STELLA BECK

PRINCIPAL MECHANICAL ENGINEER

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STRENGTHS

Project Leadership
Established accountability within teams by providing focused guidance on complex project objectives; praised for clarity.

Mentorship
Created pathways for junior engineers by offering personal challenges alongside growth opportunities; received their admiration.

Technical Communication
Consistently communicated intricate design details to interface with all stakeholders logically, ensuring mutual understanding.

Innovative Problem Solving
Proactively tackled engineering challenges by devising creative uses for emerging technologies, gaining internal respect.

Data-Driven Decision Making
Leveraged data analytics to inform critical engineering decisions; recognized for underpinning fiscal responsibility in outcomes.

SKILLS

Mechanical Design
Ball Screw Technology
CAD/CAE Proficiency
Fatigue Analysis
Precision Engineering
Project Leadership
Risk Management
Team Mentorship
Analytical Skills
Communication

SUMMARY

Accomplished Principal Mechanical Engineer with over 10 years of experience in mechanical design, focusing on precision motion components, particularly ball screws. Proven track record in contact mechanics, tribology, and fatigue analysis, demonstrating strong capabilities in leading complex projects and engineering teams. Proficient in advanced CAD/CAE tools while driving product reliability and manufacturability in aerospace applications. Excellent communicator dedicated to defining customer needs, mentoring professionals, and fostering a culture of innovation in engineering. Eager to leverage expertise to advance new technologies and contribute meaningfully.

EXPERIENCE

Principal Mechanical Engineer

Precision Motion Technologies January 2016 - Present Chicago, IL

Leads the design and development of innovative ball screw assemblies focused on enhancing performance in aerospace applications. Owns analytical approaches covering load distribution, linearity, and mechanical efficiencies to drive product reliability and optimize production techniques.

- Spearheaded intricate designs and concepts for ball screw components, significantly boosting overall efficiency.
- Defined geometric parameters that considerably improved preload strategies and long-term performance metrics.
- Implemented rigorous analytical modeling practices that fine-tuned torque predictions and enhanced operational parameters.
- Directed FEA activities related to nonlinear contact scenarios, leading to essential insights on structural resiliency.
- Applied advanced fault detection methods resulting in more reliable designs less susceptible to wear failures.
- Streamlined collaboration with manufacturing divisions, refining assembly processes to ensure adherence to quality standards.

Senior Mechanical Engineer

Dynamic Engineering Solutions June 2012 - December 2015 Aurora, IL

Managed projects focused on developing precision components in actuator systems, improving reliability and efficiency. Mentored junior engineers and strengthened technical insights across teams, delivering impactful solutions through innovative thinking.

- Led design initiatives for actuator components, emphasizing superior mechanical efficiencies and conducting extensive trade studies.
- Facilitated structured knowledge sharing with team members to amplify collaborative innovation and technical excellence.
- Engaged clients proactively to clarify project requirements, optimizing alignment between produced designs and expectations.
- Identified continuous improvement opportunities, contributing to significant cost reductions within the production workflow.
- Delivered compelling presentations to stakeholders, translating complex technical material into accessible insights.
- Drove an engaged team atmosphere where junior engineers flourished and found their voices as contributors.

Mechanical Engineer

Mechanics Inc. August 2009 - May 2012 Elgin, IL

Reliability Engineering

Failure Mode Analysis

Technical Reporting

Advanced Manufacturing

Material Selection

Lifecycle Management

LANGUAGES

English — Native

Spanish — Intermediate

MY CAREER

- Principal Mechanical Engineer at Precision Motion Technologies (10.4 Years)
- Senior Mechanical Engineer at Dynamic Engineering Solutions (3.5 Years)
- Mechanical Engineer at Mechanics Inc. (2.8 Years)

Developed and verified mechanical designs across various industrial applications, promoting compliance with standards and expectations while collaborating in cross-functional teams to enhance product delivery lifecycles.

- Executed precise mechanical designs focused on meeting the strictest industry specifications and safety standards.
- Utilized advanced CAD tools for simulations that guaranteed optimal performance under designated criteria.
- Contributed directly to testing protocols, incorporating findings that fueled successful validation efforts.
- Participated actively in troubleshooting sessions, successfully spearheading root-cause analyses for mechanical failures.
- Maintained exhaustive documentation, bolstering continued learning and seamless process transfers within organizational knowledge bases.
- Collaborated effectively across teams, blending diverse perspectives into solution-oriented outputs.

LEADERSHIP & AWARDS

- Outstanding Engineering Award for Significant Contributions to Aerospace Performance Enhancements
- Engineer of the Year from Industry Recognition Organization

EDUCATION

Bachelor's Degree in Mechanical Engineering

University of Illinois GPA: 3.8 2009 Champaign, IL

Coursework: *Thermodynamics, Fluid Mechanics, Materials Science, Mechanical Design*

CERTIFICATIONS

- Certified Six Sigma Green Belt 2020
- Certified Project Management Professional (PMP) 2021

TECHNICAL SKILLS

- **CAD Software:** SolidWorks, ANSYS, Abaqus
- **Analysis Techniques:** FEA, CAE, FMEA
- **Mechanical Testing:** Torque Testing, Endurance Testing, Load Testing
- **Manufacturing Methods:** Grinding, Thread-Rolling, Assembly Sequencing
- **Engineering Standards:** AS9100, ISO Compliance
- **Project Management Tools:** MS Project, Trello, Asana
- **Risk Management:** Risk Assessments, Trade Studies, Reliability Analysis
- **Mechanical Optimization:** Geometry Definition, Preload Strategies, Lubrication Approaches
- **Technical Documentation:** Reports, Designs Justifications, Risk Analyses
- **Collaboration Platforms:** Workshops, Brainstorming Sessions, Client Workshops

PROFESSIONAL AFFILIATIONS

- Member of the American Society of Mechanical Engineers
- Active participant in the Society of Automotive Engineers

ADDITIONAL INFORMATION

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

REFERENCES

AVAILABLE ON REQUEST