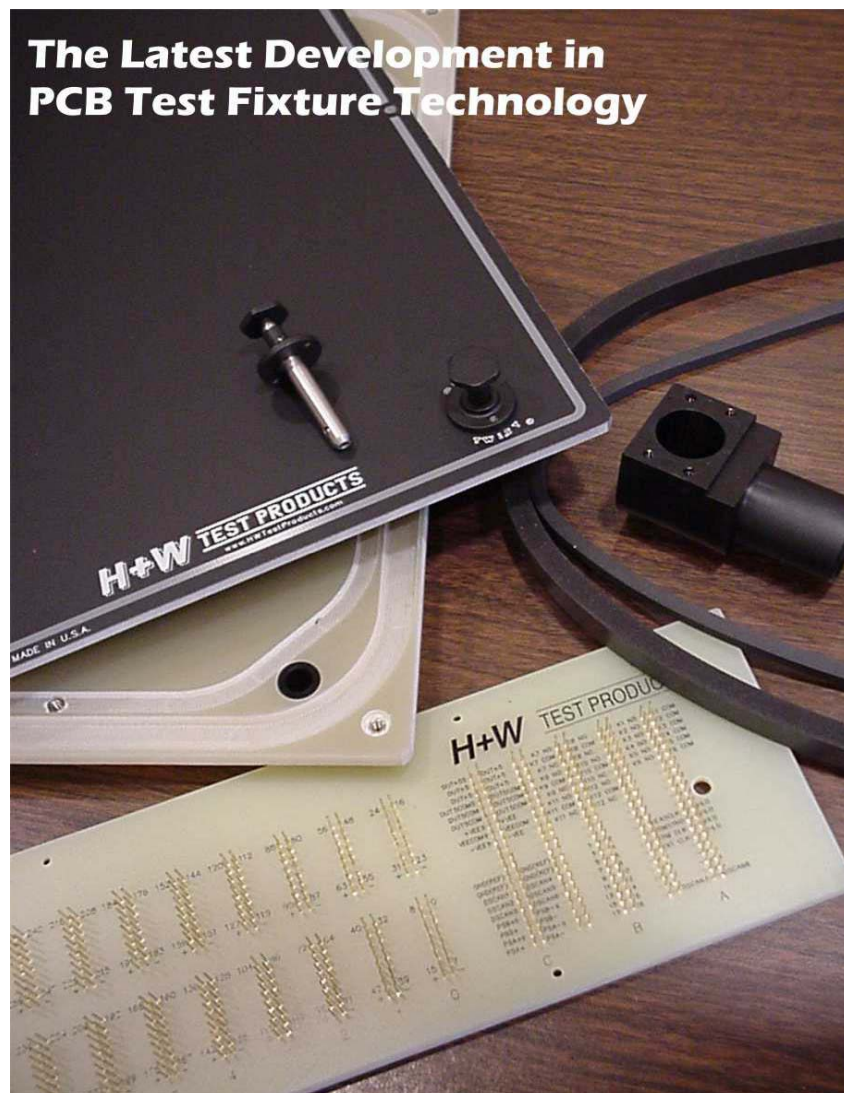


H+W TEST PRODUCTS

Home of

THE REBOUNDER®

**The Latest Development in
PCB Test Fixture Technology**



Company Profile

Founded in 1989 by Gordon R. Hutton and Steven A. Whitcomb, H+W Test Products, Inc. operates in compliance with ISO 9000 standards to manufacturer test fixture products for in-circuit, functional and combinational testers for users of automated test systems, such as GenRad, Teradyne, ITPE, Agilent (HP), Rohde & Schwarz, Checksum, Testronics, ITA/Scorpion and Schlumberger/ Factron. Products include our patented REBOUNDER® Test Fixtures, Mechanical Fixtures, Vacuum & Mechanical Over clamps, Receivers, Receiver Adapters, Dual Well Fixtures, Bi-level fixtures, Side Access Units and Non-Vacuum "Adapter Box Fixtures". H+W Test Products are sold through agents (most of whom perform value-added services) serving more than 50 countries around the world. This is due in large part to our quality and our guarantee that we will ship all orders for standard products the same day we receive those orders!! All products of H+W Test Products come with our Test-Assured™ guarantee to be free of defects in materials and/or workmanship for one (1) year from the date of shipment. H+W has the only such written warranty offered by any fixture manufacturer in the world!!

H+W TEST PRODUCTS

H+W Test Products manufactures test fixture products for in-circuit, functional and combinational testers for users of automated test systems such as Teradyne/GenRad, Test Research, Inc. (TRI), IPTE, Agilent (HP), IFR/Marconi, Rohde & Schwarz, Checksum, Testronics, ITA/Scorpion and Schlumberger/Factron. Products include our Patented REBOUNDER® Test Fixtures, Mechanical Fixtures, Mechanical Over Clamps, Receivers, Dual Well Fixtures, Bi-Level Fixtures, X-Probe Fixtures, Side Access Units and Non-Vacuum "Adapter Box Fixtures".

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Technical Information

Top Plate

- Made from fine weave AT7000™ FR4/G10 material designed specifically for the ATE Industry.
 - Standard thickness 3/16 inches [4.8mm].(Optional thickness available-please contact sales).
 - All fixtures are available with ESD impregnated AT9000™ fine weave FR4/G10 Top Plates.
 - Agilent 3070 Series are supplied with the silk-screened gridwork.
-

Probe Plate

- Made from fine weave AT7000™ FR4/G10 material designed specifically for the ATE Industry.
 - Larger 20"x30" [508mm x 762mm], 24"x30" [610mm x 762mm] & Agilent 3070 Series Probe Plates are manufactured from high density AT8000™ FR4/G10 material that is designed to add up to 50% more strength than conventional FR4/G10.
 - Standard thickness 3/8 inches [9.5mm].
 - 24"x30" [610mm x 762mm]Probe Plate thickness 1/2 inches [12.7mm].
 - Agilent 3070 Probe Plate thickness 9/16 inches [14.1mm] and has silk-screened gridwork on both sides.(Optional 3/4 inch [19mm] thickness available).
 - Optional thickness available (contact sales).
-

"Quick Twist"® Locking Guide Pin

- Larger 5/16 inch [7.9mm] diameter shaft to provide precise alignment.
- Improved registration
- Quick easy installation & operation.

Rebound Seal®

-Material: Open Cell Poron Urethane.

-Cross section size: 3/8" x 5/8" [9.5mm x 15.9mm].

Base Pan

-Manufactured from .09 inch [2.3mm] aluminum alloy 5052-H32.

-Larger 20"x30" [508mm x 762mm] & 24"x30" [610mm x 762mm] base pans manufactured from .12 inch [3.2mm] aluminum alloy.

-All seams have full penetration welds, grinded flush with outside surfaces for a clean, professional looking finish.

-Base pans get powder coated for durable, long lasting finish.

United States Patents

5,430,385 Test Fixture for printed circuit boards having a dual seal system

6,054,869 Bi-Level Test Fixture for testing printed circuit boards

D416,212 Handle for Test Fixture

FR4/G10 Technical Data

Conventional FR4/G10, Flexural Modulus, LW 55,000 kpsi, CW 45,000 kpsi.

AT7000™ FR4/G10, Flexural Modulus, LW 65,000 kpsi, CW 52,000 kpsi.

AT9000™ FR4/G10, Flexural Modulus, LW 65,000 kpsi, CW 52,000 kpsi.

AT8000™ FR4/G10, Flexural Modulus, LW 84,000 kpsi, CW 66,000 kpsi.

AT9000TM has an impregnated top surface with an (ESD) electrostatic dissipative surface with a resistivity of 10^5 to 10^{12} ohms per square inch.

AT9000TM meets the Electrostatic Discharge Associations standard of 10^5 to 10^{12} ohms per square inch.

WHAT IS ESD?

Static electricity is generated whenever two materials touch then separate. Friction between the two materials causes heat which, in turn, excites electrons. When objects separate, there is a transfer of electrons from one object to another. One material charges positively and the other negatively during separation. The result is static build-up. This is referred to as triboelectric generation and is the most common form of uncontrolled transfer of static charge. However, an electrically conductive path to ground will harmlessly dissipate the charge from the material. Electrical charge also dissipates into the air, a phenomena that increases with humidity. The amount and rate of charge build-up is influenced by factors such as type of materials, material cleanliness, speed of separation, material texture, friction, and relative humidity. The simple act of walking across an untreated vinyl floor generates a static charge up to 12kV, yet a charge of less than 10V can destroy an electronically sensitive device.

Special static-control materials such as AT9000TM have electrical resistance properties between those of insulators 10^5 and conductors 10^{12} .

They dissipate static in a controlled manner.

WHAT ARE THE ESD VALUE RANGES?

For ESD purposes, many materials are classified by their resistance or resistivity characteristics. The following ranges and definitions are found in ESD Association or EIA standard publications, & United States Department of Defense Standard Practice, MIL Spec. Handbook MIL-HDBK-263B, Section MIL-STD-1686C.



INSULATIVE MATERIALS

A material that prevents or limits the flow of electrons across its surface or through its volume is called an insulator. Insulators have an extremely high electrical resistance, generally greater than 1×10^{12} ohms/sq (surface resistivity) and 1×10^{11} ohm-cm (volume resistivity). A considerable amount of charge can be generated on the surface of an insulator. Because an insulative material does not readily allow the flow of electrons, both positive and negative charges can reside on insulative surface at the same time, although at different locations. The excess electrons at the negatively charged spot might be sufficient to satisfy the absence of electrons at the positively charged spot. However, electrons cannot easily flow across the insulative materials surface, and both charges may remain in place for a very long time.

CONDUCTIVE MATERIALS

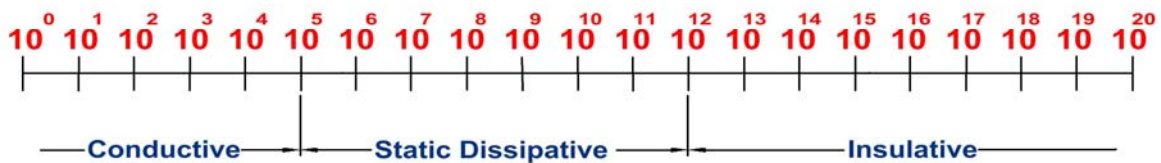
A conductive material, because it has low electrical resistance, allows electrons to flow easily across its surface or through its volume. Conductive materials have low electrical resistance, generally less than 1×10^5 ohms/sq (surface resistivity) and 1×10^4 ohm-cm (volume resistivity). When a conductive material becomes charged, the charge (i.e., the deficiency or excess of electrons) will be uniformly distributed across the surface of the material. If the charged conductive material makes contact with another conductive material, the electrons will transfer

between the materials quite easily. If the second conductor is attached to an earth grounding point, the electrons will flow to ground and the excess charge on the conductor will be "neutralized." Electrostatic charge can be created triboelectrically on conductors the same way it is created on insulators. As long as the conductor is isolated from other conductors or ground, the static charge will remain on the conductor. If the conductor is grounded the charge will easily go to ground. Or, if the charged conductor contacts or nears another conductor, the charge will flow between the two conductors.

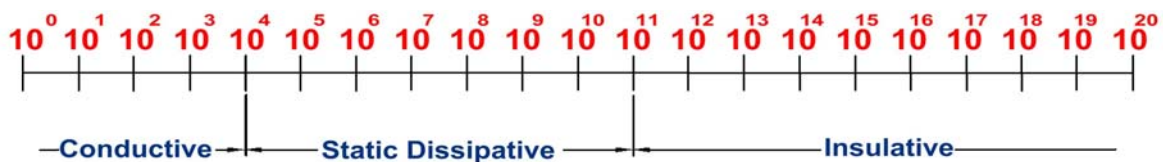
STATIC DISSIPATIVE MATERIAL

Static dissipative materials have an electrical resistance between insulative and conductive materials $1 \times 10^5 - 1 \times 10^{12}$ ohms/sq (surface resistivity) and $1 \times 10^4 - 1 \times 10^{11}$ ohm-cm (volume resistivity). There can be electron flow across or through the dissipative material, but it is controlled by the surface resistance or volume resistance of the material. As with the other two types of materials, charge can be generated triboelectrically on a static dissipative material. However, like the conductive material, the static dissipative material will allow the transfer of charge to ground or other conductive objects. The transfer of charge from a static dissipative material will generally take longer than from a conductive material of equivalent size. Charge transfers from static dissipative materials are significantly faster than from insulators, and slower than from conductors.

Surface Resistivity (W/sq)



Volume Resistivity (W-cm)



H+W TEST PRODUCTS

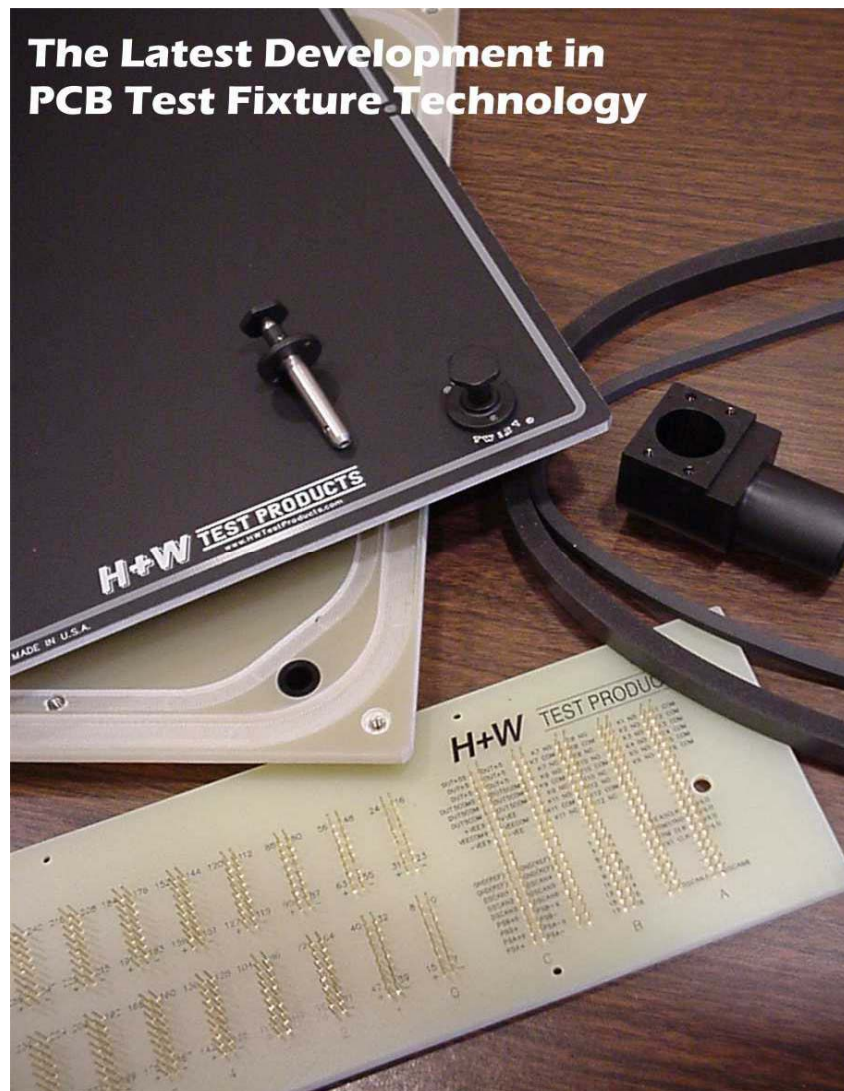
<u>H+W Rebounder® Design</u>	p9
<u>H+W Rebounder Plus® Bi-Level Fixturing</u>	p11
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H+W TEST PRODUCTS

Home of

THE REBOUNDER®

**The Latest Development in
PCB Test Fixture Technology**



Because Sometimes, Less is More

When you need to perform at the highest level of testing accuracy, every advantage counts. Once again, H+W Test Products anticipates the finishing needs of their market and provides you with a kit that combines the most popular features of our past PCB Test Kits, with new developments designed to facilitate the testing process.

By carefully analyzing the essential elements and functions of PCB Test Kits, H+W has been able to streamline the concept, improving precision and raising the efficiency of your testing.



The revolutionary Rebound Strip eliminates the need for diaphragm board springs, resulting in an increase of approximately 20% to the UUT area. The absence of seal bars facilitates assembly, and the removal of the trim ring makes the **REBOUNDER®** highly suitable for your robotic applications.

H+W's new test kit design improves testing accuracy while simplifying finishing, debugging and maintenance.

As always, all H+W Test Products units are backed by our exclusive **one-year warranty** - in writing. All the additional features you've come to expect from H+W test kits, such as part interchangeability, and deeper pans, are also standard on the new **REBOUNDER®**.

H+W TEST PRODUCTS

Home of **THE REBOUNDER PLUS** TM



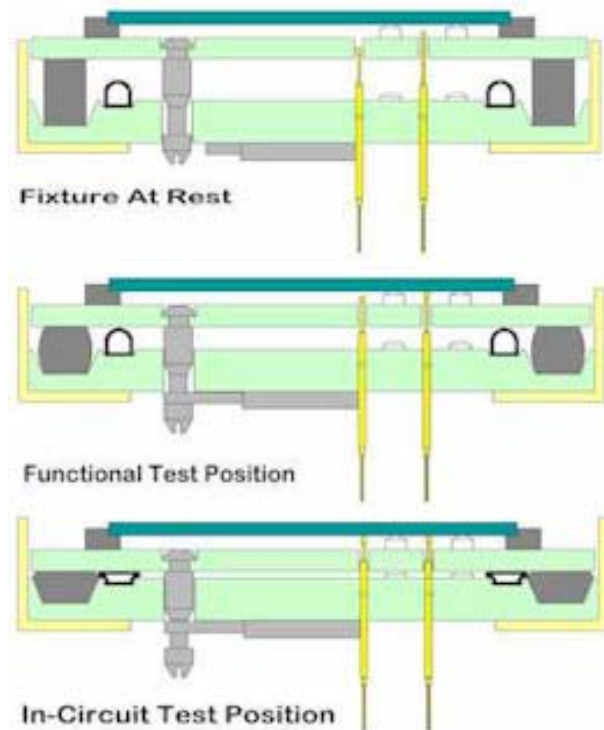
H+W Test Products has designed a series of fixtures for Bi-Level testing. This system is used on combinational testers for concurrent functional/In-circuit board testing, using a single fixture. This process lowers fixture cost, speeds testing, reduces UUT handling, and offers a 50% reduction in fixturing. All H+W Test Products are backed with our "Test-Assured" TM one year warranty in writing and SAME DAY SHIPMENTS.

Bi-Level Test Fixture Operation

A UUT/PCB overclamp must be used with each application

- Install UUT/PCB to be tested
- Apply fill vacuum
- Engage pneumatic air cylinders
- Release vacuum
- **Perform Functional Test**
- Apply full vacuum
- **Perform In-Circuit Test**
- Release vacuum to go back to functional test or..
- Disengage pneumatic air cylinders
- Release vacuum

Remove tested UUT/PCB



How to order

To order Bi-Level fixtures, select the fixture you require from an H+W product and specify the fixture model number. Remove the "R" from the beginning of the model number and insert "BIL".

Exp: **RG22001A** becomes **BILG22001A**

Usable UUT/PCB test area

H+W Bi-Level test fixtures are available in two sizes.

G2 kits: 15" x 10.5" (381 x 267)

G3 kits: 19" x 14.5" (483 x 368)

Test System Availability

GenRad 2270/2271/2272/228x

Teradyne 8x0/18xx

Teradyne/Spectrum 88xx

MDA Test Systems

Specifications subject to change without notice. Consult H+W for Latest Design Changes.
 REBOUNDER®, Rebound Strip, Quick Twist, Test-Assured and Co-Active Seals are
 trademarks or registered trademarks of H+W Test Products, Inc.
 Patent Number 5,430,385 & 6,054,869

*Count on test-kit technology that allows you to achieve the highest level of testing reliability
 within increasingly tighter time parameters*

What's The REBOUNDER® Difference and what does it mean to you?


Two distinct, Co-Active Seals	Ensure maximum reliability by providing continuous sealing back-up function.
Streamlined design.	Faster unit assembling and maintenance.
No Protruding metal bars.	Highly suitable for Automated Board Handlers.
Outer REBOUND STRIP spring biases the diaphragm board.	Elimination of springs increases UUT area.
Non-movable seals.	Friction wear is reduced, seal life is extended.
Quick Twist® Pins	Quicker finishing and debugging.
Only G10/FR4 glass epoxy, fine weave material for diaphragm board and probe plate.	Non-hydrophilic material ensures stability, consistency and reliability.
Upper head opens and holds by itself at any angle, up to 90 Degrees.	Considerably easier wiring and debugging.
Test-Assured Warranty	Full one year warranty against defects in material and/or workmanship.

H+W TEST PRODUCTS

Home of **THE REBOUNDER®**

Deep/Sloped Pan Fixtures
For System Non-Specific Applications

REBOUNDER® Test kits feature Two separate "Co-Active Seals", "Quick Twist"® Locking Guide Pins, and boards constructed of fine weave G10/FR4, increasing testing reliability and accuracy while simplifying finishing, debugging and maintenance. All H+W Products are backed - up with our "Test-Assured" one year warranty -- In Writing -- and SAME DAY SHIPMENTS.

<i>H+W</i> Fixtures W/5" (127mm) Deep Pan, Vacuum Configurations		
Part Number	Maximum Board Size	Description
RC12001A	14" x 18" (355x456)	Rt. Vacuum Port
RC12002A	14" x 18" (355x456)	Left Vacuum Port
RC15001A	2-8" x 14" (203x355) Dual Well	2 Vacuum Ports
<i>H+W</i> Fixtures W/5" Deep Pan, Non-Vacuum (Adapter Box) Style		
Part Number	Overall Size	Description
FC12003A	16" x 20" (406 x 508)	Pan Assy w/ Adpt. Plt.
		

<i>H+W</i> Fixtures With Sloped Pan, Vacuum Configurations		
Part Number	Maximum Board Size	Description
RC31001A	10" x 14" (253x355)	Rt. Vacuum Port
RC31002A	10" x 14" (253x355)	Left Vacuum Port
RC32001A	14" x 18" (355x456)	Rt. Vacuum Port
RC32002A	14" x 18" (355x456)	Left Vacuum Port
RC33001A	18" x 22" (456 x 557)	Rt. Vacuum Port
RC33002A	18" x 22" (456 x 557)	Left Vacuum Port
RC35001A	2 - 8" x 14" (203 x 355) Dual Well	2 Vacuum Ports
RC36001A	2 - 10" x 18" (253 x 456) Dual Well	2 Vacuum Ports



<i>H+W</i> Fixtures With Sloped Pan, Non Vacuum (Adapter Box) Style		
Part Number	Overall Size	Description
FC32003A	16" x 20" (406 x 508)	Pan Assy w/ Adpt. Plt.
FC33003A	20" x 24" (508 x 608)	Pan Assy w/ Adpt. Plt.



H+W Fixtures Accessories	
Part Number	Description
STD2183	Side Handles (Alum-A-Grip)
STD2128	Ground Plane For All 14" x 18" and 2 - 8" x 14" Dual Well Fixtures
STD3128	Ground Plane For All 18" x 22" and 2 - 10" x 18" Dual Well Fixtures
ESD	All Fixtures available with ESD Treatment
*	Over Clamps

Specifications subject to change without notice. Consult H+W for Latest Design Changes.

**REBOUNDER®, Rebound Strip, Quick Twist, Test-Assured and Co-Active Seals are trademarks or registered trademarks of H+W Test Products, Inc.
Patent Number 5,430,385 & 6,054,869**

Count on test-kit technology that allows you to achieve the highest level of testing reliability within increasingly tighter time parameters

What's The REBOUNDER® Difference and what does it mean to you?

Two distinct, Co-Active Seals	Ensure maximum reliability by providing continuous sealing back-up function.
Streamlined design.	Faster unit assembling and maintenance.
No Protruding metal bars.	Highly suitable for Automated Board Handlers.
Outer REBOUND STRIP spring biases the diaphragm board.	Elimination of springs increases UUT area.
Non-movable seals.	Friction wear is reduced, seal life is extended.
Quick Twist® Pins	Quicker finishing and debugging.
Only G10/FR4 glass epoxy, fine weave material for diaphragm board and probe plate.	Non-hydrophilic material ensures stability, consistency and reliability.
Upper head opens and holds by itself at any angle, up to 90 Degrees.	Considerably easier wiring and debugging.
Test-Assured Warranty	Full one year warranty against defects in material and/or workmanship.

H+W TEST PRODUCTS

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THE REBOUNDER®

Accessories

[H+W Mechanical Fixtures](#)

[Opens Testing Components](#)

[GenRad Receiver Adapter
Plates](#)

[H+W Mechanical Fixture
Accessories](#)

[Side Access Units](#)

[Fixture Receiver Adapters](#)

[Fixture Interface Receivers &
Contact Blocks](#)

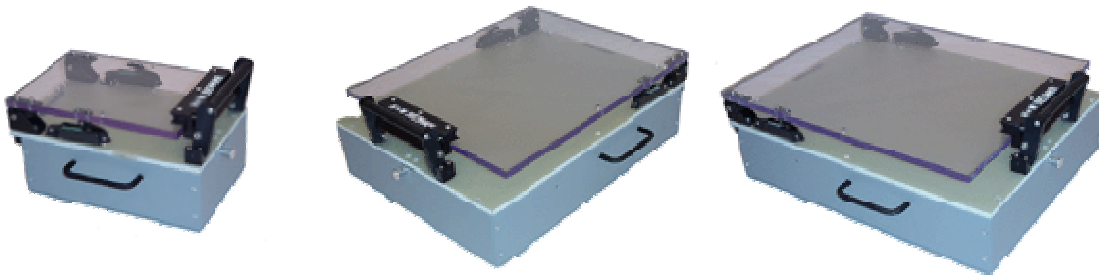
[Adapter Box Fixtures](#)

[UUT Overclamps](#)

[Prop Rod Assemblies](#)

H+W Mechanical Fixtures

H+W Test Products has developed a series of inexpensive mechanical test fixtures. These fixtures are designed for testing low volume runs of printed circuit boards or prototype applications requiring approximately 150 test points. All H+W products are backed - up with our "Test - Assured" one year warranty-in-writing and SAME DAY SHIPMENTS.



H+W Mechanical Fixtures			
Part #	Maximum Board Size	Overall Fixture Size	# Pressure Pins
FC20001A	5" x 9" (127 x 229)	8" x 12" (203 x 305)	15
FC21001A	9" x 13" (229 x 330)	12" x 16" (305 x 406)	15
FC22001A	13" x 17" (330 x 432)	16" x 20" (406 x 508)	30

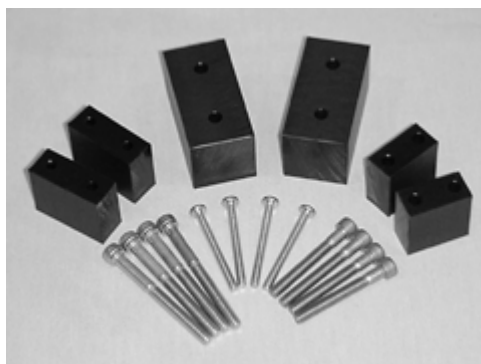
H+W Mechanical Fixture Accessories



Adapter Box Fixtures	
Part #	Description
FC20003A	8" x 12" (203 x 305)
FC21003A	12" x 16" (305 x 406)
FC22003A	16" x 20" (406 x 508)



Pan Riser Assembly	
Part #	Description
FC20202	4" (102) Pan Riser
FC21202	4" (102) Pan Riser
FC22202	4" (102) Pan Riser



Riser Block Assembly	
Part #	Description
FC20501	1/2" (13) Riser Kit All fixtures
FC20601	1" (25) Riser Kit All fixtures

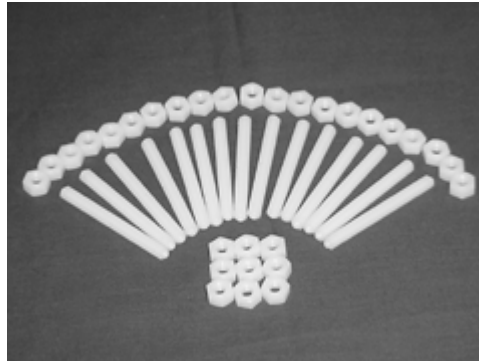


Front Latch Assembly	
Part #	Description
FC20403	FC20-1-2 Fixtures



Rear Hinge Assembly

Part #	Description
FC20406	FC20-1-2 Fixtures



Pressure Finger Assembly	
Part #	Description
*STD0001	15 (2.5" (65) Studs/30 Nuts
STD0002	15 (3.5" (89) Studs/30 Nuts
STD0003	15 (4.5" (114) Studs/30 Nuts
	* included with each kit

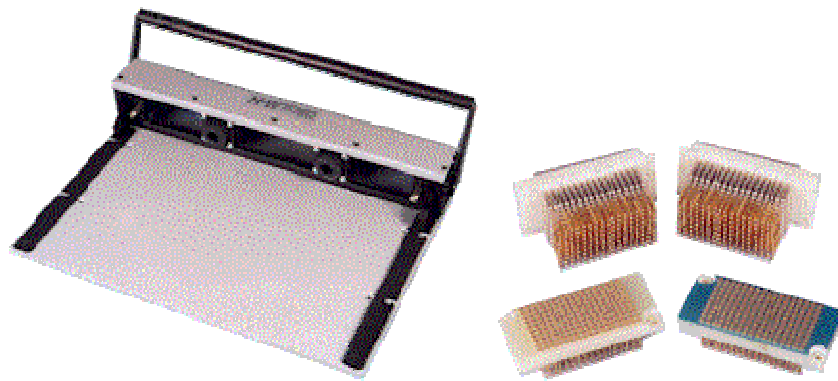
H+W Mechanical Fixtures Options:

- ESD Treatment
- G10 (FR4) Push Plates

H+W Mechanical Fixtures Include:	
<ul style="list-style-type: none"> • Side Handles • Probe Plate Latch Assembly • Probe Plate Hinges • Self Positioning Springs in Pan • Self Positioning Lexan Plate Springs 	<ul style="list-style-type: none"> • Drilling Alignment Holes in both Plates • 4" (102) Deep Pans, Expandable to 8" (203) • Insulated Nylon Pressure Fingers • Removable Base Pan Panels

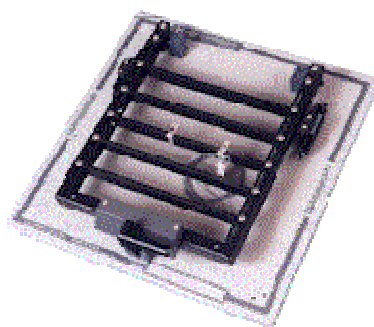
Fixture Interface Receivers & Contact Blocks

H+W TEST PRODUCTS has developed a series of receivers that utilize a modular, spring-loaded interface that allows the user to purchase only the number of interface points required for their present need. These receivers are available in the following styles: 1280 points in 160 point increments and 1700 points in 170 point increments. Both receiver types are available in either 0 or 30 degree styles. H+W maintains a complete inventory of 160 and 170 point receiver and fixture contact blocks. Both the receiver and fixture blocks are available in multiple wire termination options.



UUT Overclamps

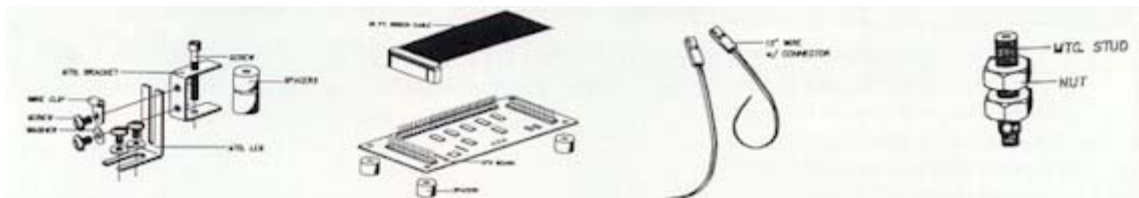
H+W Test Products has developed a series of overclamps that are adjustable in the X,Y and Z axis. These overclamps distribute pressure on the surface on the UUT. Perfect for vacuum fixtures, mechanical fixtures and Opens Testing applications. Overclamps open to 90 degrees. All overclamps are made out of aluminum and steel for strength against probe force and deflection. Nylon pressure fingers are included with each unit and optional steel pins with nylon tips are available.



H+W Manual Overclamps					
Standard Overclamps	Lexan Plate Overclamps	Minimum Overall Fixture Size	Maximum Board Size	No. Rails	No. of Pins
FC40101A	FC40301A	12" x 16" (304x405)	9.6" x 7.5" (243x190)	5	18
FC40102A	FC40302A	16" x 20" (405x507)	13.6" x 9.5" (344x241)	5	18
FC40103A	FC40303A	20" x 24" (507x608)	17.6" x 13.5" (446x342)	6	22
FC40104A	FC40304A	16" x 20" (405x507)	17.6" x 9.5" (446x241)	5	18
FC40105A		16" x 20" (Dual Well)	2-4.3" x 0.5" (109x241)	5	18

Opens Testing Components
<p>H+W Test Products has developed a product line of components for Opens Testing. Designed for GenRad's Opens Express*, Agilent (HP)'s TestJet*, and Teradyne's Multiscan* Opens Testing applications, these components and H+W's full line of overclamps and vacuum top access units provide a full range of opens testing options.</p>

FC58601 (Old GenRad Opens Express* system)	FC58602 (to be used with FC58601)	FC58603 (to be used with FC58601/2 or FC58608)	FC58604 (to be used with FC58602 and FC58603)
Includes: <ul style="list-style-type: none"> (1) H192001 Mux Bd, GR P/N 9004-0400-02 (4) H009065 .500" Nylon Spacer 	Includes: <ul style="list-style-type: none"> (1) H192002 Buffer Bd, GR P/N 9004-0335-01 (1) H192112 10 pin Buffer to Mux Bd. Ribbon Cable 	Includes: <ul style="list-style-type: none"> H192003 8"x11" Plate, for up to 70 1"x1" sensors (1) H163011 8"x11"x.125" GPPS Mounting Material (1) H004425 8"x11"x.250" Foam Poron (1) H004438 8"x11"x.375" Foam Poron 	Includes: <ul style="list-style-type: none"> (25) H192113 6" wire with connector, Sensor to Buffer Bd.
Opens Testing Sensor Plate Mounting Ki	GenRad OFM Board Kit	GenRad Sensor to OFM Wire Kit	Opens Testing Sensor Plate Mounting Kit

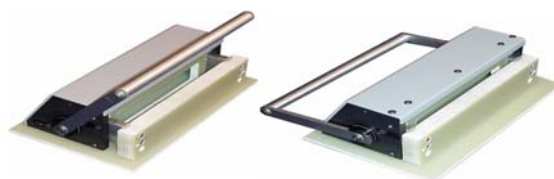


FC58606 (Can be used on H+W Overclamps)	FC58608 (New GenRad Opens Express* system)	FC58605 (to be used with FC58608)	FC5607 (to be used w/ FC58606 or Lexan Plate Overclamp)
Includes: <ul style="list-style-type: none"> (10) FC58612 	Includes: <ul style="list-style-type: none"> (1) H192004 	Includes: <ul style="list-style-type: none"> (25) H192114 	Includes: <ul style="list-style-type: none"> (10) FC58614

<p>Mounting Brackets</p> <ul style="list-style-type: none"> • (10) FC58613 Mounting Leg • (10) H008105 Nylon Wire Clip • (30) H009062 Nylon Washer • (10) H009064 .375" Nylon Spacer • (10) H009065 .500" Nylon Spacer • (10) H114620 6-32x1.25" Soc. Hd. Scr. • (30) H116604 6-32x2.50" Button Hd. Scr. 	<p>OFM Bd., GR P/N 9004-0482-00</p> <ul style="list-style-type: none"> • (1) H192111 30 pin OFM Bd. Ribbon Cable • (4) H009065 .500" Nylon Spacers 	<p>12" wire with connector, Sensor to OFM Bd.</p>	<p>Nylon Mounting Stud</p> <ul style="list-style-type: none"> • (20) H009250 Nylon 1/4-20 Hex Nut
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Side Access Units

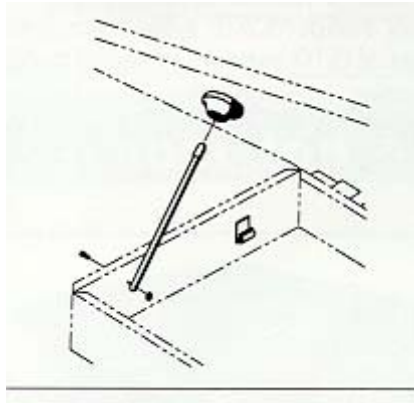
H+W Test Products has developed a series of mechanical side access units that are designed to contact UUT fingers and/or I/O connectors. These units can be used with either vacuum or mechanical test fixtures.



Part Number	Maximum Usable Size
FC50107A	7" (180)
FC50111A	11" (280)

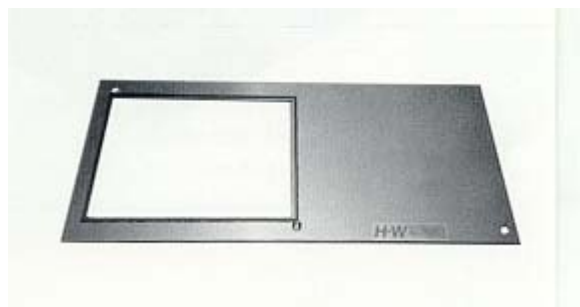
Prop Rod Assemblies

STD0100 Prop Rod assemblies can be used with any H+W test kit. Prop Rods should always be considered for larger kits or kits with large amounts of added weight on the top.



GenRad Receiver Adapter Plates

AP2272 or AP2282 For use with GenRad 2272 & 228X testers. The adapter plates allow the smaller 15 and 18 row interface panels to be used on 33 row receivers.



Adapter Box Fixtures

H+W Test Products has developed a series of Adapter Box Fixtures that are available in any model and/or size for which H+W offers vacuum fixtures. Adapter box Fixtures are a nonvacuum version of our standard vacuum test fixture. They are frequently used in M.D.A. and functional applications. The basic design consists of our standard ATE system pan and interface with a .375" sheet of G10 material mounted to the top. The G10 plate mounting is hinged the same as our standard vacuum test fixtures. All Adapter Box Fixtures are available for same day shipments.



Teradyne Products

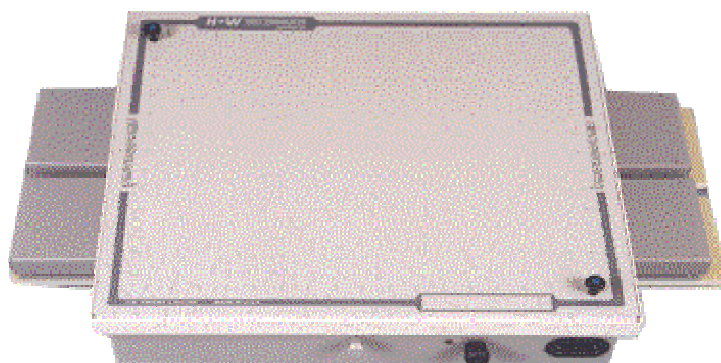
<u>Teradyne 8x10/18x0, 1884i, 8831, 8832</u>	<u>p29</u>
<u>Teradyne - Spectrum</u>	<u>p32</u>
<u>Teradyne - TestStation LH</u>	<u>p35</u>
<u>GenRad 2270/2271, MDA Test Systems</u>	<u>p37</u>
<u>GenRad 2272/2280-2286, & GenRad 2287L</u>	<u>p40</u>
<u>GenRad 2275/2276, 2288</u>	<u>p44</u>
<u>GenRad 228x, Stinger & Viper ABH AccelereATE Fixtures</u>	<u>p46</u>



H+W TEST PRODUCTS

Home of **THE REBOUNDER®**

Teradyne
8 x 0, 18 x 0, 8831, 8832 ATE Test Systems
(Including the 1884 System)



REBOUNDER® Test kits feature Two separate "Co-Active Seals", "Quick Twist"® Locking Guide Pins, and boards constructed of fine weave G10/FR4, increasing testing reliability and accuracy while simplifying finishing, debugging and maintenance. All H+W Products are backed - up with our "Test-Assured" one year warranty -- In Writing -- and SAME DAY SHIPMENTS.

<i>H+W</i> Fixtures With Interface Panel For Teradyne/Zehntel 800, 810, 850, 875, 1805, 1810/20/30/40/60/80/84/90		
Part Number	Maximum Board Size	Max Signal Points
RZ81001A	10" x 14" (253 x 355)	320
RZ81002A	10" x 14" (253 x 355)	640
RZ82001A	14" x 18" (355 x 456)	640
RZ82002A	14" x 18" (355 x 456)	1024
RZ83001A	18" x 22" (456 x 557)	640
RZ83002A	18" x 22" (456 x 557)	1024
RZ22001A	14" x 18" (355 x 456)	1280 (2) 640 I/F Panels
RZ12001A	14" x 18" (355 x 456)	2048 (2) 1024 I/F Panels
RZ13001A	18" x 22" (456 x 557)	2048 (2) 1024 I/F Panels
<i>H+W</i> Dual Well Fixtures		

With Interface Panel For Teradyne/Zehntel 800, 810, 850, 875, 1805, 1810/20/30/40/60/80/84/90		
Part Number	Maximum Board Size	Max Signal Points
RZ15001A	2 - 8" x 14" Dual Well	2048 (2) 1024 I/F Panels
RZ16001A	2 -10" x 18" Dual Well	2048 (2) 1024 I/F Panels
RZ25001A	2 - 8" x 14" Dual Well	1280 (2) 640 I/F Panels
RZ85001A	2 - 8" x 14" Dual Well	640
RZ85002A	2 - 8" x 14" Dual Well	1024
RZ86001A	2 -10" x 18" Dual Well	640
RZ86002A	2 -10" x 18" Dual Well	1024
<i>H+W</i> Fixtures W/ Interface Panel For Teradyne 1884 Systems. I/F Panels Must Be Ordered Separately For These Fixtures Only. A mixture Of Up to (4) I/F Panels. (SZ493XX and SZ494XX Series) Can Be Used		
Part Number	Maximum Board Size	Max Signal Points
RZ49001A	22" x 28" (557 x 710)	Order I/F Panels Separately Order I/F Panels Separately

<i>H+W</i> Interface Panels For RZ49 Fixtures	
Part Number	Test Points - Description
SZ49310	1024 --- 0 - 1023
SZ49320	1024 --- 1024 - 2047
SZ49330	1024 --- 2048 - 3071
SZ49340	1024 --- 3072 - 4095
SZ49412	1280 --- 0 - 1023, ___ 4096 - 4351
SZ49425	1280 --- 1024 - 2047, ___ 4352 - 4607
SZ49438	1280 --- 2048 - 3071, ___ 4608 - 4863
SZ49451	1280 --- 3072 - 4095, ___ 4864 - 5119
<i>H+W</i> Fixture Accessories	
Part Number	Description
ESD	All Fixtures available with ESD Treatment
Std 1128	Ground Plane For All 10" x 14" uut fixtures
Std 2128	Ground Plane For All 14" x 18" and 2 - 8" x 14" Dual Well Fixtures
Std3128	Ground Plane For All 18" x 22" and 2 - 10" x 18" Dual Well Fixtures
Non-Vacuum ***	Adaptor Boxes are Available in All Styles Literature is Also Available on Teradyne Fixtures For ITPE PA5060 ABH.

Specifications subject to change without notice. Consult H+W for Latest Design Changes.
 REBOUNDER®, Rebound Strip, Quick Twist, Test-Assured and Co-Active Seals are
 trademarks or registered trademarks of H+W Test Products, Inc.
 Patent Number 5,430,385 & 6,054,869

*Count on test-kit technology that allows you to achieve the highest level of testing reliability
 within increasingly tighter time parameters*

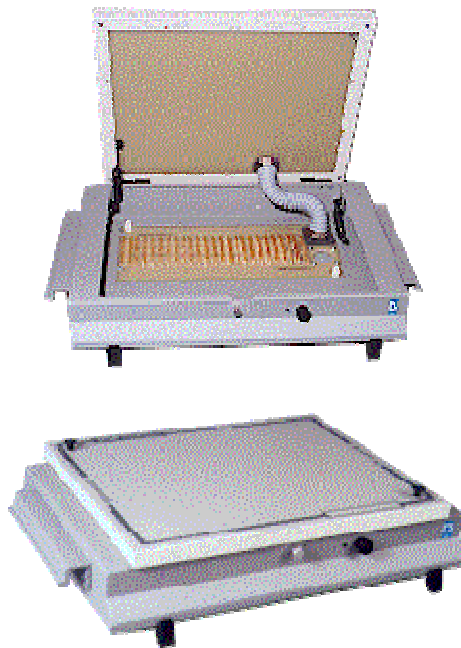
What's The REBOUNDER® Difference and what does it mean to you?

Two distinct, Co-Active Seals	Ensure maximum reliability by providing continuous sealing back-up function.
Streamlined design.	Faster unit assembling and maintenance.
No Protruding metal bars.	Highly suitable for Automated Board Handlers.
Outer REBOUND STRIP spring biases the diaphragm board.	Elimination of springs increases UUT area.
Non-movable seals.	Friction wear is reduced, seal life is extended.
Quick Twist® Pins	Quicker finishing and debugging.
Only G10/FR4 glass epoxy, fine weave material for diaphragm board and probe plate.	Non-hydrophilic material ensures stability, consistency and reliability.
Upper head opens and holds by itself at any angle, up to 90 Degrees.	Considerably easier wiring and debugging.
Test-Assured Warranty	Full one year warranty against defects in material and/or workmanship.

H+W TEST PRODUCTS

Home of **THE REBOUNDER®**

TERADYNE-SPECTRUM
S 8821, S 8851 /2 /5 ATE Test Systems
(Not for the S 8831 & S 8832 Systems)



REBOUNDER® Test kits feature Two separate "Co-Active Seals", "Quick Twist"® Locking Guide Pins, and boards constructed of fine weave G10/FR4, increasing testing reliability and accuracy while simplifying finishing, debugging and maintenance. All H+W Products are backed - up with our "Test-Assured" one year warranty -- In Writing -- and SAME DAY SHIPMENTS.

H+W Fixtures With Interface Panel		
Part Number	Maximum Board Size	Max Signal Points
* RZ91001A	10" x 14" (253 x 355)	1280
* RZ92001A	14" x 18" (355 x 456)	1280
* RZ93001A	18" x 22" (456 x 557)	1280
* RZ93021A	18" x 22" (456 x 557)	2560
# RZ94001A	18" x 28" (456 x 710)	1280
# RZ94021A	18" x 28" (456 x 710)	2560
# RZ94031A	18" x 28" (456 x 710)	5120
H+W Dual Well Fixtures With Interface Panel		
Part Number	Maximum Board Size	Max Signal Points
*RZ95001A	2 - 8" x 14" Dual Well	1280
*RZ96001A	2 - 10" x 18" Dual Well	1280
*RZ96021A	2 - 10" x 18" Dual Well	2560

* = Pan Depth of 3.25" (82)

= Pan Depth of 5.00" (127)

H+W Fixture Accessories	
Part Number	Description
RZ9X0X3A	Adapter Boxes Are Available in All Styles
Std 2128	Ground Plane For All 14" x 18" and 2 - 8" x 14" Dual Well Fixtures
Std 3128	Ground Plane For All 18" x 22" and 2 - 10" x 18" Dual Well Fixtures
Std 4128	Ground Plane For All 18" x 28" Fixtures
ESD	All Fixtures available with ESD Treatment
FC40XXA	Over Clamps

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Patent Number 5,430,385 & 6,054,869

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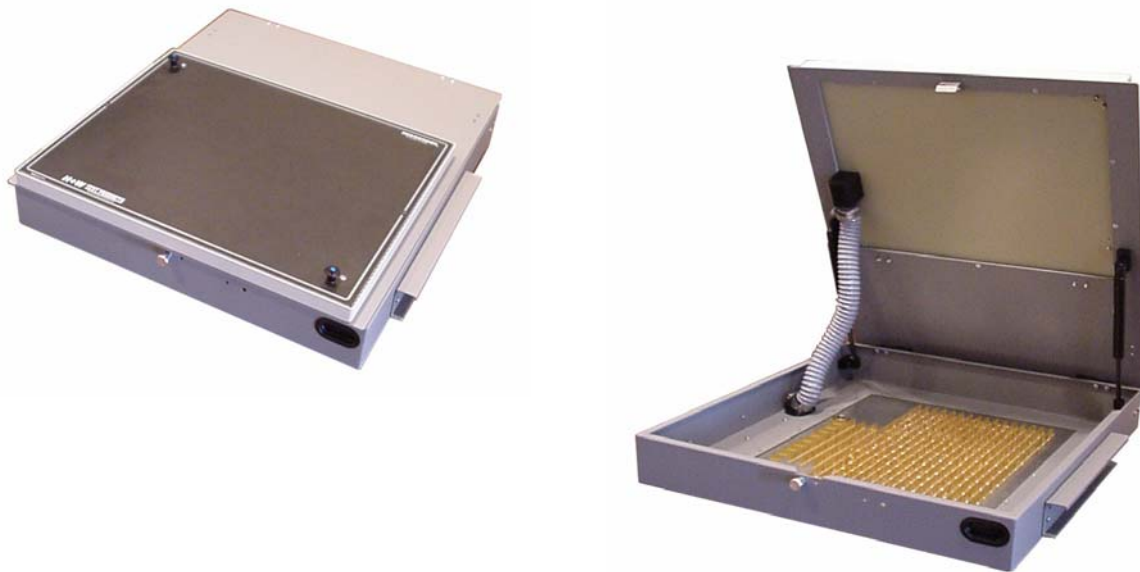
What's The REBOUNDER® Difference and what does it mean to you?

Two distinct, Co-Active Seals	Ensure maximum reliability by providing continuous sealing back-up function.
Streamlined design.	Faster unit assembling and maintenance.
No Protruding metal bars.	Highly suitable for Automated Board Handlers.
Outer REBOUND STRIP spring biases the diaphragm board.	Elimination of springs increases UUT area.
Non-movable seals.	Friction wear is reduced, seal life is extended.
Quick Twist® Pins	Quicker finishing and debugging.
Only G10/FR4 glass epoxy, fine weave material for diaphragm board and probe plate.	Non-hydrophilic material ensures stability, consistency and reliability.
Upper head opens and holds by itself at any angle, up to 90 Degrees.	Considerably easier wiring and debugging.
Test-Assured Warranty	Full one year warranty against defects in material and/or workmanship.

H+W TEST PRODUCTS

Home of **THE REBOUNDER®**

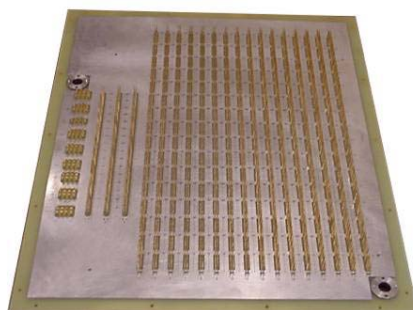
Teradyne TestStation LH



H+W Test Products has developed, with close assistance directly from Teradyne, a REBOUNDER® test fixture for the new TestStation™ LH, Low-cost, fully functional, In-Circuit Test Station. All REBOUNDER® test kits feature two separate "Co-Active Seals"™, "Quick Twist"® Locking Guide Pins, and boards constructed of fine weave G10/FR4, increasing testing reliability and accuracy while simplifying finishing, debugging, and maintenance. All H+W products are backed - up with our "Test-Assured"™ one year warranty -- in writing -- and SAME DAY SHIPMENTS.

H+W Fixture For Teradyne TestStation LH System	
Part Number	Maximum Board Size
RT42001A	14" x 18" (356 x 457)
RT43001A	18" x 22" (457 x 559)

H+W Interface Panel For Teradyne TestStation LH System	
Part Number	Description
ST42440	19 Row, 4096 Test Point, Fully Loaded Interface Panel
ST42430	15 Row, 3072 Test Points, Partially Loaded Interface Panel
ST42420	11 Row, 2048 Test Points, Partially Loaded Interface Panel



H+W Fixture Accessories	
Part Number	Description
*	Adapter Boxes are Available in All Styles
ESD	All Fixtures are Available w/ ESD Treatment

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REBOUNDER®, Rebound Strip, Quick Twist, Test-Assured and Co-Active Seals are trademarks or registered trademarks of H+W Test Products, Inc.
Patent Number 5,430,385 & 6,054,869

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H+W TEST PRODUCTS

Home of **THE REBOUNDER®**

GenRad 2270 / 2271
ATE Test Systems

REBOUNDER® Test kits feature Two separate "Co-Active Seals", "Quick Twist"® Locking Guide Pins, and boards constructed of fine weave G10/FR4, increasing testing reliability and accuracy while simplifying finishing, debugging and maintenance. All H+W Products are backed - up with our "Test-Assured" one year warranty -- In Writing -- and SAME DAY SHIPMENTS.



H+W	Fixtures for GenRad 2270/2271 Systems
Part Number	Maximum Board Size
RG01001A	10" x 14" (253 x 355)
RG02001A	14" x 18" (355 x 456)
RG02005A	14" x 18" (355 x 456) with 5 inch deep pan
RG03001A	18" x 22" (456 x 557)
RG03005A	18" x 22" (456 x 557) with 5 inch deep pan
RG05001A	2 - 8" x 14" (203 x 335) Dual Well
RG05005A	2 - 8" x 14" (203 x 335) Dual Well with 5 inch deep pan
RG06001A	2 - 10" x 18" (253 x 456) Dual Well

RG06005A	2 - 10" x 18" (253 x 456) Dual Well with 5 inch deep pan
H+W	Receiver For GenRad 2270/2271 Fixtures
Part Number	Description
RG09001A RG09330A	with 2 Vacuum Ports, without Receiver Wiring Blocks 30 degree Receiver Adapter Assembly
H+W	Fixture Accessories
Part Number	Description
*	Adapter Boxes are available in All Styles
STD2183	Side Handles (Alum-A-Grip)
H191170	170 Point Fixture Wiring Block with Wire Wrap Tails
H191171	170 Point Receiver Wiring Block with Wire Wrap Tails
H191172	170 Point Receiver Wiring Block with Round Wire Wrap Tails
H191173	170 Point Fixture Wiring Block with Aligned Wire Wrap Tails
H191174	170 Point Receiver Wiring Block with Aligned Wire Wrap Tails
ESD	All Fixtures available with ESD Treatment



Specifications subject to change without notice. Consult H+W for Latest Design Changes.

**REBOUNDER®, Rebound Strip, Quick Twist, Test-Assured and Co-Active Seals are trademarks or registered trademarks of H+W Test Products, Inc.
Patent Number 5,430,385 & 6,054,869**

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What's The REBOUNDER® Difference and what does it mean to you?

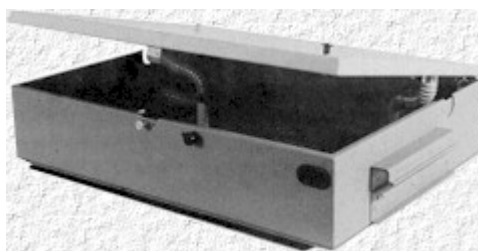
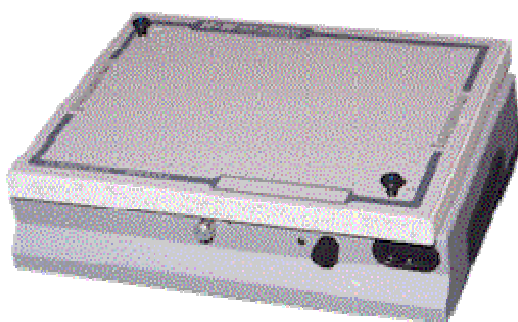
Two distinct, Co-Active Seals	Ensure maximum reliability by providing continuous sealing back-up function.
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Streamlined design.	Faster unit assembling and maintenance.
No Protruding metal bars.	Highly suitable for Automated Board Handlers.
Outer REBOUND STRIP spring biases the diaphragm board.	Elimination of springs increases UUT area.
Non-movable seals.	Friction wear is reduced, seal life is extended.
Quick Twist® Pins	Quicker finishing and debugging.
Only G10/FR4 glass epoxy, fine weave material for diaphragm board and probe plate.	Non-hydrophilic material ensures stability, consistency and reliability.
Upper head opens and holds by itself at any angle, up to 90 Degrees.	Considerably easier wiring and debugging.
Test-Assured Warranty	Full one year warranty against defects in material and/or workmanship.

H+W TEST PRODUCTS

Home of **THE REBOUNDER®**

GenRad 2272 / 2280 / 1 / 2 / 3 / 4 / 5 / 6 / 7
ATE Test Systems
(Including the 2287L System)



REBOUNDER® Test kits feature Two separate "Co-Active Seals", "Quick Twist"® Locking Guide Pins, and boards constructed of fine weave G10/FR4, increasing testing reliability and accuracy while simplifying finishing, debugging and maintenance. All H+W Products are backed - up with our "Test-Assured" one year warranty -- In Writing -- and SAME DAY SHIPMENTS.

H+W	Fixtures for GenRad 2272/2280/1/2/3/4/5/6/7 Systems
Part Number	Maximum Board Size
RG21001A	10" x 14" (253 x 355)
RG22001A	14" x 18" (355 x 456)
RG24001A	18" x 28" (456 x 710)
RG24005A	18" x 28" with 5 1/4" Deep Pan
RG25001A	2 - 8" x 14" (203 x 355) Dual Well
RG27001A	2 - 10" x 14" (253 x 335)
RG27701A	14" x 18" (355 x 456)
RG27801A	2 - 10" x 18" (253 x 456) Dual Well
RG42001A	14" x 18" (2283/4 Only)

<i>H+W</i>	Fixture for GenRad 2287L System
Part Number	Maximum Board Size
RG79001A	22" x 28" (557 x 710)

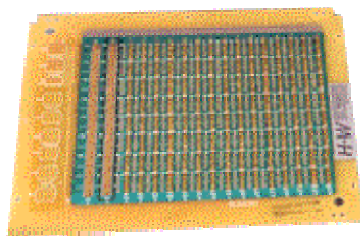
<i>H+W</i>	Fixture Accessories

Part Number	Description
*	Adapter Boxes are available in All Styles
Std 2183	Side Handles (Alum-A-Grip)
Std 1128	Ground Plane For All 10" x 14" UUT fixtures
Std 2128	Ground Plane For All 14" x 18" and 2 - 8" x 14" Dual Well Fixtures
Std4128	Ground Plane For All 18" x 28" UUT Fixtures
Std9128	Ground Plane For All 22" x 28" UUT Fixtures
ESD	All Fixtures available with ESD Treatment
*	Over Clamps

All GenRad 2272/228X Fixtures Include:

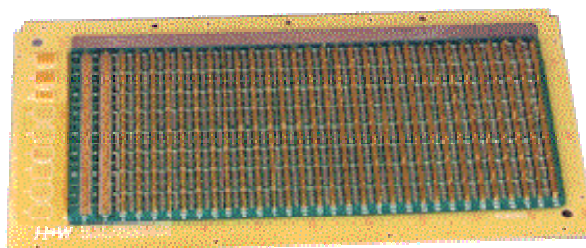
- * Ground Plane
- * Finishing Kit
- * Interface Cover
- * Pans are up to 3/4" (19mm) Deeper Than Most Other Brands

<i>H+W</i>	Interface Panels For RG21/2/5 Fixtures	
Test Points	GenRad 2272 Systems	GenRad 2280/1/2/3/4/5/6/7 Sys.
512	SG29105	SG29205
1024	SG29110	SG29210
1536	SG29115	SG29215

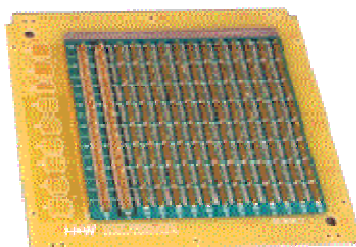


<i>H+W</i>	Interface Panels For RG24 Fixtures	
Test Points	GenRad 2272 Systems	GenRad 2280/1/2/3/4/5/6/7 Sys.
1024	SG29310	SG29410
2048	SG29320	SG29420
3072	SG29330	SG29430

3840	SG29335	SG29435
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H+W Interface Panels For RG42 Fixtures	
Test Points	GenRad 2283/4 Systems
1024	SG29510
1920	SG29519
18th Row is Loaded on Both Panels For AFTM Card	



H+W Interface Panel for RG79 Fixture	
GenRad 2287L Systems	Test Points
SG29776	7680

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Patent Number 5,430,385 & 6,054,869

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What's The REBOUNDER® Difference and what does it mean to you?

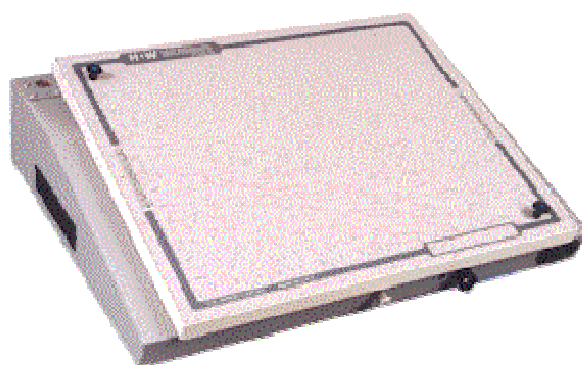
Two distinct, Co-Active Seals	Ensure maximum reliability by providing continuous sealing back-up function.
-------------------------------	--

Streamlined design.	Faster unit assembling and maintenance.
No Protruding metal bars.	Highly suitable for Automated Board Handlers.
Outer REBOUND STRIP spring biases the diaphragm board.	Elimination of springs increases UUT area.
Non-movable seals.	Friction wear is reduced, seal life is extended.
Quick Twist® Pins	Quicker finishing and debugging.
Only G10/FR4 glass epoxy, fine weave material for diaphragm board and probe plate.	Non-hydrophilic material ensures stability, consistency and reliability.
Upper head opens and holds by itself at any angle, up to 90 Degrees.	Considerably easier wiring and debugging.
Test-Assured Warranty	Full one year warranty against defects in material and/or workmanship.

H+W TEST PRODUCTS

Home of **THE REBOUNDER®**

**GenRad 2275/2276 & 2288
ATE Test Systems**



REBOUNDER® Test kits feature Two separate "Co-Active Seals", dedicated registration pins, and boards constructed of fine weave G10/FR4, increasing testing reliability and accuracy while simplifying finishing, debugging and maintenance. All H+W Products are backed - up with our "Test-Assured" one year warranty -- In Writing -- and SAME DAY SHIPMENTS.

<i>H+W</i> Fixtures for GenRad 2275/2276/2288 Systems	
Part Number	Maximum Board Size
RG52001A	14" x 18" (355 x 456)
RG53001A	18" x 22" (456 x 557)
<i>H+W</i> Dual Well Fixtures For GenRad 2275/2276/2288 Systems	
Part Number	Maximum Board Size
RG55001A	2 - 8" x 14" (203 x 355) Dual Well
RG56001A	2 - 10" x 18" (253 x 456) Dual Well

H+W Fixture Accessories	
Part Number	Description
*	Adapter Boxes are available in All Styles
Consult Factory	Standard Probes and Sockets
	Custom Probes and Sockets
H191010	Triple Power Supply Card "21"
H191020	System Power Card "0"
H191030	2275 Signal Card
H191040	2276/2288 Signal Card
Std 2128	Ground Plane For All 14" x 18" and 2 - 8" x 14" Dual Well Fixtures
Std3128	Ground Plane For All 18" x 22" and 2 - 10" x 18" Dual Well Fixtures
ESD	All Fixtures available with ESD Treatment
*	Over Clamps

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Upper head opens and holds by itself at any angle, up to 90 Degrees.	Considerably easier wiring and debugging.
	Full one year warranty against defects in material and/or workmanship.

H+W TEST PRODUCTS

Home of **THE REBOUNDER**®

H+W Fixtures for GenRad AccelerATE 228X, Stinger, and Viper Automated Board Handler Test Systems

&

The IPTE, "Teradyne" configured MFT-19", Multi Functional Test Handler

H+W Test Products has developed, with close assistance directly from GenRad & IPTE, a fixture series for Automated Board Handler systems. Each fixture assembly is manufactured to a tight tolerance range that enables any part of the fixture to be easily interchanged.

H+W Automated Board Handler Fixtures have been APPROVED by: GenRad & IPTE

HOW TO ORDER H+W, ABH FIXTURES

There are two (2) major component assemblies that make up a complete H+W fixture for ABH systems.

- 1) Upper Head Assembly
- 2) Base Assembly

These component assemblies are purchased separately. This allows the finisher (user) to stock a mix of Base and Upper Head Assemblies without having to first determine which combination is required for a particular job. As with all H+W Test Products fixtures, the ABH assemblies are in stock and available to ship the same day.

Upper Head Assembly Options
<p>PZ12101 - Upper Head Assembly, Long Stroke</p> <p>(Used with either base assembly) This needs to be adjusted to the width of the PCB. Modification and assembly instructions are included. Includes: (4) PZ12401 - Hold Down Assemblies (20) PZ12404 - Long Press on Rods (1) PZ12405 - Connector Jig Assembly</p>
<p>PZ12102 - Upper Head Assembly, Top Side Probing</p> <p>(Used with either base assembly) This needs to be adjusted to the width of the PCB. Modification and assembly instructions are included. Includes: (4) PZ12402 - Hold Down Assemblies (10) PZ12406 - Extension Rods (20) PZ12415 - Short Press on Rods (1) PZ12405 - Connector Jig Assembly</p>



BASE ASSEMBLY



Base Assembly For: 228X, Stinger & Viper In-Line Systems

AG22001 - Base Assembly, 14.61" (370mm) Max PCB Width

Modification and Assembly Instructions are included with each Kit. (Max. 21 Position ITA Connector Assembly)

Includes: *(2) AG22301 160 Pin Connector Assemblies

(1) H191151 Fixture Identification Connector

(1) AG22304 Power Connector Assembly

* Additional Connectors are sold Separately, see Connector Options Section.

Connector Options

Power Connector

AG22304 - 104 Pin Connector Assembly

Includes: (1) 104 Pin Connector Block

(104) Contact Pins

(4) Guide Pin Screws



Signal Connector

AG22301 - 160 Pin Connector Assembly

Includes: (1) 4 Row - 160 Pin Connector

(2) Guide Pin Screws



Accessories

Interface Covers

AG22203 - Interface Covers

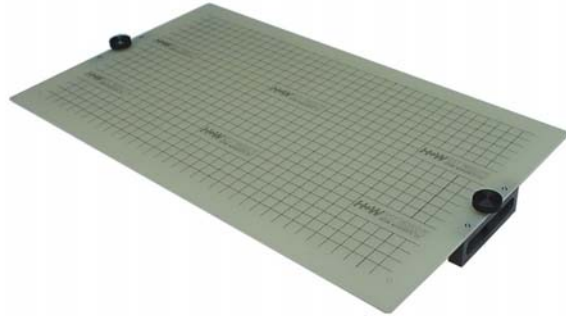
Used on AG22001 Base Assembly
Includes: (15) Individual Slot Covers
(30) Mounting Screws



Probe Plate Cover

PZ12202 - Probe Plate Cover

Used on AG22001 Base Assembly
Includes: (1) Probe Plate Cover
with Hardware



Hold Down Assembly

PZ12401 - Hold Down Assembly

Used on PZ12101 UHA
Includes: (4) Hold Down Assemblies



Hold Down Assembly

PZ12402 - Hold Down Assembly

Used on PZ12102 UHA
Includes: (4) Hold Down Assemblies



Press On Rods

PZ12403 - Press On Rods

Used on PZ12102 UHA

Includes: (20) PZ12415 Press On Rods
ESD Delrin Material



Press On Rod Assembly

PZ12404 - Press On Rod Assembly

Used on PZ12101 UHA

Includes: (20) Press On Rod Assemblies
ESD Delrin Tip



Connector Jig Assembly

PZ12405 - Connector Jig Assembly

Used on PZ12101 & PZ12102 UHA

Includes: (1) PZ12116 Connector Jig
(1) H191151 Connector
Mounting Hardware



Extension Rod Assembly

PZ12406 - Extension Rod Assembly

Used on PZ12102 UHA

Includes: (10) PZ12416 Extension Rods
(10) PZ12419 Spacers
Mounting Hardware



H+W TEST PRODUCTS

Agilent (HP) Products

Agilent (HP) 306x/3065.....p52

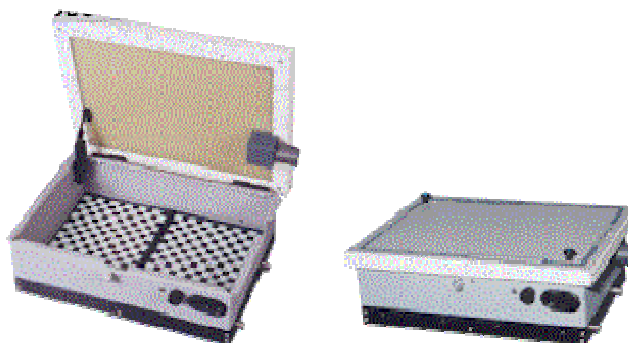
Agilent (HP) 3070/3x7x.....p54



H+W TEST PRODUCTS

Home of **THE REBOUNDER®**

Agilent (HP) 306x/3065
ATE Test Systems



REBOUNDER® Test kits feature Two separate "Co-Active Seals", "Quick Twist"® Locking Guide Pins, and boards constructed of fine weave G10/FR4, increasing testing reliability and accuracy while simplifying finishing, debugging and maintenance. All H+W Products are backed - up with our "Test-Assured" one year warranty -- In Writing -- and SAME DAY SHIPMENTS.

H+W Fixtures for Agilent (HP) 306x/3065 Systems	
Part Number	Maximum Board Size
RH51001A	10" x 14" (253 x 355)
RH52001A	14" x 18" (355 x 456)
RH53001A	18" x 22" (456 x 557)
H+W Dual Well Fixtures For Agilent (HP) 306x/3065 Systems	
Part Number	Maximum Board Size
RH55001A	2 - 8" x 14" (203 x 355) Dual Well
RH56001A	2 - 10" x 18" (253 x 456) Dual Well

H+W Fixture Accessories	
Part Number	Description
*	Adapter Boxes are available in All Styles
Std 2183	Side Handles (Alum-A-Grip)
Std 1128	Ground Plane For All 10" x 14" uut fixtures
Std 2128	Ground Plane For All 14" x 18" and
	2 - 8" x 14" Dual Well Fixtures
Std3128	Ground Plane For All 18" x 22" and
	2 - 10" x 18" Dual Well Fixtures
ESD	All Fixtures available with ESD Treatment
*	Over Clamps

Specifications subject to change without notice. Consult H+W for Latest Design Changes. REBOUNDER®, Rebound Strip, Quick Twist, Test-Assured and Co-Active Seals are trademarks or registered trademarks of H+W Test Products, Inc. Patent Number 5,430,385 & 6,054,869

Count on test-kit technology that allows you to achieve the highest level of testing reliability within increasingly tighter time parameters

What's The REBOUNDER® Difference and what does it mean to you?

Two distinct, Co-Active Seals	Ensure maximum reliability by providing continuous sealing back-up function.
Streamlined design.	Faster unit assembling and maintenance.
No Protruding metal bars.	Highly suitable for Automated Board Handlers.
Outer REBOUND STRIP spring biases the diaphragm board.	Elimination of springs increases UUT area.
Non-movable seals.	Friction wear is reduced, seal life is extended.
Quick Twist® Pins	Quicker finishing and debugging.
Only G10/FR4 glass epoxy, fine weave material for diaphragm board and probe plate.	Non-hydrophilic material ensures stability, consistency and reliability.
Upper head opens and holds by itself at any angle, up to 90 Degrees.	Considerably easier wiring and debugging.
Test-Assured Warranty	Full one year warranty against defects in material and/or workmanship.

H+W TEST PRODUCTS

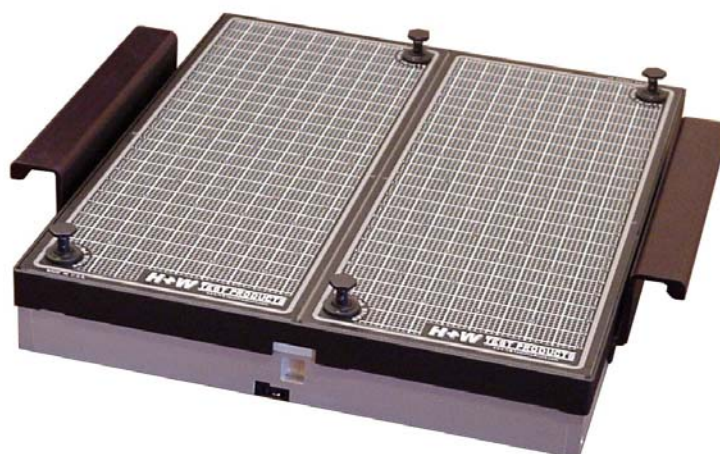
Home of **THE REBOUNDER**®

**Agilent (HP) 3070/3x7x
ATE Test Systems**

H+W Test Products is proud to introduce the newest addition to our family of vacuum test fixtures. These new fixtures, for Agilent (HP) 3070 testers, have the HP Performance Port option available for Series III tester. A major new improvement has been included with H+W's new HP3070 Series fixtures, AT8000 probe plate material. This material is 50% stronger than conventional G10 (FR4). This allows you higher test point counts with less board flex. Also, incorporated in the material is a dry lubricant to make it easier to mill and drill. All fixtures come standard with a .562" (14mm) thick probe plate. All H+W Products are backed - up with our "Test-Assured"™ one year warranty -- In Writing -- and SAME DAY SHIPMENTS.



<i>H+W</i> Fixtures for Agilent (HP) 3070/3x7x Systems	
Part Number	Maximum Board Size
RH32001A	15.8" x 14.1" (400 x 357) Single Well
RH38001A	15.8" x 28.3" (400 x 717) Single Well
RH82004A	Extended Single Well



<i>H+W</i> Dual Well Fixture For Agilent (HP) 3070/3x7x Systems	
Part Number	Maximum Board Size
RH36001A	2 - 06.56" x 11.88" (166 x 302) Dual Well
RH37001A	2 - 12.50" x 15.50" (318 x 394) Dual Well
RH86004A	Extended Dual Well



<i>H+W</i> Cassette Style Fixture for Agilent (HP) 3070/3X7X Systems	
Part Number	Description
RH32003A	Small Cassette Fixture
RH38003A	Large Cassette Fixture



***H+W* Replacement Probe Plate for Agilent manufactured
44200S & 44200L Simplate Express Fixture Kits ONLY!
Not for use on H+W Test Products Fixture Kit.**

Part Number	Description
FC15112	Small, Single Bank Probe Plate
FC15113	Large, Double Bank Probe Plate



***H+W* Agilent Manufactured Personality Pins**

Part Number	Description
H190070	Personality Pins - 1,000 Count



<i>H+W</i> Agilent (HP) Performance Port Extender	
Part Number	Description
RH32134	Agilent (HP) Performance Port Extender



<i>H+W</i> Fixture Accessories	
Part Number	Description
-----	Test Jet Accessories
ESD	Fixtures Are Available With ESD Treatment
Thicker Probe Plate	Fixtures Are Available With Thicker Probe Plates
Thicker Top Plate	Fixtures Are Available With Thicker Top Plates

All Agilent (HP) 3070/3x7x Fixtures Include:
<ul style="list-style-type: none"> * User Friendly Handles * Finishing Kit * Agilent (HP) Double Density Alignment Plates * AT8000 G10 Probe Plate Material

Specifications subject to change without notice. Consult H+W for Latest Design Changes.
 REBOUNDER, Rebound Strip, Quick Twist, Test-Assured and Co-Active Seals are trademarks or registered trademarks of H+W Test Products, Inc.
 Patent Number 5,430,385 6,054,869

H+W TEST PRODUCTS

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IFR-Marconi/Wayne Kerr 42xx



REBOUNDER® test kits feature two separate "Co-Active Seals"™, "Quick Twist"® Locking Guide Pins, and boards constructed of fine weave G10/FR4, increasing testing reliability and accuracy while simplifying finishing, debugging, and maintenance. All H+W products are backed - up with our "Test-Assured"™ one year warranty -- in writing -- and SAME DAY SHIPMENTS.

<i>H+W</i> Fixtures For IFR-Marconi/Wayne Kerr 42xx	
Part Number	Maximum Board Size
RM42001A H190003	14" x 18" (355 x 456) supplied with unloaded Interface Panel Contact Pins for above Interface Panel (1,000 piece bags)

These new fixtures for the IFR-Marconi/Wayne Kerr 42xx testers, permit the 90 degree rotation of the pan. This allows the upper head assembly to open front-to-back or side-to-side. Included with each fixture is a ratcheting upper head assembly stay, locking the head into any of eight (8) different positions. This feature enhances operator safety on steep, sloping test stations.

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 REBOUNDER®, Rebound Strip, Quick Twist, Test-Assured and Co-Active Seals are
 trademarks or registered trademarks of H+W Test Products, Inc.
 Patent Number 5,430,385 & 6,054,869

Count on test-kit technology that allows you to achieve the highest level of testing reliability

H+W Fixture Accessories	
Part Number	Description
* ESD	Adapter Boxes are Available in All Styles All Fixtures are Available w/ ESD Treatment

within increasingly tighter time parameters

H+W TEST PRODUCTS

Home of

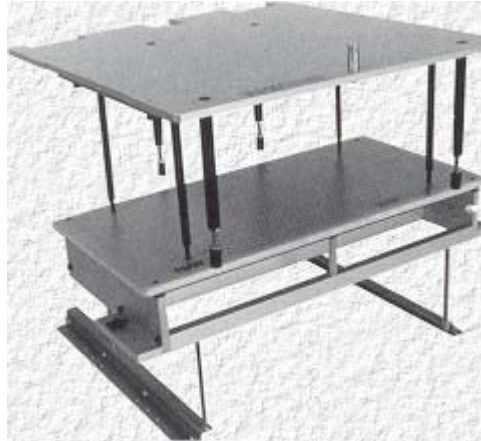
THE REBOUNDER®

H+W Fixtures For IPTE PA506x Automatic Board Handlers

H+W Fixtures for IPTE ABH Handlers

have been *APPROVED* by: **GenRad, IPTE, Teradyne & Teradyne/Spectrum**

H+W Test Products has developed, with close assistance directly from IPTE, AoT, an Engineering innovative fixture series for the PA506x ABH system. Each fixture assembly is manufactured to a tight tolerance range that enables any part of the fixture to be easily interchanged.



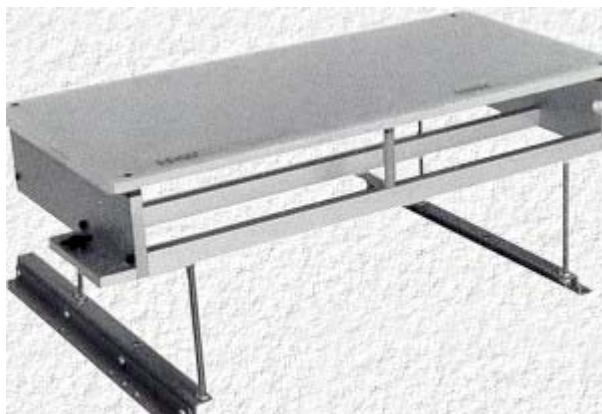
HOW TO ORDER H+W, IPTE PA506x FIXTURES

There are three (3) major component assemblies that make up a complete H+W fixture for IPTE PA506x ABH systems.

- 1) Base Assembly
- 2) Upper Head Assembly
- 3) Interface Assembly

These component assemblies are purchased separately. The Base Assembly and the Upper Head Assembly are not ATE tester specific. This allows the finisher (user) to stock a mix of Base and Upper Head Assemblies without having to first determine for which ATE System it

is destined. The Interface Assemblies can be purchased from H+W at the time of need. As with all H+W Test Products fixtures, the IPTE PA506x assemblies are in stock and available to ship the same day.



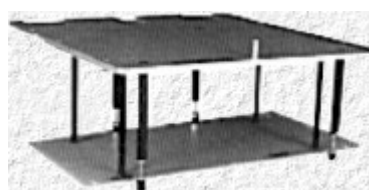
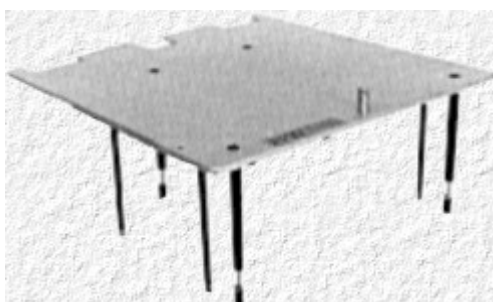
BASE ASSEMBLY OPTIONS

PZ11201	9.87" (250mm) Max PCB Width
PZ12201	14.61" (370mm) Max PCB Width

Either Base assembly needs to be adjusted to the width of the PCB. Modification and assembly instructions are included.

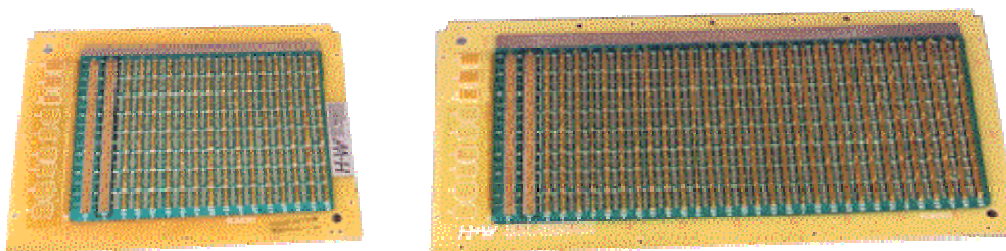
Includes

- (1) G10 Probe Plate
- (6) PZ12409 Spacer Post Assemblies
- (3) PZ12215 Beam Support



UPPER HEAD ASSEMBLY OPTIONS

PZ12101	Long Stroke Upper Head
(Used with either base assembly) This needs to be adjusted to the width of the PCB. Modifications and assembly instructions are included.	
Includes	(4) PZ12401 - Hold Down Assemblies (20) PZ12404 - Long Press On Rods
PZ12102	Top Side Probing Upper Head
(Used with either base assembly) This needs to be adjusted to the width of the PCB. Modification and assembly instructions are included.	
Includes:	(4) PZ12402 - Hold Down Assemblies (10) PZ12406 - Extension Rods (20) PZ12415 - Short Press On Rods



INTERFACE ASSEMBLY OPTIONS

GenRad 2272 and 228X Systems (For IPTE PA506x Applications Only)

Test Points	Part Number	Description
1024	PG29210	15 Row Max Panels
1536	PG29215	15 Row Max Panels
1024	PG29510	18 Row Max Panels, 18th Row is Loaded For AFTM Card
1920	PG29519	18 Row Max Panels, 18th Row is Loaded For AFTM Card
1024	PG29410	33 Row Max Panels
2048	PG29420	33 Row Max Panels
3072	PG29430	33 Row Max Panels
3840	PG29435	33 Row Max Panels



Teradyne/Zehntel Systems (For IPTE PA506x Applications Only)

Test Points	Part Number	Description
640	PZ89206	Medium Panel 0 - 639
640	PZ89210	Medium Panel 1024 - 1664
1024	PZ89310	Large Panel 0 - 1023
1024	PZ89320	Large Panel 1024 - 2047

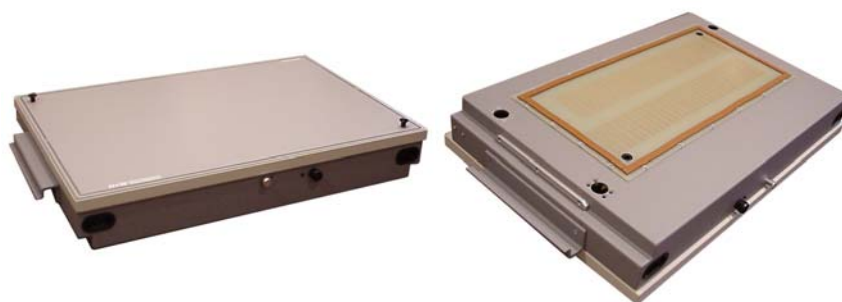
Teradyne/Spectrum 8800 Systems (For IPTE PA506x Applications Only)

Test Points	Part Number	Description
1280	PZ88101	Spectrum Interface W/Hardware
2560	PZ88201	Spectrum Interface W/Hardware

H+W TEST PRODUCTS

Home of **THE REBOUNDER®**

Test Research, Inc. (TRI)



REBOUNDER® test kits feature two separate "Co-Active Seals"™, "Quick Twist"® Locking Guide Pins, and boards constructed of fine weave G10/FR4, increasing testing reliability and accuracy while simplifying finishing, debugging, and maintenance. All H+W products are backed - up with our "Test-Assured"™ one year warranty -- in writing -- and SAME DAY SHIPMENTS.

H+W Fixture For Test Research, Inc. TR-8001 System	
Part Number	Maximum Board Size
RR84001A	18" x 28" (456 x 711) 3584 Point Loaded Interface Panel Included

H+W Fixture Accessories	
Part Number	Description
* ESD	Adapter Boxes are Available in All Styles All Fixtures are Available w/ ESD Treatment

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H+W TEST PRODUCTS

Other ATE Products

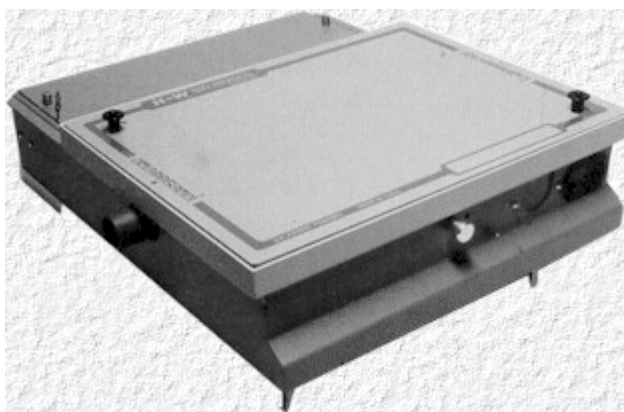
[Factron 101, 3x3, 4400, 4500, 7xx.....p67](#)

[H+W Non-System Specific Deep & Sloped Fixtures.....p70](#)

H+W TEST PRODUCTS

Home of **THE REBOUNDER®**

**Factron 101, 303, 323, 333, 4400, 4500,
720, 730, 750 & 760 ATE Test Systems
(Not For The 74x/780/790/ System)**



REBOUNDER® Test kits feature Two separate "Co-Active Seals", "Quick Twist"® Locking Guide Pins, and boards constructed of fine weave G10/FR4, increasing testing reliability and accuracy while simplifying finishing, debugging and maintenance. All H+W Products are backed - up with our "Test-Assured" one year warranty -- In Writing -- and SAME DAY SHIPMENTS.

<i>H+W</i> Fixtures For Factron 101, 303, 323, 333, 4400, 4500 Systems With Removable Rear I/F Cover	
Part Number	Maximum Board Size
RFO2001A	14" x 18" (355 x 456)
<i>H+W</i> Fixtures For Factron 7xx Systems With Removable Rear I/F Cover	
Part Number	Maximum Board Size
RF72001A	14" x 18" (355 x 456)

H+W Fixture Accessories	
Part Number	Description
*	Adapter Boxes are Available in All Styles
ESD	All Fixtures are Available With ESD Treatment
AFO2213	Interface Filler Plate (For use with Small I/F Panel)
STD2128	Ground Plane For All 14" x 18" UUT Fixtures

All Factron Fixtures Include:
*Interface Spacer Kit (7xx Series)
*Finishing Kit
*Vacuum Port Cuff
*Interface Mounting Hardware

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What's The REBOUNDER® Difference and what does it mean to you?

Two distinct, Co-Active Seals	Ensure maximum reliability by providing continuous sealing back-up function.
Streamlined design.	Faster unit assembling and maintenance.
No Protruding metal bars.	Highly suitable for Automated Board Handlers.
Outer REBOUND STRIP spring biases the diaphragm board.	Elimination of springs increases UUT area.
Non-movable seals.	Friction wear is reduced, seal life is extended.
Quick Twist® Pins	Quicker finishing and debugging.
	Non-hydrophilic material ensures stability, consistency and reliability.
	Considerably easier wiring and debugging.

<p>Only G10/FR4 glass epoxy, fine weave material for diaphragm board and probe plate.</p> <p>Upper head opens and holds by itself at any angle, up to 90 Degrees.</p> <p>Test-Assured Warranty</p>	<p>Full one year warranty against defects in material and/or workmanship.</p>
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H+W TEST PRODUCTS

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Deep/Sloped Pan Fixtures
For System Non-Specific Applications

REBOUNDER® Test kits feature Two separate "Co-Active Seals", "Quick Twist"® Locking Guide Pins, and boards constructed of fine weave G10/FR4, increasing testing reliability and accuracy while simplifying finishing, debugging and maintenance. All H+W Products are backed - up with our "Test-Assured" one year warranty -- In Writing -- and SAME DAY SHIPMENTS.

<i>H+W</i> Fixtures W/5" (127mm) Deep Pan, Vacuum Configurations		
Part Number	Maximum Board Size	Description
RC12001A	14" x 18" (355x456)	Rt. Vacuum Port
RC12002A	14" x 18" (355x456)	Left Vacuum Port
RC15001A	2-8" x 14" (203x355) Dual Well	2 Vacuum Ports
<i>H+W</i> Fixtures W/5" Deep Pan, Non-Vacuum (Adapter Box) Style		
Part Number	Overall Size	Description
FC12003A	16" x 20" (406 x 508)	Pan Assy w/ Adpt. Plt.



<i>H+W</i> Fixtures With Sloped Pan, Vacuum Configurations		
Part Number	Maximum Board Size	Description
RC31001A	10" x 14" (253x355)	Rt. Vacuum Port
RC31002A	10" x 14" (253x355)	Left Vacuum Port
RC32001A	14" x 18" (355x456)	Rt. Vacuum Port
RC32002A	14" x 18" (355x456)	Left Vacuum Port
RC33001A	18" x 22" (456 x 557)	Rt. Vacuum Port
RC33002A	18" x 22" (456 x 557)	Left Vacuum Port
RC35001A	2 - 8" x 14" (203 x 355) Dual Well	2 Vacuum Ports
RC36001A	2 - 10" x 18" (253 x 456) Dual Well	2 Vacuum Ports
		
<i>H+W</i> Fixtures With Sloped Pan, Non Vacuum (Adapter Box) Style		
Part Number	Overall Size	Description
FC32003A	16" x 20" (406 x 508)	Pan Assy w/ Adpt. Plt.
FC33003A	20" x 24" (508 x 608)	Pan Assy w/ Adpt. Plt.
		

H+W Fixtures Accessories	
Part Number	Description
STD2183	Side Handles (Alum-A-Grip)
STD2128	Ground Plane For All 14" x 18" and 2 - 8" x 14" Dual Well Fixtures
STD3128	Ground Plane For All 18" x 22" and 2 - 10" x 18" Dual Well Fixtures
ESD	All Fixtures available with ESD Treatment
*	Over Clamps

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Patent Number 5,430,385 & 6,054,869**

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What's The REBOUNDER® Difference and what does it mean to you?

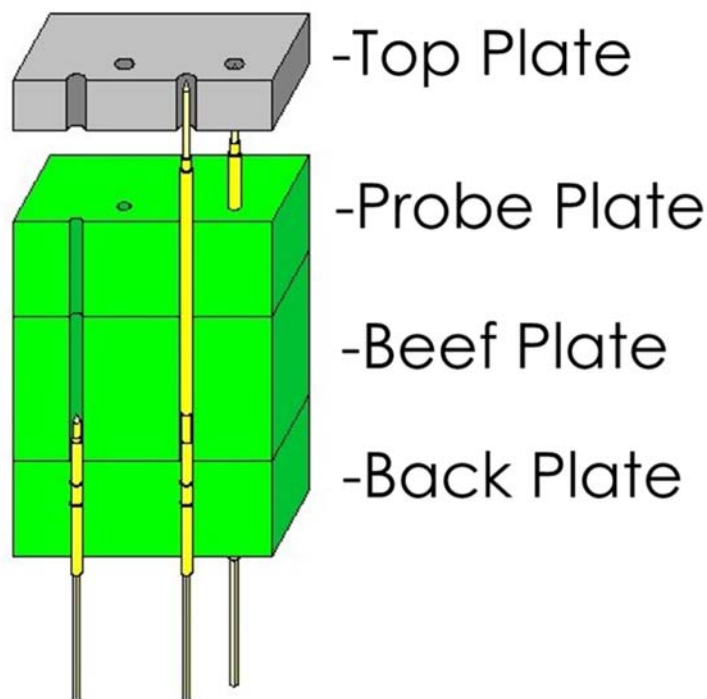
Two distinct, Co-Active Seals	Ensure maximum reliability by providing continuous sealing back-up function.
Streamlined design.	Faster unit assembling and maintenance.
No Protruding metal bars.	Highly suitable for Automated Board Handlers.
Outer REBOUND STRIP spring biases the diaphragm board.	Elimination of springs increases UUT area.
Non-movable seals.	Friction wear is reduced, seal life is extended.
Quick Twist® Pins	Quicker finishing and debugging.
Only G10/FR4 glass epoxy, fine weave material for diaphragm board and probe plate	Non-hydrophilic material ensures stability, consistency and reliability.
Upper head opens and holds by itself at any angle, up to 90 Degrees.	Considerably easier wiring and debugging.
Test-Assured Warranty	Full one year warranty against defects in material and/or workmanship.

H+W TEST PRODUCTS

Home of **THE REBOUNDER®**

X-Probe Fixture Kit

H+W Test Products has developed, with close assistance directly from QA Technology's, a REBOUNDER® test fixture for the new X-Probe™ socketless test probe. Specifically designed to work with all series of test platforms. All REBOUNDER® test kits feature two separate "Co-Active Seals"™, Quick Twist® Locking Guide Pins, and boards constructed of fine weave G10/FR4, increasing testing reliability and accuracy while simplifying finishing, debugging, and maintenance. All H+W products are backed - up with our "Test-Assured"™ one year warranty -- in writing -- and SAME DAY SHIPMENTS.



H+W Test Products Rebounder® X-Probe test fixtures have four plates.
Each plate is drilled differently by the fixture finisher.

—**TOP PLATE:** This FR4/G10 material plate is available in a non-ESD or as an ESD-Impregnated version. This plate needs to be drilled with tight tolerance holes to guide the X-Probe™ tips accurately to the targets on the PCB.

—**PROBE PLATE:** This FR4/G10 material plates uses H+W's standard, patented Rebounder® design. This is the same probe plates used in our regular test fixture kits. This plate needs to be drilled with holes slightly larger than the X-Probe's body. These small clearance holes prevent binding, misalignment or float. They help guide the X-Probe™ accurately to its target.

—**BEEF PLATE:** This lightweight, easy to drill material helps guider the X-Probe™. This plate needs to be drilled with holes slightly larger than the X-Probe's body.

—**BACK PLATE:** This high density, FR4/G10 material plate insures maximum strength, minimizes board flex and greatly improves pointing accuracy. This plate needs to be drilled with the required diameter holes to retain the X-Probe™ Interconnect Pin.

<i>How to order</i>	
To order REBOUNDER X-Probe fixtures, select the fixture you require from an H+W product bulletin and specify the fixture model number. Insert an "X" between the "R" and the second letter.	
Example: RG22001A becomes RXG22001A Example: RH32001A becomes RXH32001A	
<i>Available Sizes</i>	
Standard Fixture	Agilent Fixtures
G2 Kits: 14"x18" Max UUT G3 Kits: 18"x22" Max UUT G4 Kits: 18"x28" Max UUT G5 Kits: (2)8"x14" Max UUT G6 Kits: (2)10"x18" Max UUT	RH32 Kits: 15.8"x14.1" Max UUT, (small) Single Bank RH38 Kits: 15.8"x28.3" Max UUT, (large) Double Bank

<i>Test Systems Availability</i>

Agilent (HP) 3065, 3070
Teradyne (GenRad) 2270, 2271, 2276, 228X
Teradyne 88X, 18XX
Teradyne Spectrum 88XX
Teradyne Teststation LH
Test Research, Inc. TR-8001
H+W System Non-Specific



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Patent Number 5,430,385 & 6,054,869

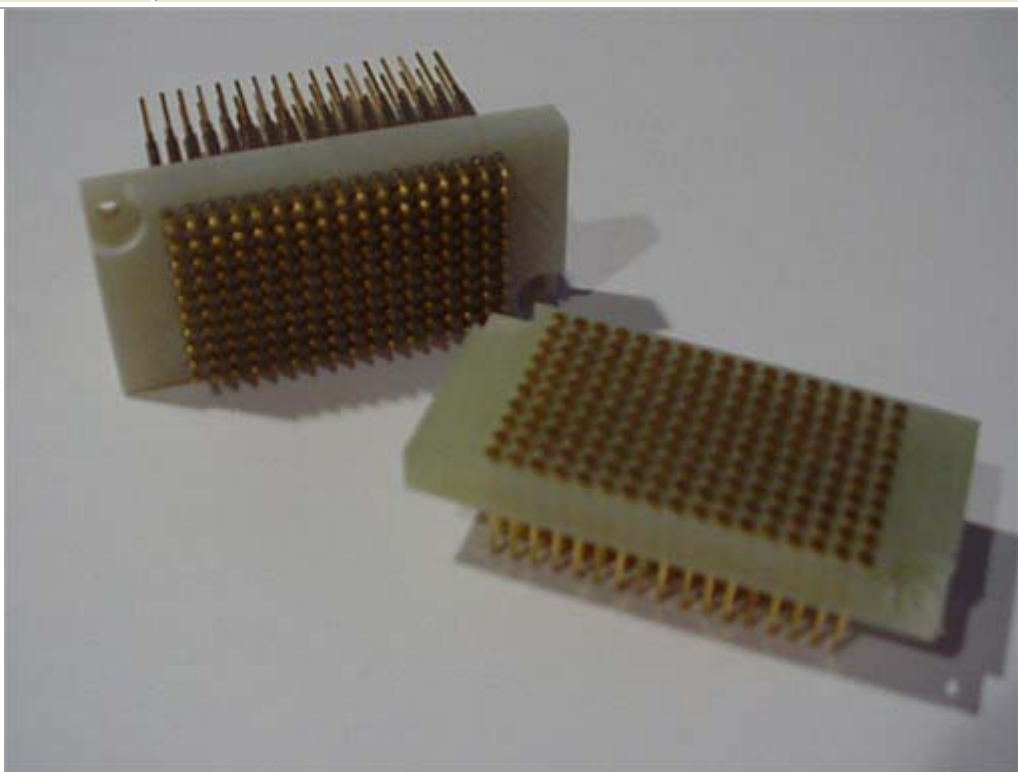
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H+W TEST PRODUCTS

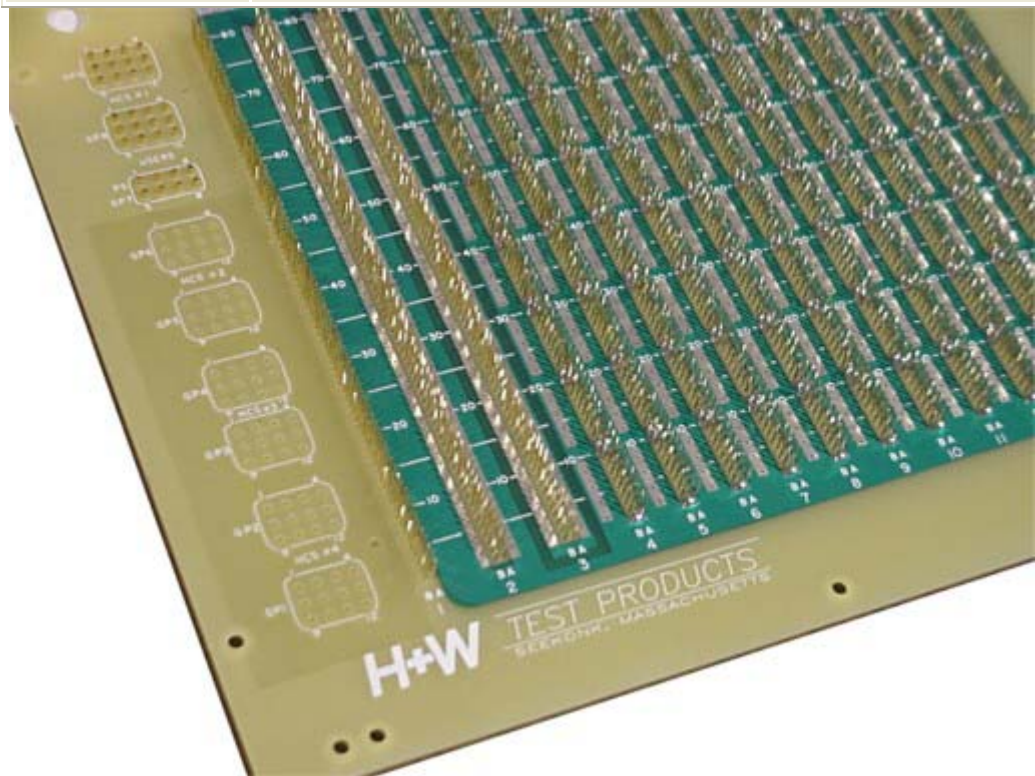
Home of **THE REBOUNDER**®

H+W Test Products has developed interface products for most series of Automated Test Equipment (ATE).

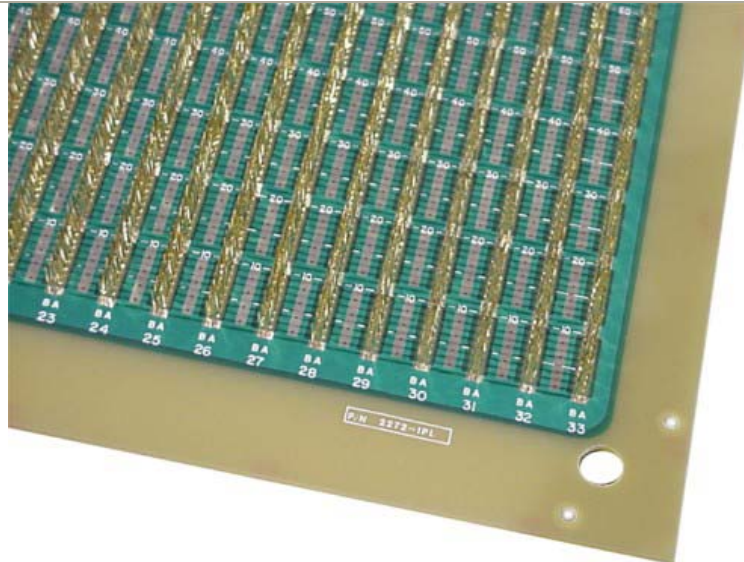
<i>H+W</i> Teradyne (GenRad) 2270/2271	
Part Number	Description
H191170	170 Pt Fixture Wiring Blk w/ WW Tails
H191173	170 Pt Fxt Wiring Blk w/ WW Tails Aligned
H191171	170 Pt Receiver Wiring Blk w/ WW Tails
H191172	170 Pt Rec Wiring Blk w/ Round WW Tails
H191174	170 Pt Rec Wiring Blk w/ WW Tails Aligned



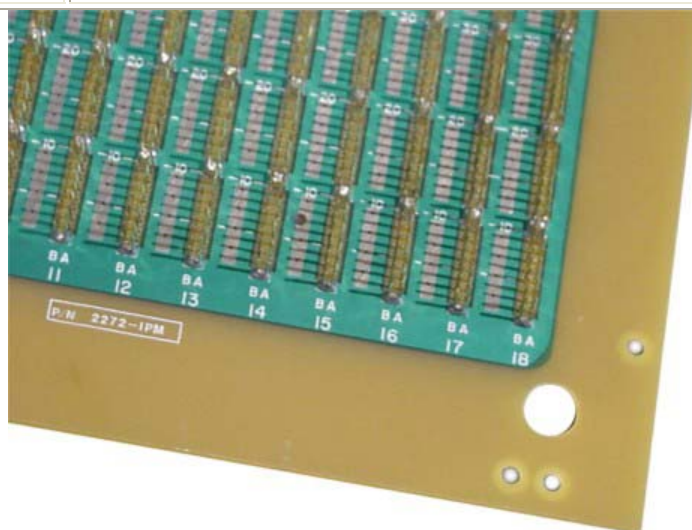
<i>H+W</i> Teradyne (GenRad) 2272	
Part Number	Description
SG29110	Small, 15 Rows, 1024 Test Points
SG29115	Small, 15 Rows, 1536 Test Points
SG29310	Large, 33 Rows, 1024 Test Points
SG29320	Large, 33 Rows, 2048 Test Points
SG29330	Large, 33 Rows, 3072 Test Points
SG29335	Large, 33 Rows, 3840 Test Points



<i>H+W</i> Teradyne (GenRad) 228X	
Part Number	Description
SG29210	Small, 15 Rows, 1024 Test Points
SG29215	Small, 15 Rows, 1536 Test Points
SG29410	Large, 33 Rows, 1024 Test Points
SG29420	Large, 33 Rows, 2048 Test Points
SG29430	Large, 33 Rows, 3072 Test Points
SG29435	Large, 33 Rows, 3840 Test Points



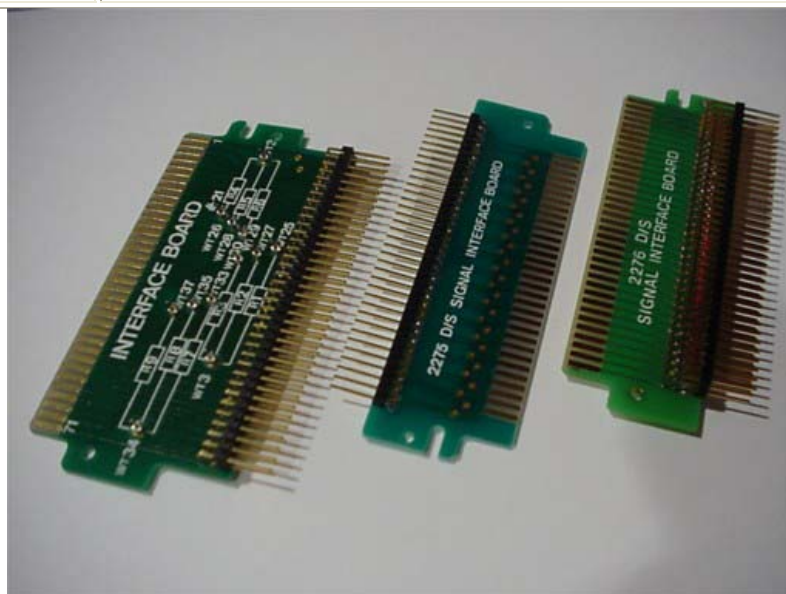
<i>H+W</i> Teradyne (GenRad) 2282/2284	
Part Number	Description
SG29510	Medium, 18 Rows, 1024 Test Points
SG29519	Medium, 18 Rows, 1920 Test Points



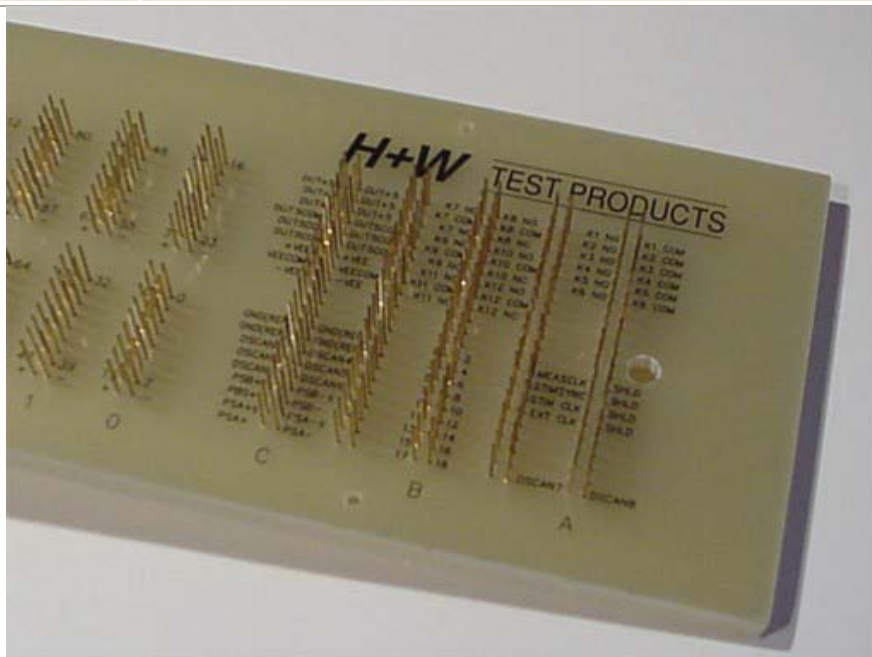
<i>H+W</i> Teradyne (GenRad) 2287L	
Part Number	Description
SG29776	XLarge, 33 Rows, 7680 Test Points

<i>H+W</i> Teradyne TestStation LH	
Part Number	Description
ST42440	XMedium, 19 Rows, 2048 Test Points
ST42428	XMedium, 14 Rows, XXXX Test Points

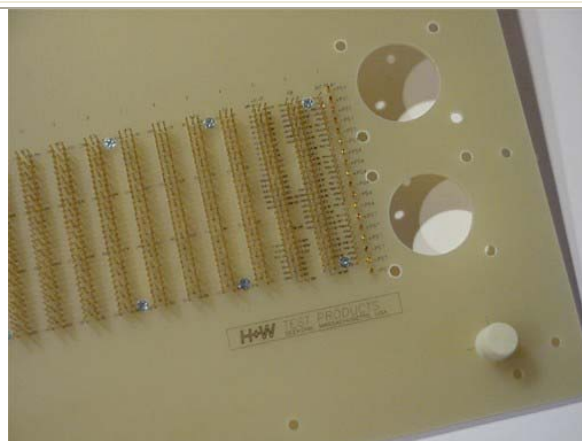
<i>H+W</i> Teradyne (GenRad) 2275, 2286, 2288	
Part Number	Description
H191010	Triple Power Supply Card #21
H191020	System Power Card #0
H191030	2275 Signal Card
H191040	2276/2288 Signal Card



H+W Teradyne (Zehntel) 800 & 1800	
Part Number	Description
SZ89103	Small, 320 Test Points, #0-319
SZ89206	Medium, 640 Test Points, #0-639
SZ89210	Medium, 640 Test Points, #1024-1663
SZ89310	Large, 1024 Test Points, #0-1023
SZ89320	Large, 1024 Test Points, #1024-2047
SZ89330	Large, 1024 Test Points, #2048-3071
SZ89340	Large, 1024 Test Points, #3072-4095



H+W Teradyne Spectrum 8800, 8851, 8852,8855	
Part Number	Description
SZ88110	Small, 1280 Test Points
SZ88210	Medium, 2056 Test Points
SZ88310	Large, 5120 Test Points



<i>H+W</i> Agilent (HP) 306X/3065	
Part Number	Description
SH59001	Interface Patch Panel (Plugs not included)

<i>H+W</i> Agilent (HP) 3070	
Part Number	Description
SH79001	Small, Single Bank Alignment Panel
SH79002	Large, Double Bank Alignment Panel
H190070	Personality Pin (Agilent manufactured)

<i>H+W</i> (Pylon) 1280 Point Receiver	
Part Number	Description
H191160	160 Pt Fixture Wiring Blk w/ WW Tails
H191163	160 Pt Fxt Wiring Blk w/ WW Tails Aligned
H191161	160 Pt Receiver Wiring Blk w/ WW Tails
H191162	160 Pt Rec Wiring Blk w/ Round WW Tails
H191164	160 Pt Rec Wiring Blk w/ WW Tails Aligned