




Cygnus Surface Range Ultrasonic Thickness Gauges

 **CYGNUS** *Brilliant Solutions in Ultrasonic Measurement*

Key Features

At Cygnus our priority is to listen to our customers to ensure that our products are designed for the real world. We have focussed on **ease of use, accuracy and durability** when creating all of our surface thickness gauges, which includes both the MK5 range and the Intrinsically Safe.

We have strategically placed Cygnus Service Centres across the globe, who are highly trained in order to provide the excellent service and support that Cygnus is renowned for.

Cygnus is the original pioneer of the Multiple-Echo measuring technique. We have a long and proud history of offering our customers superb quality and service since 1983.



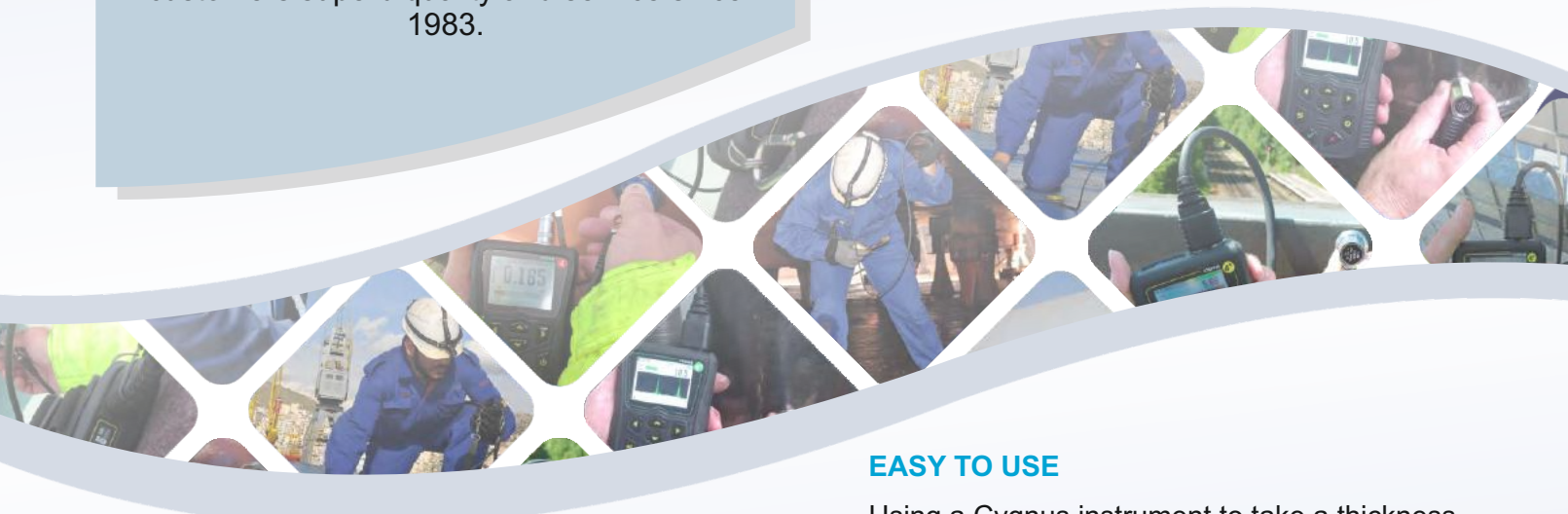
Cygnus MK5 Range

Five versatile models, varying in measuring technique and features, suit a wide range of materials, applications and corrosion levels.



Cygnus 1 Intrinsically Safe

Employing the Multiple-Echo measuring technique, to ignore coatings, this gauge is safe to use in Zone 0 & Zone 1 hazardous areas.



RELIABLE

Measures Through Coatings

Cygnus' original technique uses three return echoes to give a truly accurate, error checked metal thickness measurement (through coatings of up to 20mm (0.8")). Accepted by all major classifications societies.

The Measurement Stability Indicator (MSI™)

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

EASY TO USE

Using a Cygnus instrument to take a thickness measurement is quick and simple. Gauge menus are intuitive and easy to navigate. 'Auto-log' and 'vibrate alert' features further enhance convenience.

Bright front-mounted and end-mounted displays increase versatility. MK5 gauges are wrist and neck mountable allowing for convenient 'hands-free' use.

HIGHLY DURABLE

Ultra robust, all MK5 gauges are rated IP67 and have been tested against US Military Standards (810G). The range has been through multiple drop tests, is waterproof (1m for 30 minutes) and is sealed against the ingress of dust.

NO NEED TO REMOVE COATINGS

THREE VERSATILE MEASURING MODES

Multiple-Echo (Standard Measuring Mode - using Single Crystal Probes) gives the most reliable and accurate remaining thickness measurements, with no need to remove coating (up to 20mm thick (0.8")).

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

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

VARIETY OF PROBES

Cygnus Stainless Steel INOX Probes (Single Crystal) Used in Multiple-Echo mode, these probes include replaceable membranes for long life. (Compatible with all gauges).



Cygnus Stainless Steel INOX Probes (Twin Crystal) Used in Echo-Echo and Single-Echo modes. (Compatible with all MK5 plus (+) gauges).



COMPREHENSIVE DATA LOGGING

The Cygnus 4+ has simple, easy to use linear data logging. The Cygnus 6+ has full and comprehensive data logging. Both models have the ability to auto-log; this is a function that automatically logs measurements, without pressing any buttons, for 'hands-free' convenience.

CYGLINK SOFTWARE

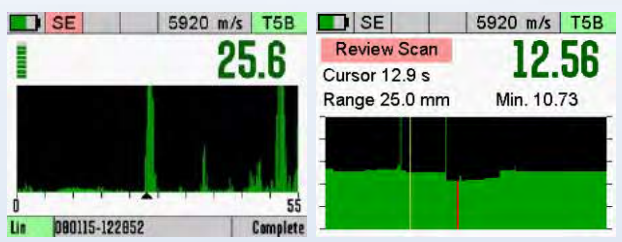
Cyglink is a Windows based application used to transfer and manage Data Logger Records, A-Scans, B-Scans, Templates, Measurement Comments and Material Velocity Tables. The program can generate PDF reports and export to Excel. It also displays A-Scans and B-Scans, allowing for after-the-event analysis of logged measurements.

Cyglink is compatible with data logging gauges (Cygnus 6+ and Cygnus 4+).

A-SCAN & B-SCAN

The Cygnus 4+ & 6+ can both display A-scans, which shows the ultrasonic echo, in visual form, used for analysis and verification.

The 6+ has the added capability to display B-scans, which shows a cross sectional view of a material.



A-Scan

B-Scan



Made in the UK



All Cygnus thickness gauges are supplied with a 3 year warranty as standard

Cygnus 2 Hands-Free & Cygnus 4 General Purpose



The Cygnus 2 Hands-Free and Cygnus 4 General Purpose are the most basic models of the MK5 range. Both gauges use Multiple-Echo to reliably measure metal thickness through coatings, up to 20mm (0.8") thick in deep coat mode. They are light, very tough and extremely simple to operate.

The Cygnus 2 has an end-mounted display making it ideally suited for climbing and rope access inspection.

The Cygnus 4 has a large and bright front mounted colour LCD display.

Key Features:

- Multiple-Echo, using Single Crystal Probes, for reliable and accurate measurements as specified by Classification Societies
- Intuitive easy to use menu
- Cygnus 2 has an OLED rotatable end display assisting hands-free operation when neck or wrist mounted
- Cygnus 4 has a large and bright front colour LCD display
- Both units can be worn comfortably on the wrist

Both Gauges are compatible with Single Crystal Probes only

| Gauge | Cygnus 2 | Cygnus 4 |
|--|--|--------------------------------|
| Materials | Sound velocities from 1,000 - 9,000 m/s (0.0390 - 0.3543 in/us) | |
| Accuracy | ±0.1 mm (±0.004") or 0.1% of thickness measurement, whichever is greatest, when calibrated in accordance with Cygnus Instruments calibration procedure | |
| Resolution | 0.1 mm (0.005") or 0.05 mm (0.002") | |
| Probe Diameters & Frequencies | <ul style="list-style-type: none"> • 6 mm (0.25") - 5 MHz (S5A) • 13 mm (0.5") - 2.25 MHz (S2C (standard)), 3.5 MHz (S3C) or 5 MHz (S5C) • 19 mm (0.75") - 2.25 MHz (S2D) | |
| Measurement Range in Steel | <ul style="list-style-type: none"> • Single crystal probes: • 3 - 250mm (0.120" - 10.00") with 2.25 MHz (S2C/D) • 2 - 150mm (0.080" - 6.000") with 3.5 MHz (S3C) • 1 - 50mm (0.040" - 2.000") with 5 MHz (S5C/A) | |
| Connector | 1 x Lemo 1 | |
| Power | 3 x AA batteries | |
| Battery Life | 10 hours minimum | |
| Display | Cygnus 2: End-Mounted OLED (rotatable) | Cygnus 4: 2.4" quarter VGA LCD |
| Size | 132 mm x 82 mm x 34 mm (3.3" x 5.1" x 1.4") (W x H x D) | |
| Weight | 300 grams (10.5 oz.) (inc. batteries) | |
| Operating Temp. | -10°C to 55°C (14°F - 131°F) | |
| Environmental Rating | IP67 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 1.22 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 | |



Cygnus 2+ Hands-Free & Cygnus 4+ General Purpose



The Cygnus 2+ Hands Free and the Cygnus 4+ General Purpose use Single Crystal Probes, for reliable readings through coatings up to 20mm (0.8") thick, as well as Twin Crystal Probes, for consistent measurements on heavily corroded metals.

The Cygnus 2+ has an OLED end-mounted rotatable display making it ideally suited for hands-free climbing and rope access inspection.

The Cygnus 4+ has a large and bright front mounted colour LCD display (with grayscale option for sunlight readability), as well as basic sequential data logging.

Key Features

- Uses Single and Twin Crystal Probes
- Measures using Multiple-Echo, Single-Echo and Echo-Echo
- One and two point calibration
- Cygnus 4+ live A-scan display
- Cygnus 4+ manual gain mode
- Cygnus 4+ explosive atmosphere: Safe operation, tested to MIL STD 810G method 511.5 procedure I

Cygnus 4+ 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

Specification

Cygnus 2+ Hands-free & Cygnus 4+ General Purpose

Both Gauges are compatible with Single & Twin Crystal Probes

| Gauge | Cygnus 2+ | Cygnus 4+ |
|--|---|---|
| Materials | Sound velocities from 1,000 - 9,000 m/s (0.0390 - 0.3543 in/us) | |
| Accuracy | ±0.1 mm (±0.004") 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") or 0.05 mm (0.002") Single-Echo and Echo-Echo modes - 0.1 mm (0.005") or 0.5 mm (0.002") or 0.01 mm (0.001") | |
| Probe Diameters & Frequencies | Single crystal probes: • 6 mm (0.25") - 5 MHz (S5A) • 13 mm (0.5") - 2.25 MHz (S2C (standard)), 3.5 MHz (S3C) or 5 MHz (S5C) • 19 mm (0.75") - 2.25 MHz (S2D) | Twin crystal probes: • 5 mm (0.2") - 7.5 MHz (T7A) • 8 mm (0.32") - 5 MHz (T5B (standard)) • 12 mm (0.5") - 2 MHz (T2C (for attenuative materials, cast metals, plastics & composites)) |
| Measurement Range in Steel | Single crystal probes: • 1 - 250mm (0.040" - 10.00") | Twin crystal probes in Single-Echo: • 0.8 - 250mm (0.031" - 10.00") Twin crystal probes in Echo-Echo: • 3 - 50mm (0.120" - 2.000") |
| Connector | Twin Lemo 00 | |
| Power | 3 x AA batteries | |
| Battery Life | 10 hours minimum | |
| Electronics | Dual channel pulser | |
| Display | Cygnus 2+: End-Mounted OLED (rotatable) | Cygnus 4+: 2.4" quarter VGA LCD |
| Size | 132 mm x 82 mm x 34 mm (3.3" x 5.1" x 1.4") (W x H x D) | |
| Weight | 300 grams (10.5 oz.) (inc. batteries) | |
| Operating Temp | -10°C to 55°C (14°F - 131°F) | |
| Data Logging | Cygnus 2+: NA | Cygnus 4+: 5000 measurements and A-scans per record. Max number records: 100 |
| Computer Software | Cygnus 2+: NA | Cygnus 4+: 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 1.22 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 | |



Cygnus 6+ Pro



The Cygnus 6+ PRO thickness gauge has a full range of features, including Multi-Mode measuring capabilities, A-scan, B-scan and comprehensive data logging.

Key Features

- Uses Single and Twin Crystal Probes
- Measures using Multiple-Echo, Single-Echo and Echo-Echo modes
- Live A-scan display
- Rolling B-scans with auto start/stop
- Freeze button
- High temperature compensation
- Manual gain mode
- One and two point calibration
- Bluetooth v2.0 for data transfer
- Large front LCD display and end-mounted OLED display with grayscale setting for bright sunlight
- Explosive atmosphere: Safe operation, tested to MIL STD 810G method 511.5 procedure I

Comprehensive Data Logging

- Linear, 2D Grid and Template based logging
- 16 Grid Patterns
- Eight user-defined text 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 displays
- Records stored on SD card
- Cyglink used to transfer and manage data

The most advanced Mk5 Gauge - Compatible with Single & Twin Crystal Probes

| | | | |
|--|---|--|---|
| Gauge | Cygnus 6+ | | |
| Materials | Sound velocities from 1,000 - 9,000 m/s (0.0390 - 0.3543 in/us) | | |
| Accuracy | ±0.1 mm (±0.004") 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") or 0.05 mm (0.002") Single-Echo and Echo-Echo modes - 0.1 mm (0.005") or 0.5 mm (0.002") or 0.01 mm (0.001") | | |
| Probe Diameters & Frequencies | Single crystal probes: • 6 mm (0.25") - 5 MHz (S5A) • 13 mm (0.5") - 2.25 MHz (S2C (standard)), 3.5 MHz (S3C) or 5 MHz (S5C) • 19 mm (0.75") - 2.25 MHz (S2D) | Twin crystal probes: • 5 mm (0.2") - 7.5 MHz (T7A) • 8 mm (0.32") - 5 MHz (T5B (standard)) • 12 mm (0.5") - 2 MHz (T2C (for attenuative materials, cast metals, plastics & composites)) | |
| Measurement Range in Steel | Single crystal probes: • 1 - 250mm (0.040" - 10.00") | Twin crystal probes in Single-Echo: • 0.8 - 250mm (0.031" - 10.00") | Twin crystal probes in Echo-Echo: • 3 - 50mm (0.120" - 2.000") |
| Connector | Twin Lemo 00 | | |
| Power | 3 x AA batteries | | |
| Battery Life | 10 hours minimum | | |
| Electronics | Dual channel pulser | | |
| Display | 2.4" quarter VGA LCD and end-mounted OLED (rotatable) | | |
| Display Info. | Thickness value, A-scan, B-scan and cross-section scan | | |
| Size | 132 mm x 82 mm x 34 mm (3.3" x 5.1" x 1.4") (W x H x D) | | |
| Weight | 300 grams (10.5 oz.) (inc. batteries) | | |
| Operating Temp. | -10°C to 55°C (14°F - 131°F) | | |
| Data Logging | 5000 measurements and A-scans per record. Max number records: 100 | | |
| Computer Software | CygLink allows remote logging & viewing of A-scan graphs. Survey & 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 1.22 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 probes | | |



Cygnus 1 Intrinsically Safe



The Cygnus 1 Intrinsically Safe is simple and tough ultrasonic thickness gauge that is safe to use in zone 0 and zone 1 hazardous area. The gauges employs Multiple-Echo technology to measure remaining metal thickness, through coatings of up to 20mm (0.8") thick.

Ideal for chemical plants, storage tanks, oil and gas production infrastructure, dry dust environments, LPG vessels, mines, road tankers, grain processing plants, fuel depots and many more.

Key Features

- Certified Intrinsically Safe to:
 - ATEX
 - {Ex} I M 1 Ex ia I Ma (Ta = 0 to 45 C)
 - {Ex} II 1 G Ex ia IIC T6 Ga (Ta = 0 to 45 C)
 - CSA Class 1 Group A, B, C & D Division 1
- For use in Zone 0, Zone 1 hazardous areas
- Also approved for use in MINES
- No plant shutdown or hot work permit necessary
- Heavy duty sealed unit - IPX5 and IPX7 rated
- Rugged, durable, shock-proof construction
- Stable calibration - linear accuracy - no zero adjustment
- Self verification of the measurements to ensure accuracy
- Bright LED display with polarised filter
- Two rechargeable battery packs with charger
- Echo strength indicator to aid measurement
- Metric / imperial switchable

The only Zone Zero Ultrasonic Thickness Gauge in the World

| Gauge | Cygnus 1 Intrinsically Safe |
|--|--|
| Materials | Sound velocities from 2000 - 7000 m/s (0.059 and 0.31 in/us) - covers virtually all common engineering materials |
| Accuracy | ±0.1 mm (±0.004") or 0.1% of thickness measurement, whichever is greatest, when calibrated in accordance with Cygnus Instruments calibration procedure |
| Resolution | 0.1 mm (0.005") or 0.05 mm (0.002") (selectable) |
| Probe Diameters & Frequencies | Single crystal soft-faced compression <ul style="list-style-type: none"> • 6 mm (0.25") - 5 MHz (S5A) • 13 mm (0.5") - 2.25 MHz (S2C (standard)), 3.5 MHz (S3C) or 5 MHz (S5C) • 19 mm (0.75") - 2.25 MHz (S2D) (lower frequency probes offer better penetration on heavy corrosion/coatings) |
| Measurement Range in Steel | Single crystal probes: <ul style="list-style-type: none"> • 3 - 250mm (0.120" - 10.00") with 2.25 MHz (S2C/D) • 2 - 150mm (0.080" - 6.000") with 3.5 MHz (S3C) • 1 - 50mm (0.040" - 2.000") with 5 MHz (S5C/A) |
| Power | NiMH rechargeable battery pack |
| Battery Life | 10 hours' continuous operation |
| Display | Bright LED display |
| Size | 235 mm x 75 mm (9.252" x 3.000") (H x W) |
| Weight | 1040 g (34.7 oz) with remote probe (inc. batteries) |
| Operating Temp. | -10°C to +50°C (14°F to 122°F) |
| Certification | ATEX {Ex} I M 1 Ex ia I Ma (Ta = 0 to 45 C) {Ex} II 1 G Ex ia IIC T6 Ga (Ta = 0 to 45 C) CSA Class 1 Group A, B, C & D Division 1 |
| Environmental Protection | IPX5 & IPX7 |
| 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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