Test Monitoring Center
6555 Penn Avenue
Pittsburgh, PA 15206-4489
(412) 365-1000

L-42 Information Letter 03-1
Sequence Number 15
January 16, 2003

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

TO: L-42 Mailing List

SUBJECT: 1. Himmelstein Torque Meter
2. Himmelstein Model 701 or 711 Strain Gage Conditioner

1. At the November 20, 2002 L-42 Surveillance Panel meeting, the panel approved the use of a Himmelstein inline torque meter Models numbers MCRT28061T(1-4)CNZ, MCRT28061T(1-4)NNZ, MCRT2661TN(1-4)NZ, and MCRT2661TC(1-4)NZ with a range of 10,000 lb-in. to measure pinion torque. Section 3.4.1 of the L-42 procedure (STP512A) has been revised and Section 3.4.1.1 has been deleted. This change is effective with the next reference oil test after January 1, 2003.

2. At the November 20, 2002 L-42 Surveillance Panel meeting, the panel approved the use of a Himmelstein Model 701 or 711 strain gage conditioner. The old Sections 3.4.2 and 3.4.3 of the L-42 procedure (STP512A) have been deleted, a new Section 3.4.2 has been added, and 3.4.4 has been renumbered to 3.4.3. This change is effective with the next reference oil test after January 1, 2003.

The replacement page for STP512A is attached.

Kevin Layton
Chairman
L-42 Surveillance Panel

John L. Zalar
Administrator
ASTM Test Monitoring Center

Attachment

c: ftp://astmtmc.cmu.edu/docs/gears/l42/procedure_and_ils/il03-1.pdf

Distribution: Email

3.3.1 Thermocouple—The thermocouple shall be installed in the rear cover plate such that the tip is approximately 3/8 in. (9.5 mm) from the crest of the teeth and approximately on the centerline of the ring gear.

3.3.2 Temperature recording instrument—The temperature recording instrument shall continuously record the temperature of the lubricant throughout the test.

3.3.3 Cooling—A suitable tube shall be used to distribute water over the rear cover plate and/or housing. The water control valve shall start and stop the flow of water and shall be actuated through the temperature recording instrument (see Fig. 1).

3.4 Torque Measuring—The test equipment shall include a means for measuring the load applied to the test unit. It shall consist of the following:

3.4.1 Torque Meter—A Himmelstein inline torque meter Model numbers MCRT28061T(1-4)CNZ, MCRT28061T(1-4)NNZ, MCRT2661TN(1-4)NZ, and MCRT2661TC(1-4)NZ with a range of 10,000 lb-in shall be installed to measure pinion torque. Refer to Figures 6, 7, and 8.

3.4.2 Signal Conditioning—A Himmelstein Model 701 or 711 strain gage conditioner shall be used for signal conditioning. The low pass cut-off frequency shall be set at 10Hz. No additional hardware or software filtering is allowed.

3.4.3 Dynamometers—Two axle dynamometers (Midwest Dynamatic, Model 3232 or equivalent) with suitable control equipment shall be used. The suggested minimum average inertia loads are as follows: Coast Side Load, 950 lb-ft (1287.3 N-m); Drive Side Load, 1100 lb-ft (1490.5 N-m). The minimum average peak torque loads suggested are Coast Side Load, 1600 lb-ft (2168 N-m); Drive Side Load, 2300 lb-ft (3116.5 N-m). Test torques may require modification for different gear batch approvals.

NOTE 3—The Midwest dynamometer has a 0.050 in. (1.27 mm) air gap. Its moment of inertia is 1731 in-lb. sec^2, or 4640 lb-ft^2 (7428.6 kg/m^2).

3.5 Power Source—(All parts are available through local General Motors dealers.) The power source shall include: