

Product Design Engineer

Location: Lowell, MA

Team: CTO Organization – Product Engineering

About Sangtera

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

Role Overview

We are seeking a **Product Design Engineer** to design and prototype key mechanical components of our miniature actuator platform. This role sits at the intersection of precision mechanical engineering, MEMS packaging, and automated assembly systems.

The position requires strong **mechanical product design capability together with hands-on prototyping skills**. The engineer will contribute both to the design of the actuator hardware itself and to the tools used to assemble it.

You will design precision housings, axles, and structural components for miniature actuator systems, while also developing the tooling and processes required to assemble them at scale. This includes hands-on prototyping, rapid iteration, and close collaboration with MEMS, process, and reliability engineering.

Required Skills

- MS or higher degree in Mechanical Engineering or related field
- At least 5 years of product design experience
- Strong mechanical product design capability
- Experience designing **precision mechanical assemblies**
- Experience with **tight tolerance components and small-scale systems**
- CAD design experience (Onshape preferred)
- Hands-on prototyping experience
 - CNC machining

- CAM tools
- 3D printing
- Ability to move quickly from concept to physical prototype
- Strong hands-on mechanical testing and iteration skills
- Experience designing and making tools and fixtures for assembly

Desired Experience

- Experience designing **motors or motor-like systems**
- Design of miniature housings, axles, or rotating mechanisms
- Hands-on experience with **precision manufacturing methods** (e.g., Swiss machining)
- Experience with **seals and moving seals**
- Sealing fluidic systems against evaporation and long-term degradation
- Knowledge of **tribology and wear mechanisms**
- Mechatronics for automated or semi-automated assembly
- Experience handling **thin sheets or fragile small components**
- Experience with **MEMS-scale assembly or packaging**
- Experience designing **electrical feed-throughs**
- Mechanical testing, validation, and assembly of precision systems

What Makes This Role Unique

This role combines **product design, precision mechanical engineering, and manufacturing tooling development** in a way that is rarely found in traditional mechanical engineering positions.

You will not only design the actuator itself, but also define how it is built—bridging the gap between **MEMS-scale devices and manufacturable mechanical systems**.

The work involves:

- Designing miniature, high-performance mechanical systems that operate at the boundary between MEMS and traditional mechanics
- Solving challenges in sealing, tribology, and long-term reliability for fluidic actuator systems
- Creating assembly processes and tooling for fragile, small-scale components
- Working hands-on to rapidly iterate hardware from concept to working prototype

This is an ideal role for engineers who enjoy building real hardware, working across disciplines, and solving fundamentally new problems in precision actuation.

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.