CASE STUDY

LARGE VEHICLE MANUFACTURING WITH AGV TECHNOLOGY

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SUMMARY

A manufacturing company sought to improve its vehicle assembly line's efficiency. The primary challenge was moving vehicle bodies from the main conveyor line to various stations for loading and securing seats, then returning them to the main line. This case study explores the innovative solution provided to address these challenges, highlighting the integration of Automated Guided Vehicles (AGVs) into the manufacturing process.

"We designed and integrated various static chain conveyors into the existing production line to communicate with the AGV transporter, making the traditionally fixed assembly line mobile and flexible." - Blake Ringger, Mechine Design Engineer

33% PRODUCTION GROWTH

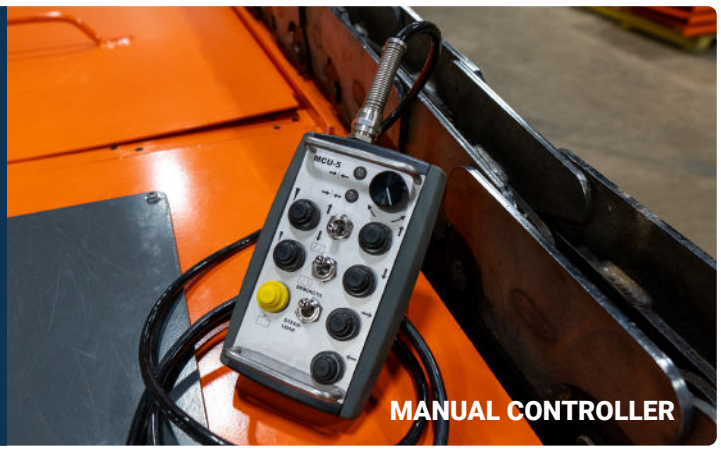
The implementation of automation has enabled the client to increase their production by 33%, going from 60 to 80 vehicles a day.

40ft BATTERY TRANSPORTER

Designed and built to the client's specifications, the battery-powered transporter was constructed to handle 10,000 lbs. and efficiently moves it throughout the plant.

SAVING WITH AUTOMATION

The automation partner of the heavy industry is here; our Flatbed Transporter is fitted with hardware to safely and automatically drive along the assembly process.



MANUAL CONTROLLER

THE PROBLEM

The company faced logistical inefficiencies in transporting vehicle bodies weighing 10,000 pounds across the assembly line, which hampered productivity. The goal was to find a solution that could streamline the process, increase output, and maintain high safety standards without compromising the quality of work.

THE SOLUTION

The proposed solution involved designing and implementing an AGV system tailored to the specific needs of vehicle manufacturing. This AGV was unique in its length, matching or exceeding the vehicle bodies' size ranging from 18 – 40 feet long, equipped with a chain conveyor system on its top. This design allowed for the efficient transport of vehicle bodies to various workstations, significantly improving the assembly line's flow.

IMPLEMENTATION

The introduction of the AGV system into the manufacturing process marked a significant improvement in operational efficiency. It enabled the company to move towards its goal of increasing daily vehicle output from 60 to 80 units. The AGVs were designed to accommodate vehicles of various lengths and configurations, ensuring flexibility and adaptability in the manufacturing process.

CHALLENGES

The project encountered several challenges, including adjustments required due to the vehicles' diverse configurations and the necessity for the AGVs to operate within a constrained space to spin 180 degrees. Additionally, ensuring the AGVs could navigate effectively and safely in the manufacturing environment required innovative solutions, such as utilizing LIDAR technology for precise navigation and implementing comprehensive safety measures to protect workers and equipment.

CONCLUSION

The integration of AGVs into the vehicle manufacturing process significantly enhanced operational efficiency, flexibility, and safety. This case study demonstrates the potential of automation in manufacturing, showing how tailored technological solutions can address complex logistical challenges and contribute to achieving production goals.