



- Pitch-Catch Probes
- Mechanical Impedance Probes
- Resonance Probes
- Accessories

The Company

Olympus NDT designs and manufactures ultrasonic and eddy current test systems for manual and automated nondestructive testing. These systems are used throughout the world for the analysis of defects resulting from processes such as welding, extrusion, and casting, as well as from wear, corrosion, and fatigue.

Our broad field of activity includes aerospace and automotive manufacturing, petrochemical industries, construction welding, and in-service inspection.

To serve these markets, Olympus NDT has manufacturing facilities in Canada and the United States. We manufacture state-of-the-art conventional and phased-array ultrasonic equipment and probes for the inspection of a wide range of tubes, plates, welds, and composite structures.

Standard probes can be ordered efficiently and delivered quickly; custom probes may be designed, developed, and manufactured. Strict adherence to quality procedures ensures that reliable, long-life probes are delivered to the user, and that probe-to-probe repeatability is assured.

Olympus NDT continues to lead the way in terms of the technology, design, and development of standard- and application-specific probes and accessories. Easy ordering, superior quality, and quick turnaround are the goals of the teams making these probes—customer service is an everyday focus.

We invite you to browse this catalog to find out more about the BondMaster 1000e+ probes for aerospace maintenance and manufacturing, composite bond testing, and automotive applications.

Olympus NDT offers products and services from several high-quality brands: R/D Tech, Panametrics-NDT, NDT Engineering, Sonic, and Nortec. For many decades these brands have earned excellent reputations for providing cost-effective solutions and excellent support and customer service.

Warranty

Olympus NDT Inc. offers a ninety-day warranty on all probes sold. These products are guaranteed against all defects in materials and manufacturing.

All products covered by this warranty must be examined by Olympus NDT Inc. and receive its approval in advance before any repairs or replacement are made. Any shipping costs are at the expense of the customer.

The warranty excludes defects and deterioration due to normal wear and tear, or caused by an external accident such as:

- Incorrect assembly
- Poor maintenance
- Incorrect usage
- Exposure to temperatures outside the range of -20°C to 60°C for storage, or 10°C to 40°C for operation
- Voltage beyond recommended limits
- Unforeseen modifications of the product

Olympus NDT will honor claims for defective products if submitted within 90 days from the date of shipment, provided that the product has not been improperly used and is subject to its inspection.

Olympus NDT Inc. will not be held responsible in any way whatsoever for direct, indirect, special, incidental, or consequential damages resulting from possession, use, improper installation, accident, service, modification, or malfunction of the product (including, without limitation, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss), or from service or modification of the product by anyone other than Olympus NDT Inc. or an authorized Olympus NDT service center.

Disclaimer

This document was prepared with particular attention to usage to ensure the accuracy of the information contained therein. It corresponds to the version of the products manufactured prior to the printing date. There may, however, be some differences between the catalog and the products if the products have been modified thereafter.



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BondMaster 1000e+ Technology

The BondMaster™ 1000e+ is a versatile, full-multimode instrument offering pitch-catch, MIA (mechanical impedance analysis), and resonance modes. This choice of technologies allows the user to select the best method for a particular application and to inspect a wide variety of composite materials. Each of the three test modes requires specific probes. This catalog will help you to choose the best probe for your application.



Five inspection methods are available to inspect for defects in the wide range of materials being used in adhesive-bonded joints today. The selected method and any adjustments can be set up in the laboratory and stored in memory for later use in the field. After the optimum inspection method is selected, the operator simply connects the required probe to the instrument—the BondMaster 1000e+ is then automatically configured for the type and frequency of the connected probe.

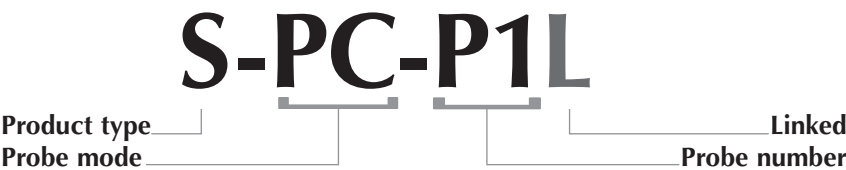
If the instrument has not been set up for a particular application, the operator must choose the inspection method to use as well as the corresponding probe. The BondMaster is automatically configured upon connection of the probe; the operator then selects the parameters required to evaluate the joint, according to specific bond-calibration standards.

There are three inspection methods for the pitch-catch test mode: the pitch-catch swept method, the pitch-catch impulse method, and the pitch-catch RF method. Eight different probes are used to cover the various inspection methods used with the pitch-catch mode. This simple mode, which uses no couplant, is generally preferred when it is applicable.

Five probes are available for the MIA mode. This mode requires no couplant; a small contact area makes this mode well suited for use on irregular surfaces, and for detecting small defects. It is also suitable for continuous or mechanical scanning by using spring loading or constant pressure on the probe tip.

The resonance mode features six probes that are especially well suited for detecting disbonds or delamination in thin-skinned composites. The resonance mode is typically used for skin-to-skin inspections.

Numbering System Used to Identify BondMaster 1000e+ Probes



Glossary Used to Identify BondMaster Probes

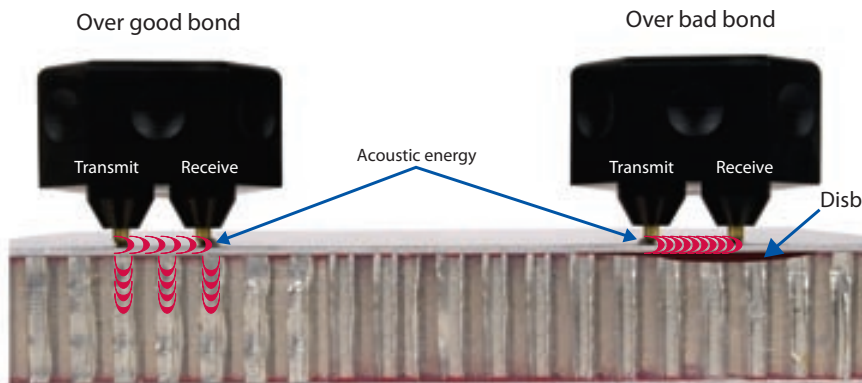
Product type S = sensor SPO = special product order BMM-H = BondMaster MIA housing	Probe number P1 = probe 1 PHV= probe high voltage
Probe mode PC = pitch-catch mode MP = MIA mode PR = resonance mode	Linked L = all probes can be ordered as linked; this provides support for second-level PowerLink™ on the BondMaster™ 1000e+ and on newer BondMaster instruments.

Note: When ordering BondMaster probes, use the order number provided in this catalog. For example: 9317812, for the S-PC-P1 probe.

BondMaster 1000e+ Test Modes

Pitch-Catch Test Mode

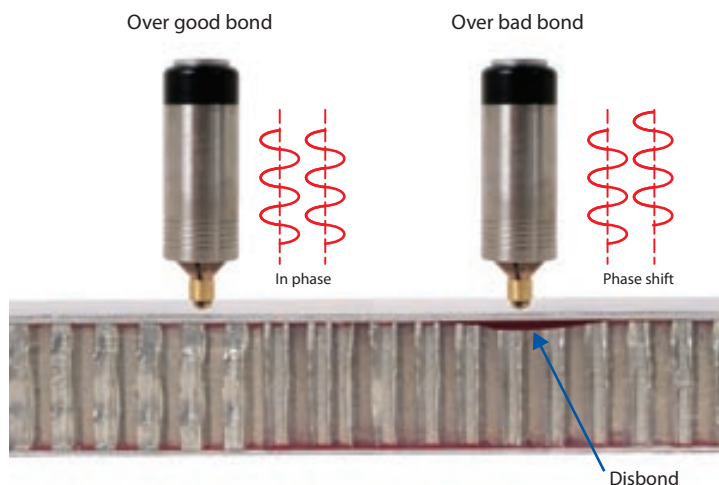
This mode uses high-frequency sound waves to transmit surface waves into the test part. A separate receiving element, a set distance from the transmitter, picks up the energy transmitted into the material. The sound waves are carried in a plate-wave mode across the test piece between the two probe tips. The return signals are detected and a phase-amplitude display is used to show the effects of good and bad bonds on the sound path. This test mode is typically used for skin-to-core defects.



Mechanical Impedance Analysis (MIA) Test Mode

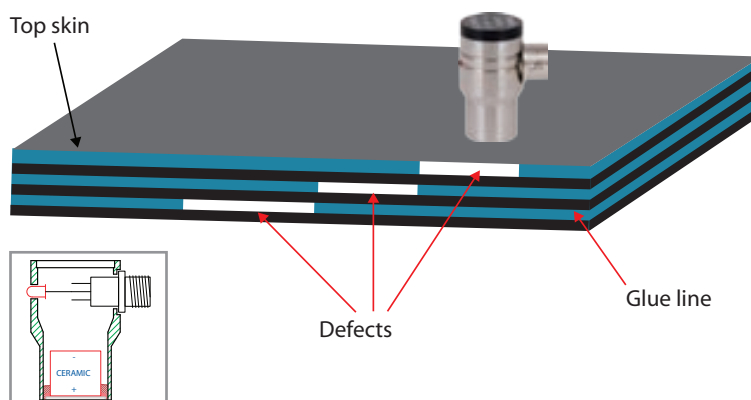
The mechanical impedance analysis test mode uses a single-tipped dual-element probe. A drive element generates sound waves and a receive element detects the effect of the structure on probe-tip loading. During setup, the drive frequency is swept from 2 kHz to 10 kHz to establish the optimum test frequency. Testing is then performed at a fixed frequency.

When the drive and receive elements are nulled on a good bond, they vibrate together at the same phase and amplitude. When the probe is placed on a structure, the receiving element is affected by the sample stiffness, which varies from bonded to disbonded conditions. This change is monitored as a comparison between the drive and receive phase and amplitude signals. This test mode is typically used for skin-to-core defects.



Resonance Test Mode

The contact transducer is driven at its resonance frequency and coupled to the sample using a low-viscosity couplant. This is critical for obtaining repeatable results; standard UT couplant should not be used. Impedance changes in the sensor are analyzed to detect changes in the test sample. Resonance is generally used for detecting skin-to-skin disbonds such as with aircraft lap joints. This mode also works well for disbonds and delaminated materials. In many cases the delamination depth can be estimated by the signal phase rotation. This test mode is typically used for skin-to-skin or inter-laminar defects.



Note: Dimensions listed herein are approximate and are not to be used for design purposes.

Pitch-Catch Probes

Features

1. Quick inspection
2. Very easy to calibrate
3. High sensitivity to disbonds and material thicknesses
4. Capable of broadband and high voltage, offering additional capabilities for thicker laminates of stiffer materials.
5. Requires no couplant.



S-PC-P1

Order number: 9317812

Specifications

Operation mode: Pitch-catch

Frequency: Low

Tips: Fixed tips, 17 mm (0.67 in.) spacing.

Detection capability: Typically 12.7 mm (0.5 in.) or larger

Typical applications

- Detect disbonds between the skin and the core of composite structures.
- Detect disbonds and core cutouts between the core and the skin of honeycomb structures.
- Detect delamination between structural layers.



S-PC-P1L

Order number: 9322117

L: Ordered with PowerLink™

Note: Dimensions listed herein are approximate and are not to be used for design purposes.

S-PC-P2

Order number: 9317854

Specifications

Operation mode: Pitch-catch

Frequency: Low

Tips: Spring-loaded tips, 19 mm (0.75 in.) spacing.

Detection capability: Typically 12.7 mm (0.5 in.) or larger

Typical applications

- Detect disbonds between the skin and the core of composite structures.
- Detect disbonds and core cutouts between the core and the skin of honeycomb structures.
- Detect delamination between structural layers.



S-PC-P2L

Order number: 9322118

L: Ordered with PowerLink™

S-PC-P3

Order number: 9317855

Specifications

Operation mode: Pitch-catch

Frequency: High

Tips: Spring-loaded tips, 19 mm (0.75 in.) spacing

Detection capability: Typically 12.7 mm (0.5 in.) or larger

Typical applications

- Detect disbonds between the skin and the core of composite structures.
- Detect disbonds and core cutouts between the core and the skin of honeycomb structures.
- Detect delamination between structural layers.



S-PC-P3L

Order number: 9322119

L: Ordered with PowerLink™

S-PC-P11

Order number: 9317797

Specifications

Operation mode: Pitch-catch

Frequency: Broadband

Tips: Spring-loaded tips, 17 mm (0.67 in.) spacing

Detection capability: Typically 12.7 mm (0.5 in.) or larger

Typical applications

- Detect disbonds between the skin and the core of composite structures.
- Detect disbonds and core cutouts between the core and the skin of honeycomb structures.
- Detect delamination between structural layers.



S-PC-P11L

Order number: 9322115

L: Ordered with PowerLink™

Note: Dimensions listed herein are approximate and are not to be used for design purposes.

S-PC-P12

Order number: 9322074

Specifications

Operation mode: Pitch-catch

Frequency: Broadband

Tips: Fixed tips, 17 mm (0.67 in.) spacing.

Detection capability: Typically 12.7 mm (0.5 in.) or larger

Typical applications

- Detect disbonds between the skin and the core of composite structures.
- Detect disbonds and core cutouts between the core and the skin of honeycomb structures.
- Detect delamination between structural layers.



S-PC-P12L

Order number: 9322120

L: Ordered with PowerLink™

S-PC-P13

Order number: 9322076

Specifications

Operation mode: Pitch-catch

Frequency: Broadband, high-drive.

Tips: Spring-loaded tips, 17 mm (0.67 in.) spacing.

Detection capability: Typically 12.7 mm (0.5 in.) or larger

Typical applications

- Detect disbonds between the skin and the core of composite structures.
- Detect disbonds and core cutouts between the core and the skin of honeycomb structures.
- Detect delamination between structural layers.



S-PC-P13L

Order number: 9322121

L: Ordered with PowerLink™

SP0-5629-P

Order number: 9318169

Specifications

Operation mode: Pitch-catch

Frequency: Broadband

Tips: Spring-loaded tips, 12.7 mm (0.5 in.) spacing.

Detection capability: Typically 12.7 mm (0.5 in.) or larger

Typical applications

- Detect disbonds between the skin and the core of composite structures.
- Detect disbonds and core cutouts between the core and the skin of honeycomb structures.
- Detect delamination between structural layers.



SP0-5629-PL

Order number: 9322151

L: Ordered with PowerLink™

Note: Dimensions listed herein are approximate and are not to be used for design purposes.

SP0-5629-PHV

Order number: 9322184

Specifications

Operation mode: Pitch-catch

Frequency: Broadband, high voltage.

Tips: spacing 12.7 mm (0.5 in.), spring-loaded tips.

Detection capability: Typically 12.7 mm (0.5 in.) or larger

Typical applications

- Detect disbonds between the skin and the core of composite structures.
- Detect disbonds and core cutouts between the core and the skin of honeycomb structures.
- Detect delamination between structural layers.



SP0-5629-PHVL

Order number: 9322185

L: Ordered with PowerLink™

S-PC-DHV

Order number: 9323942

Specifications

Operation mode: Pitch-catch, differential high-voltage.

Frequency: 5.1 kHz for structures thicker than 25.4 mm; 6 kHz to 12 kHz for structures thinner than 25.4 mm.

Pulse: Between 1 and 3

Tips: Four tips

Detection capability: Successful with a wide variety of materials, including plastics and wood laminates.

Typical applications

- Detect disbonds between the skin and the core of composite structures.
- Detect disbonds and core cutouts between the core and the skin of honeycomb structures.
- Developed for detection of far-surface skin-to-core defects.



Note: Dimensions listed herein are approximate and are not to be used for design purposes.

Mechanical Impedance Analysis (MIA) Probes

Features

1. Easy to calibrate
2. Sensitive to smaller defects
3. Can be used on irregular and curved surfaces.
4. Works well to detect disbonds in crushed core conditions.
5. Suitable for continuous or mechanical scanning by using spring loading or constant pressure on the probe tip.
6. Requires no couplant.



S-MP-1

Order number: 9317806

Specifications

Operation mode: MIA

Probe design: Right angle probe, not spring-loaded.

Tips: 12.7 mm (0.5 in.) tip diameter

Detection capability: Detect defects in graphite-composite skin bonded to honeycomb.

Typical applications

- Can be used on irregular or curved surfaces.
- Suitable for detecting skin-to-core disbonds, crushed core, and other typical skin-to-core bondline defects.
- Is used where there is limited access.



Note: Dimensions listed herein are approximate and are not to be used for design purposes.

S-MP-2

Order number: 9317807

Typical applications

- Can be used on irregular or curved surfaces.
- Works well on disbonds, crushed core, and bond defects on the inside walls of composite structures.
- Is used where access is limited.

Specifications

Operation mode: MIA

Probe design: Straight probe, not spring-loaded.

Tips: 6.35 mm (0.25 in.) tip diameter

Detection capability: Detect defects in graphite-composite skin bonded to honeycomb.



S-MP-3

Order number: 9317796

Specifications

Operation mode: MIA

Probe design: Right angle probe, requires BMM-H for spring loading.

Tips: 12.7 mm (0.5 in.) tip diameter

Detection capability: Detect defects in graphite-composite skin bonded to Nomex® honeycomb. 2-ply through 7-ply skin thickness. Defects sized 25.4 mm by 50.8 mm. And 2-ply through 18-ply. Defect size of 12.7 mm (0.5 in.) or larger.

Typical applications

- Can be used on irregular or curved surfaces.
- Suitable for detecting skin-to-core disbonds, crushed core, and other typical skin-to-core bondline defects.
- Is suitable for continuous or mechanical scanning by using spring loading or constant pressure on the probe tip.



S-MP-3L

Order number: 9322123

L: Ordered with PowerLink™

S-MP-4

Order number: 9317808

Specifications

Operation mode: MIA

Probe design: Right angle probe, requires BMM-H for spring loading.

Tips: 6.35 mm (0.25 in.) tip diameter

Detection capability: Detect, on metal to metal, defects up to 2 mm (0.08 in.) thickness in the bondline, 6.35 mm (0.25 in.) defect size or larger; and on Fiberglass bonded to a foam core, defect size of 12.7 mm (0.5 in.) or larger, and a maximum skin thickness of 6.35 mm (0.25 in.).

Typical applications

- Can be used on irregular or curved surfaces.
- Suitable for detecting skin-to-core disbonds, crushed core, and other typical skin-to-core bondline defects.
- Is suitable for continuous or mechanical scanning by using spring loading or constant pressure on the probe tip.

S-MP-4L

Order number: 9322116

L: Ordered with PowerLink™



Note: Dimensions listed herein are approximate and are not to be used for design purposes.

S-MP-5

Order number: 9322075

Specifications

Operation mode: MIA

Probe design: Right angle probe, adjustable spring tension.

Tips: 12.7 mm (0.5 in.) tip diameter

Detection capability: Internally spring-loaded three-position tension adjustments for greater consistency and accuracy. Especially well suited for overhead inspection. Features removable Delrin® wear shoe.

Typical applications

- Can be used on irregular or curved surfaces.
- Suitable for detecting skin-to-core disbonds, crushed core, and other typical skin-to-core bondline defects.
- Is suitable for continuous or mechanical scanning by using spring loading or constant pressure on the probe tip.

S-MP-5L

Order number: 9322122

L: Ordered with PowerLink™

BMM-H Probe Housing

Order number: 9316874

Designed for use with S-MP-3 and S-MP-4 probes. Ensures constant pressure is being applied to the part. Also greatly enhances stability while keeping the probe perpendicular to the inspection surface. Incorporates a Teflon® wear shoe. Spring-loaded probe holder.



Note: Dimensions listed herein are approximate and are not to be used for design purposes.

Resonance Probes

Features

1. These probes work well for skin-to-skin disbonds and delaminated materials.
2. Determine in which layer defects are located for multilayer skin applications.
3. Can detect corrosion between layers.



S-PR-1

Order number: 9317809

Specifications

Operation mode: Resonance

Frequency range: 35 kHz (± 5 kHz)

Tips: 15.9 mm (0.63 in.) diameter case

Detection capability: Determine in which layer defects are located for multilayer skin applications. For metal or composite applications.

Typical applications

- Used to inspect adhesive-bonded joints and detect corrosion in multilayered joints.
- Can also find delamination and determine the thickness of structures.

S-PR-1L

Order number: 9322112

L: Ordered with PowerLink™



Note: Dimensions listed herein are approximate and are not to be used for design purposes.

S-PR-2

Order number: 9317810

Specifications

Operation mode: Resonance

Frequency range: 65 kHz (± 10 kHz)

Tips: 15.9 mm (0.63 in.) diameter case

Detection capability: Determine in which layer defects are located for multilayer skin applications. For metal or composite applications.

Typical applications

- Used to detect adhesive-bonded joints and corrosion in multilayered joints.
- Can also find delamination and the thickness of structures.

S-PR-2L

Order number: 9322111

L: Ordered with PowerLink™

S-PR-3

Order number: 9317793

Specifications

Operation mode: Resonance

Frequency range: 110 kHz (± 10 kHz)

Tips: 15.9 mm (0.63 in.) diameter case

Detection capability: Determine in which layer defects are located for multilayer skin applications. For metal or composite applications. Detect defects sized 12.7 mm (0.5 in.) or larger in fiberglass bonded to a foam core. Maximum skin thickness is 6.35 mm (0.25 in.).

Typical applications

- Used to detect adhesive-bonded joints and corrosion in multilayered joints.
- Can also find delamination and the thickness of structures.

S-PR-3L

Order number: 9322110

L: Ordered with PowerLink™

S-PR-4

Order number: 9317794

Specifications

Operation mode: Resonance

Frequency range: 165 kHz (± 10 kHz)

Tips: 12.7 mm diameter case (0.5 in.)

Detection capability: Determine in which layer defects are located for multilayer skin applications. For metal or composite applications. Detect defects size 12.7 mm (0.5 in.) or larger in fiberglass bonded to a foam core. Maximum skin thickness is 6.35 mm (0.25 in.).

Typical applications

- This probe is used to detect adhesive-bonded joints and corrosion in multilayered joints.
- It can also detect delamination and the thickness of structures.

S-PR-4L

Order number: 9322109

L: Ordered with PowerLink™



Note: Dimensions listed herein are approximate and are not to be used for design purposes.

S-PR-5

Order number: 9317795

Specifications

Operation mode: Resonance

Frequency range: 250 kHz (± 10 kHz)

Tips: 9.5 mm (0.37 in.) diameter case

Detection capability: Determine in which layer defects are located for multilayer skin applications. For metal or composite applications. Detect defects sized 12.7 mm (0.5 in.) or larger on metal to metal. Defects from 2 mm (0.08 in.) (0.08 in.) up to 25.4 mm (1 in.) thickness in the bondline.

Typical applications

- This probe is used to detect adhesive-bonded joints and corrosion in multilayered joints.
- It can also detect delamination and the thickness of structures.

S-PR-5L

Order number: 9322108

L: Ordered with PowerLink™

S-PR-6

Order number: 9317811

Specifications

Operation mode: Resonance

Frequency range: 330 kHz (± 10 kHz)

Tips: 9.5 mm (0.37 in.) diameter case

Detection capability: Determine in which layer defects are located for multilayer skin applications. Defect size 12.7 mm (0.5 in.) or larger for graphite-composite defects; skin thickness, 2 ply through 18 ply.

Typical applications

- This probe is used to detect adhesive-bonded joints and corrosion in multilayered joints.
- It can also detect delamination and the thickness of structures.

S-PR-6L

Order number: 9322107

L: Ordered with PowerLink™



Note: Dimensions listed herein are approximate and are not to be used for design purposes.

Typical BondMaster 1000e+ Applications

Application	Pitch-catch	MIA	Resonance
Metal-to-metal defects, up to 2.03 mm (0.08 in.) thickness in the bondline, 6.35 mm (0.25 in.) defect size or larger.		✓ (SM-P-2 or 4)	✓ (S-PR- 4, 5, or 6)
Metal-to-metal defects, up to 2.03 mm (0.08 in.) thickness in the bondline, 19.05 mm (0.75 in.) defect size or larger.	✓ (All probes)	✓ (All probes)	✓ (All probes)
Metal-to-metal defects, from 2.03 mm (0.08 in.) up to 25.4 mm (1 in.) thickness in the bondline, 12.7 mm (0.5 in.) defect size or larger.			✓ (S-PR-3, 4, or 5)
5 ply of graphite-composite skin bonded to aluminum. Honeycomb defect size, 12.7 mm (0.5 in.) or larger.	✓ (All probes)	✓ (All probes)	
Graphite-composite skin bonded to Nomex honeycomb. 2 ply through 7 ply skin thickness. Defects size 25.4 mm (1 in.) by 50.8 mm (2 in.).	✓ (All probes)	✓ (All probes)	
Graphite-composite defects, skin thickness 2 ply through 18 ply. Defect size 12.7 mm (0.5 in.) or larger.	✓ (S-PC-2 or 3)	✓ (SM-P-3 or 4)	✓ (S-PR-3, 4, 5, or 6)
Determine in which layer defects are located for multilayer skin applications. Metal or composite applications.			✓ (All probes)
Fiberglass bonded to a foam core. Maximum skin thickness 6.35 mm (0.25 in.). Defect size 12.7 mm (0.5 in.) or larger.	✓ (All probes)	✓ (SM-P-2 or 4)	

Pitch-Catch Probes Table

Order number	Description
9317812	S-PC-P1: Low-frequency, fixed tips, 17 mm (0.67 in.) tip spacing.
9322117	S-PC-P1L: Low-frequency, fixed tips, 17 mm (0.67 in.) tip spacing (PowerLink)
9317854	S-PC-P2: Low-frequency, spring-loaded tips, 19 mm (0.75 in.) tip spacing.
9322118	S-PC-P2L: Low-frequency, spring-loaded tips, 19 mm (0.75 in.) tip spacing (PowerLink).
9317855	S-PC-P3: High frequency, spring-loaded tips, 19 mm (0.75 in.) tip spacing.
9322119	S-PC-P3L: High frequency, spring-loaded tips, 19 mm (0.75 in.) tip spacing (PowerLink).
9317797	S-PC-P11: Broadband, spring-loaded tips, 17 mm (0.67 in.) tip spacing.
9322115	S-PC-P11L: Broadband, spring-loaded tips, 17 mm (0.67 in.) tip spacing (PowerLink).
9322074	S-PC-P12: Broadband, fixed tips, 17 mm (0.67 in.) tip spacing, high voltage.
9322120	S-PC-P12L: Broadband, fixed tips, 17 mm (0.67 in.) tip spacing, high voltage (PowerLink).
9322076	S-PC-P13: Broadband, spring-loaded tips, 17 mm (0.67 in.) tip spacing, high voltage.
9322121	S-PC-P13L: Broadband, spring-loaded tips, 17 mm (0.67 in.) tip spacing, high voltage (PowerLink).
9318169	SPO-5629-P: Broadband, spring-loaded tips, 13 mm tip spacing.
9322151	SPO-5629-PL: Broadband, spring-loaded tips, 13 mm tip spacing (PowerLink).
9322184	SPO-5629-PHV: Broadband, spring-loaded tips, 13 mm tip spacing, high voltage.
9322185	SPO-5629-PHVL: Broadband, spring-loaded tips, 13 mm tip spacing, high voltage (PowerLink).
9323942	S-PC-DHV: Broadband, four spring-loaded elements.

Note: Dimensions listed herein are approximate and are not to be used for design purposes.

MIA Probes Table

Order number	Description
9317806	S-MP-1: Right angle probe, 12.7 mm (0.5 in.) tip diameter.
9317807	S-MP-2: Straight probe, 6.35 mm (0.25 in.) tip diameter.
9317796	S-MP-3: Right angle probe, 12.7 mm (0.5 in.) tip diameter.
9322123	S-MP-3L: Right angle probe, 12.7 mm (0.5 in.) tip diameter. Can be used with spring-loaded BMM-H housing (PowerLink).
9317808	S-MP-4: Right angle probe, 6.35 mm (0.25 in.) tip diameter.
9322116	S-MP-4L: Right angle probe, 6.35 mm (0.25 in.) tip diameter. Can be used with spring-loaded BMM-H housing (PowerLink).
9322075	S-MP-5: Right angle probe, 12.7 mm (0.5 in.) tip diameter.
9322122	S-MP-5L: Right angle probe, 12.7 mm (0.5 in.) tip diameter. Internally spring-loaded three-position tension adjustments for greater consistency and accuracy. Especially well suited for overhead inspection. Features removable Delrin wear shoe (PowerLink).
9316874	BMM-H: Designed for use with S-MP-3 and S-MP-4 probes. Ensures constant pressure is being applied to the part. Also greatly enhances stability while keeping the probe perpendicular to the inspection surface. Incorporates a Teflon wear shoe. Spring-loaded probe holder.

Resonance Probes Table

Order number	Description
9317809	S-PR-1: 35 kHz (± 5 kHz) in a 15.9 mm (0.63 in.) diameter case
9322112	S-PR-1L: 35 kHz (± 5 kHz) in a 15.9 mm (0.63 in.) diameter case (PowerLink).
9317810	S-PR-2: 65 kHz (± 10 kHz) in a 15.9 mm (0.63 in.) diameter case
9322111	S-PR-2L: 65 kHz (± 10 kHz) in a 15.9 mm (0.63 in.) diameter case (PowerLink).
9317793	S-PR-3: 110 kHz (± 10 kHz) in a 15.9 mm (0.63 in.) diameter case
9322110	S-PR-3L: 110 kHz (± 10 kHz) in a 15.9 mm (0.63 in.) diameter case (PowerLink).
9317794	S-PR-4: 165 kHz (± 10 kHz) in a 12.7 mm (0.5 in.) diameter case
9322109	S-PR-4L: 165 kHz (± 10 kHz) in a 12.7 mm (0.5 in.) diameter case (PowerLink).
9317795	S-PR-5: 250 kHz (± 10 kHz) in a 9.5 mm (0.37 in.) diameter case
9322108	S-PR-5L: 250 kHz (± 10 kHz) in a 9.5 mm (0.37 in.) diameter case (PowerLink).
9317811	S-PR-6: 330 kHz (± 10 kHz) in a 9.5 mm (0.37 in.) diameter case
9322107	S-PR-6L: 330 kHz (± 10 kHz) in a 9.5 mm (0.37 in.) diameter case (PowerLink).

Note: Dimensions listed herein are approximate and are not to be used for design purposes.

BondMaster 1000e+ Probe Kits

Enhanced Probe Kit

The best combination of price and performance, offering the most versatile collection of BondMaster probes.

Order number: B1000-PK-01

Quantity	Model	Description
1	S-MP-5L	Internally spring-loaded MIA probe
1	S-PC-P13L	Broadband high-voltage P-C probe
1	S-PC-P12L	Pitch-catch probe
1	S-PR-3L	110 kHz resonance probe
1	S-PR-4L	165 kHz resonance probe
1	S-PR-5L	250 kHz resonance probe
1	SBM-CPM-P11	Cable (P-C and MIA)
1	SBM-CR-P6	Cable (resonance)
1	Couplant (4 oz)	For use with resonance probes
1	Probe case	



Note: Dimensions listed herein are approximate and are not to be used for design purposes.

Basic Probe Kit

Low cost with good functionality

Order number: 9317813

Quantity	Model	Description
1	S-MP-3	Standard size tip
1	BMM-H	Probe housing
1	S-PC-P11	Pitch-catch probe
1	S-PR-4	165 kHz resonance probe
1	SBM-CPM-P11	Cable (P-C and MIA)
1	SBM-CR-P6	Cable (resonance)
1	Couplant (4 oz)	For use with resonance probes
1	Probe case	

Probe Kit

Increased functionality and versatility

Order number: 9317814

Quantity	Model	Description
1	S-MP-3	Standard size MIA probe
1	S-MP-4	Small MIA probe
1	BMM-H	Probe housing
1	S-PC-P11	Pitch-catch probe
1	S-PR-3	110 kHz resonance probe
1	S-PR-5	250 kHz resonance probe
1	SBM-CPM-P11	Cable (P-C and MIA)
1	SBM-CR-P6	Cable (resonance)
1	Couplant (4 oz)	For use with resonance probes
1	Probe case	

Deluxe Probe Kit

Exceptional functionality and versatility

Order number: 9322158

Quantity	Model	Description
1	S-MP-3	Standard size MIA probe
1	S-MP-4	Small MIA probe
1	BMM-H	Probe housing
1	S-PC-P11	Pitch-catch probe
1	S-PC-P12	Pitch-catch probe
1	S-PR-3	110 kHz resonance probe
1	S-PR-5	250 kHz resonance probe
1	SBM-CPM-P11	Cable (P-C and MIA)
1	SBM-CR-P6	Cable (resonance)
1	Couplant (4 oz)	For use with resonance probes
1	Probe case	

Note: Dimensions listed herein are approximate and are not to be used for design purposes.

Northrop Deluxe Probe Kit

Northrop specific kit

Order number: 9317546

Quantity	Model	Description
1	S-PR-3	110 kHz resonance probe
1	S-PR-5	250 kHz resonance probe
1	S-MP-3	Standard size MIA probe
1	S-MP-4	Small MIA probe
1	BMM-H	Probe housing
1	SBM-CPM-P11	Cable (P-C and MIA)
1	SBM-CR-P6	Cable (resonance)
1	Couplant (4 oz)	For use with resonance probes
1	Probe case	

Air Force Probe Kit

Air Force specific kit

Order number: 9322078

Quantity	Model	Description
1	S-PR-1	35 kHz resonance probe
1	S-PR-2	65 kHz Resonance Probe
1	S-PR-3	110 kHz resonance probe
1	S-PR-4	165 kHz resonance probe
1	S-PR-5	250 kHz resonance probe
1	S-PR-6	330 kHz resonance probe
1	S-PC-P1	Pitch-catch probe, low voltage.
1	S-PC-P12	Pitch-catch probe, high voltage.
1	S-MP-5	Internal spring MIA probe
1	SBM-CPM-P11	Cable (P-C and MIA)
1	SBM-CR-P6	Cable (resonance)
1	Teflon Tape	¼ in. wide roll
1	Couplant 4 oz	For use with resonance probes

BondMaster 1000e+ General Accessories

Order number	Descriptions	Use
Cables		
9117789	SBM-CPM-P11: 11-pin to 11-pin cable	Use with pitch-catch and MIA probes.
9117790	SBM-CR-P6: 11-pin to 6-pin cable	Use with resonance probes.
9117790	SBM-CR-P7: 11-pin to 7-pin cable	Use with resonance probes.
Accessories		
9522107	Flush-mount tuning adapter	Use to optimize pitch-catch RF and impulse inspections above 15 kHz.
3308193	Couplant (4 oz)	Use with all resonance probes.
3303965	¼ in. wide Teflon tape	Use to protect the tips of MIA and resonance probes.

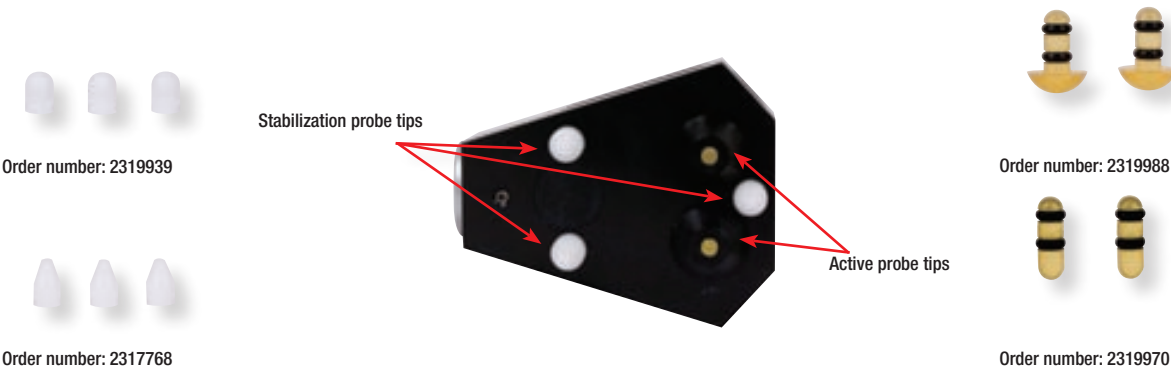
Note: Dimensions listed herein are approximate and are not to be used for design purposes.


Probe Stabilization Tips and Active Probe Tips

Order number	2319989	1817235	2317768	2319970	2319988	2319939
Description	Probe tips	Probe tips	Probe tips, chisel	Active probe tips, with O-rings	Mushroom tips	Probe tips, round
To fit S-PC-P1	3					
To fit S-PC-P2		2				
To fit S-PC-P3			2			
To fit S-PC-P11*			3	2	2	
To fit S-PC-P12						3
To fit S-PC-P13*			3	2	2	
To fit SPO-5629-P				2		
To fit SPO-5629-PHV				2		
To fit S-PC-DHV				4 (2 sets of 2 required)		

* Tips are also available as a kit; see below.

BondMaster Pitch-Catch Refurbishment Kit

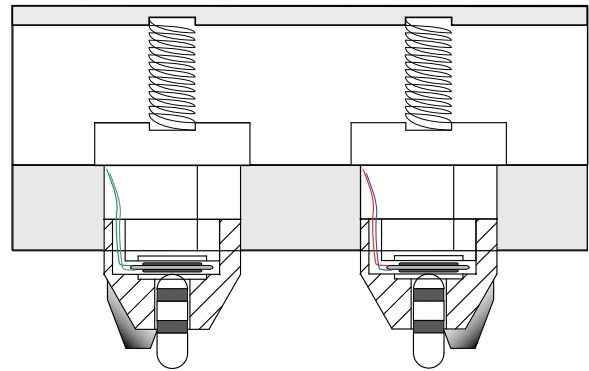


Order number	Description	Use
B1000-PK-02	Contain 3 x 2317768 and 2 x 2319970 (3 chisel-probe tips and 2 active-probe tips with O-rings). 	Used to change all the tips on the S-PC-P11 and S-PC-P13 probes.

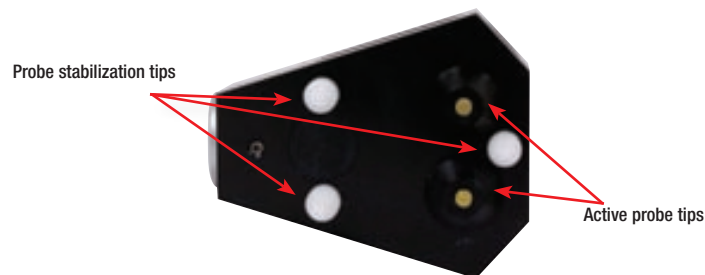
Note: Dimensions listed herein are approximate and are not to be used for design purposes.

Procedures for Replacing Probe Tips

Probe configurations include two fixed or spring-loaded active-probe tips, and three white-plastic stabilization tips. Frequent or inappropriate use will lead to deterioration of the tips. You can easily and quickly replace the tips with new ones by following the steps below.

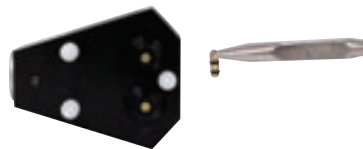
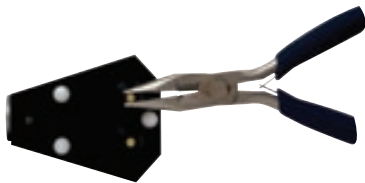


1. Turn the probe and identify the tips that need to be replaced.



To replace the active probe tips

1. With a pair of pliers or with your fingers, lightly grip the tips and pull them out of the probe.
2. Insert new active tips. You can use alcohol on the tips to make it easier to insert them into the probe.



To replace the probe stabilization tips

1. It is important to replace the stabilization tips one by one. After unscrewing each tip (with pliers or with your hands), make sure that you replace the tip before removing the next one.

BondMaster Probe Chronology and Compatibility

Instrument	Commercial detachable probes* with resister and EPROM for PowerLink. Pitch-catch, MIA, and resonance probes.	Commercial detachable probes with resister and enhanced EPROM for PowerLink. Pitch-catch, MIA, and resonance probes.	Commercial detachable probes with resister for PowerLink: Pitch-catch, MIA, and resonance probes.	Navy (potted) probes with resister for PowerLink. Resonance no. 3 and no. 5, pitch-catch no.1.
Navy BondMaster, software version 1c	✓		✓	✓
Commercial BondMaster, software version 1c	✓		✓	✓
Commercial BondMaster, software version 2a	✓			
LW Sonic BondMaster-Grey, software version 2c	✓			
LW Sonic BondMaster-Black, software version 2d	✓	✓		
BondMaster 1000	✓	✓		
BondMaster 1000+	✓	✓		
BondMaster 1000e+	✓	✓		

* S-MP-5, S-PC-P12, S-PC-13 probes will not work on Navy BondMaster and Commercial BondMaster (software version 1c).

Instrument identification:

- Navy BondMaster is typically painted white.
- Commercial BondMaster has a large lead-acid battery located at the back of the unit.
- LW Sonic BondMaster uses D-cell batteries.
- BondMaster 1000 uses 2 NiMH batteries
- BondMaster 1000+ uses 1 Li-ion battery
- BondMaster 1000e+ uses a field-replaceable Li-ion battery

Instrument probe connector:

All instruments listed above use an 11-probe connector at the front of the instrument.

Resonance probes:

There have been several different connectors on resonance probes. Use CAUTION to avoid cable-compatibility problems!

- Resonance no. 3 and no. 5: cable is potted into the probe.
- BMR-x probes use a 4-pin connector and an 11-pin to 4-pin cable (9116754)
- SPR-x and SPR-xL probes once used a 7-pin connector.
- SPR-x and SPR-xL probes are currently configured with a 6-pin connector, unless specifically requested with a 7 pin.

PowerLink™

With the PowerLink option, when a probe is connected to the BondMaster, the probe is identified and the instrument is automatically configured for the probe type.

All BondMaster probes use some form of PowerLink. Certain probe types (S-PC-xL, S-MP-xL, S-PR xL) have enhanced PowerLink functionality, which allows the instrument setting to be factory programmed into the probe.

How to Order

For pricing or for additional information, consult the ordering information outlined on page 4 and call your local sales representative.

To quickly locate your local sales representative, go to **www.olympusNDT.com**.

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www.olympusNDT.com
info@olympusNDT.com



OLYMPUS NDT

48 Woerd Avenue • Waltham, MA 02453 • USA
Tel.: (1) 781-419-3900 • Fax: (1) 781-419-3980
12569 Gulf Freeway • Houston, TX 77034 • USA
Tel.: (1) 281-922-9300 • Fax: (1) 952-487-8877

OLYMPUS NDT UK LTD.

12 Nightingale Close • Rotherham, South Yorkshire S60 2AB • UK

OLYMPUS SINGAPORE PTE. LTD.

491B River Valley Road 12-01/04, Valley Point Office Tower, 248373 • Singapore

OLYMPUS AUSTRALIA PTY. LTD.

PO Box 985 • Mount Waverley, VIC 3149 • Australia

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