

Job Description – Senior Mechanical Engineer

Required experience: 3+ years

Job type: On-site, full time

Company Overview

The world is moving towards an autonomous future where sooner or later everything that is driven, pushed or pulled today, will be moving by itself.

At Flo Mobility, we believe that the true adaptation of autonomy lies in the seamless coexistence of humans and bots. By leveraging the power of sensors, computer vision, edge computing, and actuators, we optimize this relationship to deliver the best speed, agility, comfort and control. Our hero product, FLO **Material movement robot**, is an Autonomous Electric Material mover, helping customers reduce time and cost of moving material across Construction, Agriculture, Mining and Warehousing industries.

Flo Hauler is being used by industry leaders like L&T, PSP, Total Environment to gain 50% savings on cost and time for the last mile of material movement. Our solutions are offered on Raas (Robot-as-a-service) model. The no capex approach makes it easy for our clients to adopt our MMRs (Material Movement Robots).

Education Background

- Bachelor's degree (B.E./B.Tech.) in Mechanical Engineering from a recognized university (Mandatory).
- Master's degree (M.E./M.Tech.) in Mechanical Engineering or a related field is preferred. ● Strong academic foundation in machine design, manufacturing processes, mechanics, and materials engineering.
- Additional certifications in CAD software (SolidWorks/Fusion 360), GD&T, FEA, or Product Design will be an added advantage.

Role Overview

We are seeking a versatile and highly capable Mechanical Design Engineer to spearhead the end-to-end development of our next-generation robotic systems and automated machinery. In this role, you will do much more than build 3D models; you will own the fundamental engineering architecture of our systems. You will apply a deep understanding of physics and mechanics to design complex mechanisms, optimize advanced drive systems, and precisely calculate and select critical components such as motors, gearboxes, actuators, and bearings.

This is a comprehensive, hands-on position that bridges the gap between digital theory and physical reality. You will collaborate closely with cross-functional teams—including electrical engineers and software programmers—to seamlessly integrate hardware with control systems. Beyond the digital drawing board, you will take full ownership of the physical machine assembly, prototype testing, and vendor management, ensuring that your designs are successfully fabricated, assembled, and optimized for peak performance

Responsibilities

- 1. Advanced 3D CAD & Generative Modeling:** Mastery of industry-standard parametric modeling software (e.g., Fusion 360, SolidWorks etc.) to build complex, large-scale electromechanical assemblies.
- 2. Mechanism & Powertrain Design:** Hands-on experience calculating, sizing, and selecting critical drive components including electric motors (PMSM, BLDC, Stepper, Servo), gearboxes (planetary, cycloidal, worm, harmonic), actuators, and bearings based on load, torque, and speed requirements.
- 3. Engineering Analysis & Simulation:** Direct experience conducting physical stress, strain, force, and structural load analysis using FEA (Finite Element Analysis) tools to validate design integrity.
- 4. GD&T and Geometric Dimensioning:** Complete proficiency in applying Geometric Dimensioning and Tolerancing (GD&T) standards to 2D production drawings for clear manufacturing communication and precision fits.

5. **Mechatronics & Electro-Mechanical Integration:** Proven experience packaging electronic hardware, routing wire harnesses, and safely embedding sensors, PCBs, and controllers inside mechanical housings.

6. **Hands-on Physical Build & Assembly:** Demonstrated capability to lead the physical assembly, mechanical setup, debugging, and initial bench testing of complete prototype robotic systems and machines.

7. **End-to-End Vendor Management:** Direct experience managing external fabrication vendor relationships, interpreting manufacturing quotes, handling component sourcing, and performing incoming quality control checks against tight engineering tolerances. 8.

Skills

MANDATORY: MUST HAVE SKILLS AND HANDS-ON EXPERIENCE

1. Bachelor's or Master's degree in Mechanical Engineering with 3+ years of relevant industry experience.
2. Strong proficiency in **Fusion 360 or similar software** (3D modeling, assemblies, and detailed manufacturing drawings).
3. Hands-on experience in **sheet metal design, weldments, machined parts, and fabrication processes**.
4. Good knowledge of **DFM/DFA (Design for Manufacturing & Assembly)**, GD&T, and engineering tolerances.
5. Experience in prototype development, testing, troubleshooting, and product validation.
6. Familiarity with mechanical components such as motors, gearboxes, bearings, linear motion systems, and structural analysis.
7. Excellent problem-solving, communication, and cross-functional collaboration skills with the ability to manage projects independently.