JULIAN MERCER

MECHANICAL ENGINEER

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PROFESSIONAL SUMMARY

Licensed Mechanical Engineer with 9+ years designing powertrain, appliance, and agricultural equipment components from concept through production release. Combines CAD, finite element analysis, and test data to cut cost and failure rates while meeting program schedules.

CORE SKILLS

SolidWorks | Creo | Ansys FEA | GD&T | Tolerance analysis | Design for manufacturing | Root cause analysis | Thermal analysis | DFMEA | Prototype testing | Injection molding | Engineering change management | MATLAB | Bill of materials control

PROFESSIONAL EXPERIENCE

Senior Mechanical Engineer Apr 2021 - Present
Cummins, Columbus, IN

- Lead the redesign of a turbocharger heat shield for a heavy-duty diesel engine, cutting part weight 14% and passing a 500-hour thermal durability test on the first attempt.
- Ran FEA in Ansys on bracket and housing concepts, removing two prototype rounds and saving about $85,000 in tooling and test costs.
- Wrote tolerance stack-ups and GD&T drawings for 40 components, which brought supplier first-article rejects from 11% to 4%.
- Mentor three junior engineers on design reviews and root cause reports, and signed off on release packages for two engine platforms.
- Introduced a design-for-assembly checklist on engine brackets that removed two fasteners per part and shortened line assembly time by about 40 seconds.

Mechanical Design Engineer Aug 2018 - Mar 2021
Whirlpool Corporation, Benton Harbor, MI

- Redesigned a dishwasher spray arm assembly in SolidWorks, reducing noise by 3 dB in lab tests and trimming material cost by $0.42 per unit.
- Planned and ran vibration and life-cycle tests on 60 units, then used the results to correct a hinge failure before launch.
- Worked with two injection molders to adjust gate locations and wall thickness, lowering scrap on the part from 6% to 2.5%.
- Maintained the bill of materials and engineering change orders for a 70-part sub-assembly with zero release errors over two years.

Associate Engineer Jul 2016 - Jul 2018
Deere & Company, Moline, IL

- Supported hydraulic hose routing on a mid-size tractor line, producing 3D layouts that removed three interference issues found in pilot builds.
- Collected strain gauge data from field tests and summarized load cases for senior engineers, shortening the analysis cycle by a week.
- Updated 120 legacy drawings to current standards and flagged 15 dimension conflicts for correction.

EDUCATION

B.S. in Mechanical Engineering, Purdue University, West Lafayette, IN

CERTIFICATIONS

Professional Engineer (PE), Mechanical | Fundamentals of Engineering (FE) Exam Passed | Certified SOLIDWORKS Professional (CSWP)