**Project Deliverable 3**

**Student Name**

**Student ID**

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**Layout Design for Kuwait Motor Design**

This document includes the layout design for Kuwait Motor Design, which they will use for the production of their bevel and inline motors. It includes all the required machinery, operations, and follows he specifications provided, with a clear focus on efficient flow, safety standards, employee requirements, and the proper infrastructure for both electrical and air needs.

* The CNC lathe machine is placed at top right corner for uninterrupted access. It produces 3 gears per hour and hence requires full-time operation. A 2m space is left in the back to allow for maintenance processes.
* The jib crane is placed directly adjacent to the CNC lathe to ensure it can lift and move heavy parts that the lathe handles. However, it shouldn’t interfere with walkways.
* The Aluminum casting cell is placed on the left of the steel casing for isolation to ensure safety. It is placed as far away from the gearbox assembly as possible, with a 10m spacing from other equipment.
* Gearbox assembly line is aligned with the CNC machine to ensure proximity to machined parts for smooth process flow. Placed near the workers’ entrance for efficient access.
* The electric motor cell produces the electrical motor, which needs to be integrated with the gearbox. It is placed as close to the center of the layout as possible, leaving out space for forklift movement, since it connects upstream and downstream processes.
* Two final assembly lines are placed near the offices, one for Bevel Gearbox assembly and the other for Inline Gearbox assembly. They have spacing for movement of manufactured goods out of the facility.
* Fire extinguishers are strategically placed near the CNC lathe, 2 final assembly lines and aluminum casting cell.
* 6m2 of space left for the recycling of industrial waste in an area with very few operations, and also directly accessible by the forklift for easy movement out of the facility.
* Walkways of at least 1.2 meters are left next to every machine.

2 m

Jib Crane

Aluminum casting

*Steel column (cannot be moved)*

*4 meters*

CNC Lathe



Electric motor cell

Final assembly

Final assembly

Gearbox assembly line

Layout of the facility

WC

Changing room

Management office

Electric motor cell

Gearbox assembly line

Aluminum casting

CNC Lathe

Final assembly

Layout of the machines

Jib Crane



