

# Single Crystal Probes for Cygnus Ultrasonic Thickness Gauges

To complement our range of ultrasonic thickness gauges we offer a range of ultrasonic probes. The performance of any ultrasonic thickness gauge relies heavily on the quality of the probe and its suitability to the material being measured. Therefore selecting the right probe is vital.

Single Crystal Probes are used with the gauge in Multiple Echo mode and allow measurements to be taken ignoring coatings.

Constructed from stainless steel, Cygnus single crystal probes, soft face probes incorporate a replaceable wear membrane. This protects the probe face ensuring years of reliable, accurate service.



Probes

## Guidelines for Probe Frequency Selection

The probe frequency will be determined by the minimum thickness you need to measure, however the lower the probe frequency the more effective the ultrasound will be at penetrating coatings and corrosion. The 2.25 MHz 13mm INOX probe is recommended for the majority of applications as it performs the best on corroded metal and through thick coatings.

Probe ID Number	Frequency	Face Size	Band/Face Colour		Range in Steel	Typical Applications
S5A	5.0 MHz	6 mm (¼")	Black Face	●	1 to 50 mm	Small diameter pipes and boiler tubes/heat exchangers
S5C	5.0 MHz	13 mm (½")	Black Band	○	1 to 50 mm	Measuring wall thickness down to 1mm
S3C	3.5 MHz	13 mm (½")	Orange Band	○	2 to 150 mm	Measuring wall thickness down to 2mm with corrosion through coatings
<b>S2C</b>	<b>2.25 MHz</b>	<b>13 mm (½")</b>	<b>Red Band</b>	○	<b>3 to 250 mm</b>	<b>Standard probe supplied, best for all round measurement of wall thickness with corrosion through coatings.</b>
S2D	2.25 MHz	19 mm (¾")	Red Face	●	3 to 250 mm	Large flat plates with heavy corrosion and/or through thick coatings.

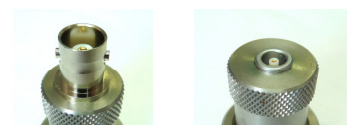
## Probes

Probes for use with **Cygnus 2, Cygnus 3 & Cygnus 4** Gauges. Probes are fitted with a BNC connector.

All Probes are supplied with a 1.35 meter probe cable with a choice of connector to suit the model of thickness gauge.

*Note. For Underwater, Intrinsically Safe & Heavy Duty gauges specific probes are available.*

### Probe Connectors



BNC

Lemo 00

Order Code	Frequency	Face Size	Probe Connector	Cable Connector	Cable connects to
<b>004- 9316</b>	5.0 MHz	13 mm	BNC	Lemo 1	Mk4 Cygnus 2, 3 & 4 Gauges
<b>004- 9313</b>	3.5 MHz	13 mm	BNC	Lemo 1	"
<b>004- 9310</b>	2.25 MHz	13 mm	BNC	Lemo 1	"
<b>004- 9311</b>	2.25 MHz	19 mm	BNC	Lemo 1	"
<b>004- 9314</b>	5.0 MHz	6 mm	Lemo 00	Lemo 1	"

## Probe Membranes

Cygnus single crystal probes have a protective membrane fitted in front of the probe face to protect it from damage during use on rough corroded surfaces. A thin film of membrane couplant sits between the membrane and the probe face to allow the ultrasound to pass through. The membrane also helps the probe face "mould" to uneven corroded surfaces aiding measurement.

The performance of the probe depends on the condition of the membrane and how well it has been fitted. Cygnus recommends membranes are replaced frequently as a precaution or at the first sign of any scoring, tearing or damage.

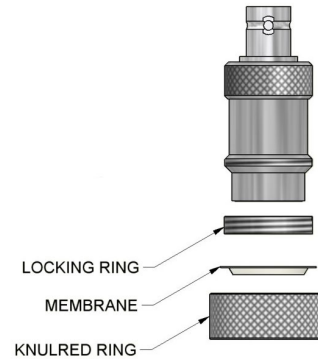
Membranes are available in two materials, the standard Polyurethane membrane is suitable for surface temperatures up to 75°C (167°F), the Teflon membrane is suitable for surface temperatures up to 150°C (302°F) with a maximum contact time of 5 seconds.

### Standard Polyurethane (75°C) Pack of 20

Order Code	Probe Size
001-3702	6 mm Probe
001-3701	13 mm Probe
001-3700	19 mm Probe

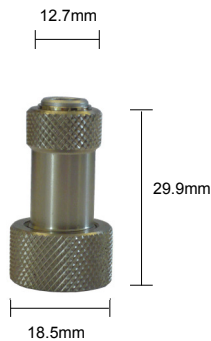
### Teflon (150°C) Pack of 10

Order Code	Probe Size
001-4873	6 mm Probe
001-4874	13 mm Probe
001-4875	19 mm Probe



## Probe Dimensions

5.0 MHz 6mm



2.25 MHz / 3.5MHz 13mm  
INOX



2.25MHz 19mm



## Specifications

<b>Body</b>	Stainless Steel 304	<b>Connectors</b>	13, 19 mm: BNC 6 mm: Lemo 00
<b>Weight</b>	6 mm: 30 g (1 oz) 13 mm: 64 g (2.26 oz) 19 mm: 100 g (3.5 oz)	<b>Membrane</b>	Polyurethane (Standard) up to 75°C  Teflon (High Temperature) up to 150°C