



MACK ENGINES



Customer
Volvo Powertrain North America 13302
Pennsylvania Avenue Hagerstown MD.

VOLVO / MACK TRUCK AUTOMATED PRODUCTION APPLICATION

PROCESS DESCRIPTION

Mack engines are designed and manufactured at this 1.5 million-square-foot facility in Hagerstown, MD. The TC15 transfer case, rear engine power take-off and Mack Maxitorque ES T300 series transmissions are also produced at this facility.

Volvo Powertrain NA required a system in place to control and verify the use of torque tools and other equipment in the engine test & paint department. The system will interface with the conveyor PLC application to ensure that engines cannot leave a particular station without achieving the proper criteria. Additionally, the system transfers information related to an engine to be used in an off-line process at the end of the conveyor system.

PROJECT DESCRIPTION

FEC was selected by Volvo to design and implement a custom .Net application, which included the following:

- Interfaces to a conveyor system PLC
- Interfaces to 2 SQL Data bases and undefined number of torque tools
- Custom interface to an existing Volvo application
- PLC programming interface to RFID readers

The application displays information to the operator, and configures the torque tool for the specific parts. Subsequently, the torque tool is enabled, and retrieves the actual torque and angle applied to the component. This information is evaluated to determine Pass/Fail status, and along with other information is saved to a custom database developed by FEC. Component validation is a critical part of the application. In addition, a custom interface was developed in order to be able to program each station.

SYSTEM COMPONENTS

- Open Automation Software
- Kepware Allen Bradley PLC OAS server
- Kepware Modicon TCP OAS Server
- Custom SQL Server 2005 Database
- .Net Application Programming
- PLC Program modifications
- PLC interface to RFID readers

