



## Job Description

**Position Title:** Mechanical Design Engineer

**Date:** February 10, 2022

**Department:** Mechanical Engineering

**Approval(s):** \_\_\_\_\_

(Department Head)

**Reports To:** Mechanical Engineering Manager

(President)

### General Summary

Mechanical Design Engineer position working for a rapidly growing custom automation company building machines for the Life Sciences industry. Responsibility includes designing automation (assemblies and sub-assemblies), fixtures, and prototypes, performing equipment debugging, supporting applications, interfacing with customers to understand requirements, designing to safety standards, and applying mechanical engineering principles to the implementation of automation. This role can have an estimated 15% travel.

### Essential Duties and Responsibilities

1. Design automation (assemblies and subassemblies), retrofits, fixtures, and prototypes.
2. Interface with customers to understand system requirements and resolve design issues encountered.
3. Document customer requirements to capture design intent and develop designs that incorporate said intent.
4. Document and maintain revisions to existing automated systems.
5. Work with team members to create integrated design between multiple stations and designers on large machines.
6. Incorporate proven, readily available technology into design based on customer or project requirements.
7. Identify correct motors, actuators, slides, heaters, grippers, and electrical components for specific design application.
8. Update Test Plan to capture design requirements that commissioning will use to test the machine according to User Requirement Specifications.
9. Design automation to OSHA and NFPA standards.
10. Mitigate operator risk of machine operation, usage, maintenance, or machine failure during design. Use safety sensors in critical areas to ensure operator and machine safety.
11. Anticipate possible failure modes of machine operation that cause harm to the operator, machine, product, or environment and alter the design to eliminate or minimize it.
12. Create drawings with detailing of parts and assemblies including dimensions, callouts, tolerances, and material specifications.
13. Creates comprehensive build plans for the mechanical assemblers to accurately assemble/build to print.
14. Develop and release bill of materials including stock material and commercials to purchasing.
15. Communicate to Fabrication critical features, dimensions, materials, and tolerances.
16. Evaluate and troubleshoot automation when problems arise during commissioning and propose recommendations for resolving equipment issues.
17. Act as a technical mechanical design resource/support for company sales staff.
18. Support applications by providing automation concepts and concept drawings in preparation of estimates and quotes.
19. Stay current in new developments within industries served. Keeps informed of new applications and methods to improve systems or products.
20. Observe all safety rules, applicable regulations, and relevant ISO standards.

### Accountabilities

Design to specifications  
Manufacturing instructions

## **Knowledge, Skills and Abilities Required**

### *Education and Experience/Skills Required:*

1. Bachelor's degree in Mechanical Engineering or comparable knowledge/experience preferred.
2. 5 years' experience is preferred.
3. Strong and demonstrated mechanical design aptitude and skilled in 2D (AutoCAD)
4. 3D CAD SolidWorks PDM experience preferred.
5. Strong preference for prior automation design experience.
6. Demonstrated ability to work independently with a high degree of accuracy and attention to detail.
7. Proven experience working effectively in a team environment.
8. Requires excellent oral and written communication skills to communicate effectively with customers, vendors, and employees.
9. Working knowledge of all MS Office applications.
10. Ability to read and interpret technical specifications, blueprints, assembly plans, and other manufacturing instructions.
11. Ability to work with complex mathematical concepts.
12. Up to 15% travel required.

### *Professional Licensing and/or Certifications Required:*

Valid Driver's License and appropriate level of automobile insurance coverage compliant with local and State laws.

### **Physical Demands Required:**

While performing the duties of this job, the employee will frequently be required to sit/stand, use fine dexterity, tools, and controls. The employee must occasionally lift and/or move drawings, files, parts, and systems weighing up to 40 pounds. Specific vision abilities required include close vision, depth perception, and the ability to adjust focus.

## **Work Environment**

The noise level in the work environment is usually moderate. The use of safety equipment included but not limited to safety glasses, hearing protection, gloves and protective clothing.

*The above is intended to describe the general content of and requirements for the performance of this job. It is not to be construed as an exhaustive statement of duties, responsibilities, or requirements.*