

UniWest - UT Probes

UniWest

Since 1985, employee-owned UniWest has engineered and manufactured eddy current (EC) testing solutions and instruments with unparalleled flaw detection capabilities for safety-critical and high-performance components in industries around the globe.

Theory

Ultrasonic testing is based on time-varying deformations or vibrations in materials. Ultrasonic testing (UT) a non-destructive testing technique that pulses ultrasonic waves in a material and measures the time the pulses take to return to the transducer. In most common UT applications, very short wavelength, high frequency ultrasonic pulse-waves are transmitted into materials to detect internal flaws or to characterize materials. The information gathered is traditionally displayed on an A-Scan display that plots time taken on the x-axis and returning intensity on the y-axis.

Ultrasonic testing is often performed on steel and other metals and alloys, though it can also be used on concrete, wood and composites, albeit with less resolution. It is used in many industries including steel and aluminium construction, metallurgy, manufacturing, aerospace, automotive and other transportation sectors.

Contact Transducers



Single element compression wave transducers are generally used for applications such as flaw detection, metal thickness estimation and feature mapping. The Standard Contact configurations are housed in a rugged stainless-steel shell couple with an aluminium oxide wear face. Replaceable delay

A- Transducer Type	B- Active Element (mm)	C- Frequency (MHz)				
		2.25	5	7.5	10	15
Replaceable Delay Line	Dia					
RDL	6.4		✓	✓	✓	✓
RDL	9.5	✓	✓	✓	✓	
RDL	12.7	✓	✓			

A- Transducer Type	B- Active Element (mm)	C- Frequency (MHz)				
		2.25	5	7.5	10	15
Standard Contact	Dia					
SC	6.4	✓	✓	✓	✓	✓
SC	9.5	✓	✓	✓	✓	✓
SC	12.7	✓	✓	✓	✓	

*All transducers are fitted with a microdot style connector

**Part Number- A-B-C (inches)- ie RDL-3/8-5.0 is a Replaceable delay line 9.5mm diameter 5MHz transducer

Angle Beam Potted

Angle beam transducers are single element shear wave transducers in a non-marring plastic housing. The high



sensitivity and good resolution of these transducers allow them to be widely used and make them a popular choice for many NDT applications. They are found in diverse applications in industries employing NDT such as weld inspection and flaw detection on air frames and other such applications. Custom designs available upon request. Suitable for Al and Steel(D), transducers come in 45,60 and 70 degree (C) configurations. Connection points can be on the top or side(E).

A- Transducer Type	B- Active Element (mm)	F- Frequency (MHz)			
		2.25	5	7.5	10
ABP	4.7x4.7	✓	✓	✓	✓
ABP	6.4x6.4	✓	✓	✓	✓
ABP	9.5x9.5	✓	✓	✓	✓

*All transducers are fitted with a microdot style connector

**Part Number- A-B-C-D-E-F (inches)- ie ABP-1/4x1/4-45-AL-S-5 is a 6.4x6.4mm 45 Degree Aluminium 5MHz transducer with a side connection.

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Quick Change Angle Beam Transducers

The Quick-Change Transducer (QCT) series of transducers that makes changing wedge angle and transducer frequency rapid



and easy, saving both time and money. The QCT connects straight into the wedges allowing for many combinations all within one kit. All QC Transducers are fitted with top mounted microdot connectors allowing for seamless transition from one transducer to the next. The stainless-steel transducer housing will resist even the harshest working conditions. The emphasis of the QCT is general purpose with a balance of power and resolution, a High-resolution version is available upon request.

The Quick-Change Wedge (QCW) is simple to setup and operate, utilizing incorporated noise dampening material on the wedge. Offered in steel, aluminium and titanium refracted angle. Custom contours, radii and wear pins available upon request.

A- Transducer Type	B-Size (mm)			C- Frequency (MHz)			
	4.7	6.4	9.7	2.25	5	7.5	10
QCT	✓	✓	✓	✓	✓	✓	✓
QCT	✓	✓	✓	✓	✓	✓	✓
QCT	✓	✓	✓	✓	✓	✓	✓
QCT	✓	✓	✓	✓	✓	✓	✓

*All transducers are fitted with a microdot style connector, add HR at the end for High Resolution

**Part number- A-B-C(Inches): ie QCT-1/4-2.25 is a Quick change 2.5MHz transducer with a 4.7mm element.

A- Part No	B-Size (mm)			C- Angle (degrees)					D- Material	
	4.7	6.4	9.7	35	45	60	70	90	AL	ST
QCW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
QCW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
QCW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
QCW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*Part number- A-B-C-D(inches): i.e. QCW-1/4-35-ST is a Quick-Change Wedge for a 4.7mm element, 35 degrees, Steel material

Replaceable Delay Line Pencil Type



Replaceable delay line pencil type transducers are produced with a single crystal element and rugged design, making them perfect for tough work settings. The special design allow testing to be completed in difficult to access areas of work pieces. They have great sensitivity and second to none resolution. The tips are replaceable and come with diameters 1.8, 2.3, and 3.2mm.

A- Head Style	B- Frequency		C-Connector	
	10MHz	15MHz	Microdot	Lemo
00	✓	✓	✓	✓
45	✓	✓	✓	✓
90	✓	✓	✓	✓
MM	✓	✓	✓	✓

*Included with each transducer is a 1.8,2.3 and 3.2mm delay line
**Part number- EE-A-B-C: ie EE-00-10-M Straight Head, 10MHz and Microdot connector

About PCTE

PCTE have over 30 years' experience in the measurement and testing of construction materials. PCTE can provide more than just the equipment, they can provide expert training. PCTE have a service centre in Sydney in which they can provide calibration, repairs and warranty repairs.