

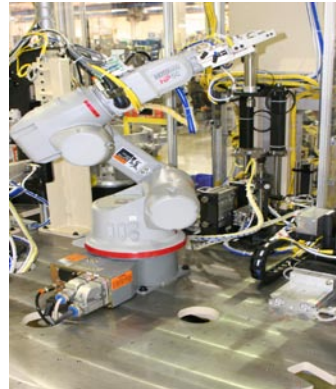
Title Tandem Cylinder Assembly & Test Cell

This project featured a synchronous assembly system to assemble and test a Tandem Master Cylinder. The system was designed, built, and installed for a Japanese Tier one supplier 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

- The proposed cell consists of three major areas, the master cylinder body assembly dial
- Combination of manual operations and Automation Universal Test Cell
- Robotic load and unload of 4 universal Testers. Final Tank Assembly and Switch Check
- Robot only presents good tested assemblies to the operator to finish the assembly.



System Values & Benefits

- One common base and control system
- Flexible tooling to run 4 Assemblies
- Robot provides flexibility for future models
- Universal Tester providing flexibility in test parameters and test procedure
- One common Test Control for all testers

System Highlights

- All three areas are mounted to a common base and have a common control system.
- Dial machine allows two positions for the operator to load the body and install the pistons.
- Automation includes cleaning, applying a lot stamp, oiling, installing a circlip.
- Manually tended functional switch check.
- The robotic test cell includes a robot with a dual gripper end effector to allow rapid exchange of master cylinders to and from each tester. The robot transfers the master cylinder from the dial machine to one of four testers. Each tester is capable of performing the functionality test. A single Sigpod is used to administer test for all 4 testers.
- The robot only unloads passed parts to a fixture for final assembly.