

1. Introduction

The test fixture was designed by Sound Design Technologies to address the customer need of contacting Sound Design Technologies' hybrids for the purpose of basic functional test. It was designed to be flexible, reliable, easy to use, and cost effective. This information note provides details on how to properly operate and maintain the test fixture.

2. Hardware

The test fixture (see [Figure 1](#)) consists of the following three major sections:

- Base unit
- Test nest
- Test head / circuit board

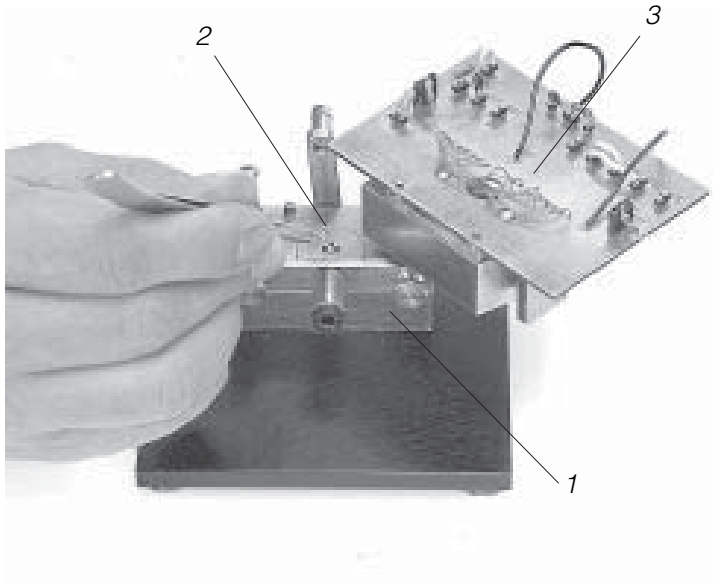


Figure 1: Test Fixture

Base Unit

The base unit makes up the bulk of the fixture and is common to all hybrids being tested.

Test Nest

The test nest is a small, semi-circular locating disk unique to each hybrid. It is responsible for holding the hybrid in place for contacting.

Test Head and Circuit Board

This section contains a plexiglass head that is unique to each hybrid. Mounted on top of this head is the circuit board. Held within the head are the pogo pins and sockets that are wired out to the circuit board. The circuit board has been configured for each product as indicated by the Typical Hearing Instrument Application diagram in the data sheet for that product. The user can modify this configuration as desired.

3. Assembling Test Fixture

To prevent damage during transport, the pogo pins are packaged separately from the test head and therefore will require assembly.

To fully assemble the test head:

1. Insert the thick ends of the pogo pins into the gold sockets in the bottom of the plexiglass head.
2. Using the broad side of a pair of tweezers push onto the tips of the pogo pins to ensure that they are fully inserted. Only the compressible tips should extend beyond the edge of the sockets.

Note: Spare pogo pins and sockets will be provided with each test head.

You are now ready to fully assemble the test fixture:

1. Loosen all four thumb screws at the front of the base unit.
2. Place the test nest into the opening in the lower section with the product code facing up.
3. Tighten the lower two thumb screws to hold the test nest firmly in place.
4. Place the plexiglass portion of the test head/circuit board into the opening in the upper section.
5. Tighten the upper two thumb screws.

4. Operation

To use the test fixture:

1. Place the test fixture on a level surface with the lever away from you.
2. Turn the lever to its left-most position (toward the Sound Design Technologies logo on the circuit board) to raise the upper half of the fixture (see [Figure 2](#)).

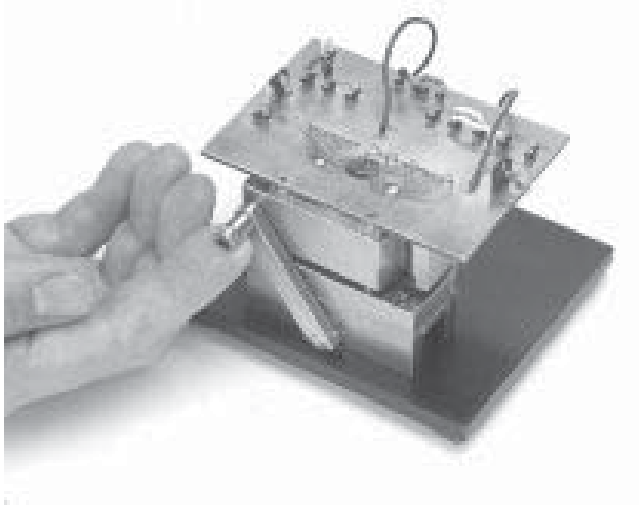


Figure 2: Unlocking Test Fixture

3. The upper half of the fixture should now be in its unlocked position and able to swing freely. Rotate this section counter-clockwise so that the test nest is exposed.
4. Place the hybrid into the test nest with a pair of fine tipped tweezers or other component handling instrument. The proper orientation of pad 1 is indicated by a dot on the test nest.

Note: All hybrids should be cleaned of any flux or other debris before testing. Always ensure that you are properly grounded before handling components to prevent ESD damage.

5. Rotate the upper half of the fixture back to its closed position so that it rests firmly against the positioning post. Turn the lever to its right-most position to bring the pins in contact with the hybrid.

From time to time a hybrid may stick to the contacting pins when the lever is raised. Should you have access to a vacuum hose, an attachment has been incorporated in the design. This will help to hold the hybrid firmly in place and prevent it from sticking to the contacting pins.

4.1 Changing Setup for Different Hybrids

The test fixture was designed so that it is very easy to change setups for different hybrids. Before changing the setup ensure that the upper half of the base unit is in its unlocked position and rotated away from the lower half to expose the test nest.

To change the test head/circuit board assembly:

1. Loosen the thumb screws on the upper half of the fixture and lift the assembly out of the fixture.

2. Place the new test head assembly into the opening and tighten the thumb screws so that it is held firmly in place.
3. Similarly, loosen the thumb screws on the lower half of the fixture to remove the test nest and replace it with the new one.

CAUTION: Great care should be taken when handling and storing the test heads to avoid damaging the contacting pins. Always store test heads so that the pins are not leaning against any surfaces.

4.2 Adjusting Contacting Height of Test Fixture

On the lower section of the base unit next to the test nest is a small set screw. This screw sets the height of the upper section of the base unit when it is brought down into its locked position and has been preset at a height that is appropriate for most hybrids. From time to time, this may need to be adjusted, particularly for very thick or very thin hybrids. This can be done using a 0.050 inch hex key, included with the base unit. It is located in a groove on the side of the black base. Ideally, the screw should be set at a height that allows the pogo pins of the test head to compress by approximately half of their travel length when brought into contact with a hybrid. If the screw is set too low, this will reduce the life of the pogo pins. If the screw is set too high, reliable contacting may not be achieved.

5. Programmable and Digital Hybrids

A CS44 socket is included on all circuit boards for programmable and digital hybrids. It is configured to mate with the Sonion or Deltek programming cable (see [Figure 3](#)).

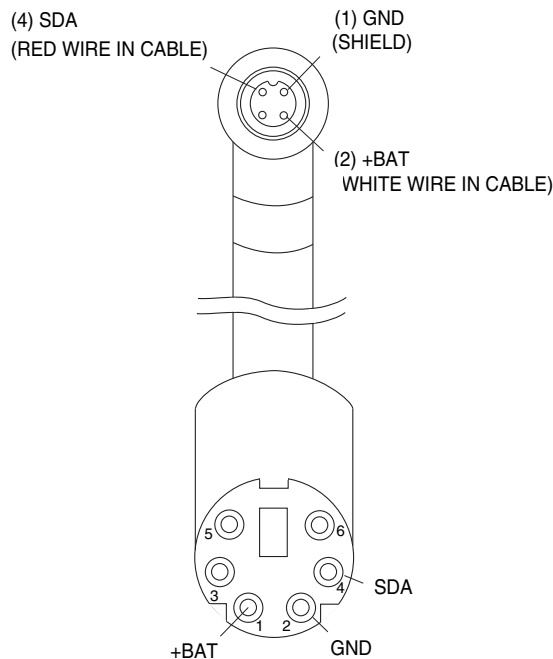


Figure 3: Sonion or Deltek Programming Cable

6. Maintenance

To replace a broken pogo pin:

1. Remove the test head assembly as described in [Changing Setup for Different Hybrids on page 3](#).
2. Pull the broken pin out of the socket from the bottom of the plexiglass test head using fine tipped tweezers.
3. Place the new pin in the socket with tweezers and push down on the end with a flat edge so that it is level with the other pins in its uncompressed position.

To replace a broken wire/socket:

4. Remove the test head assembly as described in [Changing Setup for Different Hybrids on page 3](#).
5. Remove the pogo pin and keep it for reuse.
6. De-solder the blue wire from the circuit board.
7. Using fine tipped tweezers grab the socket at the opening on the bottom side of the plexiglass test head and pull it out. If you are unable to get a firm hold on the bottom side of the socket, try pushing it through from the top side.
8. Feed the blue wire of the new socket through the bottom side of the plexiglass head and pull through the top side of the head until the gold socket is flush with the bottom side of the head.
9. Solder the wire back in place.
10. Replace the pogo pin in the socket as described above.

Note: The exposed portion of every other gold socket has been sheathed in 'shrink-wrap' to prevent them from shorting against each other should they get slightly bent. It is highly recommended that you ensure replacement sockets are similarly isolated.

7. Troubleshooting

The following is provided as a trouble-shooting guide should you encounter problems when testing Sound Design Technologies hybrids with the test fixture.

- Are the power supplies, grounds, and measuring equipment connected properly to the circuit board?
- Is the circuit board configured properly? Are any components, trimmers or jumpers missing or connected improperly?
- Is the hybrid oriented properly in the test nest?
- Are the blue wires extending from the gold sockets broken or de-soldered? Check for cold solder joints.
- Are all the pogo pins intact? Are any missing or broken?
- Are the pogo pins properly lining up with and contacting the hybrid's pads?
- Are any of the pins improperly shorted to each other?

Note: Some pins will be shorted to each other as a result of the configuration of the circuit board, therefore it is necessary to remove all jumpers from the circuit board when checking for shorts.

If you are still unable to locate the problem contact Sound Design Technologies' AWD Applications department at hipapps@sounddes.com.

Note: The hybrid test fixture was intended to provide a means to contact Sound Design Technologies hybrids for the purpose of basic functional test and is not intended as a means to duplicate Sound Design Technologies' production test configuration.

8. Revision History

Version	ECR	Date	Changes
2	145550	July 2007	Update & new layout format.
3	148596	April 2008	Document conversion to new template and editing.

CAUTION

ELECTROSTATIC SENSITIVE DEVICES
DO NOT OPEN PACKAGES OR HANDLE
EXCEPT AT A STATIC-FREE WORKSTATION



DOCUMENT IDENTIFICATION

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SOUND DESIGN TECHNOLOGIES

Mailing Address: P.O. Box 278 , Burlington , Ontario , Canada , L7R 3Y2

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