

HARPER INTERNATIONAL

POSITION DESCRIPTION

The Position Description is the tool used by Harper International to communicate and clarify the essential job functions, establish the basis for performance expectations, and identify training needs for each position.

Part I - Reporting Structure

Job Title: Development Design Engineer

Reports to (Position): Director of Engineering

Status: Exempt

Department: Engineering

Supervises (Positions): N/A

Date of last revision: July 2017

Part II – Position Objective

The Development Design Engineer will oversee the conception and design of high temperature thermal processing equipment. The primary responsibility is to tackle specific areas of a system design that need further refinement from a conceptual stage. Examples would include development of design concepts to the point where the identified risks are mitigated, conducting or supervising lab test, execution of Engineering Studies. On completion of the activity, the design could be implemented within a project and the Development Design Engineer would follow through to insure the proper execution of the design.

They will work closely with a broad set of team members across multiple departments during the development phase. They would help ensure feasibility of concepts. They would create the path from concept to design, and may serve as the Project Engineer.

Part III – Job Responsibilities

Essential Duties

1. The Development Design Engineer is to identify the risks associated with a design concept and develop a method to mitigate them.
2. They will create a design using computer-aided design software. They will identify the tests, FEA modeling, etc. required to determine the answers to the questions associated with the development effort. They experiment with and analyze different materials, manufacturing processes, design tolerances and other factors in the developmental process.
3. In collaboration with Sales, Project Engineering, Applications, and The Technology Team they will review project requirements, technical specifications, and reference drawings to prepare layouts for parts/sub-assemblies from concept phase through detailed design & drawings.
4. Perform or work with in collaboration with others who perform the FEA analysis, heat transfer, fluid dynamics, statics and strength of material calculations. Utilize knowledge about design considerations for heat-resistant alloys.
5. Evaluate equipment & make suggestions regarding design improvements.
6. May lead small to medium sized new product development projects.

IV – Knowledge, Skills, Education

1. Bachelor's degree in Mechanical Engineering required.
2. Must possess mechanical knowledge of custom OEM equipment, machines, and components including their design, uses, repair, and maintenance.
3. Familiarity with high temperature materials, welding, weld symbols, fabrication (especially large structural equipment), sheet metal, and mechanical drive components necessary.
4. Knowledge of the practical application of engineering science and technology and the ability to apply that knowledge to custom, innovative design concepts.
5. Proficient with 3D CAD systems, such as Inventor.
6. Knowledge of best practice design techniques such as DFM, GD&T, etc. with an ability to read and interpret technical drawings. Experience creating and interpreting P&ID drawings a plus.
7. Knowledge of Design of Experiments and general test methods a plus.
8. Must possess excellent verbal & written communication skills with a focus on providing excellent customer service. Strong commitment teamwork and integrating information from multi-disciplined teams.
9. Strong "hands on" bias. Enjoys building large and complex equipment. Propensity to take things apart to figure out how they work. Curious by nature.
10. Up to 25% travel required-both domestic & international
11. Must have a minimum of five (5) years' experience in the Development of industrial equipment.

VI - Physical Demands

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to walk. The employee is frequently required to sit, use hands, reach with hands and arms, talk and hear. The employee is occasionally required to stand, stoop, kneel, crouch or crawl.