Ultrasonic Thickness Gauge

Multigauge 3000

Underwater Gauge

نماینده انحصاری در ایـــران

شرکت کاوشکـــاران

تلفـــن: ۸۸۶۸۵۲۹۷ – ۰۲۱

www.KAWOSHKARAN.com

tritex ndt

www.tritexndt.com

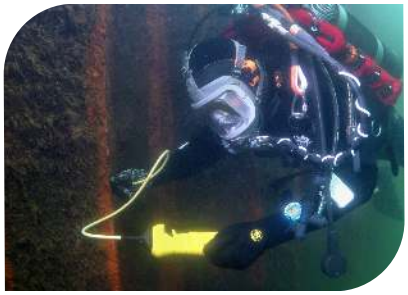
Multigauge 3000

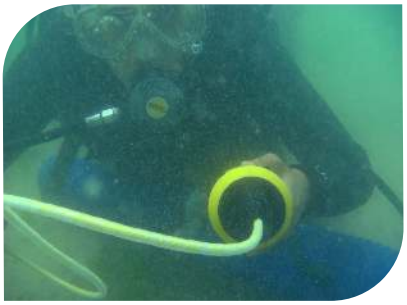
Underwater Gauge

Large Bright
10 mm Display

The Multigauge 3000 Underwater Gauge is a simple, robust ultrasonic thickness gauge designed for most common underwater thickness gauging applications. The gauge is pressure tested to 500m and has the option to transfer measurements to a surface display unit with the simple addition of a replacement end cap. It has been designed and built to survive extremely harsh conditions that exist in the offshore and underwater industries worldwide. The gauge uses multiple echo which means measurements can be easily taken without the need to remove coatings, up to 6mm thick, and the large bright LED display ensures the display can be seen by the diver, even in poor visibility.

The gauge is equipped with **Intelligent Probe Recognition (IPR)**, which automatically adjusts settings in the gauge for enhanced performance and **Automatic Measurement Verification System (AMVS)** to ensure only true measurements are displayed, even on the most heavily corroded metals.





Features:

- **Large 10mm display for poor visibility**
- **Ignores coatings up to 6mm thick using multiple echo. Coating Plus+ ignores coatings up to 20mm**
- **Pressure tested to 500m**
- **Integral battery with 55 hour runtime on one fast charge. No need for a spare battery**
- **Easy to use**
- **No fuss upgrade option to a topside repeater**
- **Intelligent Probe Recognition (IPR)**
- **Automatic Measurement Verification (AMVS)**
- **No zeroing required**
- **Free calibration for the life of the gauge**
- **Rugged and robust**

Multigauge 3000 Standard Kit

simple . accurate . robust

Multigauge 3000

3 Options...

Surface Display Unit

Multigauge 3000 Diver Handheld

The standard unit allows the diver to take measurements underwater. The large bright display gives a clear reading even in poor visibility conditions. The gauge benefits from being highly visible and easy to hold due to its robust heavy duty construction.

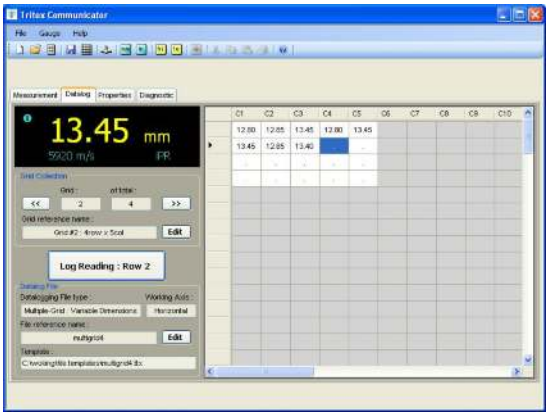
The Multigauge 3000 can be easily upgraded to one of two topside repeater options by simply replacing the end cap. An alternative end cap houses an Impulse connector for connection to an umbilical. The umbilical can be up to 1000 metres long.

Multigauge 3000 Surface Display Unit

The Multigauge 3000 Surface Display unit repeats the measurements from the Multigauge 3000 diver unit. This allows measurements to be displayed topside when visibility is too bad for the diver to see the display, or when measurements have to be verified by another person.

Additionally, it also allows the person on the surface to remotely change the settings on the diver unit, including the calibration, measurement units and resolution.

Multigauge 3000 Surface Software



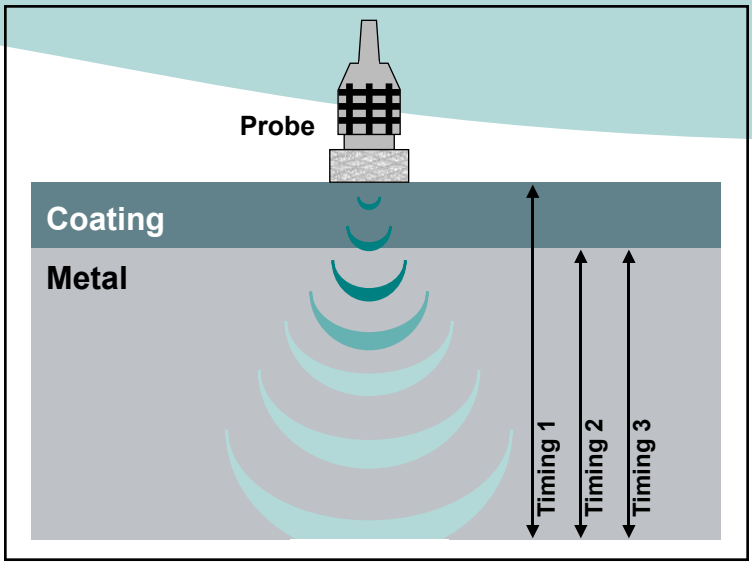
Communicator Software

The Multigauge 3000 Surface Software displays measurements onto a laptop which allows the topside person to log the data as required. The kit is supplied with an RS232 to USB converter for connection with most laptop computers.

The software allows the user to adjust settings in the gauge through a bi-directional link, display the repeated measurements from the diver and datalog the measurements into useful templates.

About Multiple Echo

All Ultrasonic Thickness Gauges should be calibrated to the velocity of sound of the material being measured. Coatings have a different velocity of sound than metal and it is important they are not included in the measurement. Multiple Echo ensures all coatings, up to 6mm thick, are completely eliminated from the measurement.



How it works:

A transmitted ultrasound pulse travels though both the coating and the metal and reflects from the back wall. The returned echo then reverberates within the metal, with only a small portion of the echo travelling back through the coating each time. The timing between the small echoes gives us the timing of the echoes within the metal, which relate to the metal thickness. The returned echoes need not be consecutive as the gauge will interpret them automatically and calculate the thickness. A minimum of three echoes are checked each time. This is referred to as the **Automatic Measurement Verification System (AMVS)**.

Specification

Sound Velocity Range	*From 1000 m/s to 8000 m/s (0.0394 in/µs to 0.3150 in/µs)*		
Single Crystal Soft Faced Probe Options	*2.25 MHz*	*3.5 MHz*	*5 MHz*
Probe Measurement Range	*3 - 250 mm (0.120" to 10")*	*2 - 150 mm (0.080" to 6")*	*1 - 50 mm (0.040" to 2")*
Probe Sizes	*13 mm (0.5") & 19 mm (0.75")*	*13 mm (0.5")*	*13 mm (0.5")*
Resolution	*0.1 mm (0.005") or 0.05 mm (0.002")*		
Accuracy	*± 0.1 mm (0.005") or ± 0.05 mm (0.002")*		
Coatings Range	*Up to 6mm (Standard Mode)*; up to 20mm (Coating Plus+)**		
Display	*Red 4 character 7 segment LED*		
Pressure Tested	*500 metres*		
Batteries	*1 x Rechargeable 7.2V 2.3Ah NiMH battery pack*		
Battery Life	*55 Hours continuous use*		
Gauge Dimensions	*235 mm x 80 mm (9.25" x 3.15")*		
Gauge Weight	*1110 g (38.85 ounces) fully assembled*		
Environmental	*RoHS and WEEE compliant*		
Operating Temperature	*-10°C to +50°C (14°F to 122°F)*		
Storage Temperature	*-10°C to +60°C (14°F to 140°F)*		

** Figures relate to most coating types*

The Tritex Multigauge 3000 has been manufactured to comply with British Standard BS EN 15317:2007, which covers the characterisation and verification of ultrasonic thickness measuring equipment.

Kit Contents:

Multigauge 3000, probe, spare membranes, membrane oil, 15mm test block, membrane key, spare 'O' rings, Molykote grease, nose cone release bar, battery charger with appropriate power lead, manual, calibration certificate, carry case.

3 YEAR WARRANTY

Contact

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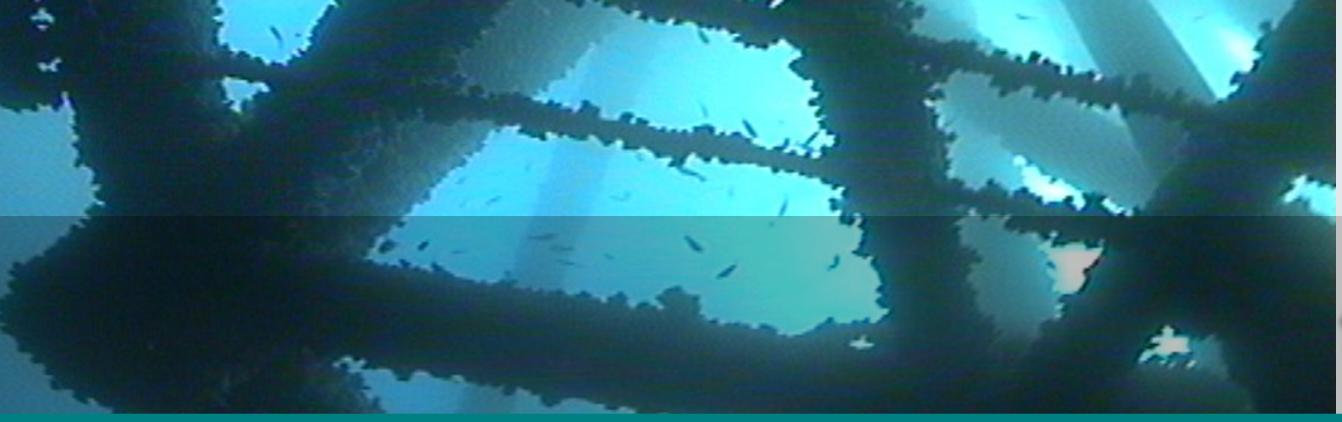
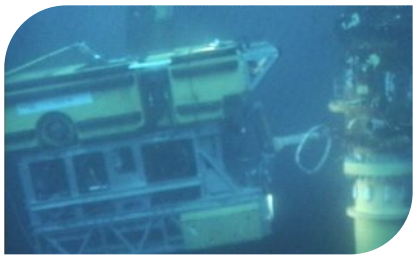


Ultrasonic Thickness Gauge

Multigauge 4000 series

ROV Gauge

The Multigauge ROV 4100 and 4400 Underwater Gauges are simple, robust ultrasonic thickness gauges designed to be mounted onto all types of work class ROV's. There are two models in the range, the Multigauge ROV 4100 which has a depth rating of 1000m and the Multigauge ROV 4400 which has a depth rating of 4000m. Both gauges have been designed and built to survive extremely harsh conditions that exist in the offshore and underwater industries worldwide. The gauges use multiple echo which means measurements can be easily taken without the need to remove coatings, up to 6mm thick, and the selectable RS232 or RS422 output makes connection to most ROV's simple. The gauge is equipped with **Intelligent Probe Recognition (IPR)**, which automatically adjusts settings in the gauge for enhanced performance and **Automatic Measurement Verification System (AMVS)** to ensure only true measurements are displayed,



Multigauge 4400
4000 m

Features:

- **Ignores coatings up to 6mm thick using multiple echo. Coating Plus+ ignores coatings up to 20mm**
- **Depth rating to 1000m and 4000m**
- **Easy to use datalogging software**
- **Compatible with most ROV's**
- **RS232 or RS422 output**
- **Optional probe holder for correct presentation of the probe**
- **Rugged and robust**
- **Intelligent Probe Recognition (IPR)**
- **Automatic Measurement Verification (AMVS)**
- **No zeroing required**
- **Free calibration for the life of the gauge**

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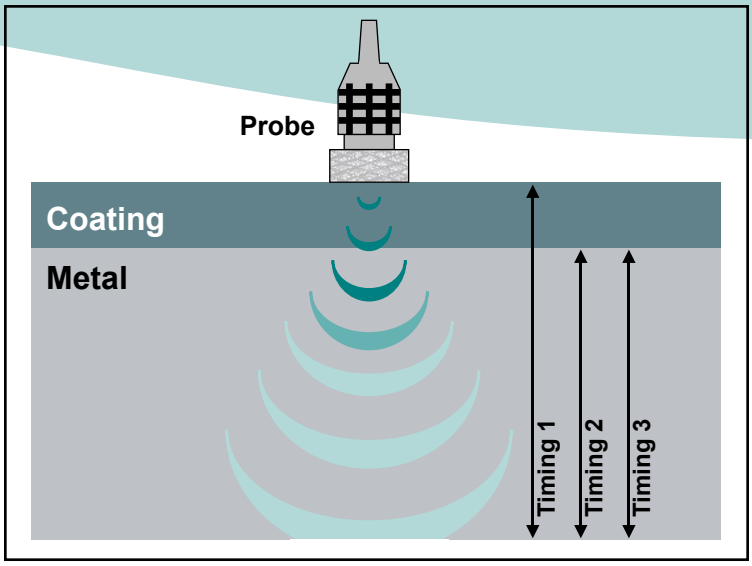
تلفن: ۰۲۱ - ۸۸۶۸ ۵۲۹۷
www.IR-QC.com

www.tritexndt.com

About Multiple Echo

All Ultrasonic Thickness Gauges should be calibrated to the velocity of sound of the material being measured. Coatings have a different velocity of sound than metal and it is important they are not included in the measurement. Multiple Echo ensures all coatings, up to 6mm thick, are completely eliminated from the measurement.



How it works:

A transmitted ultrasound pulse travels though both the coating and the metal and reflects from the back wall. The returned echo then reverberates within the metal, with only a small portion of the echo travelling back through the coating each time. The timing between the small echoes gives us the timing of the echoes within the metal, which relate to the metal thickness. The returned echoes need not be consecutive as the gauge will interpret them automatically and calculate the thickness. A minimum of three echoes are checked each time. This is referred to as the **Automatic Measurement Verification System (AMVS)**.

Specification

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Probe Sizes	*13 mm (0.5") & 19 mm (0.75")*	*13 mm (0.5")*	*13 mm (0.5")*
Resolution	*0.1 mm (0.005") or 0.05 mm (0.002")*		
Accuracy	*± 0.1 mm (0.005") or ± 0.05 mm (0.002")*		
Coatings Range	*Up to 6mm (Standard Mode)*; up to 20mm (Coating Plus+)**		
Output	*RS232 or RS422 User Selectable*		
Pressure Tested	*1000 metres (Multigauge 4100) & 4000m (Multigauge 4400)*		
Power	*9Vdc - 30Vdc @ 150mA*		
Gauge Dimensions	*145 mm x 72 mm (5.71" x 2.83")*		
Gauge Weight	*Multigauge 4100 ROV: 465 g (16.40 ounces)* *Multigauge 4400 ROV: 2500g (151.68 ounces)*		
Environmental	*RoHS and WEEE compliant*		
Operating Temperature	*-10°C to +50°C (14°F to 122°F)*		
Storage Temperature	*-10°C to +60°C (14°F to 140°F)*		

** Figures relate to most coating types*

The Tritex Multigauge 4000 series has been manufactured to comply with British Standard BS EN 15317:2007, which covers the characterisation and verification of ultrasonic thickness measuring equipment.

Kit Contents:

Multigauge 4000 gauge, probe, spare membranes, membrane oil, 15mm test block, membrane key, spare 'O' rings, Molykote grease, nose cone release bar, manual, calibration certificate, carry case, communicator software, RS422 - RS232 converter, Impulse connector with fly lead, ROV test cable, power supply for use with test cable.

3 YEAR WARRANTY

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