CONNOR MCNEELY

Mechanical Design Engineer

Location: Youngsville, La **Phone:** (337) 581-7113 **Email:** connordmcneely@gmail.com

Website: connordmcneely.com

SUMMARY

Mechanical Design Engineer with 5+ years of experience in product design, CAD modeling, and mechanical systems development. Expert in SolidWorks (3D modeling, FEA, CFD, Simulation), parametric design, and engineering drawings with GD&T per ASME Y14.5. Proven track record designing pumps, pressure vessels, and mechanical components from concept through production. Skilled in DFMA, tolerance analysis, design optimization, material selection, and cross-functional collaboration with manufacturing, quality, and supply chain teams.

PROFESSIONAL EXPERIENCE

Lead Mechanical Design Engineer · Pump Manufacturer December 2023 - Present

Youngsville, LA

• Create 3D CAD models, assemblies, and detailed 2D manufacturing drawings using SolidWorks for API 610 centrifugal pumps and pressure vessel components, applying GD&T per ASME Y14.5 standards

• Lead mechanical design and product development from concept through production, managing full product lifecycle including requirements analysis, design reviews, prototyping, testing, and manufacturing support

• Perform finite element analysis (FEA) and computational fluid dynamics (CFD) simulations using SolidWorks Simulation to validate structural integrity, optimize component designs, and verify performance requirements

• Execute engineering calculations including stress analysis, pressure ratings, and wall thickness assessments using Excel-based models and hand calculations to support design decisions and verify code compliance

• Apply DFMA principles and tolerance analysis to optimize designs for manufacturability, achieving 15% manufacturing cost reduction while improving assembly efficiency and maintaining design performance

• Perform material selection for mechanical components including duplex stainless steel, aluminum alloys, and engineering plastics based on service requirements, applying ASTM specifications and material properties analysis

• Collaborate with manufacturing engineers, machine shops, and casting suppliers to ensure design manufacturability, review tolerance stack-ups, and resolve production issues through engineering change orders (ECO)

• Generate comprehensive technical documentation including design specifications, BOMs (bill of materials), inspection procedures, test plans, and engineering calculations for customer deliverables and regulatory compliance

• Develop and execute design validation plans including prototype testing, hydrostatic pressure testing, and performance verification to ensure products meet engineering requirements and quality standards

• Conduct root cause analysis of design and manufacturing issues, implement corrective actions, and perform FMEA to improve product quality and reliability throughout the product lifecycle

• Lead cross-functional design projects coordinating with engineering, manufacturing, quality assurance, and supply chain teams to deliver pump systems for offshore oil and gas applications meeting API 610, ASME, and NORSOK standards

Automation/Mechatronics Engineer · John Deere Turf Care January 2023 - July 2023

• Reduced takt time by 20% and improved ergonomics by 30% through automation system design and MES programming
• Programmed Allen-Bradley PLCs using ladder logic and maintained SQL databases for manufacturing execution systems
• Designed and implemented mistake-proofing solutions using PLCs, HMIs, machine vision systems, and smart torque tools
• Led continuous improvement projects using Lean Six Sigma methodology to enhance safety, quality, and productivity
• Updated electrical schematics, PLC programs, and HMI configurations to optimize manufacturing equipment performance

Automation/Process Engineer · Sulfur Operations Support Inc. September 2022 - December 2022

• Designed injection molds using CAD, FEA, and CFD analysis, reducing manufacturing costs by 20% and scrap rates by 15%
• Improved product quality by 10% through scientific molding techniques, RJG methods, and DOE (Design of Experiments)
• Optimized manufacturing processes through VFD troubleshooting and equipment modifications, increasing throughput by 25%
• Implemented Lean Six Sigma and continuous improvement initiatives to reduce cycle times and improve process efficiency
• Enhanced quality inspection processes using machine vision, IoT dashboards, and Kaizen methodologies

Inspection/Automation/Mechanical Engineer · Pfizer September 2021 - September 2022

Kalamazoo, MI

• Contributed to production of 759M vaccine doses through mechanical design improvements and process optimization
• Designed machine components and assemblies using SolidWorks, Inventor, and AutoCAD with GD&T per ASME Y14.5
• Performed FEA structural analysis to validate component designs and ensure compliance with engineering requirements
• Developed FMEA documentation and implemented corrective actions to resolve quality issues in packaging operations
• Led Kaizen events and preventative maintenance initiatives ensuring GMP, FDA, and ASME compliance

Mechanical Design Engineer - Senior Capstone Project · Galaxy Products LLC August 2018 - August 2019

New Iberia, LA

• Led mechanical design of CNC Pneumatic Gang Drill System, reducing equipment downtime by 75% and improving drilling efficiency by 50% through innovative product design
• Managed multidisciplinary engineering team through complete product development cycle including P&ID development, SolidWorks 3D CAD modeling, and PLM documentation
• Designed aluminum mounting system using DFM principles and GD&T (ASME Y14.5), coordinating CNC machining operations for component fabrication
• Conducted FEA and CFD analysis to validate design performance, performing FMEA to ensure system reliability per ASTM and ASME standards

EDUCATION

Bachelor of Science · Mechanical Engineering August 2015 - August 2020

Louisiana Tech University

Key Coursework: Mechanical Design, Machine Design, CAD/CAE, Finite Element Analysis, Fluid Mechanics, Thermodynamics, Materials Science, Manufacturing Processes, Control Systems

CORE SKILLS

CAD/Design Software

SolidWorks (3D Modeling), Assemblies, Drawings, FEA, CFD, Simulation, AutoCAD, Inventor, CATIA, Fusion 360, Parametric Modeling, Solid Modeling, Surface Modeling, Mathcad, MATLAB

Product Design & Development

Mechanical Design, Product Design, Component Design, Assembly Design, Concept Development, Design Optimization, New Product Introduction (NPI), Product Lifecycle Management (PLM), Prototyping, Design Validation

Engineering Analysis & Calculations

Finite Element Analysis (FEA), Computational Fluid Dynamics (CFD), Stress Analysis, Structural Analysis, Thermal Analysis, Hand Calculations, Engineering Calculations, Design Verification, FMEA

Technical Documentation & Standards

GD&T (ASME Y14.5), Engineering Drawings, Manufacturing Drawings, 2D Drawings, Technical Specifications, Design Documentation, BOM Creation, Bill of Materials, API 610, ASME Section VIII, ISO 9001, ISO 5199, ASTM, ANSI

Manufacturing & Design for Manufacturing

DFMA (Design for Manufacturing and Assembly), DFM, DFA, Tolerance Analysis, Tolerance Stack-up, CNC Machining, Sheet Metal Design, Casting Design, Injection Molding, Welding Design, Manufacturing Processes, Supplier Collaboration

Materials & Material Selection

Material Selection, Metals (Stainless Steel, Aluminum, Carbon Steel, Duplex Stainless), Engineering Plastics, Composite Materials, Material Properties, ASTM Standards, Corrosion Resistance

Design Tools & Methodologies

Design Reviews, Engineering Change Orders (ECO), Configuration Management, Design Controls, Requirements Analysis, Cost Reduction, Value Engineering, Continuous Improvement, Root Cause Analysis

Automation & Controls

PLC Programming (Allen-Bradley, Siemens), SCADA, HMI, Ladder Logic, Machine Vision (Cognex), Robotics (Fanuc)

Programming & Data Analysis

Python, SQL, Visual Basic, Excel (Advanced Formulas, VBA), MATLAB, Data Analysis, Machine Learning

CERTIFICATIONS AND TRAINING

Certified SolidWorks Professional (CSWP)

In process of obtaining

Lean Six Sigma Methodology Training

PLC Programming (Allen-Bradley, Siemens)

Machine Learning and Python Programming

Engineering Standards Training (API 610, ASME Section VIII, GD&T, ISO 9001)

Profiles

LinkedIn

connor-mcneely-b322b9176

linkedin.com/in/connor-mcneely-b322b9176