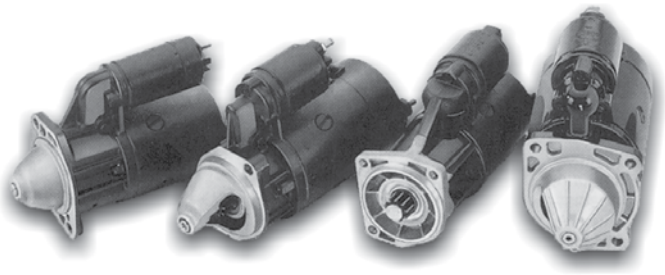
Starter Motor Testing: Performance Testing and Verification

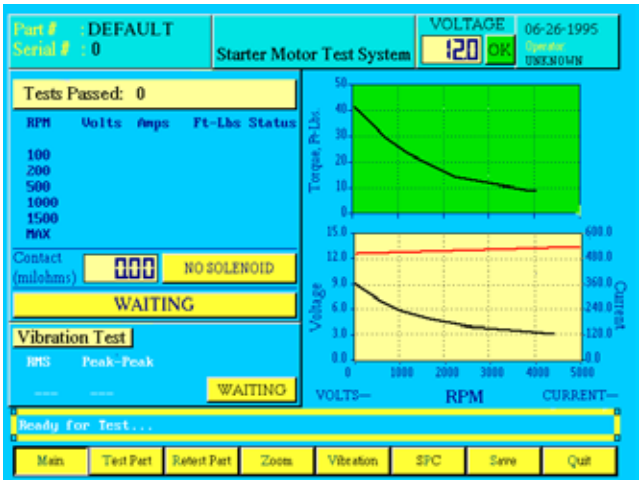
Highlights:

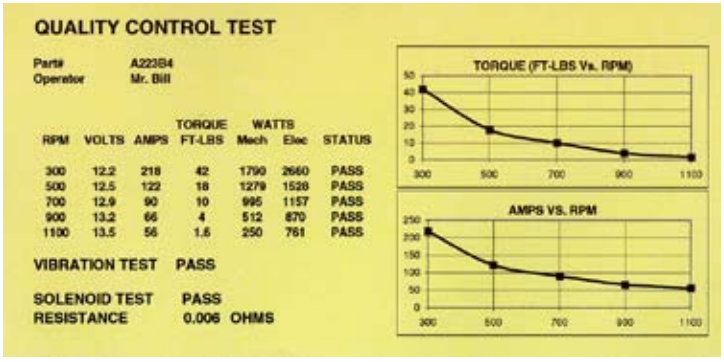
- Complete motor test in under 10 seconds (typical)
- Measures and checks voltage, amperage, and torque at distinct RPM levels (user selectable)
- Checks PASS/FAIL status at each operating point
- Generates graphs of motor performance
- Motor mechanical load controlled with 4-20mA output signal
- Verifies solenoid functionality and measures contact resistance
- Test data and analysis results stored for traceability
- Prints product test tag incorporating starter performance data

This test system is configured to automate production testing of DC starter motors manufactured for automotive vehicles. The model number to be tested is selected from a built-in menu, and the system then steps the motor through a preset test sequence. First, power is applied and the motor's no-load RPM and current is measured. Next, the system progressively loads the motor (with a 4-20mA controlled hydraulic torque converter) and then measures Volts, Amps and torque at a number of discrete speeds (RPM). This data is then compared against user-entered PASS/FAIL limits for each operating point. Finally, the system checks the functionality of the solenoid and computes the contact resistance based on voltage drop and current.



All test data is stored in disk files for traceability and subsequent analysis. If the starter meets specifications, a test label (tag) is printed and affixed to the motor verifying the test results for the customer.





Operator Screen and Test Label

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