Cygnus Instruments

MK5 Ultrasonic Thickness Gauge - Cygnus 4+ General Purpose

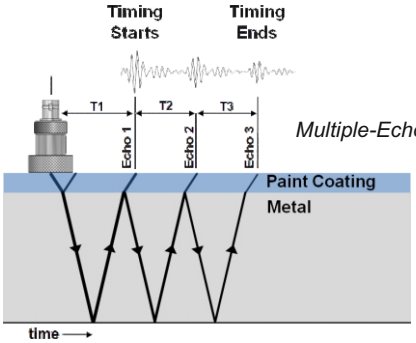
The **Cygnus 4+ General Purpose** thickness gauge is a light, tough multi-mode thickness gauge. It features an A-scan display and simple sequential data logging. The gauge also boasts a large and bright colour LCD display (with grayscale option for sunlight readability).

KEY FEATURES

- Uses single and twin crystal probes
- Measures using Multiple-Echo, Single-Echo and Echo-Echo
- One and two point calibration
- Basic data logging
- A-scan display
- Manual gain mode
- Large front mounted LCD
- Explosive atmosphere: Safe operation, tested to MIL STD 810G Method 511.5 Procedure I
- Shock and impact to US MIL STD 810G
- Environmental sealing (water and dust proof) to IP67 – US MIL STD 810G.

THREE VERSATILE MEASURING MODES

Multiple-Echo (Single Crystal Probes) uses three error checked back wall echoes to provide the most reliable and accurate remaining thickness measurements, with no need to remove coating (up to 20 mm thick (0.8 inch)).



Multiple-Echo Diagram

Echo-Echo (Twin Crystal Probes) measures through coatings of up to 1 mm (0.04 inch) thick, ideal for measuring painted metals with back wall corrosion.

Single-Echo (Twin Crystal Probes) ideal for measuring uncoated metals with heavy back-wall corrosion. Also effective on a range of cast metals, plastics and composites.

MEASUREMENT STABILITY INDICATOR (MSI™)

Exclusive to Cygnus, MSI™ ensures stable and therefore reliable measurements are displayed in Echo-Echo and Single-Echo modes.

BASIC DATA LOGGING

- Linear based data logging
- Eight user-defined comments to attach to any measurement point
- Add additional radial points to any measurement point for extra detail
- Auto-log feature
- Saves the A-scan display
- Records stored on SD card
- CygLink used to transfer and manage data.

CYGLINK SOFTWARE

CygLink is a Windows® based application used to transfer and manage data logger records, A-scans, B-scans, templates, measurement comments and material velocity tables. The program can generate PDF reports and export to Excel. It also displays A-scans and B-scans, allowing for after-the-event analysis of logged measurements.

VARIETY OF PROBES

Cygnus Stainless Steel INOX Probes (Single Crystal) Used in Multiple-Echo mode, these probes include replaceable membranes for long life, require no zeroing and have a high linear accuracy.

Cygnus Stainless Steel INOX Probes (Twin Crystal) Used in Echo-Echo and Single-Echo modes, these probes have improved measurability on extreme back wall corrosion and pitting.

DURABLE CABLES

Using standard industry connectors our probe leads offers superior flexibility and resistance to oils and ultraviolet light. The cable will not stiffen after exposure to ultraviolet light.

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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 and attachments accessory.

SPECIFICATION

Gauge	Cygnus 4+ General Purpose		
Measuring Modes	Multiple-Echo using 3 sound pulses to ignore coatings up to 20 mm (0.8 inch) thick Echo-Echo using 2 sound pulses to ignore coatings up 1 mm (0.04 inch) thick Single-Echo using 1 sound pulse		
Materials	Sound velocities from 1,000 - 9,000 m/s (0.0390 - 0.3543 in/us)		
Accuracy	±0.1 mm (±0.004 inch) 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 (0.005 inch) or 0.05 mm (0.002 inch) Single-Echo and Echo-Echo modes - 0.1 mm (0.005 inch) or 0.5 mm (0.002 inch) or 0.01 mm (0.001 inch)		
Probe Diameters and Frequencies	Single crystal probes: • 6 mm (0.25 inch) - 5 MHz (S5A) • 13 mm (0.5 inch) - 2.25 MHz (S2C (standard)), 3.5 MHz (S3C) or 5 MHz (S5C) • 19 mm (0.75 inch) - 2.25 MHz (S2D)	Twin crystal probes: • 5 mm (0.2 inch) - 7.5 MHz (T7A) • 8 mm (0.32 inch) - 5 MHz (T5B (standard)) • 12 mm (0.5 inch) - 2 MHz (T2C (for attenuative materials, cast metals, plastics and composites))	
Measurement Range in Steel	Single crystal probes: • 1 - 250 mm (0.040 - 10.00 inch)	Twin crystal probes (Single-Echo): • 0.8 - 250 mm (0.031 - 10.00 inch)	Twin crystal probes (Echo-Echo): • 3 - 50 mm (0.120 - 2.000 inch)
Connector	Twin Lemo 00		
Power	3 x AA batteries		
Battery Life	10 hours minimum		
Electronics	Dual channel pulser		
Display	2.4 inch quarter VGA LCD		
Display Info.	Thickness value and A-scan		
Size	132 x 82 x 34 mm (3.3 x 5.1 x 1.4 inch) (W x H x D)		
Weight	300 grams (10.5 oz.) (inc. batteries)		
Operating Temp.	-10°C to 55°C (14°F to 131°F)		
Data Logging	500,000 measurement points, including A-scan (5,000 readings per record, soft limit of 100 records)		
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 Explosive Atmosphere: Safe operation as defined by Class I, Division 2, Group D, as found in the National Fire Protection Association Code (NFPA 70), Article 500, and tested using MIL STD 810G Method 511.5, Procedure I MIL STD 810G Method 501.6 (high temp +55°C (131°F)) MIL STD 810G Method 502.6 (low temp -20°C (-4°F)) 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 1.22m)		
Standards	Designed for EN 15317		
Environmental	RoHS, WEEE compliant		
Warranty	3 years on gauge and 6 months on probes		

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