

| Troubleshooting Guide for Fine Pitch Applications and Bonding Problems Related to Capillary Wire Bonding | | |
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| Symptom | Possible Cause | Possible Remedy |
| Broken wire above ball | Insufficient wire for loop height | Increase loop parameters in order to increase loop length |
| | Ball security height too low | Increase ball security height, kink height, or reverse motion |
| Sagging Loops | Too much wire in loops causing loops to sag downward | Decrease loop factor |
| | | Increase reverse length |
| | | Check/clean wire tensioner |
| | Wedge bond placement too close to the tip of the lead | "Reteach" wedge position to increase the surface level of the wedge bond |
| | Bond height incorrectly set | "Reteach" bond height |
| Non-sticking ball | Poor or contaminated pad materials may have caused bond to fail after non-stick detector sampling | Check if the non-stick detector timing and current signals are correct |
| | Bond force too low | Increase bond force |
| | Ultrasonic power too low | Increase ultrasonic power |
| | Free air ball size too small | Increase EFO time or current |
| No ball size | EFO solenoid malfunction | Replace EFO solenoid |
| | Free air ball size too small | Increase EFO time or current |
| Non-sticking wedge | Finger not clamped | Adjust work holder clamp and improve set-up |
| | Leadframe contaminated or poor plating on leadframe | Change bond parameters Inspect material and check quality of incoming leadframe |
| Wire open | Wire feed problem | Adjust wire feed sensor |
| | Dirty wire clamp | Clean wire clamp jaws |
| | Excessive force on wedge | Reduce force on wedge |
| | Excessive power on wedge | Reduce ultrasonic power on wedge |
| Wire short | Tail too long | Carry out wire clamp force check and adjustment |
| | Electrode to wire distance is too small | Carry out EFO height check and adjustment |
| Malformed ball | Excessive ultrasonic power | Reduce ultrasonic power |
| | Inconsistent FAB | Check floating lead |
| | Excessive power/force with poor set-up | Reduce bond lead |
| Golf club bond | Gold wire contacts the torch electrode | Reduce the torch level or the tail length |
| | Torch electrode is dirty | Clean electrode with alcohol |
| | Torch electrode wiring is broken | Repair or replace with new torch electrode |