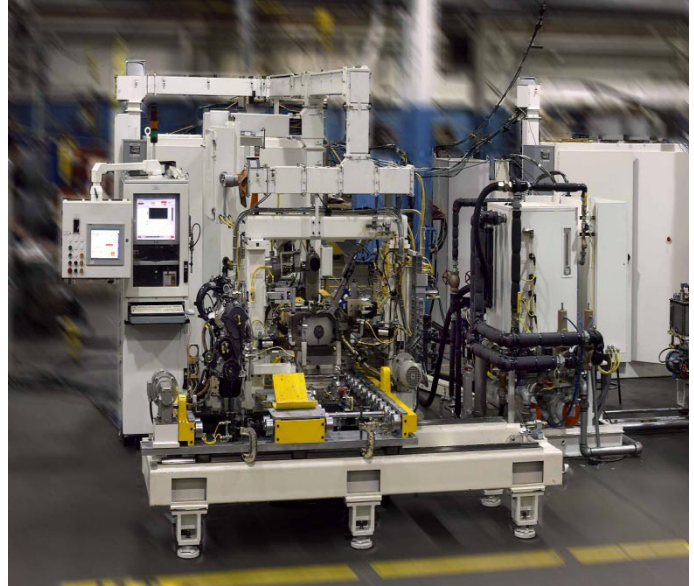


Automotive Engine Hot Test

A Chinese car manufacturer required a fully automatic engine hot test system for 100% production test. Hot Testing was desired to provide customer engine max power, torque, and to see if the thermo-start open or not. Multiple models needed to be supported, including 2 different intake manifold, 2 different crank sensor positions, 2 different wiring harnesses, and 2 completely different ECU units (different ECU manufacturers). Available time for test was limited to 4 min part to part, so the ability to maximize time utilization was imperative. Data handling had significance due to the need to archive a large quantity of engine test data allowing SPC and trending analysis reporting.



System Overview

- Full Load Hot test capable of measuring maximum engine torque and power
- Pallet delivery system with RFID for tracking, fully automatic
- Oscar Data Management System capable of managing multiple years worth of engine data, including SPC analysis capabilities was provided.
- Centralized hot water system for quick cycle time (four minute part to part)
- Two ECU system with automatic switching
- Exhaust gas analysis, CO, CO₂, HC, NO_x
- Use of dummy electrical harness with automatic probing
- Ability to disengage drive line in mid cycle for Idle stability test
- Oil, water and fuel evacuation system at end of cycle
- Connectivity to ATW OSCAR host system (also used for cold test) for production and SPC analysis.

System Values & Benefits

- Turn key test system providing single point accountability.
- Able to test a variety of engine models and variations.
- Able to test power, torque, and thermostat open or not that cold Test cannot.
- Able to perform SPC analysis including trending on all engine data acquired.

System Highlights

- Palletized Engine delivery system.
- Fully automatic engine engagement.
- Multiple models needed to be supported
- Full analysis of all components fit and function through advanced waveform analysis techniques.