

# OPERATING PROCEDURES – MANUAL Z MODE

## K&S Gold Wire Bonder

Rev. 12/27/2001

### Workholders

1. Machine power should be **OFF**.
2. Choose one of the 3 types of workholders: dual-in-line, flat pack and TO-5.
3. Connect the T.C. and heater cables of the desired workholder.
4. Position sample on workholder.
  - On the dual-in-line and flat pack holders, adjust the clamps by loosening the four screws.
  - The TO-5 holder uses a magnetic hold down. Align lip of TO-5 package with slit in holder and the magnetic force will pull it into place.
5. Turn base counter-clockwise to lowest position. Set holder aside.



### Capillary Tips

1. To install capillary:
  - Loosen set screw with Allen wrench.
  - Gently push the unwanted capillary down through the head until it drops free into a container then store the container in the **USED** jar.
  - With a tweezers retrieve a fresh capillary from the **NEW** jar.
  - Insert capillary so that the same amount protrudes out of the top and bottom of the transducer.
  - Tighten set screw with Allen wrench.
  - Position the setup gauge under the capillary.
  - While holding gauge, loosen the set screw and push the capillary down until its tip just rests on the gauge.
  - Tighten the set screw.

**NOTE:** Do not move gauge while in contact with capillary tip.

### Thread Wire

1. Power unit **ON**. [Red toggle switch on left panel]
2. To thread gold wire:
  - Set **CLAMP** switch to the up position. [left panel]
  - Ensure that wire is under the glass plate and the wire guide.
  - Pull wire further through wire guides and open jaws of drag clamp and wire clamp.
  - Set **CLAMP** switch to the down position. This holds the wire.

**TIP:** Hold wire with tweezers and snap a portion off. This produces a straight point of wire to insert into the capillary.

- Using tweezers, feed the wire through the capillary so that it protrudes about ½ inch from the tip.
- Click **LEFT** mouse button to go through the **1<sup>st</sup>** and **2<sup>nd</sup>** bonding operation.
- End result is a ball with tail ready for next bonding.

## **Pre-Check**

1. Power unit **ON**. [Red toggle switch on left panel]
2. Ensure that the **1<sup>st</sup>** and **2<sup>nd</sup>** indicators are on.
3. When the **2<sup>nd</sup>** indicator goes out, set and hold the **TEST** switch in the down position. The U/S indicator should light.
4. Release the **TEST** switch.
5. The temperature of the workholder will ramp. Allow 20-30 minutes for temperature to stabilize.
6. To set temperature, push SET button.
  - Use UP button to increase temperature; use DOWN button to
7. Adjust distance of eyepieces. Set magnification to lowest setting.
8. Toggle switch to **MAN/Z** [right control panel].



## **Operation**

1. Press and hold the sidebutton of the mouse. This lowers the bonding head.
2. While holding the sidebutton, move the mouse to maneuver the bonding area under the capillary.
3. Continue pressing the sidebutton to drop the bonding head to the bonding site.
4. Slowly release the sidebutton. This is the first bond.
5. Move the mouse to position for the second bonding site.
6. Repeat the steps for the second bond.





### **RIGHT CONTROL PANEL**

The **SHORT** indicator turns on if a small gap exists between the tail and wand – decrease **TAIL** dial.

The **OPEN** indicator turns on if a large gap exists between the tail and the wand – increase **TAIL** dial.

### **Completion**

1. Turn off power.
2. Remove workholder from stage.
3. Allow to cool before removing sample.

**RECORD USE IN  
LOG BOOK.**