

Requirements for Optimum Connections Using Elastomer-based Compression Probes

Read This First

Elastomer-based compression probes have specific requirements that you must follow to ensure a proper connection between the probe and test system. The following list identifies these probe handling and maintenance requirements.

- When tightening the probe head to the nut bar or press-in nuts, use care to evenly tighten probe head screws until they are snug. First tighten both bolts until the nut bar makes contact with the board surface, then snug each bolt to a maximum of 1 in-lbs.

NOTE. *To achieve the 1 in-lb torque requirement, finger tighten both bolts and then turn an additional eighth to quarter turn using a screwdriver.*

- Use the key pin on the elastomer holder to properly orient the probe to the test system connection pads.
- Ensure that the contacts on the test system circuit board are free of lint and debris.
- Do not touch the contacts in the elastomers.
- Attach the nut bar to the probe head to prevent damage to the elastomer when the probe is not in use.
- Replace the probe elastomer after removing and reattaching the probe 50 to 100 times.
- After replacing the elastomer for the second or third time, clean the edge of the hybrid using a cotton swab that has been dipped in isopropyl alcohol. After the alcohol dries, carefully remove lint residue using a piece of adhesive tape. Press the adhesive tape onto the face of the elastomer and holder, and then carefully remove the tape by rolling it such that it gradually detaches from the elastomer and holder.



CAUTION. *To prevent static discharge from damaging the hybrid, wear a grounded antistatic wrist strap and clean hybrids only at a static-free work station. Do not allow alcohol to come into contact with the elastomer because alcohol damages the silicon rubber.*

Incorrect Probe Handling Behaviors

The following probe handling behaviors have been found to damage the probe, resulting in the need for probe repairs or replacement.

- Tightening down the probe head on one side before beginning the other side. This will warp the elastomer holder and other probe head chassis parts.
- Over tightening the probe head. This can cause damage to the probe head and warp or deform some of the plastic parts.
- Allowing alcohol, benzene, toluene, or other similar solvents to come into contact with the elastomer. Solvents like these damage the silicon rubber of the elastomer.
- Torquing down the probe head with the probe head oriented 180 degrees from the proper orientation. Torquing down the elastomer holder in this position will deform the keying pin and will require the replacement of the elastomer holder.
- Not keeping a nut bar attached to the probe head when not in use. This permits damage to the elastomer and lead to intermittent connection problems.

Addressing Probe Connection Problems

If you suspect that you have a probe connection problem, perform the following:

- Undo the probe head, and then reattach it being sure to tighten each side incrementally to the required torque.
- Use a magnifying glass or microscope with at least 20X magnification to look for damaged pins on the elastomer. You must look at both sides of the elastomer. If you see damaged elastomer pins, you must replace the elastomer. For elastomer replacement instructions, refer to your probe instruction manual.
- Remove possible dust or lint contamination from the elastomer and holder using a piece of adhesive tape. Press the adhesive tape onto the face of the elastomer and holder, and then carefully remove the tape by rolling it such that it gradually detaches from the elastomer and holder.

Additional Information

For further information, refer to the elastomer-based compression probe instruction manual that was included with your Tektronix logic analyzer.