



Test Monitoring Center

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SEQUENCE VIB INFORMATION LETTER 04-3

SEQUENCE NUMBER 19

October 1, 2004

ASTM consensus has not been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.

TO: Sequence VIB Mailing List

SUBJECT: 1. Changes to Instrumentation Calibration Frequency
2. Changes to Stand/Engine Calibration Periods

1. At the September 15, 2004 meeting of the Sequence VIB Surveillance Panel, the panel approved a motion to change the instrumentation calibration requirements in Test Method D6837. Fuel flow, engine speed, AFR analysis equipment, and exhaust backpressure are now to be calibrated prior to a reference oil test sequence. Also, the calibration interval has been increased from every three months to every six months for coolant flow, thermocouple and temperature measurement systems, and other instrumentation not noted. Finally, the panel agreed to clarify the humidity system calibration frequency from a semiannual basis to every six months. Revised Sections 10.2, 10.2.3, 10.2.4, 10.2.5 and 10.2.6 are attached.
2. The panel also agreed to revise stand/engine calibration periods. A new stand/engine calibration period is defined as four (4) full length non-reference oil tests, or 600 engine hours or 90 days, whichever occurs first. Thereafter, the calibration period is defined as seven (7) full length non-reference oil tests, or 1050 engine hours, or 90 days, which ever occurs first. Revised section 10.1.1 is attached.

These changes are effective September 21, 2004.

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Attachment

c: ftp://ftp.astmtmc.cmu.edu/docs/gas/sequencevi/procedure_and_ils/il04-3.pdf

Distribution: Email

Revises Test Method D 6837-04, as amended by Information Letters 04-1 and 04-2

10.1.1 *Procedure*—Test stand/engine calibration is accomplished by conducting tests on ASTM TMC reference oils (see X1.2).

10.1.1.1 Conduct reference oil tests on each test stand/engine combination within a laboratory according to the ASTM TMC Lubricant Test Monitoring System (LTMS) guidelines. Do not terminate a reference oil test due to an FEI result.

10.1.1.2 For a given test stand/engine combination, following the first calibration period of a new stand/engine combination, conduct a minimum of one operationally valid, statistically acceptable reference oil test after four full length non-reference oil tests, or 600 engine hours, or 90 days, which ever occurs first.

10.1.1.3 Thereafter, conduct a minimum of one operationally valid, statistically acceptable reference oil test after seven full length non-reference oil tests, or 1050 engine hours, or 90 days, which ever occurs first. The 90 elapsed days are judged from the end-of-test (EOT) day of the last, operationally valid, statistically acceptable reference oil test to the start-of-test (SOT) day of a calibrated non-reference oil test.

10.1.1.4 If more than 90 days elapse between Sequence VIB tests, EOT to SOT, on a stand/engine combination, a minimum of one operationally valid, statistically acceptable (according to LTMS) test is required. If acceptable results are obtained on the reference oil the test/stand engine is calibrated.

10.1.1.5 Re-reference the engines once removed from the test stand and re-installed, even if the test number and time criteria are met by the engine. Laboratories shall inform the TMC with a written explanation when a test engine is removed from a test stand and installed into another test stand. Only appropriate Sequence VIB test engines (see X 1.3) may be referenced.

10.2 *Instrument Calibration*—Record all instrument calibrations for further reference. Perform a complete test stand instrument calibration every six months. The following are to be calibrated prior to a reference oil test sequence: (1) fuel flow meter; (2) engine speed; (3) AFR analysis equipment; and (4) exhaust back-pressure equipment.

10.2.3 *Coolant Flow Measurement System*—Calibrate the flow measuring device a minimum of once every six months.

10.2.4 *Thermocouple and Temperature Measurement System*—Check the calibration of the test stand temperature measurement system (thermocouple through readout) at the test stand using the existing readout system a minimum of once every six months. For the critical temperatures (see Table 3) the individual temperature sensors shall indicate within $\pm 0.56^{\circ}\text{C}$ ($\pm 1^{\circ}\text{F}$) of the laboratory calibration standards. The calibration equipment utilized shall be appropriate for the desired $\pm 0.56^{\circ}\text{C}$ ($\pm 1^{\circ}\text{F}$) accuracy level. See 6.9 for additional thermocouple calibration requirements.

10.2.5 *Humidity Measurement System*—Calibrate the primary laboratory measurement system at each stand a minimum of once every six months using a hygrometer with a minimum dew point accuracy of $\pm 0.55^{\circ}\text{C}$ at 16°C ($\pm 1^{\circ}\text{F}$ at 60°F). Locate the sample tap in the engine air supply line in the intake air cleaner.

10.2.6 *Other Instrumentation*—As a minimum, calibrate instrumentation for measuring parameters other than those detailed in 10.2-10.2.5 every six months.