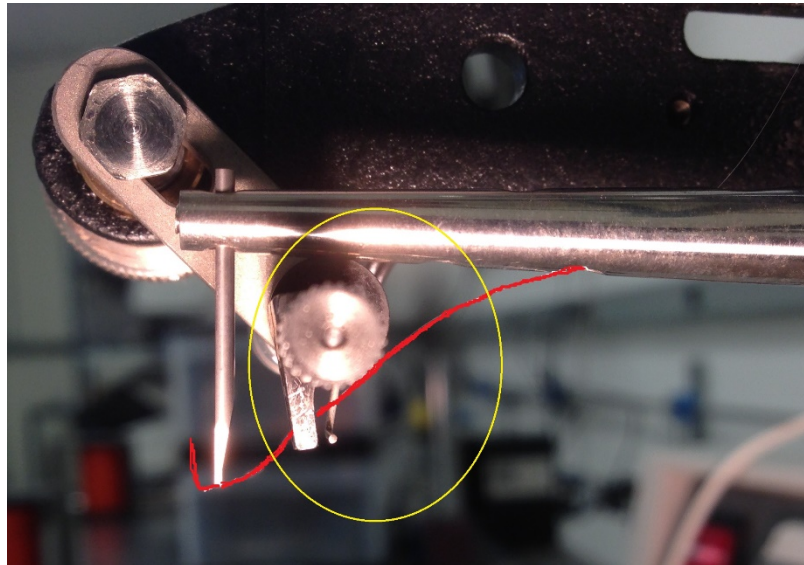


GENERAL PROCESS AND OPERATION SPECIFICATION

Wire Bonder

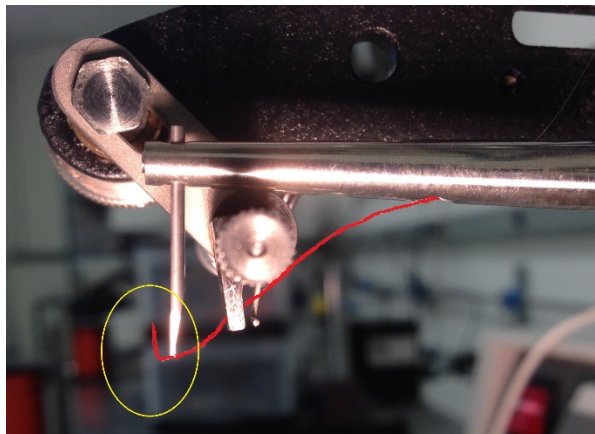
- I. SCOPE
- II. SAFETY
 - A. Always keep your hands out of the working area while the bonding head is in operation
 - B. Never touch, with your hands and material having a low melting point, the heated workholders.
 - C. Personnel who handle or remove PCBs must be grounded to avoid electrostatic discharge damage. A Banana Grounding Socket is located directly below the base cover.
 - D. Open the Left and Right head doors for adjustment only while the machine is in the RESET position
- III. APPLICABLE DOCUMENTS, MATERIALS AND REQUIREMENTS
 - A. For more information about the detailed operation of this tool refer to the K&S Factory manual – “4500 Digital Series Manual Wire Bonders.”
File name: 4500 Digital Series Complete File.pdf.
 - B. For a table of initial POWER, TIME, and FORCE settings, refer to factory manual pg. “6-7”
 - C. Approved wire materials: Al, Ag wire and ribbon
 - D. Materials provided by AggieFab as part of normal lab fees: Al
 - E. Approved substrate materials: Glass, Si, PVDF (with no substrate heating)
- IV. OPERATION
 - A. Replacing Wire Threading
 - 1. RESET the machine and remove workholder from work table
 - 2. Lift Clamp and Tool levers (located behind the microscope on left)
 - 3. Press the “Clamp Open” button and wait for the clamp to open as well as the LED to turn on.
 - 4. Using fine tweezers, grab a straight piece of wire about 5mm in length. Thread the wire through the wedge tip. The hole is very small and angled downward near the bottom of the tip. Using a downward motion while softly scraping the surface of the wedge is necessary to find the hole. Often times, the machine will close up during this step if you exceed a certain amount of time. The machine may also deliver a message saying “To continue, press RESET.” It is fine if this message is not displayed but in either case, press RESET and wait for the machine to reset. Press the “Clamp Open” button and begin the threading process again. This may take several tries.

5. Using fine tweezers, orient the portion of wire that comes before the wedge into the clamp and above the metal feeding bar.



Pull the tail coming out of the front of the wedge to make all portions of the wire fairly taught. Close the clamp by pressing “Clamp Open” and wait for the LED to turn off.

6. Adjust the tail so that it is an appropriate length and oriented straight and upwards, maybe angled slightly away from the wedge.



B. Wire Bonding Setup

1. Lower the workholder all the way down
2. Turn on machine and use the control pad to scroll down until you can see the Loop option. Set the Loop to 1.0.
3. Raise the Search option for Bond 1 & 2 to ~3.00. You can see which Bond number you are on by looking on the top of the screen (Either a 1 or 2 will be highlighted). To toggle which Bond you are on, scroll either up or down to access the desired Bond's options.

4. Return to Bond 1 and Right click the mouse. You may need to press the "Manuel" Button if you click and nothing happens then try clicking again. You should see the wedge tip move down.
5. Raise the workholder until wedge tip is just below the sample.
6. Hit the RESET button.
7. Raise the Loop back up to an appropriate value
8. Make the bond. To make Bond 1, right-click and hold to lower the wedge tip. Lower the Search to lower the wedge tip so that the tip is just above the sample but not touching it. Let go of the right-click to make your first bond. Move the mouse either up or down to reach next bonding point. Repeat process to make Bond 2.

NORMAL OPERATION

SIGNATURES AND REVISION HISTORY

- a. Author of this document: Larry Rehn
- b. Author Title or Role: Technical Manager
- c. Date:
- d. Revision: Original Issue

Approvals:

Technical Manager Signature: _____

Date: _____

Revision History:

Revision	Author	Date
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Rev A	A. Shammai	6/18/14
Rev B		
Rev C		