



**[WWW.ITOKIN2000.COM](http://WWW.ITOKIN2000.COM)**

# Contents

- 1 Thickness Gages..... 4
  - 1.1 TG-110 DL..... 5
    - 1.1.1 Instrument..... 5
    - 1.1.2 Accessories - Options - Spares ..... 6
  - 1.2 CB-110..... 7
    - 1.2.1 Instrument..... 7
    - 1.2.2 Accessories - Options - Spares ..... 8
  - 1.3 900 Series ..... 10
    - 1.3.1 Instrument..... 10
    - 1.3.2 Accessories - Options - Spares ..... 12
  - 1.4 TG-410..... 13
    - 1.4.1 Instrument..... 13
    - 1.4.2 Accessories - Options - Spares ..... 14
  - 1.5 NovaScope 6000..... 15
    - 1.5.1 Instrument..... 15
    - 1.5.2 Accessories - Options - Spares ..... 16
  - 1.6 Special Thickness Gage Transducers ..... 17
    - 1.6.1 Pencil Style Transducers ..... 17
    - 1.6.2 Pencil Style Transducers Accessories – Options – Spares..... 18
    - 1.6.3 Immersion Bubbler Transducers..... 19
    - 1.6.4 Immersion Bubbler Transducer Accessories – Options - Spares..... 19
  - 1.7 Vector TX1 ..... 21
    - 1.7.1 Instrument..... 21
    - 1.7.2 Accessories - Options - Spares ..... 22
- 2 Flaw Detectors..... 23
  - 2.1 Avenger ..... 24
    - 2.1.1 Instrument..... 24
    - 2.1.2 Accessories - Options - Spares ..... 25
  - 2.2 Raptor..... 27
    - 2.2.1 Instrument..... 27
    - 2.2.2 Accessories – Options – Spares..... 28
- 3 Bond Testers ..... 29
  - 3.1 BondaScope 3100..... 30
    - 3.1.1 Instrument..... 30

- 3.1.2 Accessories - Options – Spares ..... 31
- 3.1.3 Bond Testing Probes ..... 32
- 3.1.4 Bond Testing Probe Kits ..... 33
- 3.1.5 Bond Testing Cables..... 33
- 3.2 Curlin Air..... 34
  - 3.2.1 Instrument ..... 34
  - 3.2.2 Accessories - Options - Spares ..... 34
- 4 Imaging Systems ..... 36
  - 4.1 Raptor CIS..... 37
    - 4.1.1 Instrument ..... 37
    - 4.1.2 Accessories – Options – Spares..... 38
  - 4.2 BondHub..... 39
    - 4.2.1 Instrument ..... 39
    - 4.2.2 Accessories - Options – Spares ..... 40
  - 4.3 Scanners ..... 41
    - 4.3.1 Motorized Scanners ..... 42
    - 4.3.2 Manual Scanners ..... 44
    - 4.3.3 Specific Scanners: Accessories - Options – Spares..... 46
      - 4.3.3.1 TUNNEL SCAN: Accessories – Options – Spares ..... 46
      - 4.3.3.2 CROSS SCAN: Accessories – Options – Spares..... 46
      - 4.3.3.3 RCA-10/18: Accessories – Options – Spares..... 46
      - 4.3.3.4 SLIDE SCAN: Accessories – Options – Spares ..... 47
      - 4.3.3.5 AEHS-03: Accessories – Options – Spares ..... 47
      - 4.3.3.6 STRING SCAN: Accessories – Options – Spares ..... 48
    - 4.3.4 General Scanners: Accessories – Options – Spares ..... 49
      - 4.3.4.1 General Scanners: UT Transducers ..... 49
      - 4.3.4.2 General Scanners: Bond Testing Probes ..... 49
- 5 UT Transducers ..... 50
  - 5.1 TG-110DL Transducers ..... 46
  - 5.2 900 Series and NovaScope 6000 Transducers..... 47
  - 5.3 Standard Transducers..... 48
    - 5.3.1 Contact Transducers & Accessories ..... 48
    - 5.3.2 Delay Line Transducers & Accessories ..... 50
    - 5.3.3 Protected Element Transducers & Accessories ..... 51
    - 5.3.4 Dual Element Transducers & Accessories..... 52
  - 5.4 Angle Beam Transducers & Wedges ..... 53
    - 5.4.1 Angle Beam Transducers (LSA) ..... 53

- 5.4.2 Standard Angle Beam Wedges (LSW) ..... 53
- 5.4.3 Custom Angle Beam Wedges (LSW) ..... 53
  - 5.4.3.1 30° and 90° angle wedges ..... 53
  - 5.4.3.2 Wedge contouring ..... 53
- 5.4.4 Quick Change Transducers (TAB)..... 54
- 5.4.5 Standard Quick Change Wedges (TAW)..... 54
- 5.4.6 Custom Quick Change Wedges (TAW)..... 54
  - 5.4.6.1 30° and 90° angle wedges ..... 54
  - 5.4.6.2 Wedge contouring ..... 55
- 5.4.7 Mini Potted Transducers (MPA)..... 55
- 5.4.8 AWS Code Angle Beam Transducers (AWS)..... 56
- 5.4.9 AWS Code Angle Beam Wedges (AWW)..... 56
- 5.5 Immersion Transducers..... 57
  - 5.5.1 Unfocused Immersion Transducers ..... 57
  - 5.5.2 Focused Transducer Options ..... 61
- 5.6 Scanner Specific UT Transducers & Accessories..... 62
- 5.7 Cables & Adapters ..... 63
- 6 Calibration blocks ..... 64
  - 6.1 Imperial Calibration Blocks..... 65
  - 6.2 Metric Calibration Blocks ..... 65

# 1 Thickness Gages

---

# 1.1 TG-110 DL

Miniature Ultrasonic Thickness Gage, versatile yet easy to operate. Works exclusively with dual element transducers, is widely used for corrosion inspection as well as many other thickness measurements.



## 1.1.1 Instrument

Item number	Item description																								
	<p><b>MINIATURE ULTRASONIC THICKNESS GAGE PACKAGE</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- Corrosion &amp; pitting measurement</li> <li>- Tube and pipe inspection</li> <li>- Tanks inspection</li> <li>- Boilers Glass measurement</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Instrument, 2x AA Alkaline batteries, wrist strap, 2oz couplant bottle, operator manual, carrying case</li> <li>- Depending on their extension, they also include the following</li> </ul> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>- 506</th> <th>- 208</th> <th>- 502</th> <th>- 505</th> <th>-560P</th> <th>-702</th> </tr> </thead> <tbody> <tr> <td>TG-506</td> <td>TG-208</td> <td>TG-502</td> <td>TG-505</td> <td>TG-560P</td> <td>TG-702</td> </tr> <tr> <td>LMD1</td> <td>LMD1</td> <td>(incl. cable)</td> <td>(incl. cable)</td> <td>LMD1</td> <td>(incl. cable)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>TG110-T</td> <td></td> </tr> </tbody> </table> <p>Features include:</p> <ul style="list-style-type: none"> <li>- Auto Probe Recognition (Automatically recognizes NDT Nova Series transducers – a series of transducers recognizable by all NDT Systems’ instruments featuring Auto Probe Recognition)</li> <li>- Single and two-point calibration</li> <li>- English/Metric units</li> <li>- Low/High Alarm LED</li> <li>- One or two-dimensional data logger for storing up to 50.000 measurements</li> <li>- Time-encoded scrolling B-Scan</li> </ul> <p>Options include:</p> <ul style="list-style-type: none"> <li>- A series of 10 different transducers ranging from 2.25MHz to 10MHz.</li> <li>- Optional through-paint measurement software (see below for details)</li> <li>- Optional velocity measurement software (see below for details)</li> </ul>	- 506	- 208	- 502	- 505	-560P	-702	TG-506	TG-208	TG-502	TG-505	TG-560P	TG-702	LMD1	LMD1	(incl. cable)	(incl. cable)	LMD1	(incl. cable)					TG110-T	
- 506	- 208	- 502	- 505	-560P	-702																				
TG-506	TG-208	TG-502	TG-505	TG-560P	TG-702																				
LMD1	LMD1	(incl. cable)	(incl. cable)	LMD1	(incl. cable)																				
				TG110-T																					
TG-110 PKG 506																									
TG-110 PKG 208																									
TG-110 PKG 502																									
TG-110 PKG 505																									
TG-110 PKG 560P																									
TG-110 PKG 702																									

## 1.1.2 Accessories - Options - Spares

Item number	Item description
LMD1	<b>CABLE   LEMO 00 TO MICRODOT   DUAL   6FT   STANDARD CABLE FOR TG-110</b>
LMD1-S	<b>CABLE   LEMO 00 TO MICRODOT   DUAL   6FT   SHIELDED CABLE FOR TG-110</b>
TG-208	<b>TRANSDUCER   DUAL ELEMENT   2.25 MHZ   Ø 0.75"   MICRODOT</b>
TG-506	<b>TRANSDUCER   DUAL ELEMENT   5 MHZ   Ø 0.375"   MICRODOT</b>
TG-502	<b>TRANSDUCER   DUAL ELEMENT   5 MHZ   Ø 0.20"   INCL. 6FT CABLE WITH LEMO 00</b>
TG-505	<b>TRANSDUCER   DUAL ELEMENT   5 MHZ   Ø 0.30"   INCL. 6FT CABLE WITH LEMO 00</b>
TG-790	<b>TRANSDUCER   DUAL ELEMENT   5 MHZ   Ø 0.325"   HIGH TEMPERATURE   MICRODOT</b>
TG-702	<b>TRANSDUCER   DUAL ELEMENT   7.5 MHZ   Ø 0.20"   INCL. 6FT CABLE WITH LEMO 00</b>
TG101HR	<b>TRANSDUCER   DUAL ELEMENT   10 MHZ   Ø 0.20"   MICRODOT</b>
TG-560P	<b>TRANSDUCER   DUAL ELEMENT   5 MHZ   Ø 0.375"   THROUGH-PAINT   MICRODOT</b> - TG110-T Through-Paint software option is required to utilize the TG-560P
TG110-T	<b>SOFTWARE   THROUGH-PAINT OPTION</b> - For TG-110 instrument - Enables the through-paint software feature when combined with the TG-560P transducer - Software allows thickness measurement of coated materials. - Software does not return thickness of the actual coating, this will remain unknown - Required to be installed at factory
TG110 VEL SOFT	<b>SOFTWARE   VELOCITY SOFTWARE OPTION</b> - For TG-110 instrument - Enables the velocity software feature with any of the listed transducers - Requires the user to know and set the thickness of the material being measured, and will return the material velocity in that particular area - Required to be installed at factory
TG110DT-USB	<b>DATA TRANSFER PACKAGE   FOR TG-110</b> Package includes: - TG110-DTPW (Data Transfer Program, Windows) - 511-10850 (USB Data Transfer Cable for TG-110 and A-Trace instruments) - Manual
511-10850	<b>DATA TRANSFER CABLE   USB   FOR TG-110, CB-110, A-TRACE</b>
BC-110	<b>PROTECTIVE SLIP-ON CASE   FOR TG-110, CB-110, 900, 930</b> - Canvas protective case with clear window for user accessibility to keys
CC-110	<b>PROTECTIVE CARRYING CASE   FOR TG-110, CB-110, 900, 930</b> - Replacement Hard-shelled carrying case (included in any original instrument package)
500-10700	<b>REPLACEMENT BATTERY CAP   FOR TG-110, CB-110</b>

# 1.2 CB-110

Portable Cylinder Bore Thickness Gage uniquely tailored to measure wall thickness inside bores, pipes or any other concave surfaces.



## 1.2.1 Instrument

Item number	Item description
CB-110 PACKAGE	<p><b>CYLINDER BORE THICKNESS GAGE   WITH TG-505R</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- Cylinder Bore Cross Section</li> <li>- Cylinder Bore wall thickness</li> <li>- Port wall thickness</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Instrument, TG-505R transducer, 2x AA Alkaline batteries, wrist strap, 2oz couplant bottle, operator manual, carrying case, certificate of calibration</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- Auto Probe Recognition (Automatically recognizes NDT Nova Series transducers – a series of transducers recognizable by all NDT Systems’ instruments featuring Auto Probe Recognition)</li> <li>- Single and two-point calibration</li> <li>- English/Metric units</li> <li>- Low/High Alarm LED</li> <li>- Time-encoded scrolling B-Scan</li> <li>- Special data logger format designed to inspect multi-cylinder engines</li> </ul>
CB110-H1	<p><b>CYLINDER BORE THICKNESS GAGE   WITH TG-505R AND HAMMER 01</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- See CB-110 PACKAGE</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- See CB-110 PACKAGE</li> <li>- MPCV1 Manually Pressurized Couplant Vessel, 1 Gallon</li> <li>- HAMMER01 Assembly including HP-505R transducer</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- See CB-110 PACKAGE</li> <li>- HAMMER 01 in conjunction with the included MPCV1 allows for smooth and continuous measurements. When conducted in the time-encoded scrolling B-Scan mode, scans along the cylinder wall can be recorded and exported with the optional CB-110 Data Transfer package.</li> </ul>



**CYLINDER BORE THICKNESS GAGE | WITH TG-505R AND HAMMER 02**

Applications include:

- See CB-110 PACKAGE

Package includes:

- See CB-110 PACKAGE
- MPCV1 Manually Pressurized Couplant Vessel, 1 Gallon
- HAMMER02 Assembly including HP2-505R transducer



CB110-H2

Features include:

- See CB-110 PACKAGE
- HAMMER 02 in conjunction with the included MPCV1 allows for smooth and continuous measurements. When conducted in the time-encoded scrolling B-Scan mode, scans along the cylinder wall can be recorded and exported with the optional CB-110 Data Transfer package.

## 1.2.2 Accessories - Options - Spares

Item number	Item description
TG-505R	<b>TRANSDUCER   DUAL ELEMENT   5 MHZ   Ø 0.30"   CONVEX FACE   6FT CABLE W/ LEMO 00</b> - Fits bore sizes from approx. Ø 3.5" to Ø 4.8"
HAMMER01	<b>CYLINDER BORE INSPECTION SYSTEM H1   6FT CABLE W/ LEMO 00</b> - Fits bore sizes from approx. Ø 3.5" to Ø 4.8" - Includes built-in HP-505R - Designed to be used in conjunction with the MPCV1 for continuous measurement scans 
HP-505R	<b>HAMMER PROBE   DUAL ELEMENT   5 MHZ   Ø 0.30"   SPECIAL CONNECTOR FOR HAMMER01</b> - Replacement transducer for HAMMER01 - Fits bore sizes from approx. 3.5" to Ø 4.8"
HAMMER02	<b>CYLINDER BORE INSPECTION SYSTEM H2   6FT CABLE W/ LEMO 00</b> - Fits bore sizes from approx. Ø 2.5" to Ø 3.5" - Includes built-in HP2-505R - Designed to be used in conjunction with the MPCV1 for continuous measurement scans 
HP2-505R	<b>HAMMER PROBE   DUAL ELEMENT   5 MHZ   Ø 0.30"   SPECIAL CONNECTOR FOR HAMMER02</b> - Replacement transducer for HAMMER02 - Fits bore sizes from approx. Ø 2.5" to Ø 3.5"
MPCV1	<b>MANUALLY PRESSURIZED COUPLANT VESSEL   1 GALLON</b> 

PORT-01	<p><b>TRANSDUCER   MINIATURE SWIVEL HEAD   DUAL ELEMENT   5 MHZ   Ø 0.22"   MICRODOT</b></p> <ul style="list-style-type: none"> <li>- Used for the majority of cylinder head port work</li> <li>- Mild Curvature of face for flat to moderately curved inspection surfaces.</li> <li>- Ø 0.325" contact face by 0.45" tall case</li> <li>- Range 0.040" to 2.000"</li> <li>- Sensor mounted at the end of a 6" long handle assembly.</li> <li>- Requires LMD1 cable</li> </ul> 
PORT-03	<p><b>TRANSDUCER   MINIATURE SWIVEL HEAD   DUAL ELEMENT   7.5 MHZ   Ø 0.22"   MICRODOT</b></p> <ul style="list-style-type: none"> <li>- Used for the majority of cylinder head port work</li> <li>- Mild Curvature of face for flat to moderately curved inspection surfaces.</li> <li>- Ø 0.325" contact face by 0.45" tall case</li> <li>- Range 0.025" to 0.500"</li> <li>- Sensor mounted at the end of a 6" long handle assembly.</li> <li>- Requires LMD1 cable</li> </ul> 
LMD1	<b>CABLE   LEMO 00 TO MICRODOT   DUAL   6FT   STANDARD CABLE FOR TG-110</b>
LMD1-S	<b>CABLE   LEMO 00 TO MICRODOT   DUAL   6FT   SHIELDED CABLE FOR TG-110</b>
TG-208	<b>TRANSDUCER   DUAL ELEMENT   2.25 MHZ   Ø 0.75"   MICRODOT</b>
TG-506	<b>TRANSDUCER   DUAL ELEMENT   5 MHZ   Ø 0.375"   MICRODOT</b>
TG-502	<b>TRANSDUCER   DUAL ELEMENT   5 MHZ   Ø 0.20"   INCL. 6FT CABLE WITH LEMO 00</b>
TG-505	<b>TRANSDUCER   DUAL ELEMENT   5 MHZ   Ø 0.30"   INCL. 6FT CABLE WITH LEMO 00</b>
TG-790	<b>TRANSDUCER   DUAL ELEMENT   5 MHZ   Ø 0.325"   HIGH TEMPERATURE   MICRODOT</b>
TG-702	<b>TRANSDUCER   DUAL ELEMENT   7.5 MHZ   Ø 0.20"   INCL. 6FT CABLE WITH LEMO 00</b>
TG101HR	<b>TRANSDUCER   DUAL ELEMENT   10 MHZ   Ø 0.20"   MICRODOT</b>
CB110DT-USB	<p><b>DATA TRANSFER PACKAGE</b></p> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- CB110-DTPW (Data Transfer Program, Windows)</li> <li>- 511-10850 (USB Data Transfer Cable for TG-110 and A-Trace instruments)</li> <li>- Manual</li> </ul>
511-10850	<b>DATA TRANSFER CABLE   USB   FOR TG-110, CB-110 AND A-TRACE</b>
BC-110	<p><b>PROTECTIVE SLIP-ON CASE   FOR TG-110, CB-110, 900, 930</b></p> <ul style="list-style-type: none"> <li>- Canvas protective case with clear window for user accessibility to keys</li> </ul>
CC-110	<p><b>PROTECTIVE CARRYING CASE   FOR TG-110, CB-110, 900, 930</b></p> <ul style="list-style-type: none"> <li>- Replacement Hard-shelled carrying case (included in any original instrument package)</li> </ul>
500-10700	<b>REPLACEMENT BATTERY CAP   FOR TG-110, CB-110</b>

# 1.3 900 Series

Precision Ultrasonic Thickness Gage Series for single element contact and delay line transducers, offering a variety of 4 different layouts and options to satisfy entry-level and experienced operators likewise.



## 1.3.1 Instrument

Item number	Item description
900 PACKAGE	<p><b>900 HANDHELD PRECISION ULTRASONIC THICKNESS GAGE</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- Chemical milling</li> <li>- Investment Castings</li> <li>- Turbine blades</li> <li>- Tube and Pipe</li> <li>- Tanks</li> <li>- Boilers Glass</li> <li>- Metals, plastics, composites, glass, rubber</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Instrument with LEMO 00 connector, 2 NiMH Batteries, AC Battery charger, Operator Manual, 2oz couplant bottle, wrist strap, carrying case.</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- Automatic probe recognition, adjustable sound velocity, English/Metric units, RS-232C I/O port, 110/240V compatible.</li> </ul>
910-R PACKAGE	<p><b>910 BENCHTOP PRECISION ULTRASONIC THICKNESS GAGE</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- See 900 PACKAGE</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Instrument with BNC connector, 2 NiMH Batteries, AC Battery charger, Operator Manual, 2oz couplant bottle, custom packaging.</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- See 900 PACKAGE</li> <li>- Lightweight benchtop design</li> <li>- Separate digital readout display</li> </ul>

<p>930 PACKAGE</p>	<p><b>930 HANDHELD PRECISION ULTRASONIC THICKNESS GAGE</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- See 900 PACKAGE</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- See 900 PACKAGE</li> <li>- Data Transfer software package</li> <li>- Data transfer cable RS232 (500-10850)</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- Automatic probe recognition, adjustable sound velocity, English/Metric units, RS-232C I/O port, 110/240V compatible, differential mode, minimum thickness capture mode, high/low alarm, basic thickness gate setup options and storage, time-encoded scrolling B scan display, one and two-dimensional data logger.</li> </ul>
<p>950-R PACKAGE</p>	<p><b>950 BENCHTOP PRECISION ULTRASONIC THICKNESS GAGE</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- See 900 PACKAGE</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- See 910-R PACKAGE</li> <li>- Data Transfer software package (TG900-DTPW)</li> <li>- Data transfer USB cable (B3100 USB CABLE)</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- See 930 PACKAGE</li> <li>- Lightweight benchtop design</li> <li>- Separate digital readout display</li> <li>- 4 analogue oscilloscope outputs for RF video, Measurement time/gate and IP Sync</li> <li>- ECHO MODE manually selectable</li> </ul>

### 1.3.2 Accessories - Options - Spares

Item number	Item description
BC-110	<b>PROTECTIVE SLIP-ON CASE   FOR TG-110, CB-110, 900, 930</b> - Canvas protective case with clear window for user accessibility to keys
CC-110	<b>PROTECTIVE CARRYING CASE   FOR TG-110, CB-110, 900, 930</b> - Replacement Hard-shelled carrying case (included in any original instrument package)
CC-TGBT	<b>EQUIPMENT CARRY CASE   FOR 910-R, 950-R</b> - Black Pelican Style case with custom cut foam padding. - Included in 910-R PACKAGE and 950-R PACKAGE.
BP900	<b>BATTERY PACK   FOR 900 SERIES</b> - 2 x NiMH rechargeable high-capacity batteries needed to power any 900 Series unit - Included in any 900 Series package.
900-RBC	<b>RECHARGEABLE BATTERY CHARGER   FOR 900 SERIES</b> - Universal AA battery charger for high-capacity batteries - 110/240V compatible
AC910-R	<b>BENCHTOP BATTERY CHARGER   FOR 910-R, 950-R</b> - Directly plugs into rear panel of 910 or 950-R unit. - Does not require removing batteries from the instrument
950-IBM-F	<b>DATA TRANSFER CABLE   FOR 950-R   INCLUDES FOOT SWITCH</b> - Interconnect Cable, 3-feet long from 950 Benchtop to PC. RS232C output. Includes remote foot-operated switch to produce single thickness transfer command and a 6 ft long cable.
950-IBM-H	<b>DATA TRANSFER CABLE   FOR 950   INCLUDES HAND SWITCH</b> - Interconnect Cable, 3-feet long from 950-R Benchtop to PC. RS232C output. Includes remote hand-operated switch to produce single thickness transfer command and a 6 ft long cable.
TG900-DTPW	<b>DATA TRANSFER SOFTWARE   FOR 900 SERIES</b>
TG900DT	<b>DATA TRANSFER PACKAGE</b> - Transfers thickness data from all 900 series Thickness Gages to PC computer. Data Transfer program (TG900-DTPW) and Data Transfer Cable (500-10850) included
500-10850	<b>DATA TRANSFER CABLE   RS232   FOR 900, 910-R, 930, 950-R</b>
B3100 USB CABLE	<b>DATA TRANSFER CABLE   USB   FOR 950-R, BONDASCOPE 3100</b>

# 1.4 TG-410

Precision handheld ultrasonic thickness gage, including A-Scan and B-Scan signal representation as well as many features making most thickness measurements as simple as possible

TG-410 is part of the A-Trace product family



## 1.4.1 Instrument

Item number	Item description
TG-410 PACKAGE	<p><b>PRECISION ULTRASONIC THICKNESS GAGE PACKAGE   LEMO 00</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- Chemical milling</li> <li>- Investment Castings</li> <li>- Turbine blades</li> <li>- Tube and Pipe</li> <li>- Tanks</li> <li>- Boilers Glass</li> <li>- Metals, plastics, composites, glass, rubber</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Instrument, 6x NiMH AA batteries, AC charger, wrist strap, 2oz couplant bottle, operator manual, carrying case, certificate of calibration</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- Resolution (0.0001in, 0.0025mm)</li> <li>- Single and dual element</li> <li>- Lemo 00 connectors</li> <li>- SplitScan: View S-Scan and B-Scan simultaneously</li> <li>- SplitView: View a full A-Trace screen and a zoomed in A-trace screen, automatically tracking current thickness measurement</li> <li>- English/Metric units, time-encoded scrolling B-Scan, Low/High visual and audible alarm, data logger including A-Scans and B-Scans.</li> <li>- Default and programmable user setups</li> <li>- Single-point calibration</li> <li>- Gate selection: Contact, IP-1st, 1st-2nd (allows through-paint, delay, bubbler, immersion)</li> <li>- Gate parameters: IP Blocking, IF Blocking, IF-1st, 1st-2nd, Echo Blk, POS or NEG gating</li> </ul>
TG-410-B1 PKG	<p><b>PRECISION ULTRASONIC THICKNESS GAGE PACKAGE   BNC</b></p> <ul style="list-style-type: none"> <li>- See TG-410 PACKAGE</li> <li>- BNC connectors</li> </ul>

## **1.4.2 Accessories - Options - Spares**

See 2.1.2 Accessories - Options - Spares

# 1.5 NovaScope 6000

High precision ultrasonic thickness gage with a substantial amount of adjustable settings and parameters to accomplish most UT thickness measurement applications.

It is the most comprehensive instrument of NDT Systems' current thickness gage product line.



## 1.5.1 Instrument

Item number	Item description
NOVASCOPE 6000	<p><b>HIGH PRECISION ULTRASONIC THICKNESS GAGE PACKAGE   BNC</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- High resolution turbine blade inspection</li> <li>- Thickness measurements on wax castings</li> <li>- Bond inspection on multi-layer composites</li> <li>- Corrosion, erosion, chemical-milled inspections</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Instrument, Li-ion Battery, AC charger, operator manual, 2GB removable Micro-SD memory card, re-usable custom packaging, Certificate of Calibration</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- BNC transducer connectors, Sun-readable LCD display, separate menu touchscreen, virtual slide bar, physical encoder knob, 2GB internal memory and another 2GB removable memory, English or Metric units, alarm outputs, analogue thickness, serial RS-232C and IP sync, 110/240V compatible.</li> <li>- 0.0001" / 0.0025mm digital resolution</li> <li>- 0.010" / 0.254mm to 9.999" / 254mm thickness (in stainless steel, transducer dependent)</li> </ul>












## 1.5.2 Accessories - Options - Spares

Item number	Item description
6000-IBM-CPC	<b>N6K to PC INTERFACE CABLE   "Computer Print Command"</b> - Records current thickness in Windows HyperTerminal by using PC keyboard commands
6000-IBM-H	<b>N6K to PC INTERFACE CABLE   INCLUDES HAND SWITCH</b> - Records current thickness in Windows HyperTerminal by engaging the handheld switch
6000-IBM-F	<b>N6K to PC INTERFACE CABLE   INCLUDES FOOT SWITCH</b> - Records current thickness in Windows HyperTerminal by engaging the foot switch
6000-IBM-FD	<b>N6K to PC INTERFACE CABLE   INCLUDES DOUBLE FOOT SWITCH</b> - Records current thickness in Windows HyperTerminal by engaging left foot switch - Toggles from positive to negative gate polarity when engaging right foot switch
AC3100	<b>POWER ADAPTOR   FOR NOVASCOPE 6000, BONDASCOPE 3100</b> - Power Adaptor charges the battery or powers the unit directly.
SD CARD	<b>Micro SD Card, 2GB</b> - Formatted 2GB SD Card, including default transducer setups (as supplied with instrument)

# 1.6 Special Thickness Gage Transducers

## 1.6.1 Pencil Style Transducers



Item number	Item description
AEX01C	<b>PENCIL PROBE   REMOVABLE DELAY   12 MHZ   Ø 0.187"   STRAIGHT HEAD</b> 
AEX02C	<b>PENCIL PROBE   FIXED DELAY   12 MHZ   Ø 0.187"   STRAIGHT HEAD</b> 
AEX03C	<b>PENCIL PROBE   REMOVABLE DELAY   12 MHZ   Ø 0.187"   90° HEAD</b> 
AEX05C	<b>PENCIL PROBE   REMOVABLE DELAY   12 MHZ   Ø 0.187"   90° OR STRAIGHT HEAD</b> 
AEX07C	<b>PENCIL PROBE   REMOVABLE DELAY   5 MHZ   Ø 0.187"   STRAIGHT HEAD</b> 
<b>AEX07C-90</b>	<b>PENCIL PROBE   REMOVABLE DELAY   5 MHZ   Ø 0.187"   90° HEAD</b> 
AE12205	<b>MINI PENCIL PROBE   REMOVABLE DELAY   12 MHZ   Ø 0.187"   90° HEAD   ⚡ 0.350"</b> 
AE12205-G	<b>MINI PENCIL PROBE   REMOVABLE DELAY   12 MHZ   Ø 0.187"   90° HEAD   ⚡ 0.350"</b> 
AE12205-A	<b>MINI PENCIL PROBE   REMOVABLE DELAY   12 MHZ   Ø 0.187"   90° HEAD   ⚡ 0.350"   Angled</b> 

DM123	<b>MINI PENCIL PROBE   FIXED DELAY   15 MHZ   0.125x0.300"   90° SWIVEL HEAD   <math>\updownarrow</math> 0.350"</b>		
PTX5	<b>MINI PENCIL PROBE   REMOVABLE DELAY   15 MHZ   <math>\varnothing</math> 0.100"   90° HEAD   <math>\updownarrow</math> 0.250"</b>		
PTX6	<b>MINI PENCIL PROBE   REMOVABLE DELAY   15 MHZ   <math>\varnothing</math> 0.100"   90° HEAD   <math>\updownarrow</math> 0.175"</b>		
PTX6S	<b>MINI PENCIL PROBE   REMOVABLE DELAY   15 MHZ   <math>\varnothing</math> 0.100"   90° SWIVEL HEAD   <math>\updownarrow</math> 0.175"</b>		
VTX1	<b>MINI VANE PROBE   FIXED DELAY   15 MHZ   <math>\varnothing</math> 0.100"   90° SWIVEL HEAD   <math>\updownarrow</math> 0.150" 0.060" TIP</b>		
VTX1-B	<b>MINI VANE PROBE   FIXED DELAY   15 MHZ   <math>\varnothing</math> 0.100"   90° SWIVEL HEAD   <math>\updownarrow</math> 0.180" 0.090" TIP</b>		
VTX2	<b>MINI VANE PROBE   FIXED DELAY   10 MHZ   <math>\varnothing</math> 0.100"   90° SWIVEL HEAD   <math>\updownarrow</math> 0.150"</b>		
VTX3	<b>MINI VANE PROBE   FIXED DELAY   5 MHZ   <math>\varnothing</math> 0.100"   90° SWIVEL HEAD   <math>\updownarrow</math> 0.150"</b>		

## 1.6.2 Pencil Style Transducers Accessories – Options – Spares

Item number	Item description
AEX-T	<b>AEX REPLACEMENT TIPS   TIP <math>\varnothing</math> 0.070"   GROOVES   1 EACH</b> - For AEX01C, AEX03C, AEX05C (STANDARD)
<b>AEX-T09</b>	<b>AEX REPLACEMENT TIPS   TIP <math>\varnothing</math> 0.090"   GROOVES   1 EACH</b> - For AEX07C, AEX07C-90 (STANDARD)
<b>AEX-TS-NG</b>	<b>AEX REPLACEMENT TIPS   TIP <math>\varnothing</math> 0.070"   NO GROOVES   1 EACH</b> - For AE12205, AE12205-A (STANDARD)
<b>AEX-TS</b>	<b>AEX REPLACEMENT TIPS   TIP <math>\varnothing</math> 0.070"   GROOVES   1 EACH</b> - For AE12205-G (STANDARD) - For AE12205, AE12205-A (OPTION)
PTX5-T	<b>PTX5 REPLACEMENT TIPS</b>
PTX6-T	<b>PTX6 REPLACEMENT TIPS</b>

### 1.6.3 Immersion Bubbler Transducers

Item number	Item description	
IBU05	<b>IMMERSION BUBBLER   WATER FEED DELAY LINE   5 MHZ   Ø 0.250"</b> - Includes IBUCS	
IBU10	<b>IMMERSION BUBBLER   WATER FEED DELAY LINE   10 MHZ   Ø 0.250"</b> - Includes IBUC	
IBU15	<b>IMMERSION BUBBLER   WATER FEED DELAY LINE   15 MHZ   Ø 0.250"</b> - Includes IBUC	
IBU25	<b>IMMERSION BUBBLER   WATER FEED DELAY LINE   25 MHZ   Ø 0.250"</b> - Includes IBUC	
IBU25-A	<b>IMMERSION BUBBLER   WATER FEED DELAY LINE   25 MHZ   Ø 0.250"</b> - Includes IBUC-H, RTS	
E11877	<b>IMMERSION BUBBLER   WATER FEED DELAY LINE   30 MHZ   Ø 0.250"</b> - Includes IBUC	
AE11605	<b>IMMERSION BUBBLER   WATER FEED DELAY LINE   25 MHZ   Ø 0.157"</b> - Includes AE11605-C - Not compatible with T300 bubbler tank	

### 1.6.4 Immersion Bubbler Transducer Accessories – Options - Spares

Item number	Item description
IBUC	<b>CONE   IBU REPLACEMENT   STANDARD   INCLUDES IBUT</b> - Fits IBU10, IBU15, IBU25, E11877
IBUC-H	<b>CONE   IBU REPLACEMENT   STANDARD   INCLUDES IBUT-H</b> - Fits IBU10, IBU15, IBU25, IBU25-A, E11877
IBUCS	<b>CONE   IBU REPLACEMENT SHORT   STANDARD   INCLUDES IBUT</b> - Fits IBU05 ONLY
AE11605-C	<b>CONE   AE11605 REPLACEMENT   SHORT STAINLESS STEEL   5 EACH</b> - Fits AE11605 ONLY
IBUT	<b>TIP   IBU REPLACEMENT   STANDARD STAINLESS   FLAT   5 EACH</b> - Fits IBU05, IBU10, IBU15, IBU25, E11877
IBU-TP	<b>TIP   IBU REPLACEMENT   NYLON PLASTIC   FLAT   5 EACH</b> - Fits IBU05, IBU10, IBU15, IBU25, E11877
IBUT-H	<b>TIP   IBU REPLACEMENT   HARDENED STAINLESS   FLAT   5 EACH</b> - Fits IBU05, IBU10, IBU15, IBU25, IBU25-A, E11877

IBUT-V	<p><b>TIP   IBU REPLACEMENT   STANDARD STAINLESS   V-GROOVE   5 EACH</b></p> <ul style="list-style-type: none"> <li>- Fits IBU05, IBU10, IBU15, IBU25, IBU25-A, E11877</li> </ul>
AE11605-T	<p><b>TIP   AE11605 REPLACEMENT   SHORT STAINLESS STEEL   5 EACH</b></p> <ul style="list-style-type: none"> <li>- Fits AE11605 ONLY</li> </ul>
T300	<p><b>BUBBLER TANK   WATER RECIRCULATION SYSTEM   FOR IMMERSION BUBBLER PROBES</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- Stationary inspection system for any IBU transducers</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- T300 Bubbler tank</li> <li>- Power adaptor</li> <li>- T300A, adaptor to fit any IBU transducer</li> <li>- (Does not include transducer nor cable)</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- Continuous and fully adjustable water flow</li> <li>- Brushless motor</li> <li>- 110/240V compatible</li> </ul> 
T300A	<p><b>BUBBLER TANK ADAPTOR   FITS ALL IBU TRANSDUCERS</b></p>

# 1.7 Vector TX1

Portable Coating thickness gage for dielectric, non-conductive materials on metal substrates



## 1.7.1 Instrument

Item number	Item description
TX1 PACKAGE P3	<p><b>COATING GAGE PACKAGE   INCLUDING P3</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- Various coatings such as paint, primer, plastic, epoxy, rubber, ceramic</li> <li>- Anodize</li> <li>- Chemical films</li> <li>- Paperboard</li> <li>- Asphalt-coated and cement-lined pipes</li> <li>- Isolation, heat shields</li> <li>- Radomes and sonar domes</li> <li>- Fiberglass</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Instrument, P3 probe, Batteries, Power cord, hard-shelled carrying case and operator manual.</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- English and Metric Readout</li> <li>- 110/240V compatible</li> <li>- Easy to operate with only two controls</li> <li>- Rechargeable battery powered and AC powered</li> <li>- Built-in charger</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- English or metric units</li> <li>- 110/240v compatible</li> </ul>

### 1.7.2 Accessories - Options - Spares

Item number	Item description																												
P3	<p><b>STANDARD VECTOR TX1 PROBE</b></p> <ul style="list-style-type: none"> <li>Performance specs:           <table border="1" data-bbox="492 430 1352 577"> <thead> <tr> <th colspan="2" data-bbox="492 430 917 464">English</th> <th colspan="2" data-bbox="917 430 1352 464">Metric</th> </tr> <tr> <th data-bbox="492 464 760 499">Measurement Range</th> <th data-bbox="760 464 917 499">Resolution</th> <th data-bbox="917 464 1182 499">Measurement Range</th> <th data-bbox="1182 464 1352 499">Resolution</th> </tr> </thead> <tbody> <tr> <td data-bbox="492 499 760 535">0.000 - 0.500 in</td> <td data-bbox="760 499 917 535">± 0.001 in</td> <td data-bbox="917 499 1182 535">0.000 – 10.0 mm</td> <td data-bbox="1182 499 1352 535">± 0.02 mm</td> </tr> <tr> <td data-bbox="492 535 760 577">0.500 – 0.750 in</td> <td data-bbox="760 535 917 577">± 0.01 in</td> <td data-bbox="917 535 1182 577">10.0 – 19.0 mm</td> <td data-bbox="1182 535 1352 577">± 0.2 mm</td> </tr> </tbody> </table> </li> <li>Dimensional specs:           <table border="1" data-bbox="492 655 1352 802"> <thead> <tr> <th colspan="2" data-bbox="492 655 917 688">English</th> <th colspan="2" data-bbox="917 655 1352 688">Metric</th> </tr> <tr> <th data-bbox="492 688 711 762">Housing size (Dia x height)</th> <th data-bbox="711 688 917 762">Contact Tip (Dia x shape)</th> <th data-bbox="917 688 1136 762">Housing size (Dia x height)</th> <th data-bbox="1136 688 1352 762">Contact Tip (Dia x shape)</th> </tr> </thead> <tbody> <tr> <td data-bbox="492 762 711 802">1 5/8" x 2 3/8"</td> <td data-bbox="711 762 917 802">1 1/16" x Flat</td> <td data-bbox="917 762 1136 802">42mm x 16 mm</td> <td data-bbox="1136 762 1352 802">27mm x Flat</td> </tr> </tbody> </table> </li> </ul>	English		Metric		Measurement Range	Resolution	Measurement Range	Resolution	0.000 - 0.500 in	± 0.001 in	0.000 – 10.0 mm	± 0.02 mm	0.500 – 0.750 in	± 0.01 in	10.0 – 19.0 mm	± 0.2 mm	English		Metric		Housing size (Dia x height)	Contact Tip (Dia x shape)	Housing size (Dia x height)	Contact Tip (Dia x shape)	1 5/8" x 2 3/8"	1 1/16" x Flat	42mm x 16 mm	27mm x Flat
English		Metric																											
Measurement Range	Resolution	Measurement Range	Resolution																										
0.000 - 0.500 in	± 0.001 in	0.000 – 10.0 mm	± 0.02 mm																										
0.500 – 0.750 in	± 0.01 in	10.0 – 19.0 mm	± 0.2 mm																										
English		Metric																											
Housing size (Dia x height)	Contact Tip (Dia x shape)	Housing size (Dia x height)	Contact Tip (Dia x shape)																										
1 5/8" x 2 3/8"	1 1/16" x Flat	42mm x 16 mm	27mm x Flat																										
ACTX1	<p><b>POWER CORD   FOR VECTOR TX1</b></p> <ul style="list-style-type: none"> <li>Power cord allows direct AC operation of the Vector TX1 and charges the batteries</li> </ul>																												

## 2 Flaw Detectors

---



# 2.1 Avenger

Miniature ultrasonic flaw detector. Standard unit includes various flaw detection capabilities for linear longitudinal and shear wave flaw detection, along with separate thickness measurement mode. Optional software upgrades can add additional state-of-the-art flaw detection features

The Avenger is part of the A-Trace product family



## 2.1.1 Instrument

Item number	Item description
AVENGER-L00 PKG	<p><b>MINIATURE ULTRASONIC FLAW DETECTOR PACKAGE   LEMO 00</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- See TG-410 PACKAGE</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Instrument, 6x NiMH AA batteries, AC charger, wrist strap, 2oz couplant bottle, operator manual, carrying case, certificate of calibration</li> </ul> <p>General features include:</p> <ul style="list-style-type: none"> <li>- Lemo 00 connectors</li> <li>- Single and dual element transducers</li> <li>- SplitScan: View S-Scan and B-Scan simultaneously</li> <li>- SplitView: View a full A-Trace screen and a zoomed in A-trace screen, automatically tracking current thickness measurement</li> <li>- English/Metric units, Low/High visual and audible alarm, data logger including A-Scans and B-Scans.</li> <li>- Default and programmable user setups</li> <li>- Time-encoded scrolling B-Scan (NOT available in the AWS software option)</li> </ul> <p>Thickness mode features include:</p> <ul style="list-style-type: none"> <li>- Gate selection: Contact, IP-1st, 1st-2nd (allows through-paint, delay, bubbler, immersion)</li> <li>- Gate parameters: IP Blocking, IF Blocking, IF-1st, 1st-2nd, Echo Blk, POS or NEG gating</li> </ul> <p>Flaw detection features include:</p> <ul style="list-style-type: none"> <li>- Dual gate capability: Set threshold, start and end position of two fully independent linear flaw gates. Highest signal amplitude within start and end range will be displayed in % of FSH.</li> <li>- Threshold will trigger programmable amplitude alarm signal.</li> <li>- Thickness measurement and flaw detection can be done simultaneously: both types of gates and results are shown on screen</li> </ul> <p>Software options:</p> <ul style="list-style-type: none"> <li>- DAC - Distance Amplitude Correction</li> <li>- DAC + AWS - Calculations (time-encoded scrolling B-Scan feature not available)</li> </ul>

AVENGER-B1 PKG	<b>MINIATURE ULTRASONIC FLAW DETECTION PACKAGE   BNC</b> <ul style="list-style-type: none"> <li>- See AVENGER-L00 PKG</li> <li>- BNC connectors</li> </ul>
AVENGER-L1 PKG	<b>MINIATURE ULTRASONIC FLAW DETECTION PACKAGE   LEMO 01</b> <ul style="list-style-type: none"> <li>- See AVENGER-L00 PKG</li> <li>- LEMO 01 connectors</li> </ul>
AVENGER-AWS	<b>MINIATURE ULTRASONIC AWS FLAW DETECTION PACKAGE   BNC</b> Applications include: <ul style="list-style-type: none"> <li>- See AVENGER-L00 PKG</li> <li>- Weld inspection as per AWS (American Welding Society) standards</li> <li>- Time-encoded scrolling B-Scan feature not available</li> </ul> Package includes: <ul style="list-style-type: none"> <li>- See AVENGER-L00 PKG</li> <li>- LC1-AVENGER</li> <li>- BBG01</li> <li>- TBS103</li> <li>- AWS0266</li> <li>- AWW045</li> <li>- AWW060</li> <li>- AWW070</li> <li>- CHR028-TM</li> <li>- AWS- Calculations (software option included in AVENGER-AWS)</li> </ul> Features include: <ul style="list-style-type: none"> <li>- DAC- Distance Amplitude Correction – incorporates 20-point DAC curve to compensate for material attenuation and sound dissipation and maintain a true quantitative signal amplitude across the range covered by the DAC curve</li> <li>- AWS- Calculations – includes standardized calculations required to fulfill compliant AWS inspections and measurements</li> <li>- Time-encoded scrolling B-Scan feature not available</li> </ul>

## 2.1.2 Accessories - Options - Spares

Item number	Item description
LCATR	<b>PROTECTIVE CASE   FOR A-TRACE</b> <ul style="list-style-type: none"> <li>- Canvas protective slip-on case with clear window for user accessibility to keys</li> </ul>
BPATR	<b>BATTERY PACK   FOR A-TRACE</b> <ul style="list-style-type: none"> <li>- 6x NiMH AA Batteries (included in original instrument package)</li> </ul>
CC-ATR	<b>PROTECTIVE CARRYING CASE   FOR A-TRACE</b> <ul style="list-style-type: none"> <li>- Replacement Hard-shelled carrying case (included in any original instrument package)</li> </ul>
AC_ATRACE	<b>UNIVERSAL AC BATTERY CHARGER   FOR A-TRACE</b>
511-10702	<b>REPLACEMENT BATTERY CAP   FOR A-TRACE</b>
511-10850	<b>DATA TRANSFER CABLE   USB   FOR TG-110, CB-110, A-TRACE</b>
TG410DT-USB	<b>DATA TRANSFER PACKAGE SOFTWARE   FOR TG-210, TG-410</b> Package includes:

	<ul style="list-style-type: none"> <li>- Data Transfer Program, Windows</li> <li>- 511-10850 (USB Data Transfer Cable for TG-110 and A-Trace instruments)</li> <li>- Manual</li> </ul>
AVENGER-DT-USB	<b>DATA TRANSFER PACKAGE SOFTWARE   FOR AVENGER</b> Package includes: <ul style="list-style-type: none"> <li>- DTPW-AVENGER (Data Transfer Program, Windows)</li> <li>- 511-10850 (USB Data Transfer Cable for TG-110 and A-Trace instruments)</li> <li>- Manual</li> </ul>
AVENGER-DAC	<b>DAC   SOFTWARE UPGRADE   FOR AVENGER</b> <ul style="list-style-type: none"> <li>- Distance Amplitude Correction</li> <li>- incorporates 20-point DAC curve to compensate for material attenuation and sound dissipation and maintain a true quantitative signal amplitude across the range covered by the DAC curve</li> </ul>
AWS-DAC	<b>AWS AND DAC   SOFTWARE UPGRADE   FOR AVENGER</b> <ul style="list-style-type: none"> <li>- See AVENGER-DAC</li> <li>- AWS - American Welding Society: provides standardized calculations required to fulfill compliant AWS inspections and measurements</li> <li>- Time-encoded scrolling B-Scan feature not available</li> </ul>
BBG01	<b>CABLE   BNC TO BNC   GREEN RG-174 COAX   6FT</b> <ul style="list-style-type: none"> <li>- Cable to connect any transducer without cable to TG-110</li> </ul>
TBS103	<b>CALIBRATION TEST BLOCK   DSC</b> <ul style="list-style-type: none"> <li>- Shear wave Distance &amp; Sensitivity Calibration</li> <li>- PER: AWS &amp; ASTM-E-164</li> </ul>
CHRF028-TM	<b>TRANSDUCER   CONTACT   2.25 MHZ   Ø 1.0"   BNC</b>
AWS0266	<b>TRANSDUCER   AWS ANGLE BEAM   2.25 MHZ   0.75" x 0.75"   BNC</b> <ul style="list-style-type: none"> <li>- Compliant to AWS code requirements</li> <li>- Rectangular element and housing</li> <li>- To be mounted to any of the AWW wedges</li> <li>- Including two mounting screws</li> </ul>
AWW045	<b>WEDGE   AWS   45°</b>
AWW060	<b>WEDGE   AWS   60°</b>
AWW070	<b>WEDGE   AWS   70°</b>

## 2.2 Raptor

3-in-1 high-resolution, high-speed flaw detector, thickness gage and A-, B-, C-Scan imaging system.

The Raptor is NDT Systems' most versatile UT instrument and its most comprehensive flaw detector.



### 2.2.1 Instrument

Item number	Item description
RAPTOR PACKAGE	<p><b>PRECISION ULTRASONIC FLAW DETECTOR PACKAGE   BNC</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- C-Scan flaw detection and thickness gauging</li> <li>- Metals, plastics, composites, glass, rubber</li> <li>- Corrosion mapping for tubes, pipes and pressure vessels</li> <li>- Storage tanks and boilers glass inspection</li> <li>- Weld inspection per AWS code</li> <li>- Investment castings turbine blade inspection</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Instrument, Li-Ion battery pack, AC charger, couplant, hard-shelled carrying case, manual.</li> </ul> <p>Imaging features include:</p> <ul style="list-style-type: none"> <li>- A-, B-, C-scan imaging for flaw detection and thickness gaging</li> <li>- Distance and time-encoded B-Scan possible</li> <li>- Imaging view: Encoded B-scan, spreadsheet view, pan &amp; zoom, 3D, histogram</li> <li>- SplitScan view: Display A-Trace and B-scan or C-scan simultaneously</li> <li>- User definable length and resolution separate for X &amp; Y</li> <li>- Compatible with all of NDT Systems' scanner offerings</li> <li>- Scan index adjustable from .001" to 2".</li> <li>- Windows based RAPWIN software for image analysis</li> </ul> <p>Flaw detection features include:</p> <ul style="list-style-type: none"> <li>- 20-point DAC curve capabilities</li> <li>- AWS code required calculations included</li> <li>- Two independent flaw amplitude gates available</li> <li>- Peak Echo hold: fixed or unique timed 'waterfall' reset</li> <li>- Audible and visual alarm modes, thickness high, low or high/low. Amplitude +/- level</li> </ul> <p>Thickness mode and general features include:</p> <ul style="list-style-type: none"> <li>- 0.001" or 0.0001" resolution selectable</li> <li>- BNC connectors, English and Metric units, 5.7" color VGA LCD display</li> <li>- PRF up to 5000Hz</li> <li>- Spike or square tunable pulsar</li> <li>- Programmable user setups</li> </ul>

## 2.2.2 Accessories – Options – Spares

Item number	Item description
LC-RPTR	<b>PROTECTIVE CASE   FOR RAPTOR, BONDACOPE 3100</b> - Canvas protective slip-on case with clear window for user accessibility to keys
RBP-1	<b>BATTERY PACK   FOR RAPTOR, BONDASCOPE 3100, RBCU-1</b> - Li-Ion battery pack (included in original instrument package)
AC-RAPTOR	<b>AC BATTERY CHARGER   FOR RAPTOR, RBCU-1, CURLIN AIR</b>
CC-RAPTOR	<b>PROTECTIVE CARRYING CASE   FOR RAPTOR</b> - Replacement Hard-shelled carrying case (included in any original instrument package)
BCL-1	<b>BATTERY CONDITIONING CHARGER   FOR RAPTOR, BONDASCOPE 3100, RBCU-1</b> - Discharges, conditions, charges and re-calibrates battery within 16 hours process
RAPTOR USB CABL	<b>DATA TRANSFER CABLE   USB   FOR RAPTOR</b>

## 3 Bond Testers

---

# 3.1 BondaScope 3100

Portable, multi-mode composite bond tester to inspect a variety of composite materials for defects of any nature



## 3.1.1 Instrument

Item number	Item description
BOND 3100 PKG	<p><b>COMPOSITE INSPECTION BONDASCOPE 3100 PACKAGE   LEMO 8 + HIROSE 6</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- Integrity of composites and adhesively bonded structures</li> <li>- Metal to metal bonding</li> <li>- Adhesively bonded fittings</li> <li>- Multi-layered laminates</li> <li>- Glass fiber and carbon fiber composites</li> <li>- Sandwich constructions with various skin and core materials</li> <li>- Bonded carbon fiber composite structures</li> <li>- Delaminations, disbonds, skin to core flaws, far-side defects, impact damage, liquid ingress</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Instrument, Li-Ion battery pack, AC charger, data transfer package, hard-shelled carrying case, operator manual, certificate of calibration</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- Resonance, Pitch-Catch and Mechanical Impedance Analysis modes</li> <li>- Tone burst and Swept frequency</li> <li>- Pitch-catch and MIA modes require no couplant</li> <li>- Fischer 11-pin (“F11”) &amp; Lemo 8-pin (“L8”) probe connectors</li> <li>- Auto-probe recognition</li> <li>- Various visual and auditable alarm modes</li> <li>- SplitScan and SplitView</li> <li>- 110/240V compatible</li> </ul>

### 3.1.2 Accessories - Options – Spares

Item number	Item description
BONDDT-KIT	<b>DATA TRANSFER PACKAGE   USB   FOR BONDASCOPE</b> Package includes <ul style="list-style-type: none"> <li>- BOND-DTPW (Data Transfer Package, Windows)</li> <li>- B3100 USB CABLE (USB Data Transfer Cable for Bondascope instrument)</li> <li>- Manual</li> </ul>
B3100 USB CABLE	<b>DATA TRANSFER CABLE   USB   FOR BONDASCOPE 3100, 950-R, CURLIN AIR</b>
MIA-SL	<b>MIA   SPRING-LOADED PROBE HOLDER   ALLOWS EQUAL PRESSURE INSPECTION</b>
PC-TIP	<b>PITCH-CATCH   REPLACEMENT TIPS   2/EA   FITS ALL PITCH-CATCH PROBES</b>
PC-FEET	<b>PITCH-CATCH   REPLACEMENT FEET   4/EA   FITS ALL PITCH-CATCH PROBES</b>
TEFLON TAPE	<b>TEFLON TAPE</b> <ul style="list-style-type: none"> <li>- Can be used to avoid scratching and/or provide better contact from probe to material</li> </ul>
LC3100	<b>PROTECTIVE CASE   FOR BONDASCOPE 3100</b> <ul style="list-style-type: none"> <li>- Canvas protective slip-on case with clear window for user accessibility to keys</li> </ul>
RBP-1	<b>BATTERY PACK   FOR RAPTOR, BONDASCOPE 3100, RBCU-1</b> <ul style="list-style-type: none"> <li>- Li-Ion battery pack (included in original instrument package)</li> </ul>
AC3100	<b>AC BATTERY CHARGER   FOR BONDASCOPE 3100, CURLIN AIR</b> <ul style="list-style-type: none"> <li>- 110/240v compatible</li> </ul>
CC3100	<b>PROTECTIVE CARRYING CASE   FOR BONDASCOPE 3100</b> <ul style="list-style-type: none"> <li>- Replacement Hard-shelled carrying case (included in any original instrument package)</li> </ul>
BCL-1	<b>BATTERY CONDITIONING CHARGER   FOR RAPTOR, BONDASCOPE 3100, RBCU-1</b> <ul style="list-style-type: none"> <li>- Discharges, conditions, charges and re-calibrates battery within 16 hours process</li> </ul>



### 3.1.3 Bond Testing Probes

Item no	Item description
H318	RESONANCE   18 KHZ   Ø 0.500"   HIROSE 6PIN
H326	RESONANCE   26 KHZ   Ø 0.500"   HIROSE 6PIN
H330	RESONANCE   30 KHZ   Ø 0.500"   HIROSE 6PIN
H353	RESONANCE   53 KHZ   Ø 0.500"   HIROSE 6PIN
H360	RESONANCE   60 KHZ   Ø 0.500"   HIROSE 6PIN
L3110	RESONANCE   110 KHZ   Ø 0.500"   HIROSE 6PIN
L3165	RESONANCE   165 KHZ   Ø 0.375"   HIROSE 6PIN
L3200	RESONANCE   200 KHZ   Ø 0.750"   HIROSE 6PIN
L3201	RESONANCE   200 KHZ   Ø 0.250"   HIROSE 6PIN
L3250	RESONANCE   250 KHZ   Ø 0.250"   HIROSE 6PIN
L3280	RESONANCE   280 KHZ   Ø 0.125"   HIROSE 6PIN
L3330	RESONANCE   280 KHZ   Ø 0.187"   HIROSE 6PIN
L3370	RESONANCE   370 KHZ   Ø 0.125"   HIROSE 6PIN
PCLS31	PITCH-CATCH   LOW FREQ   TONE BURST   SPRRING LOADED TIP ↔ 0.670"   LEMO 8PIN
PCMS31	PITCH-CATCH   MED FREQ   TONE BURST   SPRING LOADED TIP ↔ 0.670"   LEMO 8PIN
PCHS31	PITCH-CATCH   HIGH FREQ   TONE BURST   SPRING LOADED TIP ↔ 0.670"   LEMO 8PIN
PCL32	PITCH-CATCH   LOW FREQ   TONE BURST   FIXED TIP ↔ 0.670"   LEMO 8PIN
PCM32	PITCH-CATCH   MED FREQ   TONE BURST   FIXED TIP ↔ 0.670"   LEMO 8PIN
PCH32	PITCH-CATCH   HIGH FREQ   TONE BURST   FIXED TIP ↔ 0.670"   LEMO 8PIN
PCLHV32	PITCH-CATCH   LOW FREQ   TONE BURST   HIGH VOLT   FIXED TIP ↔ 0.670"   LEMO 8PIN
PCLHVS32	PITCH-CATCH   LOW FREQ   TONE BURST   HIGH VOLT   SPR. LOADED TIP ↔ 0.670"   LEMO 8PIN
PPCHPS31	PITCH-CATCH   LOW FREQ   PULSED   HIGH VOLT   SPR. LOADED TIP ↔ 0.670"   LEMO 8PIN
M31	MECHANICAL IMPEDANCE ANALYSIS   Ø 0.250" TIP   LEMO 8PIN
M32	MECHANICAL IMPEDANCE ANALYSIS   Ø 0.375" TIP   LEMO 8PIN
M33	MECHANICAL IMPEDANCE ANALYSIS   Ø 0.500" TIP   LEMO 8PIN

### 3.1.4 Bond Testing Probe Kits

Item number	Item description				
BPK-01	<b>BOND PROBE KIT 1</b>				
	Package includes:				
	<u>Resonance</u>	<u>Pitch-Catch</u>	<u>MIA</u>	<u>Cables</u>	<u>Accessories</u>
	L3110 L3250 L3280	PCMS31 PCLHVS32	M32	BF11-S6 BF11-L8	COUPLANT UGII04 CARRYING CASE
BPK-02	<b>BOND PROBE KIT 2</b>				
	Package includes:				
	<u>Resonance</u>	<u>Pitch-Catch</u>	<u>MIA</u>	<u>Cables</u>	<u>Accessories</u>
	L3110 L3250 L3370	PCMS31 PCLS31 PCHS31 PPCLHPS31	NONE	BL8-S6 BL8-L8	COUPLANT UGII04 CARRYING CASE
BPK-03	<b>BOND PROBE KIT 3</b>				
	Package includes:				
	<u>Resonance</u>	<u>Pitch-Catch</u>	<u>MIA</u>	<u>Cables</u>	<u>Accessories</u>
	L3110 L3165 L3200 L3201 L3250 L3280 L3330 L3370 H318 H326 H353	PCLS31 PCMS31 PCHS31 PCLHV32 PCLHVS32 PPCHPS31	M31 M32 M33	BF11-S6 BF11-L8 BF11-F11	COUPLANT UGII12 (2) PC-TIP (2) PC-FEET TEFLON TAPE MIA-SL CARRYING CASE

### 3.1.5 Bond Testing Cables

Item number	Item description
BF11-S6	<b>CABLE   BONDASCOPE 3100 TO RESONANCE   8FT   FISCHER 11PIN TO HIROSE 6PIN</b>
BF11-L8	<b>CABLE   BONDASCOPE 3100 TO PITCH-CATCH AND MIA   8FT   FISCHER 11 PIN TO LEMO 8PIN</b>
BF11-F11	<b>CABLE   BONDASCOPE 3100 TO OLYMPUS P-C AND MIA   8FT   FISCHER 11 PIN TO FISCHER 11PIN</b>
BL8-S6	<b>CABLE   BONDASCOPE 3100 AND 350 TO RESONANCE   8FT   LEMO 8PIN TO HIROSE 6PIN</b>
BL8-BL8	<b>CABLE   BONDASCOPE 3100 AND 350 TO P-C AND MIA   8FT   LEMO 8PIN TO LEMO 8PIN</b>

## 3.2 Curlin Air

Portable, Ultrasonic Flaw Detector for Non-Contact Air Coupled Inspection of Attenuative or Liquid-Intolerant Materials



### 3.2.1 Instrument

Item number	Item description
150-10000-1	<p><b>COMPOSITE INSPECTION CURLIN AIR PACKAGE   BNC</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- Composites</li> <li>- Foam core laminates</li> <li>- Glass fiber/ carbon fiber composites</li> <li>- Far-side defects</li> <li>- Bonded honeycomb structures</li> <li>- Construction materials:</li> <li>- Drywall, plywood, particleboard, cement</li> <li>- Structural urethane foam</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Instrument, Analog Output, Batteries, AC charger, 2x M-01 Microdot to Open-End cables for alarm output signals transmission, carrying pouch with shoulder strap, hard-shelled carrying case and operator manual.</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- BNC transducer connectors, Sun-readable LCD display, user-friendly menu structure with direct access to range, delay &amp; gain controls, audio/visual flaw alarms.</li> </ul>

### 3.2.2 Accessories - Options - Spares

Item number	Item description
AT1	<p><b>HI-POWER TRANSDUCER   LEMO 01</b></p> <ul style="list-style-type: none"> <li>- Standard Curlin Air transmitting transducer</li> <li>- Standard Curlin Air receiving transducer</li> <li>- Cable required to connect directly to instrument: ATC-10</li> <li>- Note: The Curlin Air only works in thru-transmission mode. Therefore, its operation requires two transducers at all times, for instance 2 x AT1 transducers, or 1 x AT1 and 1 x AT2.</li> </ul>

AT2	<b>MINI RECEIVER TRANSDUCER   MICRODOT</b> <ul style="list-style-type: none"> <li>- Optional Curlin Air receiving transducer</li> <li>- Best for applications requiring either higher sensitivity, greater resolution or use in areas with restricted clearance.</li> <li>- Beam diameter is approximately 1/8" at aperture</li> <li>- Cable required to connect directly to instrument: MBA-10</li> </ul>
AT2YA	<b>YOKE ADAPTOR</b> <ul style="list-style-type: none"> <li>- Required to mount AT2 receiver to Curlin Air yoke.</li> </ul>
ATC-10	<b>CABLE   AT1 TO CURLIN AIR</b> <ul style="list-style-type: none"> <li>- Special 10-foot Lemo 01 to BNC cable to connect the AT1 to the Curlin Air.</li> </ul>
MBA-10	<b>CABLE   AT2 TO CURLIN AIR</b> <ul style="list-style-type: none"> <li>- Special 10-foot BNC to Microdot cable to connect AT2 to Curlin Air</li> </ul>
BBR01-10	<b>CABLE   YOKE TO CURLIN AIR</b> <ul style="list-style-type: none"> <li>- Special 10-foot BNC to BNC cable to connect the yoke to the Curlin Air.</li> </ul>
150-80000	<b>YOKE ASSEMBLY   FIXED ENDS</b> <ul style="list-style-type: none"> <li>- For manually scanning materials (using a pair of AT1 transducers).</li> <li>- Two non-rotatable transducer holders</li> </ul>
150-81000	<b>YOKE ASSEMBLY   ONE FIXED END, ONE GIMBALED END</b> <ul style="list-style-type: none"> <li>- For manually scanning materials (using a pair of AT1 transducers).</li> <li>- One non-rotatable transducer holder</li> <li>- One rotatable transducer holder</li> </ul>
150-81000L	<b>YOKE ASSEMBLY   ONE FIXED END, ONE GIMBALED END   10" LONGER</b> <ul style="list-style-type: none"> <li>- For manually scanning materials (using a pair of AT1 transducers).</li> <li>- One non-rotatable transducer holder</li> <li>- One rotatable transducer holder</li> </ul>
150-80200	<b>GIMBAL ATTACHMENT   FOR YOKE ASSEMBLY</b> <ul style="list-style-type: none"> <li>- Rotatable transducer holder</li> <li>- Can be mounted to any yoke to replace a non-rotatable transducer holder</li> </ul>
AC-RAPTOR	<b>AC BATTERY CHARGER   FOR RAPTOR, RBCU-1, CURLIN AIR</b>
TEP1	<b>CARRYING POUCH   FOR CURLIN AIR</b> <ul style="list-style-type: none"> <li>- The unit firmly fits into a form-fitting compartment supported by an adjustable angle and height such that the screen can be viewed just below normal line-of-sight.</li> <li>- Includes padded shoulder strap for comfort during extended use.</li> </ul>
CURLIN AIR-DTPW	<b>DATA TRANSFER PACKAGE   FOR CURLIN AIR</b> <ul style="list-style-type: none"> <li>- CD with data transfer package software</li> <li>- Manual for guidance on installation and usage</li> <li>- B3100 USB CABLE (USB – PC INTERFACE CABLE)</li> </ul>
B3100 USB CABLE	<b>DATA TRANSFER CABLE   USB   FOR BONDASCOPE 3100, 950-R, CURLIN AIR</b>

# 4 Imaging Systems

---

# 4.1 Raptor CIS

Corrosion Inspection System.  
Fully battery-operated scanner system designed for pipe inspection and corrosion mapping.



## 4.1.1 Instrument

Item number	Item description
RAPTOR CIS RAPTOR CIS 18	<p><b>RAPTOR CORROSION INSPECTION SYSTEM   10" RCA or 18" RCA</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- Pipes, elbows, pressure vessels &amp; storage tanks inspection</li> <li>- Thickness scans, corrosion mapping, flaw inspections</li> <li>- "Quick and dirty" survey using manual AEHS-03 scanner</li> <li>- Precision full-field XY scan with RCA scanner</li> <li>- Imaging &amp; 3D modeling</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- RAPTOR: See RAPTOR PACKAGE for details on the instrument</li> <li>- RCA-10/18: Magnetic wheeled automated XY pipe scanner (4" pipe diameter to flat surface)</li> <li>- RBCU-1: Raptor Battery Control Unit, provides power to RCA-10/18</li> <li>- RCA053: Standard transducer for RCA scanner</li> <li>- 2224: Special pipe inspection "Mushroom" probe holder</li> <li>- RCCB-3M: Raptor Cable Control Bundle – 3 meters. Connecting Raptor, RCA-10/18, RBCU-1</li> <li>- AEHS-03: Manually operated one-dimensional scanner incl. factory installed cable and probe</li> <li>- MPCV2: Manually Pressurized Couplant Vessel, 2 gallons</li> <li>- CouplantUGII02, Raptor manual, (2) AC chargers, Raptor protective case, large CIS carrying case</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- See RAPTOR PACKAGE</li> <li>- System fully battery operated</li> <li>- Liquid feed provisioned on both scanners</li> <li>- RCA-10/18: multiple optional transducers available for application specific requirements</li> </ul>

## 4.1.2 Accessories – Options – Spares

Item number	Item description
MPCV2	<b>MANUALLY PRESSURIZED COUPLANT VESSEL   2 GALLONS</b>
RBCU-1	<b>RAPTOR BATTERY CONTROL UNIT</b> - Provides power to RCA-10/18
AC-RAPTOR	<b>AC BATTERY CHARGER   FOR RAPTOR, RBCU-1, CURLIN AIR</b>
RBP-1	<b>BATTERY PACK   FOR RAPTOR, BONDASCOPE 3100, RBCU-1</b> - Li-Ion battery pack (included in original instrument package)
BCL-1	<b>BATTERY CONDITIONING CHARGER   FOR RAPTOR, BONDASCOPE 3100, RBCU-1</b> - Discharges, conditions, charges and re-calibrates battery within 16 hours process
RCCB-3M	<b>RAPTOR CONTROL CABLE BUNDLE   3 METERS</b> - Interface cable for RCA-10 and RCA-18 - Other cable lengths available upon request
LC-RPTR	<b>PROTECTIVE CASE   FOR RAPTOR</b> - Canvas protective slip-on case with clear window for user accessibility to keys
RCA-10/18	See 4.3.1 Motorized Scanners
AEHS-03	See Manual Scanners

# 4.2 BondHub

Multi-mode composite inspection imaging bond tester allowing full-field inspection, data collection and analysis of a variety of composite materials



## 4.2.1 Instrument

Item number	Item description
BONDHUB	<p><b>COMPOSITE INSPECTION IMAGING BONDHUB PACKAGE</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- See Bond 3100 PKG</li> <li>- Compatible with any of NDT Systems’ current scanners</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Instrument, keyboard, mouse, factory-installed Windows 7 license, factory installed internal Li-Ion battery packs, AC charger, B3100-BH cable, operator manual, custom-made packaging</li> <li>- Does not include Bondascope 3100</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- C-Scan (XY-encoded) imaging capability of all 3 available bond testing modes</li> <li>- C-Scan bond testing data recording, post-processing, analysis, reporting and archiving</li> <li>- C-Scan bond testing data reproducibility</li> <li>- Cost savings as composite inspector reviews full set of data instead of conducting inspection</li> <li>- Full-field inspection</li> <li>- Quantitative defect sizing</li> <li>- Faster inspection turn-arounds</li> <li>- Manual and automated scanners available</li> <li>- Reduced human error influence</li> <li>- 12” sun readable TFT LCD display</li> <li>- Battery or AC powered</li> <li>- 110/240C compatible</li> </ul>



### 4.2.2 Accessories - Options – Spares

Item number	Item description
ACBONDHUB	<b>AC BATTERY CHARGER   FOR BONDHUB</b>
B3100-BH CABLE	<b>CABLE   BONDASCOPE 3100 TO BONDHUB</b>
Scanners	<b>PLEASE SEE “SCANNER” BROCHURE FOR SCANNERS AND SCANNER ACCESSORIES</b>

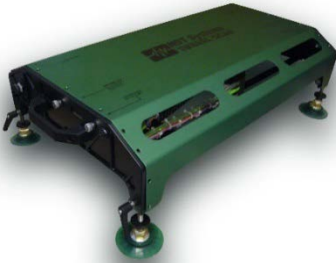
### 4.3 Scanners

NDT Systems manufactures a complete range of manual and automatic precision scanners. Our scanners are affordable, robust and high quality and can be used with other manufacturer's instruments, including for Phased-Array (PAUT) inspections



### 4.3.1 Motorized Scanners

Item number	Item description
TUNNEL SCAN	<p><b>TUNNEL SCAN I - 18in x 12in</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- Corrosion mapping and thickness measurements</li> <li>- Composite inspection and flaw detection</li> <li>- Immersion testing</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Scanner</li> <li>- AC-RAPTOR                      Battery charger</li> <li>- 2x RBP-1                        Li-Ion Battery pack</li> <li>- AE09M01                        probe holder</li> <li>- CC-TUNNEL SCAN            Carrying case</li> <li>- Neoprene tubing 25 ft</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- Compatible with Raptor and BondHub imaging systems</li> <li>- High resolution: 0.001in</li> <li>- Scan speed: 10in/s</li> <li>- Light weight and battery operated</li> <li>- Vacuum feet with integrated pump</li> <li>- Liquid Couplant feed</li> <li>- Works on flat or slightly curved surfaces</li> </ul> <p>Options include:</p> <ul style="list-style-type: none"> <li>- Made to size immersion tank</li> <li>- Magnetic feet</li> <li>- TSCAN-BH CABLE            Tunnel Scan to Bondhub cable</li> <li>- TSCAN-RAP CABLE          Tunnel Scan to Raptor cable</li> </ul>
TUNNEL SCAN II TUNNEL SCAN III	<p><b>TUNNEL SCAN II – 50in x 40in   TUNNEL SCAN III - 60in x 40in</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- See TUNNEL SCAN</li> <li>- Only compatible with Raptor</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Scanner</li> <li>- AC-RAPTOR                      Battery charger</li> <li>- TSCANII CABLE                Tunnel Scan II to Raptor cable</li> <li>- AE09M01                        probe holder</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- Compatible with Raptor only</li> <li>- Resolution: 0.020in</li> <li>- Scan speed: 8in/s</li> <li>- Adjustable height in increments of 1in</li> <li>- Liquid Couplant feed</li> </ul>



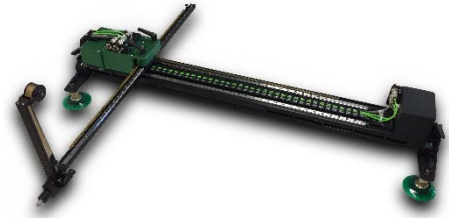
**CROSS SCAN – 24in x 24in**

Applications include:

- Corrosion mapping and thickness measurements
- Composite inspection and flaw detection

Package includes:

- Scanner
- AC-RAPTOR: Battery charger
- AE09M01 probe holder
- CC-CROSSCAN Carrying Case
- Neoprene tubing [ft]



CROSSCAN

Features include:

- Compatible with Raptor and Bondhub imaging systems
- Resolution: 0.020in
- Scan speed: 8in/s
- Light weight and battery operated
- Vacuum feet with integrated pump
- Liquid Couplant feed
- Works on flat or slightly curved surfaces

Options include:

- Magnetic feet
- CSCAN-BH CABLE CrossScan to Bondhub cable
- CSCAN-RAP CABLE CrossScan to Raptor cable

**RCA - RAPTOR CANTILEVER ARM - 10in or 18in**

Applications include:

- Pipes, elbows, pressure vessels & storage tanks inspector
- Thickness scans, corrosion mapping, flaw inspections

Package includes:

- Scanner
- SP-RCA1
- RCA-SAVER
- DMB01-02
- AE09M01


 RCA-10  
 RCA-18

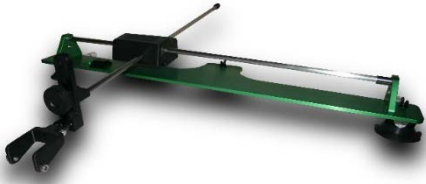
Features include:

- Requires magnetic surface to run on
- Runs on pipes from 4" OD to flat surfaces
- RCA-SAVER safety harness provides attachment to prevent scanner from accidentally dropping from a scan area, e.g. a tank wall

Data	X axis	Y axis
Scan Length [in]	unlimited	10 or 18
Scan Resolution [in]	0.040	0.020
Scan Speed [in/s]	0.25	8

### 4.3.2 Manual Scanners

Item number	Item description
SLIDESCAN 18X18 SLIDESCAN 24X24	<p><b>SLIDE SCAN - 18in x 18in   SLIDE SCAN - 24in x 24in</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- Corrosion mapping and thickness measurements</li> <li>- Composite inspection and flaw detection</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Scanner</li> <li>- AE09M01: Probe holder</li> <li>- Carrying case</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- Compatible with Raptor and Bondhub imaging systems</li> <li>- High resolution: 0.006in</li> <li>- Scan speed: &gt;10in/s</li> <li>- Vacuum suction cup feet</li> <li>- Liquid Couplant feed, light weight</li> <li>- Works on flat or slightly curved surfaces</li> </ul> <p>Options include:</p> <ul style="list-style-type: none"> <li>- Magnetic feet</li> <li>- SSCAN-RAP CABLE    Slide/StringScan to Raptor cable</li> <li>- SSCAN-BH CABLE     Slide/StringScan to Bondhub cable</li> </ul>
STRING SCAN II	<p><b>STRING SCAN II – 50in x 30in</b></p> <p>Applications include:</p> <ul style="list-style-type: none"> <li>- Corrosion mapping and thickness measurements</li> <li>- Composite inspection and flaw detection</li> </ul> <p>Package includes:</p> <ul style="list-style-type: none"> <li>- Scanner</li> <li>- AE09M01: Probe holder</li> <li>- Carrying case</li> </ul> <p>Features include:</p> <ul style="list-style-type: none"> <li>- Compatible with Raptor and Bondhub imaging systems</li> <li>- High resolution: 0.020in</li> <li>- Scan speed: &gt;30in/s</li> <li>- Vacuum suction cup feet</li> <li>- Liquid Couplant feed, light weight</li> <li>- Works on flat or slightly curved surfaces</li> </ul> <p>Options include:</p> <ul style="list-style-type: none"> <li>- Magnetic feet</li> <li>- SSCAN-RAP CABLE    Slide/StringScan to Raptor cable</li> <li>- SSCAN-BH CABLE     Slide/StringScan to Bondhub cable</li> </ul>



**ARMADILLO ENCODED HAND SCANNER | INCLUDING 6FT CABLE BUNDLE**

Applications include:

- “Quick and dirty” encoded B-Scan thickness measurement
- Corrosion inspection
- Pipes, elbows, storage tanks
- Can be used on non-magnetic surfaces
- Minimum surface curvature: 4in to flat
- Raptor compatible only



AEHS-03

Package include:

- Scanner
- Cable: included, factory installed, 6ft
- PX506: Standard AEHS-03 transducer
- SP-AEHS: Spare parts kit

Features include:

- Compatible with Raptor imaging system
- Scan speed: >30in/s
- Easy to operate
- Liquid Couplant feed

### 4.3.3 Specific Scanners: Accessories - Options – Spares

#### 4.3.3.1 TUNNEL SCAN: Accessories – Options – Spares

Item number	Item description
TSCAN-BH CABLE	<b>CABLE   TUNNEL SCAN TO BONDHUB</b>
TSCAN-RAP CABLE	<b>CABLE   TUNNEL SCAN TO RAPTOR</b>
CC-TUNNEL SCAN	<b>CARRYING CASE   FOR TUNNEL SCAN</b>
RBP-1	<b>BATTERY PACK   FOR RAPTOR, RBCU-1, TUNNEL SCAN</b> - Li-Ion battery pack (included in original instrument package)
BCL-1	<b>BATTERY CONDITIONING CHARGER</b> - Discharges, re-conditions, charges and re-calibrates battery within 16 hours process
	<b>FOR FURTHER ACCESSORIES AND TRANSDUCERS, SEE 4.3.4</b>

#### 4.3.3.2 CROSS SCAN: Accessories – Options – Spares

Item number	Item description
CSCAN-BH CABLE	<b>CABLE   CROSSCAN TO BONDHUB</b>
CSCAN-RAP CABLE	<b>CABLE   CROSSCAN TO RAPTOR</b>
CC-CROSSCAN	<b>CARRYING CASE   CROSSCAN</b>
BCL-1	<b>BATTERY CONDITIONING CHARGER   FOR RAPTOR, BONDASCOPE 3100, RBCU-1</b> - Discharges, conditions, charges and re-calibrates battery within 16 hours process
	<b>FOR FURTHER ACCESSORIES AND TRANSDUCERS, SEE 4.3.4</b>

#### 4.3.3.3 RCA-10/18: Accessories – Options – Spares

Item number	Item description
AE09M01	<b>PROBE HOLDER   DETACHABLE, GIMBALED, IRRIGATED</b> - Fits in RCA scanner, CrosScan, SlideScan, Tunnel Scanners - Requires appropriate 2xxx insert to fit a transducer
2224	<b>PROBE ADAPTOR   STAINLESS STEEL MUSHROOM</b> - Fits in standard AE09M01 probe holder of RCA-10/18 - For use with RCA scanner transducers: RCA022, RCA052, RCA053, RCA102
RCA053	<b>TRANSDUCER   DUAL ELEMENT   5 MHZ   Ø 0.375"   Ø 0.600" HOUSING   MICRODOT</b> - Fits in 2224 probe holder - Standard transducer
RCA022	<b>TRANSDUCER   DUAL ELEMENT   2.25 MHZ   Ø 0.250"   Ø 0.600" HOUSING   MICRODOT</b> - Fits in 2224 probe holder

RCA052	<b>TRANSDUCER   DUAL ELEMENT   5 MHZ   Ø 0.250"   Ø 0.600" HOUSING   MICRODOT</b> - Fits in 2224 probe holder
RCA102	<b>TRANSDUCER   DUAL ELEMENT   10 MHZ   Ø 0.250"   Ø 0.600" HOUSING   MICRODOT</b> - Fits in 2224 probe holder
DMB01-02	<b>CABLE   DUAL MICRODOT TO BNC   2 FEET   FOR RCA-10</b> - Installed on the RCA-10 to connect transducer with RCCB-3M
DMB01-02.5	<b>CABLE   DUAL MICRODOT TO BNC   2.5 FEET   FOR RCA-18</b> - Installed on the RCA-18 to connect transducer with RCCB-3M
RCA-SAVER	<b>BRACKET FOR SAFETY HARNESS</b>
RCCB-3M	<b>RAPTOR CABLE CONTROL BUNDLE   3 METERS</b> - Interface cable for RCA-10 and RCA-18 - Other cable lengths available upon request
RBP-1	<b>BATTERY PACK   FOR RAPTOR AND RBCU-1</b> - Li-Ion battery pack (included in original instrument package)
RBCU-1	<b>RAPTOR BATTERY CONTROL UNIT   FOR RCA-10/18</b> - Provides power to RCA-10/18

#### 4.3.3.4 SLIDE SCAN: Accessories – Options – Spares

Item number	Item description
SSCAN-BH CABLE	<b>CABLE   STRING/SLIDE SCAN TO BONDHUB</b>
SSCAN-RAP CABLE	<b>CABLE   STRING/SLIDE SCAN TO RAPTOR</b>
CC-SLIDESCAN	<b>CARRYING CASE   SLIDE SCAN</b>
	<b>FOR FURTHER ACCESSORIES AND TRANSDUCERS, SEE 4.3.4</b>

#### 4.3.3.5 AEHS-03: Accessories – Options – Spares

Item number	Item description
AEHS-C25	<b>EXTENSION CABLE   FOR AEHS-03   25 FT</b>
PX506	<b>TRANSDUCER   DUAL ELEMENT   5 MHZ   0.375"   SPECIAL AEHS-03 CONNECTORS</b> - Special housing and connectors - Use for AEHS-03 only
PX755	<b>TRANSDUCER   DUAL ELEMENT   7.5 MHZ   0.300"   SPECIAL AEHS-03 CONNECTORS</b> - Special housing and connectors - Use for AEHS-03 only
SP-AEHS	<b>SPARE PARTS KIT   FOR AEHS</b> - Spare transducer push screw and wrench



#### 4.3.3.6 STRING SCAN: Accessories – Options – Spares

Item number	Item description
SSCAN-BH CABLE	<b>CABLE   STRING/SLIDE SCAN TO BONDHUB</b>
SSCAN-RAP CABLE	<b>CABLE   STRING/SLIDE SCAN TO RAPTOR</b>
SSC11TC	<b>TRANSDUCER   STRING SCAN   SINGLE ELEMENT   CONTACT   5 MHZ   Ø 0.375"</b>
SSC16TC	<b>TRANSDUCER   STRING SCAN   SINGLE ELEMENT   CONTACT   2.25 MHZ   Ø 0.50"</b>
SSC17TC	<b>TRANSDUCER   STRING SCAN   SINGLE ELEMENT   CONTACT   2.25 MHZ   Ø 0.50"</b>
SSCHF0.54TC	<b>TRANSDUCER   STRING SCAN   SINGLE ELEMENT   CONTACT   0.5 MHZ   Ø 0.50"</b>
SSCHF014TC	<b>TRANSDUCER   STRING SCAN   SINGLE ELEMENT   CONTACT   1 MHZ   Ø 0.50"</b>
SSCMF0.54TC	<b>TRANSDUCER   STRING SCAN   SINGLE ELEMENT   CONTACT   0.5 MHZ   Ø 0.50"</b>
SSCMF014TC	<b>TRANSDUCER   STRING SCAN   SINGLE ELEMENT   CONTACT   1 MHZ   Ø 0.50"</b>
SSD11TC	<b>TRANSDUCER   STRING SCAN   SINGLE ELEMENT   DELAY LINE   15 MHZ   Ø 0.25"</b>
SSPDG022TC	<b>TRANSDUCER   STRING SCAN   SINGLE ELEMENT   DELAY LINE   2.25 MHZ   Ø 0.25"</b>
SSPDG052TC	<b>TRANSDUCER   STRING SCAN   SINGLE ELEMENT   DELAY LINE   5 MHZ   Ø 0.25"</b>
SSPDG102TC	<b>TRANSDUCER   STRING SCAN   SINGLE ELEMENT   DELAY LINE   10 MHZ   Ø 0.25"</b>
SSTG506C	<b>TRANSDUCER   STRING SCAN   DUAL ELEMENT   5 MHZ   Ø 0.375"</b>
SSL3110TC	<b>PROBE   STRING SCAN   RESONANCE   110 KHZ</b>
SSL3165TC	<b>PROBE   STRING SCAN   RESONANCE   165 KHZ</b>
SSL3250TC	<b>PROBE   STRING SCAN   RESONANCE   250 KHZ</b>
SSL3280TC	<b>PROBE   STRING SCAN   RESONANCE   280 KHZ</b>
SSH-L3XXX	<b>PROBE ADAPTOR   STRING SCAN   FOR STANDARD RESONANCE PROBES</b>
SSH-PC	<b>PROBE ADAPTOR   STRING SCAN   FOR STANDARD PITCH-CATCH PROBES</b>

### 4.3.4 General Scanners: Accessories – Options – Spares

Item number	Item description
MBSS01	<b>MAGNETIC BASE   2 EACH</b> - For StringScan, SlideScan, CrosScan and TunnelScan
MPCV1	<b>MANUALLY PRESSURIZED COUPLANT VESSEL   1 GALLON</b>
MPCV2	<b>MANUALLY PRESSURIZED COUPLANT VESSEL   2 GALLONS</b>
AC-RAPTOR	<b>AC BATTERY CHARGER   RAPTOR   RBCU-1   CROSS SCAN   TUNNEL SCAN</b> - 110/240v compatible
BCL-1	<b>BATTERY CONDITIONING CHARGER</b> - Discharges, re-conditions, charges and re-calibrates battery within 16 hours process

#### 4.3.4.1 General Scanners: UT Transducers

Item number	Item description
AE09M01	<b>PROBE HOLDER   DETACHABLE, GIMBALED, IRRIGATED</b> - Fits in RCA scanner, CrosScan, SlideScan, TunnelScan - Requires appropriate 2xxx insert to fit a transducer
2126	<b>PROBE ADAPTOR   NYLON SLEEVE</b> - For C14 transducer
2159	<b>PROBE ADAPTOR   NYLON SLEEVE</b> - For D11R and RDGxx2 transducers
2160	<b>PROBE ADAPTOR   NYLON SLEEVE</b> - For C13, D11 and PDGxx2 transducers
2161	<b>PROBE ADAPTOR   NYLON SLEEVE</b> - For C16, C17, CHFxx4, CHGxx4 transducers
2162	<b>PROBE ADAPTOR   NYLON SLEEVE</b> - For C11, CHFxx3, CHGxx3 transducers
TRANSDUCERS	<b>See applicable UT transducers in chapter 5</b>

#### 4.3.4.2 General Scanners: Bond Testing Probes

Item number	Item description
BHH-L3XXX	<b>PROBE ADAPTOR   GENERAL SCANNER   FOR STANDARD RESONANCE PROBES</b>
BHH-MIA	<b>PROBE ADAPTOR   GENERAL SCANNER   FOR MIA PROBES</b>
BHH-PC	<b>PROBE ADAPTOR   GENERAL SCANNER   FOR PITCH-CATCH PROBES</b>
PROBES	<b>See applicable bond testing transducers in chapter 3.1.2</b>

## 5 UT Transducers

---

## 5.1 TG-110DL Transducers

TG 100 & 110 Series	Gauge Type		Frequency /MHz				Thickness Range /inch							Element Diameter /inch		Probe Height /inch		Max. Temperature /F				
	Part number	TG100D	TG110DL	2.25	5	7.5	10	0.022-1.875	0.040-2.000	0.040-9.999	0.060-1.000	0.060-2.000	0.060-9.999	0.200-9.999	0.25-0.5	0.5-0.75	0.45-0.80	1.3-1.5	250	450	600	1000
TG-506		X		X					X					X			X	X				
TG-556		X		X					X						X		X				X	
TG-560P		X		X					X					X			X		X			
TG560-PHT		X		X					X					X			X					X
TG-702		X			X		X							X		X					X	
TG-790		X		X					X					X			X					X
TG-790HP		X		X					X					X			X					X
TG-505	X	X		X					X					X		X			X			
TG-505TM		X		X				X						X			X		X			
TG-208	X	X	X										X		X		X				X	
TQ-506		X		X									X	X			X					X
TG-502		X		X						X				X		X			X			
TG-502TM		X		X						X				X		X			X			
TG101HR		X				X	X							X		X		X				

## 5.2 900 Series and NovaScope 6000 Transducers

Contact Transducers		Characteristics				Frequency /MHz											Element Diameter /inch								
Part number	General Purpose	High Resolution	High Gain	Permanent Delay	Replaceable Delay (B=Bubbler)	0.5	1	2.25	3.5	5	7.5	10	15	20	25	0.09	0.125	0.188	0.25	0.375	0.5	0.75	1	1.125	
900 Series & Novascope 6000 - Contact																									
C11	X									X															X
C11E	X									X															X
C11TC	X									X															X
C13	X									X										X					
C13TC	X									X									X						
C14	X									X							X								
C16	X							X																X	
C17			X				X																	X	
C92		X										X								X					
C92-SM		X										X								X					
C95		X										X						X							
C95-SM		X										X						X							
C98		X													X		X								
900 Series & Novascope 6000 – Delay line																									
D11		X		X									X							X					
D11TC		X		X									X							X					
D11R		X			X								X							X					
D11RTC		X			X								X							X					
D13R		X			X						X												X		
D15		X		X									X							X					
D16R		X			X								X							X					
D20R		X			X								X				X								
AEX01C		X			X						X								X						
AEX02C		X			X							X							X						
AEX03C		X			X							X							X						
AEX05C		X			X							X							X						
AEX07C		X			X					X						X									
Novascope 6000 ONLY																									
AE12205		X			X							X							X						
AE12205-A		X			X							X							X						
AE12205-G		X			X							X							X						
PTX5		X			X								X												
PTX6		X			X								X			X									
PTX6S		X			X								X			X									
VTX1		X		X									X						X						
VTX1-B		X		X									X						X						
VTX2		X		X							X														
VTX3		X		X						X															
IBU05		X			B					X														X	
IBU10		X			B						X													X	
IBU15		X			B							X												X	
IBU25		X			B										X									X	
IBU25-A		X			B										X									X	
E11877		X			B										30										X
Accessories & Replacement Parts																									
D11RT	DELAY LINE TIP - 5/PK																								
D16RT	DELAY LINE TIP - 5/PK																								
D20RT	DELAY LINE TIP - 5/PK																								
T300	BUBBLER TANK WITH POWER CORD																								
T300A	REPLACEABLE TRANSDUCER ADAPTOR FOR T300																								
IBUC	REPLACEABLE CONE, LONG (STANDARD) – 1/PK																								
IBUCS	REPLACEABLE CONE, SHORT (FOR IBU05 ONLY) – 1/PK																								
IBUT	REPLACEABLE METAL TIPS - 5/PK																								
IBUT-H	REPLACEABLE HARDENED METAL TIP – 1/PK																								
IBU-TP	REPLACEABLE NYLON TIPS – 5/PK																								
IBUT-S	REPLACEABLE SHORT TIPS - 5/PK																								
IBUT-V	REPLACEABLE IBU STYLE V GROOVE TIP 1/PKG																								
PTX5-T	TIP FOR PTX5 PENCIL PROBE – 1/PK																								
PTX6-T	TIP FOR PTX6, PTX6S PENCIL PROBE – 1/PK																								

### 5.3 Standard Transducers

#### 5.3.1 Contact Transducers & Accessories

Contact Transducers Part number	Characteristics					Frequency /MHz										Element Diameter /inch						
	General Purpose	High Resolution	High Gain	Permanent Delay	Replaceable Delay	0.5	1	2.25	3.5	5	7.5	10	15	20	25	0.125	0.25	0.375	0.5	0.75	1	1.125
Contact- Standard – General purpose																						
CHRF0.54	X					X													X			
CHRF0.56	X					X														X		
CHRF0.58	X					X															X	
CHRF0.59	X					X																X
CHRF014	X						X												X			
CHRF014TM	X						X												X			
CHRF016	X						X													X		
CHRF018	X						X														X	
CHRF019	X						X															X
CHRF024	X							X											X			
CHRF024TM	X							X											X			
CHRF026	X							X												X		
CHRF028	X							X													X	
CHRF028-TM	X							X													X	
CHRF029	X							X														X
CHRF034	X								X										X			
CHRF036	X								X											X		
CHRF038	X								X												X	
CHRF039	X								X													X
CHRF054	X									X									X			
CHRF056	X									X										X		
CHRF058	X									X											X	
CHRF058-M	X									X											X	
CHRF058-TM	X									X											X	
Contact- Standard – High Gain																						
CMRF0.54			X			X													X			
CMRF0.56			X			X														X		
CMRF0.58			X			X															X	
CMRF0.59			X			X																X
CMRF014			X				X												X			
CMRF016			X				X													X		
CMRF018			X				X														X	
CMRF019			X				X															X
CMRF024			X					X											X			
CMRF026			X					X												X		
CMRF028			X					X													X	
CMRF029			X					X														X
CMRF034			X						X										X			
CMRF036			X						X											X		
CMRF038			X						X												X	
CMRF039			X						X													X
CMRF054			X							X									X			
CMRF056			X							X										X		
CMRF058			X							X											X	
Contact- Fingertip – General Purpose																						
CHF012	X						X									X						
CHF013	X						X										X					
CHF014	X						X												X			
CHF016	X						X													X		
CHF016-TM	X						X													X		
CHF022	X							X								X						
CHF023	X							X									X					
CHF024	X							X											X			
CHF026	X							X												X		
CHF032	X								X							X						
CHF033	X								X								X					
CHF034	X								X										X			
CHF036	X								X											X		
CHF052	X									X						X						
CHF053	X									X							X					

Part number	Characteristics					Frequency /MHz										Element Diameter /inch							
	General Purpose	High Resolution	High Gain	Permanent Delay	Replaceable Delay	0.5	1	2.25	3.5	5	7.5	10	15	20	25	0.125	0.25	0.375	0.5	0.75	1	1.125	
CHF054	X									X									X				
CHF056	X									X											X		
CHF072	X										X						X						
CHF073	X										X							X					
CHF074	X										X								X				
CHF102	X											X					X						
CHF103	X											X						X					
CHF104	X											X							X				
Contact- Fingertip – High resolution																							
CHG0.54		X				X														X			
CHG014		X					X													X			
CHG016		X					X														X		
CHG022		X						X									X						
CHG023		X						X										X					
CHG024		X						X											X				
CHG026		X						X													X		
CHG032		X							X								X						
CHG033		X							X									X					
CHG034		X							X										X				
CHG036		X							X												X		
CHG052		X								X							X						
CHG053		X								X								X					
CHG054		X								X									X				
CHG054-TC		X								X									X				
CHG056		X								X											X		
CHG072		X									X						X						
CHG073		X									X							X					
CHG074		X									X								X				
CHG102		X										X					X						
CHG102TM		X										X					X						
CHG103		X										X						X					
CHG104		X										X							X				

**5.3.2 Delay Line Transducers & Accessories**

Part number	Characteristics					Frequency /MHz										Element Diameter /inch						
	General Purpose	High Resolution	High Gain	Permanent Delay	Replaceable Delay	0.5	1	2.25	3.5	5	7.5	10	15	20	25	0.125	0.25	0.375	0.5	0.75	1	1.125
Delay line – High resolution – Replaceable delay																						
RDG0.54		X			X	X													X			
RDG012		X			X		X										X					
RDG014		X			X		X												X			
RDG022		X			X			X									X					
RDG022TM		X			X			X									X					
RDG024		X			X			X											X			
RDG052		X			X				X								X					
RDG052TM		X			X				X								X					
RDG053		X			X				X								X					
RDG054		X			X				X										X			
RDG054TM		X			X				X										X			
RDG102		X			X							X					X					
RDG102TM		X			X							X					X					
RDG104		X			X							X							X			
RDG104TM		X			X							X							X			
RDG152		X			X								X				X					
RDG152TM		X			X								X				X					
RDG202		X			X									X			X					
RDG252		X			X										X		X					
Delay line – High resolution – Permanent delay																						
PDG014		X		X			X												X			
PDG024		X		X				X											X			
PDG052		X		X					X								X					
PDG054		X		X					X										X			
PDG102		X		X							X						X					
PDG104		X		X							X								X			
PDG152		X		X								X					X					
PDG201		X		X										X		X						
PDG202		X		X										X			X					
PDG252		X		X											X		X					
Replacement Delay Lines																						
RDL2	1/4" DELAY LINE TIP.350"																					
RDL2-.250	RDL2 DELAY LINE TIP .250"LONG																					
RDL2-.375	RDL2 DELAY LINE TIP .375" LONG																					
RDL2-.50	RDL2 DELAY LINE TIP .5" LONG																					
RDL2-.75	RDL2 DELAY LINE TIP .75"LONG																					
RDL2-.875	RDL2 DELAY LINE TIP 0.875"LONG																					
RDL2-1-HT	DELAY HIGH TEMP																					
RDL2-1.00	RDL2 DELAY LINE TIP 1.00"LONG																					
RDL2-1.25	RDL2 DELAY LINE TIP 1.25"																					
RDL2-HT	DELAY HIGH TEMP																					
RDL4	1/2" DELAY LINE TIP 5/PK																					
RDL4-.75	3/4" DELAY LINE TIP 5/PK																					
RDL4-1.25	RDL4 DELAY LINE TIP 1.25"LONG																					
RDL4-1"	RDL4 DELAY LINE TIP 1.00"LONG																					



**5.3.3 Protected Element Transducers & Accessories**

CONTACT TRANSDUCERS		Characteristics				Frequency /MHz										Element Diameter /inch						
Part number	General Purpose	High Resolution	High Gain	Permanent Delay	Replaceable Delay	0.5	1	2.25	3.5	5	7.5	10	15	20	25	0.125	0.25	0.375	0.5	0.75	1	1.125
Delay line - Protected Element – General Purpose																						
RHF0.56	X					X														X		
RHF0.58	X					X															X	
RHF0.59	X					X																X
RHF014	X						X												X			
RHF016	X						X													X		
RHF018	X						X														X	
RHF019	X						X															X
RHF024	X							X											X			
RHF026	X							X												X		
RHF026TM	X							X												X		
RHF028	X							X													X	
RHF029	X							X														X
RHF034	X								X										X			
RHF036	X								X											X		
RHF036TM	X								X											X		
RHF038	X								X												X	
RHF054	X									X									X			
RHF056	X									X										X		
RHF056-TM	X									X										X		
RHF058	X									X											X	
Contact- Protected Element – General Purpose																						
RMF0.56			X			X														X		
RMF0.58			X			X															X	
RMF0.59			X			X																X
RMF014			X				X												X			
RMF016			X				X													X		
RMF018			X				X														X	
RMF024			X					X											X			
RMF026			X					X												X		
RMF026TM			X					X												X		
RMF028			X					X													X	
RMF029			X					X														X
RMF034			X						X										X			
RMF036			X						X											X		
RMF038			X						X												X	
RMF054			X							X									X			
RMF056			X							X										X		
Replacement Delay Lines																						
RD4	ACC – HIGH TEMP DELAY – 1/PK																					
RD6-1	ACC – HIGH TEMP DELAY – 1/PK																					
RD8-1	ACC – HIGH TEMP DELAY – 1/PK																					
RD9-1	ACC – HIGH TEMP DELAY – 1/PK																					
RM4	ACC - MEMBRANES - 10 PACK																					
RM6	ACC - MEMBRANES - 10 PACK																					
RM8	ACC - MEMBRANES - 10 PACK																					
RM9	ACC - MEMBRANES - 10 PACK																					
RTS	ACC - TRANSDUCER DOCUMENTATION																					
RTSP	ACC - TRANSDUCER DOCUMENTATION																					
RTSS	ACC - SPECIAL DOCUMENTATION																					

**5.3.4 Dual Element Transducers & Accessories**

DUAL ELEMENT TRANSDUCERS Part number	Type			Frequency /MHz						Element Dimensions /inch					Delay Line Type	
	Potted Fingertip	Rectangular	Replacement Delay Lines	1	2.25	3.5	5	7.5	10	Ø 0.25	Ø 0.375	Ø 0.5	0.5 x 0.5	0.5 X 1.0	Acrylic	High Temp
Potted Fingertip Housing																
DVF014	X			X								X				
DVF022	X				X					X						
DVF023	X				X						X					
DVF024	X				X							X				
DVF032	X					X				X						
DVF033	X					X					X					
DVF034	X					X						X				
DVF052	X						X			X						
DVF053	X						X				X					
DVF054	X						X					X				
DVF072	X							X		X						
DVF073	X							X			X					
DVF074	X							X				X				
DVF102	X								X	X						
DVF103	X								X		X					
Rectangular Housing																
DXR0144		X		X									X			
DXR0148		X		X										X		
DXR0244		X			X								X			
DXR0248		X			X									X		
DXR0344		X				X							X			
DXR0348		X				X								X		
DXR0544		X					X						X			
DXR0548		X					X							X		
Replacement Delay Lines																
DX44			X										X		X	
DX48			X											X	X	
DXH44			X										X			X
DXH48			X											X		X

## 5.4 Angle Beam Transducers & Wedges

### 5.4.1 Angle Beam Transducers (LSA)

Angle Beam Transducers	Type					Frequency /MHz										Refracted Angle /degrees					Element Dimensions /inch															
	Part number	Quick Change	Standard	AWS	Mini Potted	Wedge Only	0.5	1	2.25	3.5	5	7.5	10	15	20	25	30	45	60	70	90	Ø 0.25	Ø 0.375	Ø 0.5	0.19 x 0.19	0.25 x 0.25	0.38 x 0.38	0.5 x 0.5	0.5 X 1.0	0.625 X 0.625	0.625 X 0.75	0.75 x 0.75	0.75 X 1.0	1.0 X 1.0		
LSA0144		X					X																						X							
LSA0148		X					X																						X							
LSA0168		X					X																												X	
LSA0188		X					X																												X	
LSA0244		X						X																				X								
LSA0248		X						X																				X								
LSA0268		X						X																											X	
LSA0288		X						X																												X
LSA0344		X							X																		X									
LSA0348		X							X																			X								
LSA0368		X							X																											X
LSA0388		X							X																											X
LSA0544		X								X																	X									
LSA0548		X								X																	X									
LSA0568		X								X																									X	
LSA0588		X								X																										X

### 5.4.2 Standard Angle Beam Wedges (LSW)

Angle Beam Transducers	Type					Frequency /MHz										Refracted Angle /degrees					Element Dimensions /inch															
	Part number	Quick Change	Standard	AWS	Mini Potted	Wedge Only	0.5	1	2.25	3.5	5	7.5	10	15	20	25	30	45	60	70	90	Ø 0.25	Ø 0.375	Ø 0.5	0.19 x 0.19	0.25 x 0.25	0.38 x 0.38	0.5 x 0.5	0.5 X 1.0	0.625 X 0.625	0.625 X 0.75	0.75 x 0.75	0.75 X 1.0	1.0 X 1.0		
LSW4445		X				X											X											X								
LSW4845		X				X											X											X								
LSW6845		X				X											X																		X	
LSW8845		X				X											X																			X
LSW4460		X				X												X									X									
LSW4860		X				X												X										X								
LSW6860		X				X												X																	X	
LSW8860		X				X												X																		X
LSW4470		X				X														X							X									
LSW4870		X				X														X								X								
LSW6870		X				X														X															X	
LSW8870		X				X														X																X

### 5.4.3 Custom Angle Beam Wedges (LSW)

#### 5.4.3.1 30° and 90° angle wedges

A minimum order quantity of (10) is required for any of the following custom angle beam wedges.

Angle Beam Transducers	Type					Frequency /MHz										Refracted Angle /degrees					Element Dimensions /inch															
	Part number	Quick Change	Standard	AWS	Mini Potted	Wedge Only	0.5	1	2.25	3.5	5	7.5	10	15	20	25	30	45	60	70	90	Ø 0.25	Ø 0.375	Ø 0.5	0.19 x 0.19	0.25 x 0.25	0.38 x 0.38	0.5 x 0.5	0.5 X 1.0	0.625 X 0.625	0.625 X 0.75	0.75 x 0.75	0.75 X 1.0	1.0 X 1.0		
MOQ = 10	LSW4430		X			X											X											X								
MOQ = 10	LSW4830		X			X											X												X							
MOQ = 10	LSW6830		X			X											X																		X	
MOQ = 10	LSW8830		X			X											X																			X
MOQ = 10	LSW4490		X			X														X							X									
MOQ = 10	LSW4890		X			X														X								X								
MOQ = 10	LSW6890		X			X														X															X	
MOQ = 10	LSW8890		X			X														X																X

#### 5.4.3.2 Wedge contouring

1. Wedge contouring can be applied as per customer request to any of the above listed wedges.
2. When wedge contouring is desired, it has to be ordered in addition to the wedge part numbers by selecting any of the following contouring part numbers.
3. Specific contouring curvature (diameter or radius) needs to be specified as well.

Part number	Part description
CONTOUR AOD	AXIAL OUTER DIAMETER
CONTOUR AID	AXIAL INNER DIAMETER
CONTOUR COD	CIRCUMFERENTIAL OUTER DIAMETER
CONTOUR CID	CIRCUMFERENTIAL INNER DIAMETER

### 5.4.4 Quick Change Transducers (TAB)

Angle Beam Transducers	Type					Frequency /MHz											Refracted Angle /degrees					Element Dimensions /inch															
	Part number	Quick Change	Standard	AWS	Mini Potted	Wedge Only	0.5	1	2.25	3.5	5	7.5	10	15	20	25	30	45	60	70	90	Ø 0.25	Ø 0.375	Ø 0.5	0.19 x 0.19	0.25 x 0.25	0.38 x 0.38	0.5 x 0.5	0.5 X 1.0	0.625X 0.625	0.625 X 0.75	0.75 x 0.75	0.75 X 1.0	1.0 X 1.0			
TAB014	X						X																X														
TAB022	X							X															X														
TAB023	X								X															X													
TAB024	X								X															X													
TAB032	X									X													X														
TAB033	X									X														X													
TAB034	X									X														X													
TAB052	X										X												X														
TAB053	X										X													X													
TAB054	X										X													X													
TAB072	X											X											X														
TAB073	X											X												X													
TAB074	X											X												X													
TAB102	X												X										X														
TAB103	X												X											X													
TAB104	X												X											X													
TAC022	X													X									X														
TAC023	X													X										X													
TAC024	X													X										X													
TAC052	X														X								X														
TAC053	X															X								X													
TAC054	X																X							X													

### 5.4.5 Standard Quick Change Wedges (TAW)

Angle Beam Transducers	Type					Frequency /MHz											Refracted Angle /degrees					Element Dimensions /inch																
	Part number	Quick Change	Standard	AWS	Mini Potted	Wedge Only	0.5	1	2.25	3.5	5	7.5	10	15	20	25	30	45	60	70	90	Ø 0.25	Ø 0.375	Ø 0.5	0.19 x 0.19	0.25 x 0.25	0.38 x 0.38	0.5 x 0.5	0.5 X 1.0	0.625X 0.625	0.625 X 0.75	0.75 x 0.75	0.75 X 1.0	1.0 X 1.0				
TAW245A	X					X												X					X															
TAW245S	X					X												X					X															
TAW345A	X					X												X						X														
TAW345S	X					X												X						X														
TAW445A	X					X												X						X														
TAW445S	X					X												X						X														
TAW260A	X					X													X				X															
TAW260S	X					X													X				X															
TAW360A	X					X													X					X														
TAW360S	X					X													X					X														
TAW460A	X					X													X					X														
TAW460S	X					X													X					X														
TAW270A	X					X														X				X														
TAW270S	X					X														X				X														
TAW370A	X					X														X					X													
TAW370S	X					X														X					X													
TAW470A	X					X														X					X													
TAW470S	X					X														X					X													

### 5.4.6 Custom Quick Change Wedges (TAW)

#### 5.4.6.1 30° and 90° angle wedges

A minimum order quantity of (10) is required for any of the following custom angle beam wedges.

Angle Beam Transducers	Type					Frequency /MHz											Refracted Angle /degrees					Element Dimensions /inch																
	Part number	Quick Change	Standard	AWS	Mini Potted	Wedge Only	0.5	1	2.25	3.5	5	7.5	10	15	20	25	30	45	60	70	90	Ø 0.25	Ø 0.375	Ø 0.5	0.19 x 0.19	0.25 x 0.25	0.38 x 0.38	0.5 x 0.5	0.5 X 1.0	0.625X 0.625	0.625 X 0.75	0.75 x 0.75	0.75 X 1.0	1.0 X 1.0				
MOQ = 10	TAW230A	X				X											X						X															
MOQ = 10	TAW230S	X				X											X						X															
MOQ = 10	TAW330A	X				X											X							X														
MOQ = 10	TAW330S	X				X											X							X														
MOQ = 10	TAW430A	X				X											X							X														
MOQ = 10	TAW430S	X				X											X							X														
MOQ = 10	TAW290A	X				X														X			X															
MOQ = 10	TAW290S	X				X														X			X															
MOQ = 10	TAW390A	X				X														X				X														
MOQ = 10	TAW390S	X				X														X				X														
MOQ = 10	TAW490A	X				X														X					X													
MOQ = 10	TAW490S	X				X														X					X													

### 5.4.6.2 Wedge contouring

4. Wedge contouring can be applied as per customer request to any of the above listed wedges.
5. When wedge contouring is desired, it has to be ordered in addition to the wedge part numbers by selecting any of the following contouring part numbers.
6. Specific contouring curvature (diameter or radius) needs to be specified as well.

Part number	Part description
CONTOUR AOD	AXIAL OUTER DIAMETER
CONTOUR AID	AXIAL INNER DIAMETER
CONTOUR COD	CIRCUMFERENTIAL OUTER DIAMETER
CONTOUR CID	CIRCUMFERENTIAL INNER DIAMETER

### 5.4.7 Mini Potted Transducers (MPA)

Mini Potted Elements	Type					Frequency /MHz										Refracted Angle /degrees					Element Dimensions /inch																
	Quick Change	Standard	AWS	Mini Potted	Wedge Only	0.5	1	2.25	3.5	5	7.5	10	15	20	25	30	45	60	70	90	Ø 0.25	Ø 0.375	Ø 0.5	0.19 x 0.19	0.25 x 0.25	0.38 x 0.38	0.5 x 0.5	0.5 X 1.0	0.625 X 0.625	0.625 X 0.75	0.75 x 0.75	0.75 X 1.0	1.0 X 1.0				
MPA0214A				X				X									X							X													
MPA0214S				X				X									X							X													
MPA0216A				X				X										X						X													
MPA0216S				X				X										X						X													
MPA0217A				X				X												X				X													
MPA0217S				X				X												X				X													
MPA0224A				X				X									X								X												
MPA0224S				X				X									X								X												
MPA0226A				X				X										X							X												
MPA0226S				X				X										X							X												
MPA0227A				X				X												X					X												
MPA0227S				X				X												X					X												
MPA0234A				X				X									X									X											
MPA0234S				X				X									X									X											
MPA0236A				X				X										X								X											
MPA0236S				X				X										X								X											
MPA0237A				X				X												X						X											
MPA0237S				X				X												X						X											
MPA0244A				X				X									X											X									
MPA0244S				X				X									X											X									
MPA0246A				X				X										X									X										
MPA0246S				X				X										X									X										
MPA0247A				X				X												X							X										
MPA0247S				X				X												X							X										
MPA0514A				X					X								X							X													
MPA0514S				X					X								X							X													
MPA0516A				X					X									X						X													
MPA0516S				X					X									X						X													
MPA0517A				X					X											X				X													
MPA0517S				X					X											X				X													
MPA0524A				X					X								X								X												
MPA0524S				X					X								X								X												
MPA0526A				X					X									X							X												
MPA0526S				X					X									X							X												
MPA0527A				X					X											X					X												
MPA0527S				X					X											X					X												
MPA0534A				X					X								X									X											
MPA0534S				X					X								X									X											
MPA0536A				X					X									X								X											
MPA0536S				X					X									X								X											
MPA0537A				X					X											X						X											
MPA0537S				X					X											X						X											
MPA0544A				X					X								X										X										
MPA0544S				X					X								X										X										
MPA0546A				X					X									X									X										
MPA0546S				X					X									X									X										
MPA0547A				X					X											X							X										
MPA0547S				X					X											X							X										
MPA1014S				X									X				X								X												
MPA1016S				X														X							X												
MPA1017S				X																X					X												
MPA1024S				X													X									X											
MPA1026S				X														X								X											
MPA1027S				X																X						X											



## 5.5 Immersion Transducers

### 5.5.1 Unfocused Immersion Transducers

Immersion Transducers	Type						Characteristics			Frequency /MHz										Element Diameter /inch										
	Part number	A-Style	B-Style	C-Style	D-Style	E-Style	F-Style	General Purpose	High Resolution	High Gain	0.5	1	2.25	3.5	5	7.5	10	15	20	25	0.125	0.25	0.375	0.5	0.75	1	1.125			
Immersion – A Housing																														
IAHF012	X						X				X																			
IAHF022	X						X					X																		
IAHF031	X						X						X									X								
IAHF032	X						X						X										X							
IAHF051	X						X							X								X								
IAHF052	X						X							X									X							
IAHF071	X						X								X							X								
IAHF072	X						X								X								X							
IAHF101	X						X									X						X								
IAHF102	X						X									X							X							
IAHF151	X						X										X					X								
IAHF152	X						X										X						X							
IAHF201	X						X											X				X								
IAHF202	X						X											X					X							
IAHF251	X						X												X			X								
IAHF252	X						X													X		X								
IAHG011	X							X			X											X								
IAHG012	X							X			X												X							
IAHG021	X							X				X										X								
IAHG022	X							X				X											X							
IAHG031	X							X					X									X								
IAHG032	X							X					X										X							
IAHG051	X							X						X								X								
IAHG052	X							X						X									X							
IAHG071	X							X							X							X								
IAHG072	X							X							X								X							
IAHG101	X							X								X						X								
IAHG102	X							X								X							X							
IAHG151	X							X									X					X								
IAHG152	X							X									X						X							
IAHG201	X							X										X				X								
IAHG202	X							X										X					X							
IAHG251	X							X											X			X								
IAHG252	X							X												X		X								
IAMF011	X								X		X											X								
IAMF012	X								X		X												X							
IAMF021	X								X			X										X								
IAMF022	X								X			X											X							
IAMF031	X								X				X									X								
IAMF032	X								X				X										X							
IAMF051	X								X					X								X								
IAMF052	X								X					X									X							
IAMF071	X								X						X							X								
IAMF072	X								X						X								X							
IAMF101	X								X							X						X								
IAMF102	X								X							X							X							
Immersion – B Housing																														
IBHF012		X					X				X											X								
IBHF013		X					X				X												X							
IBHF014		X					X				X													X						
IBHF022		X					X					X											X							
IBHF023		X					X					X											X							
IBHF024		X					X					X												X						
IBHF032		X					X						X										X							
IBHF033		X					X						X											X						
IBHF034		X					X						X											X						
IBHF052		X					X							X									X							
IBHF053		X					X							X										X						
IBHF054		X					X							X										X						

Immersion Transducers	Type						Characteristics			Frequency /MHz										Element Diameter /inch							
	Part number	A-Style	B-Style	C-Style	D-Style	E-Style	F-Style	General Purpose	High Resolution	High Gain	0.5	1	2.25	3.5	5	7.5	10	15	20	25	0.125	0.25	0.375	0.5	0.75	1	1.125
IBHF072		X					X								X							X					
IBHF073		X					X								X								X				
IBHF074		X					X								X									X			
IBHF102		X					X									X						X					
IBHF103		X					X									X							X				
IBHF104		X					X									X								X			
IBHF152		X					X											X				X					
IBHF153		X					X											X					X				
IBHF154		X					X											X						X			
IBHF202		X					X												X			X					
IBHF252		X					X													X		X					
IBHG012		X						X			X											X					
IBHG013		X						X			X												X				
IBHG014		X						X			X													X			
IBHG022		X						X				X										X					
IBHG023		X						X				X											X				
IBHG024		X						X				X												X			
IBHG032		X						X					X									X					
IBHG033		X						X					X										X				
IBHG034		X						X					X											X			
IBHG052		X						X						X								X					
IBHG053		X						X						X									X				
IBHG054		X						X						X										X			
IBHG072		X						X							X							X					
IBHG073		X						X							X								X				
IBHG074		X						X							X									X			
IBHG102		X						X								X						X					
IBHG103		X						X								X							X				
IBHG104		X						X								X								X			
IBHG152		X						X										X				X					
IBHG153		X						X										X					X				
IBHG202		X						X											X			X					
IBHG203		X						X											X				X				
IBHG252		X						X												X		X					
IBMF0.53		X							X	X													X				
IBMF0.54		X							X	X														X			
IBMF012		X							X		X											X					
IBMF013		X							X		X												X				
IBMF014		X							X		X													X			
IBMF022		X							X			X										X					
IBMF023		X							X			X											X				
IBMF024		X							X			X												X			
IBMF032		X							X				X									X					
IBMF033		X							X				X										X				
IBMF034		X							X				X											X			
IBMF052		X							X					X								X					
IBMF053		X							X					X									X				
IBMF054		X							X					X										X			
IBMF072		X							X						X							X					
IBMF073		X							X						X								X				
IBMF074		X							X						X									X			
IBMF102		X							X							X						X					
IBMF103		X							X							X							X				
IBMF104		X							X							X								X			
IBMF152		X							X									X				X					
Immersion – C Housing																											
ICHF0.54			X				X			X														X			
ICHF0.56			X				X			X															X	X	
ICHF014			X				X				X													X			
ICHF016			X				X				X													X			
ICHF024			X				X					X												X			
ICHF026			X				X					X													X		
ICHF034			X				X						X											X			
ICHF036			X				X						X												X	X	
ICHF054			X				X							X										X			
ICHF056			X				X							X										X			



Immersion Transducers	Type						Characteristics			Frequency /MHz										Element Diameter /inch								
	Part number	A-Style	B-Style	C-Style	D-Style	E-Style	F-Style	General Purpose	High Resolution	High Gain	0.5	1	2.25	3.5	5	7.5	10	15	20	25	0.125	0.25	0.375	0.5	0.75	1	1.125	
ICHF074			X				X								X									X				
ICHF076			X				X								X										X			
ICHF104			X				X										X							X				
ICHG016			X					X			X														X			
ICHG024			X					X				X												X				
ICHG026			X					X				X												X				
ICHG054			X					X						X										X				
ICHG056			X					X						X										X				
ICHG074			X					X							X									X				
ICHG076			X					X							X									X				
ICHG104			X					X									X							X				
ICMF0.54			X						X	X														X				
ICMF0.56			X						X	X															X			
ICMF014			X						X		X													X				
ICMF016			X						X		X														X			
ICMF024			X						X			X												X				
ICMF026			X						X			X												X		X		
ICMF034			X						X				X											X				
ICMF036			X						X				X												X			
ICMF054			X						X					X										X				
ICMF056			X						X					X										X		X		
ICMF074			X						X						X									X				
ICMF076			X						X						X									X		X		
Immersion – D Housing																												
IDHF0.58				X			X			X																X		
IDHF0.59				X			X			X																	X	
IDHF018				X			X				X															X		
IDHF019				X			X				X															X		
IDHF028				X			X					X													X			
IDHF029				X			X					X													X			
IDHF038				X			X						X												X			
IDHF058				X			X							X											X			
IDHG018				X				X			X														X			
IDHG019				X				X			X														X			X
IDHG028				X				X				X													X			
IDHG029				X				X				X													X			X
IDHG038				X				X					X												X			
IDHG058				X				X						X											X			
IDMF0.58				X					X	X															X			
IDMF0.59				X					X	X																X		
IDMF018				X					X		X														X			
IDMF019				X					X		X														X			X
IDMF028				X					X			X													X			
IDMF029				X					X			X														X		
IDMF038				X					X				X												X			
IDMF039				X					X				X													X		
IDMF058				X					X					X											X			
Immersion – E Housing																												
IEHF012					X		X				X										X							
IEHF013					X		X				X											X	X					
IEHF014					X		X				X												X					
IEHF022					X		X					X										X						
IEHF023					X		X					X											X					
IEHF024					X		X					X												X				
IEHF032					X		X						X									X						
IEHF033					X		X						X										X					
IEHF034					X		X						X										X		X			
IEHF052					X		X							X								X						
IEHF053					X		X							X									X					
IEHF054					X		X							X										X				
IEHF072					X		X								X							X						
IEHF073					X		X								X								X					
IEHF074					X		X								X								X					
IEHF102					X		X										X					X						
IEHF103					X		X										X						X					

Immersion Transducers	Type						Characteristics			Frequency /MHz										Element Diameter /inch								
	Part number	A-Style	B-Style	C-Style	D-Style	E-Style	F-Style	General Purpose	High Resolution	High Gain	0.5	1	2.25	3.5	5	7.5	10	15	20	25	0.125	0.25	0.375	0.5	0.75	1	1.125	
IEHF104					X		X									X								X				
IEHF152					X		X											X				X						
IEHF153					X		X											X					X					
IEHF202					X		X												X			X						
IEHF252					X		X													X		X						
IEHG012					X			X			X											X						
IEHG013					X			X			X												X					
IEHG014					X			X			X													X				
IEHG022					X			X				X										X						
IEHG023					X			X				X											X					
IEHG024					X			X				X												X				
IEHG032					X			X					X									X						
IEHG033					X			X					X										X					
IEHG034					X			X					X											X				
IEHG051					X			X						X							X							
IEHG052					X			X						X								X						
IEHG053					X			X						X									X					
IEHG054					X			X						X										X				
IEHG072					X			X							X							X						
IEHG073					X			X							X								X					
IEHG074					X			X							X									X				
IEHG102					X			X								X						X						
IEHG103					X			X								X							X					
IEHG104					X			X								X								X				
IEHG152					X			X									X					X						
IEHG153					X			X										X					X					
IEHG202					X			X											X			X						
IEHG252					X			X												X		X						
IEMF0.53					X				X	X													X					
IEMF0.54					X				X	X														X				
IEMF012					X				X		X											X						
IEMF013					X				X		X												X					
IEMF014					X				X		X													X				
IEMF018					X				X		X															X		
IEMF022					X				X			X										X						
IEMF023					X				X			X											X					
IEMF024					X				X			X												X				
IEMF032					X				X				X									X						
IEMF033					X				X				X										X					
IEMF034					X				X				X											X				
IEMF052					X				X					X								X						
IEMF053					X				X					X									X					
IEMF054					X				X					X										X				
IEMF072					X				X						X							X						
IEMF073					X				X						X								X					
IEMF074					X				X						X									X				
IEMF102					X				X							X						X						
IEMF103					X				X							X							X					
IEMF152					X				X								X					X						
Search Tubes																												
AE09501-12	ACC - SEARCH TUBE - 12"				MALE - FEMALE MICRODOT																							
SW02	ACC - SEARCH TUBE - 2"				MALE - FEMALE UHF																							
SW04	ACC - SEARCH TUBE - 4"				MALE - FEMALE UHF																							
SW06	ACC - SEARCH TUBE - 6"				MALE - FEMALE UHF																							
SW12	ACC - SEARCH TUBE - 12"				MALE - FEMALE UHF																							
SW24	ACC - SEARCH TUBE - 24"				MALE - FEMALE UHF																							
LAR3	ACC - ANGLE REFLECTOR FOR PENCIL CASE IMMERSION																											
LAR5	ACC - ANGLE REFLECTOR FOR SLIM CASE IMMERSIONS																											

### 5.5.2 Focused Transducer Options

NDT Systems, Inc. offers the option of cylindrically or spherically focusing any of the above listed unfocused transducers within the extent of table below.

Please note that the focal characteristics need to be specified and ordered along with the transducer itself and cannot be added or adjusted in retrospect.

		Element size [“ Dia]													
		0.125		0.25		0.375		0.5		0.75		1		1.125	
Focal length [in]		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Frequency [MHz]	0.5							N/P	N/P	N/P	1	1	1.5	1.5	2
	1	N/P	N/P	N/P	N/P	N/P	0.5	N/P	0.75	1	1.75	1.5	3	1.5	4
	2.25	N/P	N/P	N/P	0.5	N/P	1	1	1.75	1.5	4	2	7	2	9
	3.5	N/P	N/P	N/P	0.75	0.75	1.5	1	3	1.5	6	2	11	4	14
	5	N/P	N/P	0.5	1	0.75	2	1	4	1.5	9	4	16		
	7.5	N/P	N/P	0.5	1.5	0.75	3.5	1.5	6	3.5	13				
	10	N/P	0.5	0.5	2	0.75	4.5	1	8	1.5	10				
	15	0.5	0.75	0.5	3	0.75	7	1	12						
	20	0.5	1	0.75	4	1	9								
	25	0.5	1.25	0.5	5										

Part number	Part description
FOCUS SPH	SPHERICAL FOCUS
FOCUS CYL	CYLINDRAL FOCUS

## 5.6 Scanner Specific UT Transducers & Accessories

Part number	Scanner Type				Element Type		Frequency /MHz						Thickness Range /inch								Element Tip Diameter /inch						
	RCA-X	StringScan II	Slide Scan	CrosScan	TunnelScan Series	Single	Dual	0.5	1	2.25	5	10	15	0.005-0.7	0.022-1.875	0.040-2.000	0.040-9.999	0.060-1.000	0.062-2.0	0.062-19.9	0.2-19.9	2.0-99.9	0.125	0.2-0.25	0.375	0.5	
RCA-10/18 Scanner Transducers																											
RCA022	X		X	X	X		X			X							X								X		
RCA052	X		X	X	X		X			X								X							X		
RCA053	X		X	X	X		X			X							X								X		
RCA102	X		X	X	X		X					X			X										X		
StringScan Transducers																											
SSC11TC		X	X	X	X	X				X										X					X		
SSC16TC		X	X	X	X	X				X										X							X
SSC17TC		X	X	X	X	X				X												X					X
SSCHF0.54TC		X	X	X	X	X		X																			
SSCHF014TC		X	X	X	X	X			X																		
SSCHF054TC		X	X	X	X	X		X																			
SSCMF054TC		X	X	X	X	X		X																			
SSD11TC		X	X	X	X	X							X	X											X		
SSPDG022TC		X	X	X	X	X				X															X		
SSPDG052TC		X	X	X	X	X								X											X		
SSPDG102TC		X	X	X	X	X						X													X		
SSTG506C		X	X	X	X		X			X							X									X	
Nylon Yoke Adapters																											
2126	X		X	X	X	ACC – Nylon Insert – D12 and C14																					
2159	X		X	X	X	ACC – Nylon Insert – D11R and 1/4" RDG Series																					
2160	X		X	X	X	ACC – Nylon Insert – D11, C13 and 1/4" PDG Series																					
2161	X		X	X	X	ACC – Nylon Insert – C16, C17 and 1/2" Optima Series																					
2162	X		X	X	X	ACC – Nylon Insert – C11 and 3/8" Optima Series																					
2224	X		X	X	X	ACC – Stainless Steel Insert – Large Flange Mushroom Style – RCAxxx Series																					

## 5.7 Cables & Adapters

Part number	End 1											End 2											Cable Type					
	Microdot	BNC	UHF	UHF-Right angle	UHF-45deg	Dual Microdot	Dual BNC	Lemo-00	Lemo-1	Male	Female	BNC	UHF	Lemo-00	Lemo-1	Lemo-00 Right Angle	Selectro	Microdot Right angle	Dual BNC	Dual Lemo-00	Dual Lemo-1	Dual Selectro	Male	Female	RG-174	RG-174 Heavy Duty	RG-58A/U	RG-58A/U Waterproof
Cables- All Male																												
MB01	X								X		X												X		X			
MBG01	X								X		X												X			X		
MU01	X								X				X										X		X			
ML01	X								X				X										X		X			
ML02	X								X					X									X		X			
MLG01	X								X				X										X			X		
MBR01	X								X			X											X			X		
BB01		X							X		X		X										X		X			
BB02		X							X		X		X										X				X	
BBG01		X							X		X		X										X			X		
BU01		X							X			X											X		X			
BU02		X							X			X											X					X
BL01		X							X				X										X		X			
BL02		X							X					X									X		X			
BLG01		X							X				X										X			X		
BLG02		X							X				X										X			X		
BBR01		X							X		X		X										X			X		
BMR01		X							X								X						X		X			
UL00			X						X				X										X				X	
UL01			X						X				X										X				X	
DMB01						X			X									X					X		X			
DML01						X			X										X				X		X			
DML02						X			X											X			X		X			
LMD1						X			X											X			X		X			
LL01							X		X				X										X		X			
Adapters																												
ALB01								X		X	X												X					
ALB02							X		X		X													X				
ALRB02							X		X		X													X				
ABB01		X								X	X													X				
AUR01				X					X			X												X				
AUR02					X				X			X												X				

## 6 Calibration blocks

---

## 6.1 Imperial Calibration Blocks

Calibration block type	CARBON STEEL		ALUMINUM		STAINLESS STEEL		OPTIONAL PROTECTIVE CASE	
	Part number	Material	Part number	Material	Part number	Material	Part number	Description
DC - Shearwave Distance Calibration	TBS101	1018 Steel	TBA101	7075-T6 Aluminum	TBSS101	304 Stainless	TBC101	Test Block Case
SC - Shearwave Sensitivity Calibration	TBS102	1018 Steel	TBA102	7075-T6 Aluminum	TBSS102	304 Stainless	TBC102	Test Block Case
DSC - Shearwave Distance/Sensitivity Calibration	TBS103	1018 Steel	TBA103	7075-T6 Aluminum	TBSS103	304 Stainless	TBC103	Test Block Case
Miniature Angle Beam	TBS104	1018 Steel	TBA104	7075-T6 Aluminum	TBSS104	304 Stainless	TBC104	Test Block Case
AWS Resolution	TBS105	1018 Steel	TBA105	7075-T6 Aluminum	TBSS105	304 Stainless	TBC105	Test Block Case
30 FBH Resolution	TBS106	4340 Steel	TBA106	7075-T6 Aluminum	TBSS106	304 Stainless	TBC106	Test Block Case
Miniature Resolution	TBS107	1018 Steel	TBA107	7075-T6 Aluminum	TBSS107	304 Stainless	TBC107	Test Block Case
ASME N-625 Reference Plate	TBS108	1018 Steel	TBA108	7075-T6 Aluminum	TBSS108	304 Stainless	TBC108	Test Block Case
IIW Type I	TBS109	1018 Steel	TBA109	7075-T6 Aluminum	TBSS109	304 Stainless	TBC109	Test Block Case
IIW Type II	TBS110	1018 Steel	TBA110	7075-T6 Aluminum	TBSS110	304 Stainless	TBC110	Test Block Case
NavShips	TBS111	1018 Steel	TBA111	7075-T6 Aluminum	TBSS111	304 Stainless	TBC111	Test Block Case
IOW Beam Profile	TBS112	1018 Steel	TBA112	7075-T6 Aluminum	TBSS112	304 Stainless	TBC112	Test Block Case
4-Step Block [0.25" 0.5" 0.75" 1"]	TBS113	1018 Steel	TBA113	7075-T6 Aluminum	TBSS113	304 Stainless	TBC113	Test Block Case
5-Step Block [0.1" 0.2" 0.3" 0.4" 0.5"]	TBS114	1018 Steel	TBA114	7075-T6 Aluminum	TBSS114	304 Stainless	TBC114	Test Block Case
DS - Distance/Sensitivity	TBS115	1018 Steel	TBA115	7075-T6 Aluminum	TBSS115	304 Stainless	TBC115	Test Block Case
Miniature IIW-Type	TBS116	1018 Steel	TBA116	7075-T6 Aluminum	TBSS116	304 Stainless	TBC116	Test Block Case
Distance/Area Amplitude (10)	TBS120	4340 Steel	TBA120	7075-T6 Aluminum	TBSS120	304 Stainless	TBC120	Test Block Case
Area/Amplitude (8)	TBS121	4340 Steel	TBA121	7075-T6 Aluminum	TBSS121	304 Stainless	TBC121	Test Block Case
Area/Amplitude (19), #3 FBH	TBS122-3	4340 Steel	TBA122-3	7075-T6 Aluminum	TBSS122-3	304 Stainless	TBC122	Test Block Case
Area/Amplitude (19), #5 FBH	TBS122-5	4340 Steel	TBA122-5	7075-T6 Aluminum	TBSS122-5	304 Stainless	TBC122	Test Block Case
Area/Amplitude (19), #8 FBH	TBS122-8	4340 Steel	TBA122-8	7075-T6 Aluminum	TBSS122-8	304 Stainless	TBC122	Test Block Case

## 6.2 Metric Calibration Blocks

Calibration block type	CARBON STEEL		ALUMINUM		STAINLESS STEEL		OPTIONAL PROTECTIVE CASE	
	Part number	Material	Part number	Material	Part number	Material	Part number	Description
DSC - Shearwave Distance/Sensitivity Calibration [Metric]	TBS103M	1018 Steel	TBA103M	7075-T6 Aluminum	TBSS103M	304 Stainless	TBC103	Test Block Case
Miniature Angle Beam [Metric]	TBS104M	1018 Steel	TBA104M	7075-T6 Aluminum	TBSS104M	304 Stainless	TBC104	Test Block Case
IIW Type I [Metric]	TBS109M	1018 Steel	TBA109M	7075-T6 Aluminum	TBSS109M	304 Stainless	TBC109	Test Block Case
IIW Type II [Metric]	TBS110M	1018 Steel	TBA110M	7075-T6 Aluminum	TBSS110M	304 Stainless	TBC110	Test Block Case
4-Step Block 'A' [ 6.25   12.5   18.75   25 MM ]	TBS113M-A	1018 Steel	TBA113M-A	7075-T6 Aluminum	TBSS113M-A	304 Stainless	TBC113	Test Block Case
4-Step Block 'B' [ 5   10   15   20 MM ]	TBS113M-B	1018 Steel	TBA113M-B	7075-T6 Aluminum	TBSS113M-B	304 Stainless	TBC113	Test Block Case
5-Step Block 'A' [ 2.5   5   7.5   10   12.5 MM ]	TBS114M-A	1018 Steel	TBA114M-A	7075-T6 Aluminum	TBSS114M-A	304 Stainless	TBC114	Test Block Case
5-Step Block 'B' [ 2   4   6   8   10 MM ]	TBS114M-B	1018 Steel	TBA114M-B	7075-T6 Aluminum	TBSS114M-B	304 Stainless	TBC114	Test Block Case
5-Step Block 'Custom' [ 5   10   15   20   25 MM ]	TBS117M	1018 Steel	n/a	n/a	n/a	n/a	TBC114	Test Block Case
8-Step Block 'Custom' [ 1   2   3   4   5   6   7   8 MM ]	TBS130M	1018 Steel	TBA130M	7075-T6 Aluminum	TBSS130M	304 Stainless	n/a	N/A