

STATEMENT OF WORK FORMAT

Automated Epoxy Dispenser

Background

The Detector Development Branch has many on-going projects toward new detector focal planes and MEMS scale devices. Packaging is a significant part of focal plane assemblies and MEMS components. Part of packaging is a die attach process using glue or epoxy to permanently connect two parts together. Typically these processes are extremely technical and require high degree of accuracy of the epoxy volume and positioning. With larger device being fabricated, we require more a system that can automate the process to yield more accurate and repeatable epoxy dispensing.

Objectives

To acquire a bench-top automated epoxy dispenser with automated positioning.

Scope

The contractor will provide a system according to our specifications below.

Tasks or Requirements

Fabricate and deliver an automated epoxy dispense and position system with the following as stated below. The contractor must have demonstrated units working in the field and a proven track record of service and replacement parts availability.

- A brand new unit is required
- Computer provided for control and programming
- Pattern Recognition/Vision System
- Capable of calculating and storing x/y offset between needle and camera
- Capable of calculating and storing z-axis offset between needle and height sensor
- Capable of calculating mass flow rate of epoxy and storing (operator will manually measure epoxy mass and input values)
- Available dispensing area 450mm square minimum
- Include vacuum purge station
- Integrated Non-Contact Height Sensor
- Precision Air Regulators
- Low Air Pressure Alarm
- Precision Flow Screw-Type Pump
- Capable of upgrading to jetting pump without hardware modifications to tool.
- Closed-loop motor control with encoder feedback
- Lines and dots of high viscosity fluids
- Tool-free removal of pump from robot.
- Tool-free disassembly of wetted parts for quick and easy cleaning

- Fast pump screw cartridge changeover
- Include minimum 2 pump screw cartridges
- System set-up and training
- Manual on clean room paper

Acceptance

- A brand new unit is required meeting all specifications above.
- Cleanliness of the system - The system must be clean and free of residue from prior process, machining or storage. Exterior surface parts must be clean and free of grease or dust. The system frame and covers must be clean, and free of rust.
- The system must be suitable for use in a Class 10,000 cleanroom.
- A field service engineer is to install the system on-site at GSFC's cleanroom and shall provide operator training of the system.
- Together with GSFC technical personnel, the field service engineer is to review the system, demonstrate and confirm that the system functions properly using appropriate test pieces. If not confirmed the tool will not be accepted.

Deliverables or Delivery schedule

- Deliver the unit system that meet or exceed the specs. Listed above.
- Set up and install all components at GSFC's cleanroom.
- Demonstrate system with specified performance/acceptance criteria (described above). Acceptance of system will be conditional upon successful demonstration of functions.
- Provide user training for equipment operation.
- Provide operation manual on clean room compatible paper.
- Equipment warranty on parts and labor for at least one year.
- Schedule - Shipment within 4 weeks after receipt of order.

Place of Performance

The system will be built at offsite at the contractor facility, however, the final acceptance, installation, and training will be at GSFC in Code 553 laboratory.

Period of Performance

Equipment warranty on parts and labor for at least one year