

Kevin Alvarez, EIT

Manufacturing Engineer | Process Optimization & Automation

Greenville, SC

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■ SUMMARY

Manufacturing Engineer with 3.5 years of experience improving high-volume machining and assembly operations in the automotive supply chain. Delivered \$3.2M in annual savings, increased line throughput by 26%, and reduced scrap by 41% through lean projects, automation, and process validation. Skilled in PLC integration, DFM, SPC, and IQ/OQ/PQ validation; Six Sigma Green Belt.

■ TECHNICAL SKILLS

Process & Lean: Lean Manufacturing, Six Sigma (DMAIC), Kaizen, Value Stream Mapping, SMED, Standard Work, Takt-Time Analysis, Line Balancing, 5S

Engineering: DFM/DFA, Process Validation (IQ/OQ/PQ), PFMEA, Control Plans, SPC, GD&T, Fixture & Tooling Design, CNC Machining, Robotic Cells

Tools: SolidWorks, AutoCAD, Minitab, Allen-Bradley PLC Basics, SAP, MES, Power BI, Excel, MS Project

■ EXPERIENCE

Manufacturing Engineer

Jun 2023 – Present

Carolina Precision Components — Greenville, SC

- Support 6 machining and assembly lines producing 2.4M parts per year; lead continuous-improvement projects delivering \$3.2M in annual savings.
- Increased line throughput by 26% by redesigning cell layouts, balancing operations, and installing a robotic part-handling cell (payback in 11 months).
- Reduced scrap from 5.2% to 3.1% (41% improvement in cost of poor quality) through SPC implementation and PFMEA-driven process changes.
- Led IQ/OQ/PQ validation of 3 new CNC machines and fixtures with 100% first-pass customer approval.
- Developed standard work and training for 90 operators, lowering changeover time from 80 to 28 minutes.

Process Engineering Co-op / Associate

Jul 2022 – May 2023

Upstate Industrial Products — Spartanburg, SC

- Conducted time studies on 50+ operations and rebalanced assembly lines to improve labor efficiency by 17%.
- Designed 12 custom fixtures and gauges in SolidWorks that cut setup errors by 60%.
- Used Minitab capability studies (Cp/Cpk) to bring 4 critical dimensions to Cpk above 1.67.
- Documented work instructions and control plans in support of IATF 16949 audits.

■ SENIOR PROJECT

Designed an automated weld-fixture station with pneumatic clamping and PLC sequencing; reduced cycle time by 30% for sponsor company.

■ EDUCATION

Bachelor of Science in Industrial & Manufacturing Engineering

Clemson University — Clemson, SC
2022 | GPA 3.6

■ CERTIFICATIONS

- Six Sigma Green Belt (ASQ)
- Engineer in Training (EIT), State of South Carolina
- SME Certified Manufacturing Technologist (CMfgT) — in progress