



Test Monitoring Center

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SEQUENCE VIB INFORMATION LETTER 02-1
SEQUENCE NUMBER 13
April 5, 2002

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. Timing Chain Replacement
2. Revision to Section 13.2.10

1. On February 5, 2002, the Sequence VIB Surveillance Panel agreed to allow the timing chain to be replaced when necessary. Section 9.3.27 of Draft 6 of the Sequence VIB procedure has been revised to include the timing chain as part of the timing chain assembly. The attached change is effective February 6, 2002.
2. On February 12, 2002, the Sequence VIB Surveillance Panel agreed to require viscosity measurements for both reference and non-reference oil tests. Section 13.2.10 of Draft 6 of the Sequence VIB procedure has been revised accordingly. The attached change is effective February 12, 2002.

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Product Engineering
Ford Motor Company

John L. Zalar
Administrator
ASTM Test Monitoring Center

Attachments

c: ftp://tmc.astm.cmri.cmu.edu/docs/gas/sequencevi/procedure_and_ils/il02-1.pdf

Distribution: Email

9.3.25 *Valve Stem Seals* – Valve stem seals may be replaced at the laboratory discretion. The 1993 Ford Service Manual procedure and recommended tools shall be used when the seals are replaced. The required replacement seal part number is F6AZ-6571-AA. The seals shall be replaced immediately prior to a calibration test.

9.3.26 *Valve Spring* – Use valve spring, part #F1AE-6513-AC that meet material requirements of #WDS-M1A314-A1. Valve springs may be replaced on Sequence VIB engines either prior to new engine break-in or prior to the next calibration test. An engine that has been previously calibrated, and has had new valve springs installed, shall run 80 hours of Phase II aging conditions before starting a calibration test. Changing just one valve spring in an engine is not permitted, all old valve springs must be replaced with new ones.

9.3.27 *Timing Chain Tensioner Assembly* – The timing chain tensioner assembly or any of the individual parts of the timing chain assembly may be replaced as needed. The individual parts include the timing chain tensioner arms (left and right), timing chain, timing chain guide, crankshaft sprockets, and camshaft sprockets. A calibration test is required immediately after replacing one or all of the above parts. Identify in the comments section of the test report which part(s) were replaced. If an engine was built with a link type camshaft chain, it may be replaced with a roller type chain and sprockets. The above parts are available through any local Ford dealership. Specify replacement parts for a Ford 4.6L, 1993 model year engine.

10. Calibration

10.1 *Stand/Engine Calibration* - This event will be monitored by the ASTM Test Monitoring Center. See 11.1.2 prior to attempting calibration of a new stand.

10.1.1 *Procedure* - Test stand/engine calibration is accomplished by conducting tests on ASTM Test Monitoring Center (TMC) reference oils (X1.2). Reference oil tests on each test stand/engine combination within a laboratory which is to be considered calibrated shall be conducted according to ASTM TMC Lubricant Test Monitoring System (LTMS) guidelines. A reference test shall not be terminated due to an FEI result. For a given test stand/engine combination, following the first calibration

13.2.10 *Oil Viscosity Measurement* - Measure and report viscosity determinations at 40°C and 100°C (Form 4) for New Oil and for Aged (Phase II) Oil. Make the viscosity determinations according to Test Method D 445.

13.2.11 *Use of SI Units* - Report all results in metric (SI) units. Follow the rules for conversion of inch-pound units to metric units as described in Practice E 380.

13.2.12 *Precision of Reported Units* - Use Practice E29 for rounding off data. Use the rounding-off method to report data to the required precision.

13.3 *Data Dictionary* - The Data Dictionary is shown in Annex A7.

13.4 *Off-Test-Time* - This is defined as the time when the test is not operating at the scheduled test conditions, but shutting down the engine is not required.

14. Precision, Validity and Bias

14.1 *Precision* - Test precision is established on the basis of reference oil test results (for operationally-valid tests) monitored by the TMC. The data are reviewed semi-annually by the Sequence VI/VIB Surveillance Panel. Contact the ASTM TMC for current industry data.

14.1.1 Test precision as established for the official acceptance of this procedure is shown in Table 10.

Note 16: Contact the ASTM TMC for up-to-date data.

14.1.2 *Intermediate Precision (r) (formerly called Repeatability)* - This is defined as the difference between successive results obtained by the same laboratory under constant operating conditions on the same oil would, in the long run, in the normal and correct conduct of the test method, exceed the values shown in Table 10, in only one case in twenty.