

# CYGNUS<sup>1</sup>

UNDERWATER

## MULTIPLE ECHO ULTRASONIC Digital Thickness Gauge

### APPLICATIONS

Metal thickness and corrosion checks on offshore structures and ships.

Safety corrosion monitoring of pipelines and storage vessels.

Metal thickness / wear checks on anchor chains, jetties, dock gates, piers and pilings.

Ships classification surveys.

Maintenance and safety checks on bridges.

Measures metal thickness to determine wastage or corrosion - accurately, quickly and *without removing surface coatings*.

Cygnus multiple echo, single crystal probes mean:-

- Coatings do not have to be removed - measures only the metal thickness.
- Accepted by major classification societies.
- No grinding - minimum surface preparation.
- Measures on rough corroded surfaces.
- Speed, accuracy and reliability.
- No false readings - repeatable results.
- Easy to use - minimum operator training.
- Greatly reduced inspection time and cost.
- Measures on metals and some other materials.

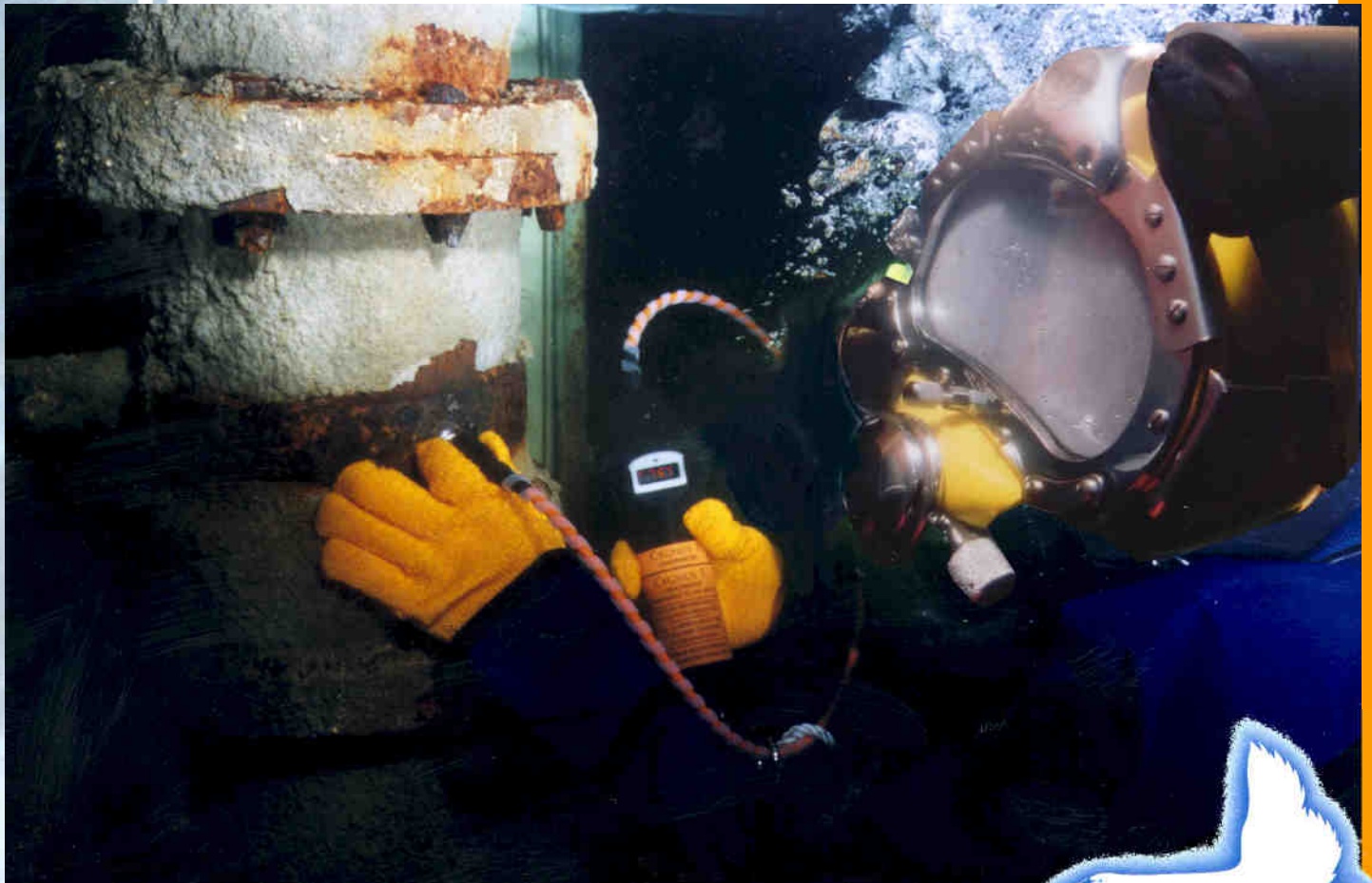


Photo courtesy of KCI Technologies, Inc

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UNDERWATER

## MULTIPLE ECHO ULTRASONIC

### Digital Thickness Gauge

#### FEATURES

- .. Pressure tested to 300 m.
- .. Heavy duty sealed unit with double 'O' ring protection.
- .. Remote probe with 0.9 m lead for measuring in awkward locations.
- .. Rugged durable shock proof construction.
- .. Stable calibration - linear accuracy - no zero adjustment.
- .. Various probe options.
- .. Large bright L.E.D display for poor visibility.
- .. Rechargeable batteries with charger.
- .. All probes are protected by a membrane to prevent damage.
- .. Self verification of the measurements to ensure accuracy.
- .. Echo strength indicator to aid measurement.



#### SPECIFICATION

Materials	Sound velocities between 2000 m/s and 7000 m/s		
Range	3 mm - 250 mm with 2.25 MHz probe 2 mm - 150 mm with 3.5 MHz probe 1 mm - 50 mm with 5 MHz probe		
Accuracy	±0.1 mm	OR	±0.05 mm
Resolution	0.1 mm		0.05 mm
Probes	Remote single crystal soft-faced compression. 6 mm - 5 Mhz 13 mm - 2.25, 3.5 or 5 Mhz 19 mm - 2.25 MHz		
Power	NiMH rechargeable batteries		
Display	Large clear L.E.D. display with polarised filter		
Size	238 mm x 85 mm		
Weight	977 gms with remote probe		
Operating Temp.	-10°C to +50°C		

#### KIT CONTENTS

Instrument, heavy duty remote 2.25 MHz 13 mm diameter probe, 2 rechargeable batteries and battery charger, spare membranes and 'O' rings, steel test block, lanyard, calibration trim tool, operation manual and carry case.



2 year warranty

## TOPSIDE REPEATER OPTIONS



The topside repeater is available in case of poor visibility or when the readings need to be verified on the surface. Umbilical cable length is specified by the customer up to a maximum of 1000 m. There are two options available:

#### OPTION A

Palm held surface display repeater with large liquid crystal display and an IP65 sealed case.

#### OPTION B

Datalogging and remote display windows based software. The umbilical is connected directly to the serial port of the PC. *(The PC is not included)*

# DEDICATED ROV THICKNESS GAUGE

Cygnus Instruments offer two dedicated ROV mountable thickness gauges. The units have been designed to be mounted onto most types of work class ROV with a manipulator facility. The shallow water version is pressure tested to 1000 m and the deep water version is pressure tested to 3000 m. Dedicated software displays the time, date and thickness readings on the surface and all of these can be stored.

## FEATURES

- u Two models available:
  - q Shallow water version pressure tested to 1000 m
  - q Deep water version pressure tested to 3000 m
- u 5 m of probe cable for routing around most ROV's
- u Power supply taken from the ROV
- u Only one twisted pair is required to transfer the data to the surface
- u The probe does not need to touch the surface under test, measurements can be taken through 5 mm of water
- u Readings are not influenced by the probe orientation
- u Dedicated software for displaying the measured results, storing the measurements and setting the calibration of the gauge

## SPECIFICATION

Materials	Sound velocities between 1000 m/s and 9995 m/s
Range	3 mm - 250 mm with 2.25 MHz probe 2 mm - 150 mm with 3.5 MHz probe 1 mm - 50 mm with 5 MHz probe
Accuracy	±0.1 mm
Resolution	0.1 mm
Probes	Single crystal soft-faced compression remote probe with 5 m of cable. 13 mm - 2.25, 3.5 or 5 MHz 19 mm - 2.25 MHz
Power	7.5 - 30 V dc @ 150mA (max)
Size	237 mm x 70 mm
Weight in air	1000 m depth model - 1.25 kg 3000 m depth model - 4.0 kg
Operating Temp.	-10°C to +50°C
Communication	Standard RS-422



2 year warranty

## KIT CONTENTS

Instrument, heavy duty remote 2.25 MHz 13 mm diameter probe with 5 m of cable, sealed 4-way connector with fly lead, test cable, RS-422 to RS-232 converter, remote display and datalogging software (Windows compatible), spare membranes and 'O' rings, steel test block, operation manual and carry case.

## SURFACE REQUIREMENT

(Not included)

PC or laptop (486 minimum) with VGA screen and one free serial comms or USB port.

# UNDERWATER COATING THICKNESS GAUGE



1 year warranty

abcdef  
BS EN ISO9001: 2000

**CYGNUS**  
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## FEATURES

- .. Probe pressure tested to 100 m
- .. Coatings up to 5 mm can be measured underwater
- .. Gauge stays on the surface and the probe is connected with up to 100m of marinised cable
- .. Ferrous, Non Ferrous and combined probes available
- .. Optional datalogging for use with dedicated software
- .. Readings unaffected by metallic anti-foulant additives
- .. Rugged durable shock proof construction
- .. Various probe types

## SPECIFICATION

Materials	Ferrous substrates: Iron and steel Non Ferrous substrates: Aluminium, zinc, copper, brass and stainless steel
Range	0 - 2000µm or 0 - 5000µm depending on the probe type
Accuracy	± 2%
Resolution	0.1 µm in the range 0 - 99.9 µm 1 µm in the range of 100 - 999 µm 0.01 mm in the range of 1.00 - 5.00 mm
Probes	Ruby tipped single point
Power	1 x 9 V PP alkaline battery
Display	Digital LCD
Size	118 mm x 60 mm x 24 mm
Weight	150 gms (including battery)
Operating Temp.	0°C to +60°C