOX Twin Crystal Probes:** Used in Echo-Echo and Single-Echo modes and focussed ultrasound beam with improved measurability on extreme back wall corrosion and pitting.

**High Temperature Twin Crystal Probes:** Used in Echo-Echo and Single-Echo modes, these high temperature probes are ideal for measurement applications such as heat pipes within the oil industry, factory steam pipes and chemical processing.

**Stainless Steel INOX Single Crystal Probes:** The INOX probes have an updated ergonomic design and an easier to read frequency, identification and serial numbering. 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 and on pipes and have replaceable wear membrane for long life.

**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 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; data transfer cable; SD card; optional Krusell® belt clip and attachments accessory.

# SPECIFICATION

<b>Materials</b>	Sound velocities between 2000 - 9000 m/s (0.079 - 0.35 in/ms) - covers virtually all common engineering materials		
<b>Accuracy</b>	0.1 mm (0.005") when calibrated in accordance with Cygnus Instruments Calibration Procedures		
<b>Resolution</b>	Multiple-Echo mode - 0.1 or 0.05 mm (0.005" or 0.002") / Single-Echo and Echo-Echo modes - 0.01 mm (0.0004")		
<b>Probes</b>	Single crystal probes: • 6 mm (¼") - 5.0 MHz (S5A) • 13 mm (½") - 2.25 MHz (S2C (standard)), 3.5 MHz (S3C) or 5.0 MHz (S5C) • 19 mm (¾") - 2.25 MHz (S2D)	Twin crystal probes: • 5 mm (0.2") - 7.5 MHz (T7A) • 8 mm (0.3") - 5.0 MHz (T5B (standard)) • 13 mm (½") - 2.0 MHz (T2C (for attenuative materials such as cast metals, plastics and composites)) • 10 mm (0.4") - 5.0 MHz (HT5)	
<b>Measurement Range in Steel</b>	Single crystal probes: • 3 - 250 mm (0.120" - 10.00") with 2.25 MHz probe (S2C/D) • 2 - 150 mm (0.080" - 6.000") with 3.5 MHz probe (S3C) • 1 - 50 mm (0.040" - 2.000") with 5.0 MHz probe (S5C/A)	Twin crystal probes in Single-Echo: • 3 - 250 mm (0.120" - 10.00") with 2.25 MHz probe (T2C) • 2 - 200 mm (0.080" - 7.900") with 3.5 MHz probe (T5B) • 2 - 200 mm (0.080" - 7.900") with 5.0 MHz probe (HT5) • 1 - 60 mm (0.040" - 2.400") with 5.0 MHz probe (T7A)	Twin crystal probes in Echo-Echo: • 5 - 100 mm (0.200" - 4.000") with 2.25 MHz probe (T2C) • 4 - 100 mm (0.160" - 4.000") with 3.5 MHz probe (T5B) • 2 - 200 mm (0.080" - 7.900") with 5.0 MHz probe (HT5) • 3 - 50 mm (0.120" - 2.000") with 5.0 MHz probe (T7A)
<b>Connector</b>	Twin Lemo 00		
<b>Power</b>	3 x AA batteries		
<b>Battery Life</b>	10 hours minimum		
<b>Electronics</b>	Dual channel pulser		
<b>Display</b>	2.4" quarter VGA LCD and end-mounted OLED (rotatable)		
<b>Display Info.</b>	Thickness value, A-scan, B-scan and cross-section scan		
<b>Size</b>	132 mm x 82 mm x 34 mm (5.20" x 3.23" x 1.34")		
<b>Weight</b>	300 grams (10.58 oz) inc. batteries		
<b>Operating Temp.</b>	-10°C to 50°C (14°F to 122°F)		
<b>Data Logging</b>	Capacity for up to 5000 points including A-scans		
<b>Computer Software</b>	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.		
<b>Environmental Rating</b>	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)		
<b>Shock and Impact</b>	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)		
<b>Compliance</b>	CE, British Standard BS EN 15317:2013 (specification for the characterisation and verification of ultrasonic thickness measuring equipment)		
<b>Environmental</b>	RoHS, WEEE compliant		
<b>Warranty</b>	3 years on gauge and 6 months on probe		

\*Specifications are subject to change

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Manufactured in the UK