

CASE STUDY

Special Purpose Equipment

The machine shown here is one of a pair, designed in conjunction with CARV Design, and built to perform a series of assembly and inspection operations on car windscreens. The system is designed to produce a range of component variants and uses interchangeable fixturing, which is coded to allow automatic selection of the correct machine programme and sequences.

The individual components, which include rain sensors, perimeter trim, brackets and clips, are manually loaded to the assembly fixtures by the operator. The glass is then also loaded and the automated sequences begin when the operator presses a two handed start system. The machine uses a series of sensors and a Keyence vision system to check alignment and the presence of all required components before Siemens servo systems position the brackets to match the glass orientation. With everything checked and in position, the system initiates the Dukane ultrasonic welding sequence.

This project demonstrates a comprehensive range of skills, including: machine, control and software design, machine building and development, welding process knowledge and project management.



System Configuration

- Rigid steel fabricated machine base framework
- Keyence machine vision system
- Dukane ultrasonic welding system
- Siemens servo drive systems
- Siemens based machine control system
- Quick change fixturing for multiple variants



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