

Precision Plastic Turning

Service Spec Sheet

CNC lathe machining of high-performance plastics into precision cylindrical components for fluid handling, medical/life sciences, semiconductor, aerospace, & laboratory applications.

SERVICE OVERVIEW

Plastic turning shapes raw plastic stock on a rotating lathe to produce round, cylindrical components with tight dimensional control and excellent surface finish. Controlled Fluidics combines precision machinery, in-process measurement, and material expertise to deliver repeatable parts from low (50-200 pieces) through high-volume, automated production.

TECHNICAL CAPABILITIES

Tolerances	±0.002 in (0.51 mm) standard; smaller possible for critical diameters & sealing features.
Size Range	Microscopic inserts & bushings up to cylindrical components with diameters beyond 500 mm & lengths of several meters
Part Geometry	Shafts, spacers, & complex geometries combining turning with cross-drilling, grooving, internal features, & secondary milling
Surface Finish	Standard 16–32 μ m (Ra); down to 4 μ m achievable with optimal turning & polishing
Materials	PTFE, PEEK, ULTEM, COC, & other common & exotic engineering plastics
Secondary Operations	Sanding, polishing, grinding, & laser engraving for fine surface & detail requirements
Production Scale	Low volume & engineering development runs through high-volume automated production (bar feeders, standardized work-holding, repeatable tooling packages)
Process Controls	Machine calibration, thermal management, & in-process measurement (micrometers, calipers) for shift-to-shift & lot-to-lot repeatability

INDUSTRIES & APPLICATIONS



Fluidic Handling

Flowmeter bodies, valve seats, pump components, custom fittings for medical devices, & analytical instruments



Aerospace & EV

Aircraft bushings & bearings, insulating spacers, radar & electronic housings, EV battery cooling loops, fuel & fluid system components



Medical, Life Science, & Microfluidics

Surgical instruments, lab equipment, implantable device components, custom tubing connectors



Lab & Precision Instruments

Lenses & optical mounts, precision measurement components, laser & sensor housings



Semiconductors & Electronics

Wafer handling parts, high-purity insulating components, connector housings for vacuum & aggressive chemistries, semiconductor wet benches



Cross-Industry Fits

Any application requiring leak-tight, repeatable round components with tight tolerances & clean surface finishes

WHY CONTROLLED FLUIDICS

On Spec, On Time, On Point: Repeatable parts through robust process controls & quality systems, keeping customer production lines running seamlessly.

Designed for Manufacturability & Sustainability: Early collaboration with design and manufacturing teams to make parts easier to produce, assemble, maintain, & recycle.

Bridging Workforce & Technology: Investment in automation, standardized work practices, & training absorbs complexity & process optimization on the customer's behalf.

Data-Informed Production: Process data (such as scrap patterns & in-process measurements) stabilizes quality over a part's full lifecycle for regulated & high-reliability markets.

Ready to discuss your plastic turning project?

Contact our team for design review or upload your project's CAD to get started now