

## Hub and Rotor Assembly Station

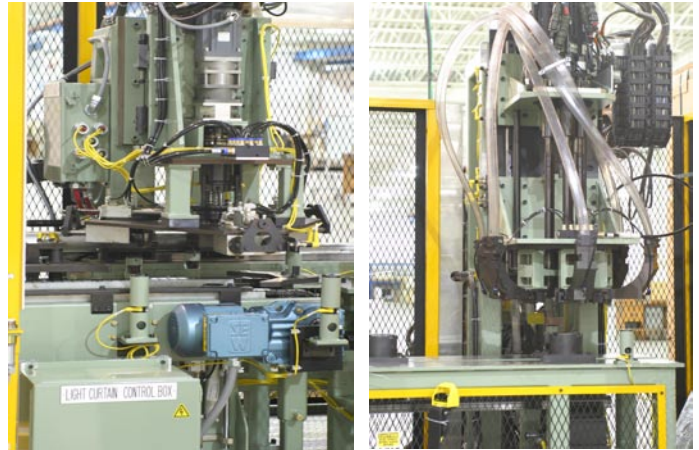
This project featured a synchronous assembly system to marry the hub and rotor for further processing. The system was designed, built, and installed for a Japanese OEM in the USA by Advanced Assembly Automation (AAA), a division of Assembly and Test Worldwide (ATW). All phases of the project, including engineering, assembly, and runoff occurred at AAA's 160,000 square foot engineering and manufacturing plant in Dayton, Ohio USA, which is part of ATW's 750,000 square feet of worldwide facilities.



### System Overview

This walking beam based assembly system consists of the following stations:

- Rotor Load - The rotor was singulated and transferred into the first pick up position on the walking beam.
- Rotor orient - The rotor is lifted and oriented utilizing a servo rotate.
- Hub load / Rotor assembly to Hub - An operator manually loads the hub to the walking beam tooling. After the Hub is loaded, the oriented Rotor is automatically loaded over the Hub.
- Drive Screws to Hub and Rotor - Manual operation.
- Spare station
- Auto Feed & Drive 5 nuts to hub studs or depending on model selected.
- Auto Feed & Drive 6 nuts to hub studs
- Transfer off onto conveyor



### System Values & Benefits

- System designed with future robot addition accommodated.
- With Robot addition, system provides 30% more production.
- Hub and Rotor Tooling designed for easy change over and Poke Yokes, allowing for additional models to be added economically

### System Highlights

- Walking Beam Transfer with tooling changes to run 4 model types.
- Tooling and parts Poke Yoked for model selection.
- Parts are loaded onto tooling once and maintained in position for remainder of operations.
- Design with future ability to add a robot to remove the operator at higher volumes.
- Servo Rotate for Rotor orientation provides for future model additions.
- Auto Feed and Drive Nut Assembly Systems with DC Torque and Angle Monitoring.
- Auto Feed and Manual Drive Screw Assembly System with Ergo balancer.
- Mitsubishi Control System