

Guidelines for Handling Altera Wafer Level Chip Scale Package

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AN-752



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Proper care must be taken when handling Altera's Wafer Level Chip Scale Package (WLCSP) components.

Follow these guidelines.

- Make sure hardened pick-up tools are not used in handling WLCSP devices. Use vacuum pen with the correct suction cup size. The cup must be smaller than actual WLCSP device to ensure vacuum suction.
- **Caution:** Hardened pick-up tools, such as tweezers, may damage components.
- Altera's WLCSP are shipped in a Tape and Reel carrier. Do not store or transport WLCSP devices in containers other than the Tape and Reel carriers. Other containers may cause additional damage to the devices.
- Use appropriate vacuum pressure, 60–70 kilopascal (kPa), on the devices.

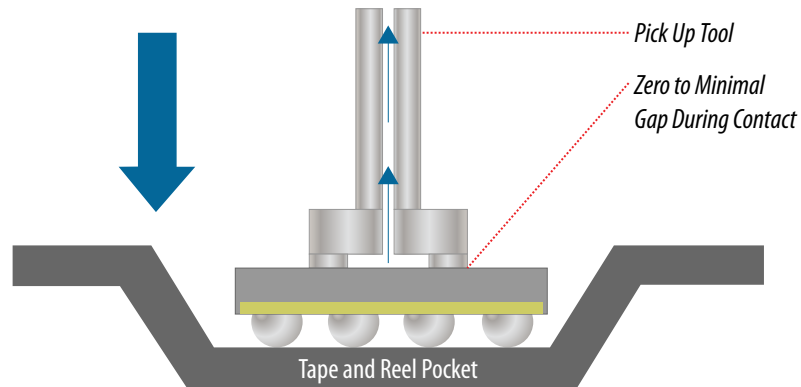
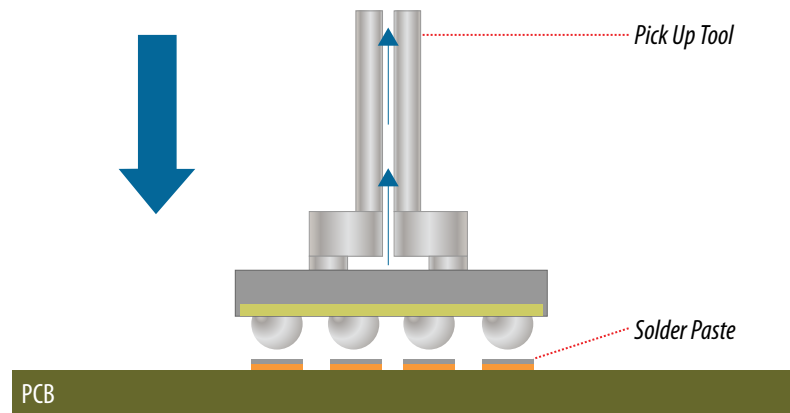
Pick and Place Process

When picking up the component from the Tape and Reel carrier, Altera recommends that you place the pick-up tool at a vertical-height distance from the WLCSP.

- Use vacuum pressure at approximately 60–70 kPa to lift the WLCSP from the pocket of the tape. This practice prevents direct contact on the WLCSP during pick-up.
- Set vertical-height distance between the WLCSP and the pick-up tool to zero (minimal gap).
- The vacuum lifts the package out from the pocket of the tape.
- Similarly, set vertical-height distance during placement on the board to zero to avoid overdrive beyond the limit of PCB.

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Figure 1: Zero Vertical-Height Distance between WLCSP and Pick-Up Tool**Figure 2: Zero Vertical-Height Distance During Board Placement**

Vacuum Pen

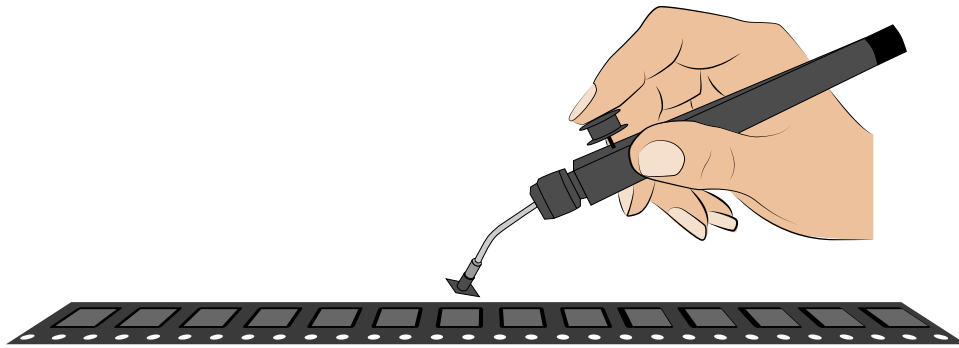
To ensure the components do not get damaged, use vacuum pens with suction cups smaller than the size of the component.

Figure 3: Example of a Vacuum Pen

The figure shows a HANDI-VAC[®] KIT-ESD vacuum pen.



Figure 4: Using the Correct Vacuum Pen



Document Revision History

2015.11.02

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The following table lists the revision history for this document.

Table 1: Document Revision History

Date	Version	Changes
November 2015	2015.11.02	Initial release.

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