Manufacturing Engineer – Precision Tooling & Automation

Location: Lowell, MA
Team: Manufacturing Engineering

About Sangtera

Sangtera is developing a new class of microhydraulic actuators for precision robotics and semiconductor-scale assembly systems. Our technology combines MEMS-scale structures with precision mechanical systems to produce extremely compact, high-force actuators.

As our technology transitions from research prototypes toward manufacturing, we are building the tools, fixtures, and automated processes required to assemble miniature precision devices reliably and at scale.

Role Overview

We are seeking a **Manufacturing Engineer – Precision Tooling & Automation** to develop the tooling, fixtures, and assembly processes that will enable production of Sangtera's miniature actuator platform.

Reporting to the **Director of Manufacturing Engineering**, you will design, build, and validate the equipment used to manufacture our products—from precision assembly fixtures and custom tooling to semi-automated manufacturing equipment. This is a highly hands-on engineering role involving rapid prototyping, machine building, mechanical design, and continuous experimentation in the lab.

You will work closely with the technical team to transform laboratory assembly methods into robust, scalable manufacturing processes. As our products and manufacturing techniques evolve, you will continuously improve ease of use, reduce cycle time, increase yield, and enable high volume production.

You will create and maintain accurate bills of materials, equipment master sheets, and CAD models for inhouse fixtures and off-the shelf equipment. You will generate and update process, training, and preventive maintenance documentation associated with tools and fixtures.

This is a hand-on, full-time in person position, based in Lowell, MA.

Required Skills

- BS or MS degree in Mechanical Engineering or a related field
- At least 5 years of experience in manufacturing engineering, tooling engineering, automation engineering, or mechanical product development
- At least 3 years of hands-on prototyping experience in CNC machining and CAM
- Strong mechanical design capability using CAD (Onshape preferred)
- Experience designing and building custom tooling, fixtures, or manufacturing equipment
- Experience assembling, debugging, and improving mechanical systems
- Strong practical engineering skills with the ability to move rapidly from concept to working hardware
- Comfortable spending significant time in the laboratory building, testing, and refining equipment
- Refining/redesigning equipment components after testing, machining, and retesting them iteratively
- Hands-on process improvement experience using Six Sigma methods
- Experience applying lean concepts in tooling design

Desired Skills

- Design of automated or semi-automated assembly equipment
- Mechatronics, motion systems, sensors, and controls
- Precision assembly of miniature or fragile components
- Vacuum handling and precision fixturing of thin film and millimeter-scale parts
- Swiss machining or other precision manufacturing methods with focus on small components
- Electrical feed-throughs and instrumentation
- Tribology, sealing systems, or fluidic components
- Design for manufacturability (DFM) and manufacturing process optimization
- Cleanroom experience a plus

- Machine vision integration a plus
- Experience with MEMS packaging or semiconductor manufacturing equipment a plus

What Makes This Role Unique

This role is about **building the factory before the factory exists**.

You will create the tools, fixtures, equipment, and manufacturing processes that make production possible. You will invent novel assembly techniques, build custom equipment, and solve manufacturing challenges for miniature devices where commercial solutions often do not exist.

The work combines precision mechanical engineering, automation, manufacturing process development, and hands-on experimentation. You will have the opportunity to define how an entirely new class of actuator is manufactured, from the earliest prototypes through scalable production. If you enjoy building hardware, developing manufacturing equipment, and turning engineering concepts into repeatable processes, this role offers an exceptional opportunity to have lasting impact.

We value rigor, curiosity, and people who like building real things. If you enjoy turning complex, coupled physical systems into robust products, we'd love to talk.

Note to recruiters

Sangtera does not accept unsolicited agency / recruiter provided resumes.
Sangtera is not responsible for any fees related to unsolicited resumes provided by recruiting agents.
Sangtera reserves the right to use any resume submitted to us without accepting contractual responsibilities to third party recruiters.