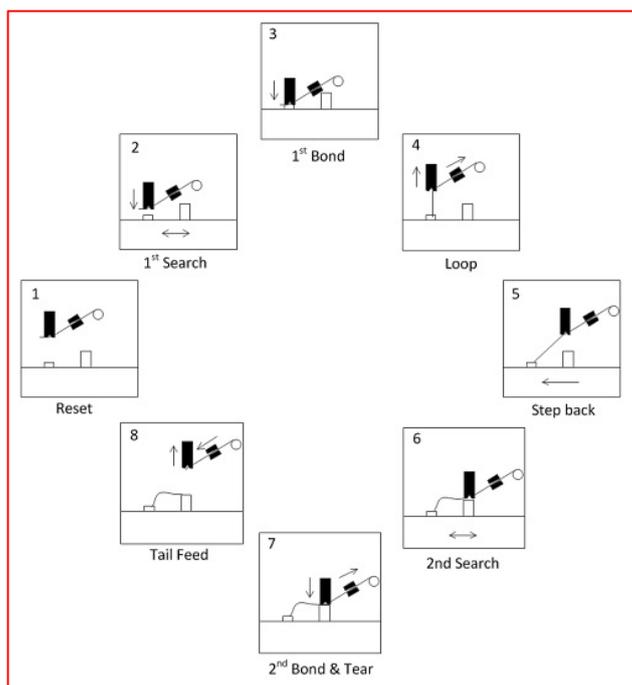


- **SCOPE:** Explanation of the wedge-wedge bonding cycle to ultrasonically weld electrical interconnects in microelectronics.

The fine wire wedge bonding sequence for both manual and automatic equipment can be explained in eight steps:



- **STEP 1: RESET / REST / IDLE**  
Wire is located under the bonding tool between surfaces (chip or lead).
- **STEP 2: FIRST SEARCH**  
Tool descends to first bond search height for final positional (X, Y) adjustment.
- **STEP 3: FIRST BOND**  
Tool brought into contact with surface – force is pre-set value – ultrasonic energy applied for pre-set time to form first bond weld.
- **STEP 4: LOOP HEIGHT**  
Tool is raised to pay wire out from spool (clamps open) to pre-set loop height value.
- **STEP 5: LOOP FORMATION**  
Tool steps back to second bond position (manual or automatic).
- **STEP 6: SECOND SEARCH**  
Tool descends to second bond search height for final positional (X, Y) adjustment.
- **STEP 7: SECOND BOND + TERMINATION**  
Tool brought into contact with surface – second bond made as stage 2.
- **STEP 8: TAIL FEED**  
Following 2<sup>nd</sup> bond, clamps close and break off wire at bond heel (or via table tear). Wire is then fed back under the tool (tail) for next bond.

For further information on wedge bonding equipment and consumables:

<https://www.inseto.co.uk/microelectronic-equipment-kns-Asterion-automatic-wedge-bonder.php>

<https://www.inseto.co.uk/microelectronic-equipment-mpp-iBond-5000-wedge-bonder.php>

<https://www.inseto.co.uk/microelectronic-materials-coining-ultrasonic-bonding-wire-and-ribbon.php>

<https://www.inseto.co.uk/microelectronic-materials-mpp-bonding-tools.php>