

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, they have a soft face incorporating a replaceable wear membrane. This protects the probe face ensuring years of reliable, accurate service.



Guidelines for Probe Frequency Selection

The probe frequency will be determined by the minimum thickness you need to measure, however the lower the frequency the more effective the ultrasound will be at penetrating coatings and corrosion. The S2C 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 Specifications

Probe ID Number	Frequency	Face Size	Band/Face Colour		Range in Steel	Typical Applications
S5A	5.0 MHz	6 mm (0.24")	Black Face	●	1 to 50 mm (0.040 to 2.000")	Small diameter pipes and boiler tubes/heat exchangers
S5C	5.0 MHz	13 mm (0.05")	Black Band	○	1 to 50 mm (0.040 to 2.000")	Measuring wall thickness down to 1mm
S3C	3.5 MHz	13 mm (0.05")	Orange Band	○	2 to 150 mm (0.080" to 6.000")	Measuring wall thickness down to 2mm with corrosion through coatings
S2C	2.25 MHz	13 mm (0.05")	Red Band	○	3 to 250 mm (0.120" to 10.00")	Standard probe supplied, best for all round measurement of wall thickness with corrosion through coatings
S2D	2.25 MHz	19 mm (0.75")	Red Face	●	3 to 250 mm (0.120" to 10.00")	Large flat plates with heavy corrosion and/or through thick coatings.

Probes for use with the Cygnus 2, 2+, 4, 4+ and 6+ Gauges are fitted with a BNC connector.

For use with Cygnus DIVE Gauge they are fitted with an integral coiled cable with a Fischer connector.

For use with the Cygnus Underwater, Intrinsically Safe and Heavy Duty gauges they are fitted to a nosecone that screws onto the gauge body.

Probe ID Number	Order Code	Frequency	Face Size	Probe Connector
S5C	004- 9316	5.0 MHz	13 mm (0.50")	BNC
S3C	004- 9313	3.5 MHz	13 mm (0.50")	BNC
S2C	004- 9310	2.25 MHz	13 mm (0.50")	BNC
S2D	004- 9311	2.25 MHz	19 mm (0.75")	BNC
S5A	004- 9314	5.0 MHz	6 mm (0.24")	Lemo 00



BNC



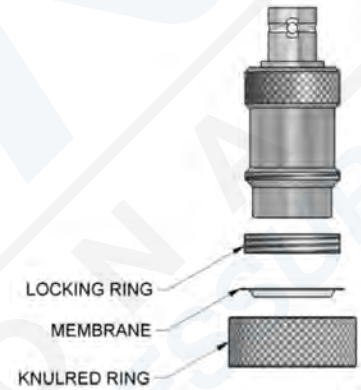
Lemo 00

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.

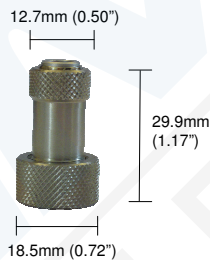
Membranes are available in two materials, the standard Polyurethane membrane is suitable for surface temperatures up to 75°C (167°F), the Teflon membrane is suitable for surface temperatures up to 150°C (302°F) with a maximum contact time of 5 seconds.

Order Code	Probe Size	Size of head including knurled ring (approx.)	Physical size of membrane (approx.)
Standard Polyurethane (75°C) Pack of 20			
001-3702	6 mm (0.24")	18mm (0.70")	14mm (0.50")
001-3701	13 mm (0.50")	24mm (0.95")	21mm (0.82")
001-3700	19 mm (0.75")	30mm (1.18")	28.5mm (1.12")
Teflon (150°C) Pack of 10			
001-4873	6 mm (0.24")	18mm (0.70")	14mm (0.50")
001-4874	13 mm (0.50")	24mm (0.95")	21mm (0.82")
001-4875	19 mm (0.75")	30mm (1.18")	28.5mm (1.12")



Probe Dimensions

5.0 MHz 6mm (0.24")



2.25 MHz / 3.5MHz
13mm (0.50")
INOX



2.25MHz 19mm (0.75")



* NOT TO SCALE

Physical Specifications

Body	Stainless Steel 304	Connectors	13mm (0.50"): BNC 19mm (0.75"): BNC 6mm (0.24") : Lemo 00	Probe operating temperature range	-20° to +60°C -4° to +140°F
Weight	6 mm (0.24"): 30 g (1 oz) 13 mm (0.50"): 64 g (2.26 oz) 19 mm (0.75"): 100 g (3.5 oz)	Membranes	Polyurethane (Standard) / Teflon (High Temperature) up to +75°C / +167°F up to +150°C / +302°F		