

Nicolas Watkins

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SUMMARY

Mechanical Engineer with five years supporting **precision manufacturing, aerospace components, CNC turning**, CNC milling, and Swiss style machining. Translates engineering drawings and GD&T requirements into practical process plans, setup documentation, inspection plans, and production records. Improves tooling, workholding, operation sequence, cycle time, dimensional quality, and manufacturability through hands on engineering support. Resolves tool wear, chatter, dimensional drift, setup variation, and nonconforming conditions with machinists, inspectors, quality engineers, and customer teams. Experience includes CMM inspection, PPAP documentation, AS9100 aligned practices, first article support, blueprint interpretation, and **controlled technical records**. This background supports careful, timely decisions in fast moving manufacturing environments, with a steady focus on customer requirements, quality, cost, and delivery. Ready to help Northstar Precision Components strengthen aerospace production methods and dependable technical execution.

EXPERIENCE

Mechanical Engineer II

July 2024 - Present

AeroForge Precision LLC

Franklin Park, IL

Own manufacturing engineering support for low volume, high mix aerospace components across CNC mills, turning centers, and **Swiss style equipment**. Lead process planning, drawing review, technical troubleshooting, quality coordination, customer responses, and improvement work that protects tolerance, delivery, and production value.

- Converted aerospace drawings and **GD&T** requirements into repeatable CNC process plans for actuator components.
- Redesigned workholding and datum sequencing, reducing rework and improving first piece approval consistency.
- Reviewed tooling access, material requirements, and inspection needs before **production release** with machinists and quality engineers.
- Diagnosed dimensional drift, tool wear, chatter, and setup variation using CMM and in process inspection results.
- Prepared customer responses, revision notes, and **manufacturing records** supporting AS9100 aligned quality reviews.
- Improved **cycle time**, inspection flow, **tooling** strategy, and process risk during cross functional production reviews.

Manufacturing Engineer

June 2022 - June 2024

Midwest Motion Components

Bensenville, IL

Supported precision components for aerospace, motion control, and instrumentation programs. Managed routers, setup sheets, tooling lists, inspection checkpoints, first article coordination, PPAP style records, and production improvements while partnering closely with machinists and quality technicians.

- Built machining routers and setup sheets from customer drawings, geometric tolerances, and finish requirements.
- Resolved thin wall, concentricity, positional tolerance, and repeatability issues through practical tooling changes.
- Coordinated **CMM** reports, gauges, and blueprint requirements for first article and in process inspections.
- Organized **PPAP** style documentation with dimensional evidence, process information, and engineering responses for customer review.
- Converted recurring scrap and setup losses into clearer work instructions and documented process changes.
- Supported **CNC turning** and milling improvements for aerospace and precision mechanical component programs.

Junior Mechanical Engineer

June 2021 - May 2022

Lakeview Precision Works

Addison, IL

Provided supervised engineering support for precision machined parts, including drawing interpretation, production documentation, inspection planning, nonconformance investigation, and controlled record updates. Built practical shop floor knowledge while improving handoffs between engineering, production, and quality.

- Interpreted drawings and verified dimensions before preparing production documentation for **CNC turning** and milling.
- Created setup notes and process sketches clarifying part orientation, datum control, and inspection features.
- Investigated nonconforming dimensions through offsets, tool condition, **workholding**, and inspection data.
- Supported CMM planning by identifying drawing characteristics requiring programmed measurement and blueprint verification.
- Updated controlled records after approved revisions, strengthening traceability across drawings, shop documents, and inspections.
- Joined kaizen activities that reduced setup confusion and standardized machining documentation across production handoffs.

PROJECTS

Actuator Component Process Improvement 📅 2024

Improved setup sequencing for tight tolerance actuator components by clarifying datum strategy, workholding, and inspection flow. Shop feedback made changes practical, and first piece reviews became more consistent.

Precision Inspection Documentation System 📅 2023

Organized routers, setup sheets, CMM checkpoints, and PPAP style evidence for precision customer programs. Clearer records helped quality technicians and machinists work from the same requirements.

LEADERSHIP & AWARDS

- Recognized by engineering and quality peers for dependable resolution of difficult dimensional issues.
- Selected for expanded ownership of aerospace process planning and customer technical documentation.

EDUCATION

Bachelor's Degree in Mechanical Engineering
Northern Illinois University GPA: 3.5
Coursework: Mechanical design, manufacturing processes, materials science, engineering mechanics

2021
DeKalb, IL

CERTIFICATIONS

- GD&T Fundamentals Certificate, ASME Continuing Education 📅 2023
- Introduction to AS9100 Quality Management Systems 📅 2022

TECHNICAL SKILLS

- **CNC Machining:** CNC turning, CNC milling, Swiss lathe machining
- **Engineering Standards:** GD&T, AS9100, PPAP
- **Inspection Systems:** CMM, gauges, first article inspection
- **Technical Drawings:** Blueprint reading, tolerance analysis, revision control
- **Process Engineering:** Process plans, setup sheets, operation sequence
- **Tooling and Fixtures:** Cutting tools, workholding, datum strategy
- **Quality Methods:** Root cause analysis, corrective action, nonconformance review
- **Manufacturing Records:** Routers, inspection plans, technical responses
- **Production Improvement:** Cycle time analysis, scrap reduction, kaizen
- **Aerospace Manufacturing:** Aerospace components, precision parts, ITAR programs

SKILLS

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|-------------------------|---------------------------|------------------------------|-------------------------------|
| • CNC turning | • Blueprint reading | • CMM inspection | • Continuous improvement |
| • CNC milling | • Precision manufacturing | • PPAP documentation | • Manufacturing documentation |
| • Swiss lathe machining | • Aerospace components | • AS9100 practices | • Technical support |
| • GD&T | • Machining processes | • Root cause troubleshooting | |

PROFESSIONAL AFFILIATIONS

- ASME continuing education participant focused on GD&T and manufacturing quality practices.
- Professional connection with aerospace manufacturing, CNC machining, and precision inspection communities.

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST