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Multi-Configuration Process Plate for Diebond Process

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I. Overview

- Diebond process plate is used to hold using vacuum the carrier of package, either leadframe or substrate
- Process plate is replaced on every package conversion and is specifically designed on one package only
- Separate process plates are needed in diebonding – one for dispensing area and another one on bonding area

Fig. 1. Standard process plate for diebond process.

II. Problem Identification

- Product robustness is one critical factor, affected by frequent mechanical changes on the die bonder machine, resulting to possible tilted die defect

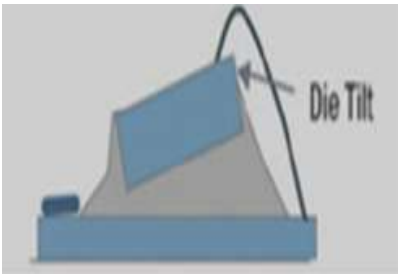

Fig. 2. Die tilt.

- Long conversion time of diebonder machines occurs due to planarity check after switching of process plates for different package size

III. Process Design Solution

- The multi-configuration process plate can be used in two or more different substrate and/or leadframe package sizes, offering flexibility
- No need to change process plates during machine conversion from one package to another, as it will accommodate several semiconductor package configurations

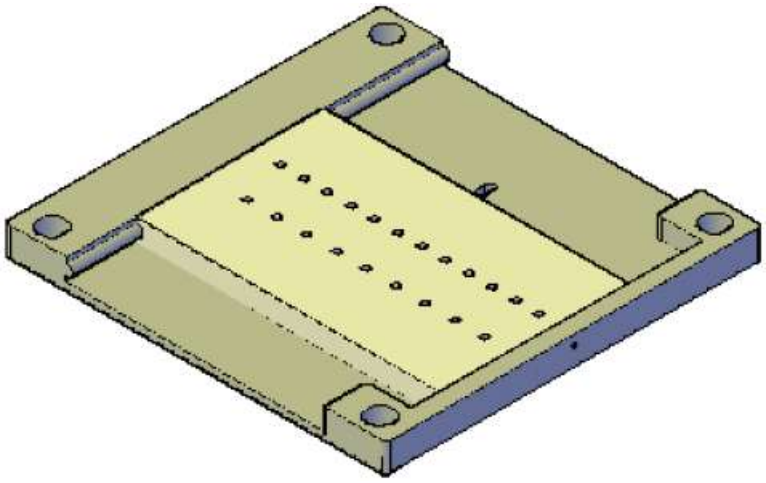

Fig. 3. Multi-configuration process plate.

- The improved process plate design will eliminate the frequent calibration and the time-consuming conversion of process plates, as well as reducing the high cost of process plate fabrication
- The multi-configuration process plate secures the integrity of the semiconductor product during diebond process due to less mechanical conversion

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