Application Study

EARPIECE SPEAKER MESH ASSEMBLY

TASK

The earpiece speaker mesh is one of the more complex components of mobile phones. Placement of this mesh is a challenging application that requires absolute accuracy. In the following pages we present a variety of solutions provided.

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Application Study

APAC BASED FULLY-AUTOMATIC MESH ASSEMBLY WITH DUAL TRAY SHUTTLE

CHALLENGES

- Earpiece speaker mesh is made of flexible material and often awkwardly shaped, making it difficult to peel.
- Earpiece speaker mesh can be picked up by vacuum only in certain defined, small areas where adhesive is applied.
- Mesh needs to be placed extremely accurately into a recessed area within tolerance of ± 0.002" / 0.05 mm.

SOLUTION

- APAC
- Robot Mode RM3065
- Customized tooling
- Vision system
- Dual tray shuttle
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FEATURES & BENEFITS

- A precision chuck, exactly corresponding to the areas of adhesive on the mesh, peels and places the mesh accurately into the target recessed area.
- The dual tray shuttle allows for semi-automated operation. The operator loads/unloads one tray shuttle while the APAC assembles on the other. The only other operator responsibility is changing rolls of adhesive. This solution ensures a fully-automatic operation for around 15 minutes. A future addition of a tray handling station will enable the customer to increase throughput in a cost-effective manner as market conditions warrant.

- The optional vision system ensures an accurate assembly by scanning both the mesh and the target part prior to placement.

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Application Study

AUTOMATED PLACEMENT OF 3-DIMENSIONAL COMBINED EARPIECE SPEAKER MESH AND CUSHION

CHALLENGES

- The part – a combined earpiece speaker mesh and cushion - has a three-dimensional shape that does not correspond to zoned glued areas of the component.
- Placement in very tight tolerances is required with little guidance in the target part housing.

SOLUTION

- APAC
- Robot Mode RM3065
- Customized tooling
- Integrated vision system
- Peel edge stripper assembly
- Rewind reel

FEATURES & BENEFITS

- AccuPlace's peeling technology along with customized tooling allow for consistent peeling of the adhesive component. The custom-designed chuck first places the component horizontally then incorporates air pressure for accurate placement of the die cut component in its three-dimensional form.
- By controlling both peel and place position the integrated vision system ensures accurate placement even onto reflective housings which have no concrete assembly reference.
- The peel edge stripper assembly prevents parts that are not seen (and therefore not picked up) from interfering with the liner drive mechanism and facilitates continued production without interruption.

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