

User Responsibility, Training, and Consequences of Misuse

OASIS prototyping facility, Protofab, operates as a shared research and prototyping facility. All users are expected to follow this SOP, facility policies, and applicable safety guidelines to ensure safe operation, equipment longevity, and equitable access for all users.

This SOP is not a substitute for hands-on training or tool qualification. Refer to User's Manual and Guides for details.

Users must complete required Protofab training and receive authorization prior to independent tool use. In the event of misuse, unintentional error, or non-compliance, corrective actions will be educational, proportional, and focused on preventing recurrence, taking into account the user's experience level and the nature of the issue.

Corrective actions may include:

- Clarification or coaching on proper tool use
- Additional training or temporary supervision
- Temporary suspension of independent tool access
- Restriction to supervised use until competency is re-established

Users may be held responsible for repair, cleaning, or downtime costs only in cases of negligence or repeated misuse.

1. Purpose

This Standard Operating Procedure (SOP) defines the safe and proper use of the Tresky T-5300-W system within Protofab. This tool is used for accurate bonding/placement of components at destination (substrate) using die attach methods and material.

2. Scope

This SOP applies to standard methods of die attach. Non-standard bonding methods and configurations, maintenance, or hardware modifications are outside the scope of this SOP and require prior approval from Protofab staff.

2. Safety & EHS

- PPE such as protective eyewear is mandatory except while using microscope eyepieces. Refer to facility rules for details.



- Hot Surface: The Substrate Holder may be set to an elevated temperature during operation. Contact with heated surfaces can result in skin burns. Users should assume all heated components remain hot until confirmed otherwise.
- Shrapnel/Flying Debris: Improper clamping and collision caused movement functions may generate small fragments or debris. These fragments may become airborne at close range and pose a risk to eyes.
- Mechanical Motion: The alignment stages move during operation and may pinch or strike hands.

3. System Overview

- Maximum Placement Accuracy: <1um
- Bond force: 10-1000g
- XY Movement (Placement Stage): 220mm x 220mm (manual)
 - Work Holder Area: Up to 400mm x 280mm
- Z-Movement :120mm, automatic with 1um resolution
- Bond head Rotation: 360° (unlimited)
- Substrate Holder:
 - 100mm x 100mm Universal, Vacuum Based
 - 52mm x 52mm Heating Plate (400°C max) with cooling
- Wafer (8" max) XY table drawer with die ejector



4. Application

- Flip-Chip with ultrasonic die attach
- Flip-Chip with adhesives or anisotropic foils
- Eutectic bonding (AuSn, AuAg or Copper Pillar)
- Die Attach with adhesive (stamped or dispensed)
- Ultrasonic Bonding
- Die Sorting from wafer into waffle pack or gel pack.

5. Pre-use checks (before every run)

- Verify utilities (CDA/vacuum) in range
- Visual inspection / cleanliness such as epoxy residue, broken or fallen components along movement path.
- Loose tools

6. Standard operating procedure

6.1 Startup

- a) XXXXXXXX

6.2 Initialization

- a) XXXXXXXX

6.3 Graphic User Interface

XXXXXXXXXX

6.4 Operating

- XXXXXXXX

6.5 Shutdown

- a) XXXXXXXX

7. Process recipes & Sequences

8. Change log

- Date / author / summary