ARDENT CONCEPTS
Signal Integrity is our Passion

APPLICATION NOTE

SCRUB-R – MAINTENANCE AND PIN REPLACEMENT

1. Purpose:

1.1. The purpose of this procedure is to guide in the removal and replacement of RC Scrub-R wireforms, as well as ensure a clean connection to the mating surface before reinsertion.

2. Scope:

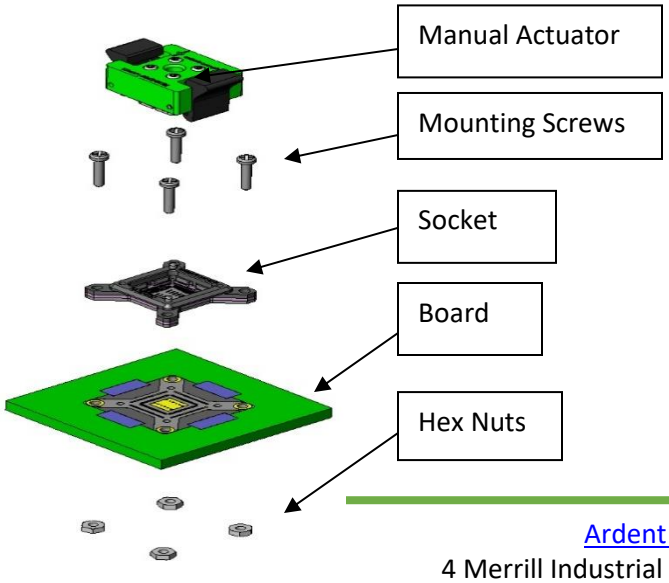
2.1. This procedure is applied to all socket assemblies using Ardent Concepts' RC Scrub-R technology.

3. Responsibilities:

3.1. It is the responsibility of anyone involved in the replacement of Scrub-Rs to ensure this process is followed while handling the products described in Section 2.1.

4. References:

4.1. General Socket Anatomy



5. Procedure:

5.1. Maintenance Notes:

5.1.1. Clean, dry compressed air can be used to remove debris from the inside of the socket every 10,000 insertions, or when the handler is stopped to change out trays. This can be done without removing the socket from the board. This will remove non-organic debris. (Reference Doc: AE-AN-SC-001)

5.1.2. If there are oils present from handling the socket or from the handler, the socket can be cleaned in an ultrasonic bath for 1/2 an hour with 99% isopropyl alcohol. The socket must be dried thoroughly before reuse. This should preferably be done by forced air or by putting the socket through one heat cycle. If you do not use heat, and use pressurize air only, the socket must be inspected under magnification to be sure there is no trapped alcohol in the cavities. (Reference Doc: AE-AN-SC-001)

5.1.3. Contact replacement should be done when the cleaning steps mentioned above no longer restore the contact resistance values to acceptable levels.

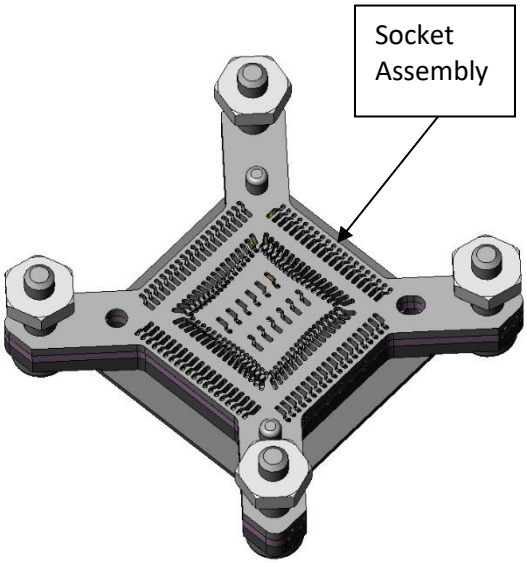
5.1.4. When contacts are replaced, a quick inspection of the board pads can also be done to look for debris or wear. The device guides on the socket can also be carefully inspected at this point for premature wear.

5.1.5. Be sure the socket area on the test board is completely free of debris and oils before installing the socket. The board pads should be hard gold plated, and free of solder. There should be no solder mask in the socket area.

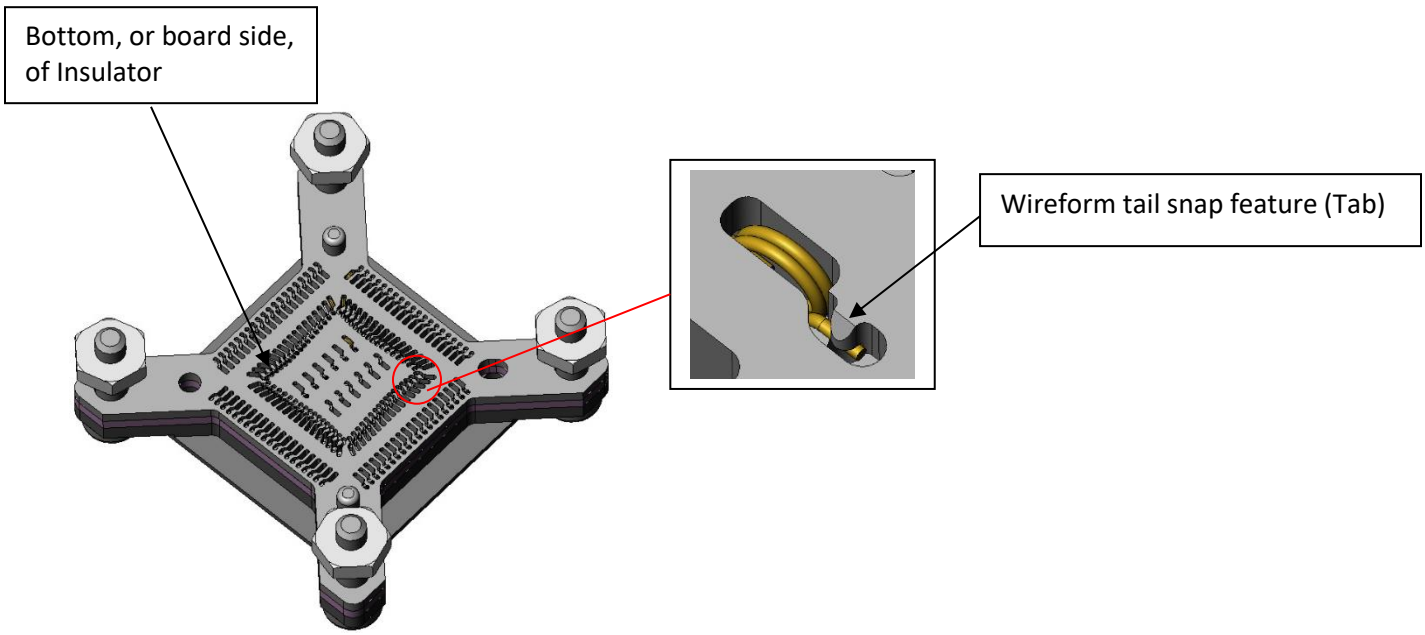
5.2. Contact Removal

5.2.1. Remove manual actuator (lid assembly) and socket from PCB.

5.2.2. Turn socket upside down on a clean bench top under a microscope with a magnification of 10x or greater.

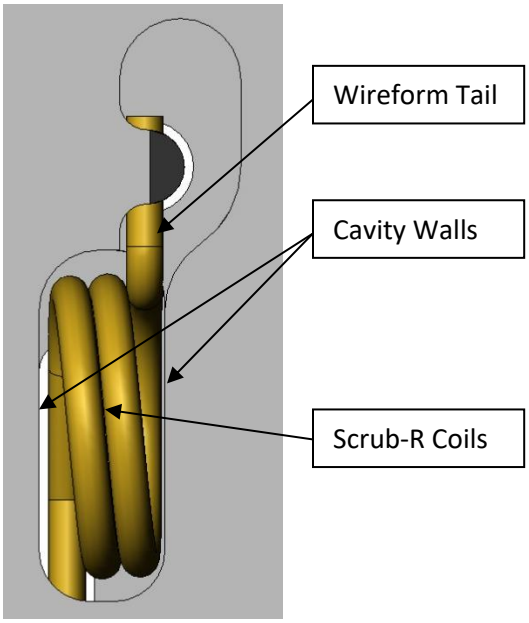


5.2.3. Zoom in to contact location that needs to be replaced

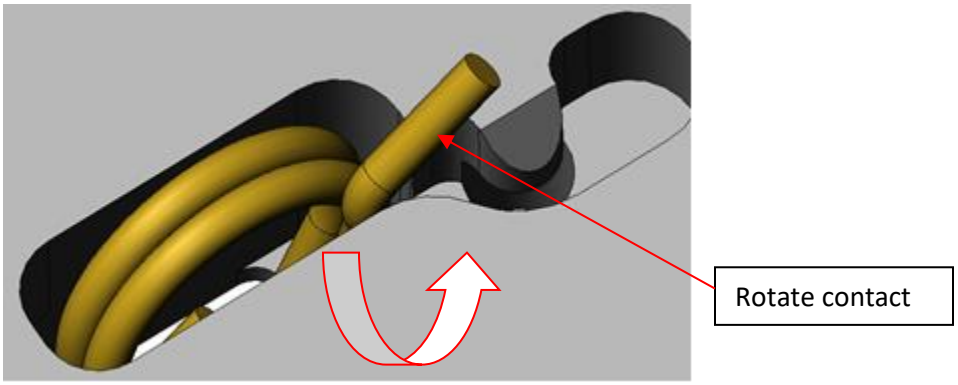


5.2.3.1. Note that each of the pins is held in place by a small plastic tab referred to in the detail view as a *wireform tail snap feature*.

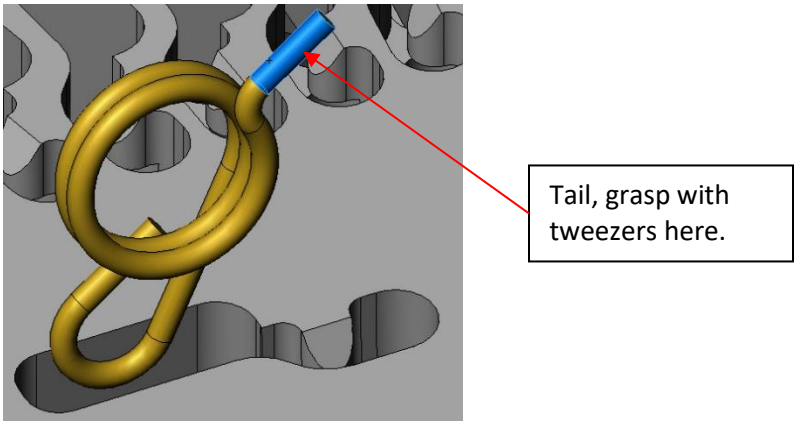
5.2.4. Gently insert dulled hobby knife blade tip under coils and lift slowly until tail disengages from tab. Care should be taken not to damage insulator walls.



5.2.5. Once the tail is disengaged from the plastic tab, the entire contact can be rotated so that the tail sticks out.

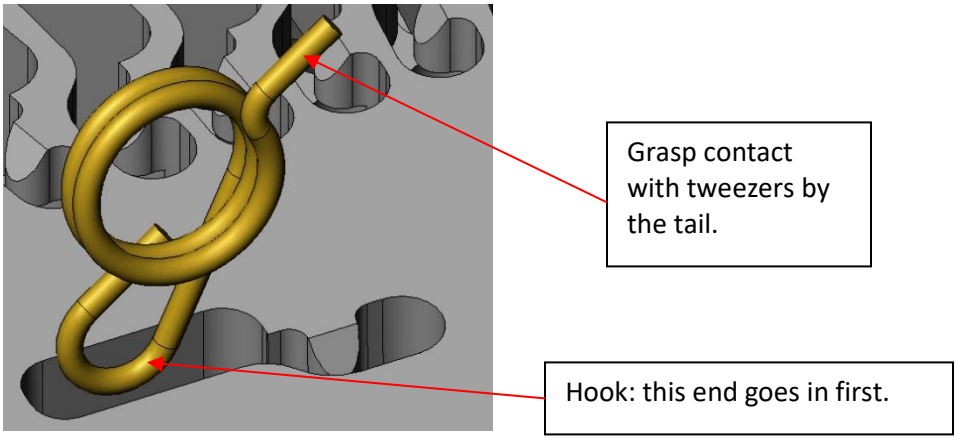


5.2.6. Grasp the tail (shown in blue) with needle-tipped tweezers and lift the contact out. Set the contact aside in a petri dish, vial, or plastic bag for later examination.



5.3. Contact Insertion

5.3.1. To load the new contact, gently grasp it by its tail with needle-tipped tweezers and insert it into the cavity hook-side down.

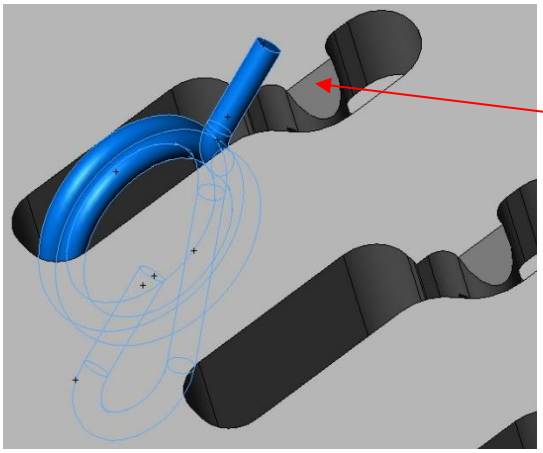


5.3.2. Once inserted, the tail will stick out of the cavity at an angle. This tail will need to be pushed into place so that it snaps down under the tab in its cavity.

5.3.2.1. A sharp hobby knife works best, but care must be taken not to damage the snap feature.

5.3.2.2. The bladed side of the knife should always face away from the snap feature when loading or unloading contacts.

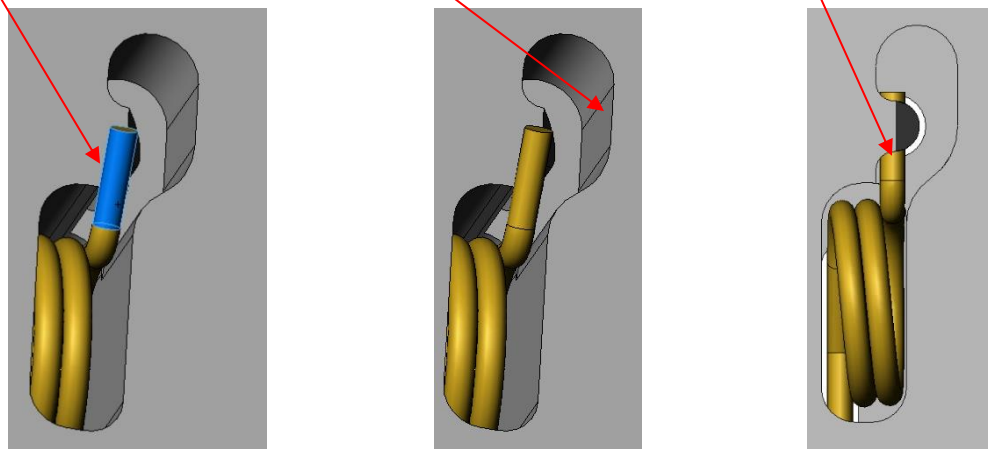
5.3.2.3. Only light downward pressure is necessary. The top of the tab will guide the tail into its cavity as the tail is pressed downward. The compliance of the tail and surrounding plastic will naturally cause the tail to tuck underneath its snap feature.



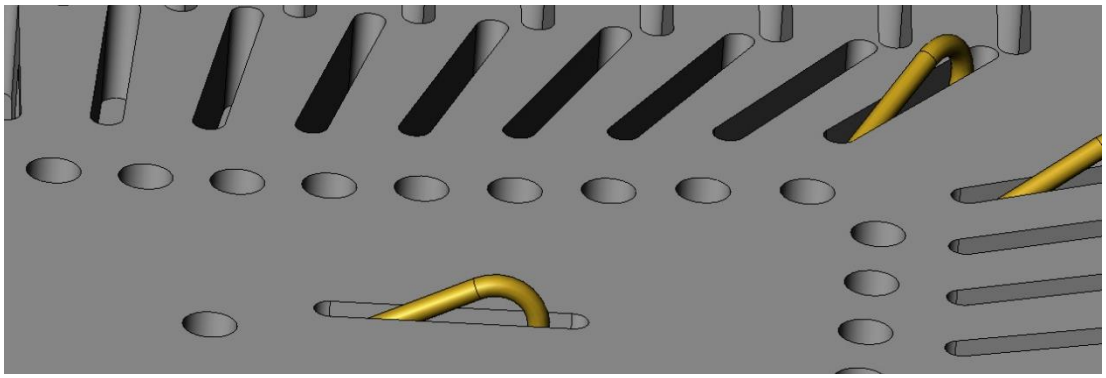
Push here with hobby knife tip

Point the tip of the hobby knife towards this end to avoid damaging the insulator.

Tail correctly tucked in place.



When the contacts are in place, their hooks should protrude out of the top side of the insulator. This may not be noticeable until the insulator is mounted on the back of the shipping cover or on the board, biasing the coils.



Who Is Ardent Concepts?

Ardent Concepts, Inc. is a leading designer and manufacturer of high performance multicoax and coaxial assemblies, connectors, and sockets used in the development of next generation semiconductors and electronics systems. Our core technology is the smallest, fastest, most electrically efficient compression mount connector technology worldwide. As data rate requirements increase and devices and systems shrink, Ardent's products deliver superior signal integrity in a dense footprint that can be reusable across programs to maximize cost savings.