



Advanced Industrial Emphasizes CNC Plastic Part Machining Precision and Quality Standards

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Advanced Industrial, a specialized distributor and CNC manufacturer of precision components made primarily from engineering and high-performance plastics based in Mooresville, North Carolina, has outlined the technical practices and quality standards that guide its cnc plastic part machining operations for customers in highly regulated industries. The company detailed how its combination of engineering-grade materials, advanced equipment, and in-house metrology supports the production of tight-tolerance, high-performance plastic components.

The company specializes in supplying precision plastic machined parts and maintains an extensive inventory of premade blanks, including bars, rods, tubes, and sheets. Advanced Industrial operates one of the more technically capable CNC machining floors in the United States, where its plastic machining department relies on state-of-the-art CNC machine tools to achieve tight tolerances and produce intricate designs.

According to Advanced Industrial, its approach to quality begins at the plastics fabrication stage and continues through a proprietary process that spans design, machining, and supply. That process accounts for numerous production variables, including workpiece orientation and workholding, feed rates, cutting speeds,

and tool selection. Determining these parameters in advance allows the company's engineers and technicians to meet challenging or unusual specifications while reducing the risk of chipping and enhancing flexure, dimensional stability, and heat tolerance.

Accuracy and control are central to Advanced Industrial's work because many of its customers require high-performance plastic parts capable of operating in extreme conditions. The company serves a range of sectors with its plastic CNC machining services, including analytical instrumentation, food processing, life sciences, marine, material handling, and sample preparation. Its capabilities also extend to aerospace, automotive, medical equipment, military, electronics, and semiconductor applications, where machined polymers can reduce weight while maintaining strength and reliability.

"Precision in cnc plastic part machining is not a single step but the result of controlling every variable from material selection through final inspection," said Paul Cedrone, CEO of Advanced Industrial. "Our teams plan each project in detail before the first cut, because that discipline is what allows us to hold tight tolerances on demanding, high-performance components."

The company's manufacturing footprint reflects that emphasis on capability. Its shop floor includes fourteen high-speed CNC mills and seven multi-tasking CNC lathes with mill-turn capabilities, allowing the company to address a wide variety of machining challenges. Advanced Industrial offers turnkey services that cover the full production cycle, from initial inquiries and design through production and final delivery. Design support includes product design assistance, tooling selection, engineering consulting, CAD and CAM work, and material selection guidance, while machining operations encompass milling, turning, drilling, grinding, and tapping. Finishing services include polishing and edge finishing.

Quality management is handled through stringent in-house procedures, with inspections and testing conducted to confirm that components meet design tolerance requirements and function as intended. Regular quality checks take place during the machining and finishing stages. The company's in-house metrology equipment includes an optical comparator, two coordinate measuring machines, an inspection system, and a range of conventional measurement tools. Advanced Industrial adheres to industry standards and certifications that include Mil-Spec, ISO, AMS, and RoHS, enabling it to serve customers in demanding applications.

Material expertise is another component of the company's offering. As a Tier 1 manufacturer and distributor of polymers and plastics, Advanced Industrial curates an inventory of engineering-grade materials that retain their properties under extreme temperature, pressure, and chemical conditions. Those materials include acetal, cast nylon, Celazole, Ertalyte, polyetheretherketone, polyimides, polytetrafluoroethylene, semi-transparent plastics such as Ultem and polycarbonate, and Torlon.

"Selecting the right polymer is often as important as the machining itself," Cedrone said. "By combining deep material knowledge with our fabrication and machining capabilities, we help customers avoid costly missteps and arrive at parts that perform reliably in the field."

The company noted that it supports lot sizes up to 5,000 units and focuses on fabricating complex plastic parts with demanding specifications. Advanced Industrial positions its combination of material sourcing, engineering support, and precision machining as a way to help customers move from concept to finished component within a single supplier relationship.

Advanced Industrial provides comprehensive plastic machining services and distribution capabilities for customers across a wide range of challenging industries. For more information, visit www.cncplastics.com.

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Advanced Industrial is a plastic Distributor/Fabricator, specializing in high-performance plastic shapes and CNC-machined components.

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