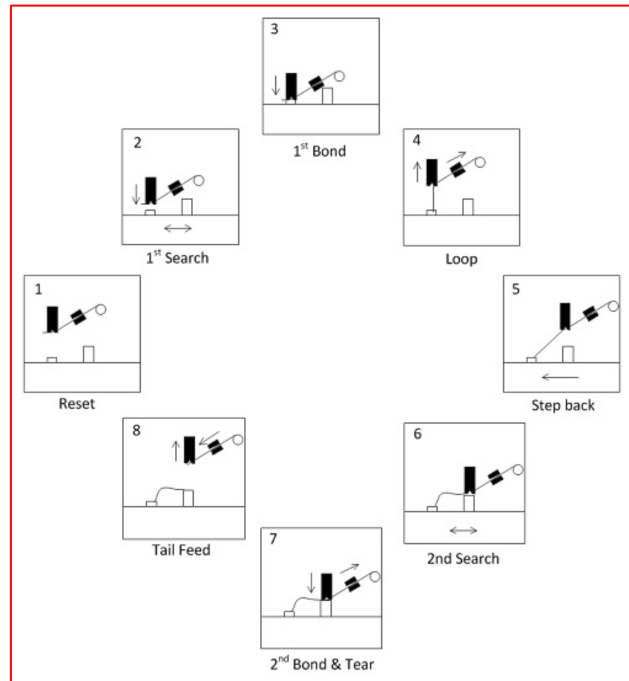
inseto	THE FINE WIRE WEDGE BOND CYCLE	
	ADVANCED TECHNOLOGY FOR RESEARCH & INDUSTRY	KNOWLEDGE BASE FACT SHEET

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

The fine wire wedge bonding cycle for both manual and automatic equipment can be explained in six 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 2nd 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.