



Manufacturing Engineer

Location: Brooklyn Park, MN

Reports To: Director, Engineering & Innovation

Position Type: Full Time – Onsite

As a 100% employee-owned company, Aprios Custom MFG offers a dynamic work environment with potential for personal and professional growth, along with a competitive salary and benefits package. Our Employee Stock Ownership Plan (ESOP) ensures that every team member has a stake in the company's success.

The Manufacturing Engineer at Aprios Custom MFG plays a critical role in supporting new injection molding and additive manufacturing programs focusing on manufacturing process development and quality assurance. This role ensures that pre and post-molding processes such as labeling, packaging, fixturing, welding, gluing, leak testing, and washing are developed, validated, and seamlessly integrated into production. Additionally, the Manufacturing Engineer is responsible for defining process requirements, writing IQ/OQ/PQ validation protocols, and working with quality and process engineers to execute them. Pre-molding responsibilities include initiating engineering change orders (ECOs), setting up bills of materials (BOMs), and ensuring necessary documentation is prepared to support a smooth transition into production.

Primary Mission: This role is responsible for the successful implementation and validation of secondary and pre and post-molding processes associated with new molding and additive manufacturing programs. This includes supporting production readiness by ensuring manufacturing solutions are developed efficiently, quality standards are met, and documentation is properly maintained. The role requires close coordination with tooling, processing, quality teams, program management, and customers to ensure timely execution of manufacturing solutions.

Duties and Responsibilities

Manufacturing & Process Development

- Develop and integrate pre and post-molding operations including labeling, packaging, fixturing, ultrasonic and spin welding, gluing, leak testing, and washing process definitions.
- Define process parameters for new production processes and optimize them for efficiency and quality.
- Collaborate with tooling, processing, and quality teams to ensure smooth production ramp-up for new molding and additive manufacturing projects.
- Support factory layout planning and capacity optimization efforts for new manufacturing processes.
- Identify opportunities for automation and process improvements to increase manufacturing efficiency.
- Train manufacturing leads on new/updated manufacturing procedures.



Pre-Molding Activities

- Initiate and manage engineering change orders (ECOs) to ensure smooth implementation of process changes.
- Set up and manage bills of materials (BOMs) for new products and ensure alignment with production requirements.
- Work within ERP and QMS systems to track and manage process changes, material requirements, and production workflows.

Quality & Validation

- Develop and author IQ/OQ/PQ validation protocols for new pre and post-molding processes and secondary manufacturing operations.
- Support Quality Assurance in conducting First Article Inspections (FAI) and documentation review.
- Define critical process parameters (CPPs) and critical quality attributes (CQAs) to ensure process reliability.
- Help define control dimensions during molding, using statistical analysis to validate that if a single critical dimension is within tolerance, other dependent dimensions will also be within tolerance.
- Active participant in CAPA and Customer Complaint meetings.

Required Skills / Abilities

- Strong manufacturing process development and quality validation expertise.
- Proficiency in process validation (IQ/OQ/PQ), documentation, and quality systems.
- Knowledge of CAD platforms and design experience for fixturing and jigs, SolidWorks preferred.
- Experience in pre and post-molding operations such as initiating ECOs, setting up BOMs, labeling, packaging, fixturing, ultrasonic and spin welding, gluing, leak testing, and washing.
- Strong personal time management skills to effectively align individual timelines with broader project schedules.
- Strong analytical and problem-solving skills with a hands-on approach to troubleshooting process issues.
- Experience working within ERP and QMS systems; IQMS experience is a significant benefit.
- Proficiency in label-generating software, Minitab, and inspection tools such as CMM, Zeiss, and Vertex vision systems.
- Knowledge of lean manufacturing, Six Sigma, and process improvement methodologies.
- Familiarity with FDA, ISO 13485/9001, and other regulated industry manufacturing standards is a plus.
- Strong communication skills, both written and verbal, with the ability to document and present findings effectively.



Education / Experience:

- Bachelor's degree in Manufacturing Engineering, Mechanical Engineering, Industrial Engineering, or a related field preferred.
- Preferred experience in injection molding, 3D printing, or other regulated industries such as military, aerospace, medical device, or food manufacturing.
- Experience with process validation, IQ/OQ/PQ, and quality documentation.

Physical / Environmental Requirements

- Prolonged periods of sitting at a desk and working on a computer.
- Hands-on work in a manufacturing environment, including standing, walking, and interacting with production equipment.
- Ability to lift up to 15 pounds occasionally.
- Must be able to access and inspect various areas of manufacturing and production.

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions. This job description is subject to change at any time in order to meet the business needs of Aprios Custom MFG.