THE BALL BOND CYLE

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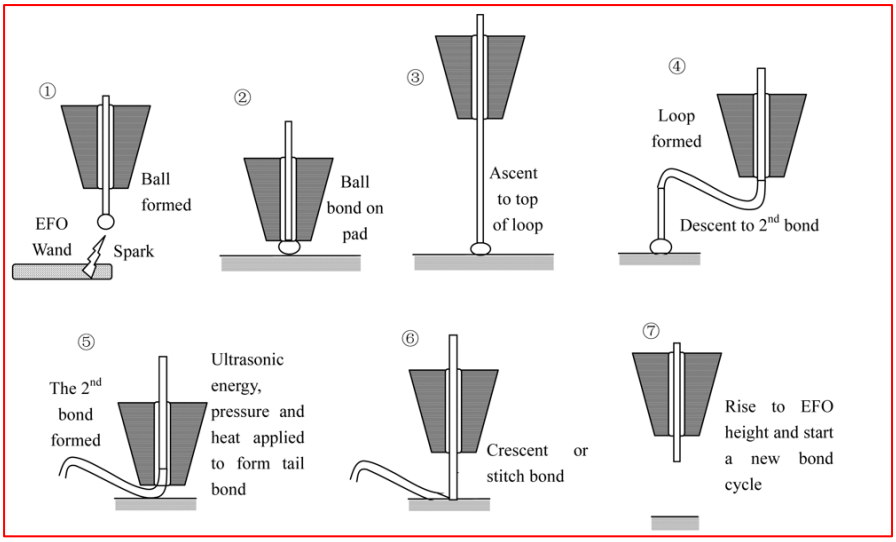
- SCOPE: Explanation of the ball bonding cycle for ultrasonically welding electrical interconnects in microelectronics.

The Ball Bonding cycle for both manual and automatic machines can be explained in seven steps:



- **STEP 1: BALL FORMATION**
  Spark from EFO wand melts wire to form ball for first bond.

- **STEP 2: FIRST BOND**
  Ball bond ready to commence. Tool brought over first bond position (X, Y) and down into contact with surface – force is pre-set value – ultrasonic energy applied for pre-set time to form first bond.

- **STEP 3: LOOP HEIGHT**
  Tool is raised to pay wire out from spool (clamps open) to loop height value.

- **STEP 4: LOOP FORMATION**
  Tool moved to second bond position (manually or automatically).

- **STEP 5: SECOND BOND**
  Tool brought into contact with surface – second bond made as step 2.

- **STEP 6: TERMINATION**
  Following 2nd bond, tool moves up to pre-set height (tail), clamps close and break off wire at 2nd bond heel.

- **STEP 7: BALL FORMATON**
  Automatic repeat of step 1 to begin cycle again.