

# Cygnus 2+ Hands Free 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 2<sup>+</sup> HANDS FREE MULTI-MODE THICKNESS GAUGE

The NEW Cygnus 2<sup>+</sup>, with its end-mounted OLED multi-functional display makes it ideal for hands free operation. Ideally suited for climbing 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
- OLED multi-functional display with improved readability in all lighting conditions
- Extremely rugged enclosure - shock and impact to MIL STD 810G
- Environment sealing to IP67 - MIL STD810G
- Cygnus echo-strength bars assist thickness measurements in Multiple-Echo mode
- 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
- Single-Echo and/or Echo-Echo measuring modes with twin crystal probes
- Automatic probe recognition for S2C and twin crystal probes.

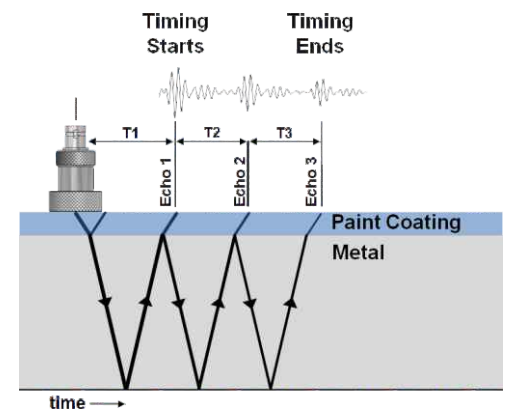


## MULTI-MEASURING MODE

**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.

## 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.



### 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; 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 (±0.004") or 0.1% of thickness measurement, whichever is greatest, when calibrated in accordance with Cygnus Instruments calibration procedure		
<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>	<div>Single crystal probes:</div> <ul style="list-style-type: none"> <li>• 6 mm (¼") - 5.0 MHz (S5A)</li> <li>• 13 mm (½") - 2.25 MHz (S2C (standard)), 3.5 MHz (S3C) or 5.0 MHz (S5C)</li> <li>• 19 mm (¾") - 2.25 MHz (S2D)</li> </ul> <div>Twin crystal probes:</div> <ul style="list-style-type: none"> <li>• 5 mm (0.2") - 7.5 MHz (T7A)</li> <li>• 8 mm (0.3") - 5.0 MHz (T5B (standard))</li> <li>• 13 mm (½") - 2.0 MHz (T2C (for attenuative materials such as cast metals, plastics and composites))</li> </ul>		
<b>Measurement Range in Steel</b>	<div>Single crystal probes:</div> <ul style="list-style-type: none"> <li>• 3 - 250 mm (0.120" - 10.00") with 2.25 MHz probe (S2C/D)</li> <li>• 2 - 150 mm (0.080" - 6.000") with 3.5 MHz probe (S3C)</li> <li>• 1 - 50 mm (0.040" - 2.000") with 5.0 MHz probe (S5C/A)</li> </ul>	<div>Twin crystal probes in Single-Echo:</div> <ul style="list-style-type: none"> <li>• 3 - 250 mm (0.120" - 10.00") with 2.25 MHz probe (T2C)</li> <li>• 2 - 200 mm (0.080" - 7.900") with 3.5 MHz probe (T5B)</li> <li>• 1 - 60 mm (0.040" - 2.400") with 5.0 MHz probe (T7A)</li> </ul>	<div>Twin crystal probes in Echo-Echo:</div> <ul style="list-style-type: none"> <li>• 5 - 100 mm (0.200" - 4.000") with 2.25 MHz probe (T2C)</li> <li>• 4 - 100 mm (0.160" - 4.000") with 3.5 MHz probe (T5B)</li> <li>• 3 - 50 mm (0.120" - 2.000") with 5.0 MHz probe (T7A)</li> </ul>
<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>	End-mounted OLED (rotatable)		
<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>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