



Test Monitoring Center

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L-42 Information Letter No. 06-1
Sequence No. 23
March 2, 2006

ASTM consensus has not yet 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: Addition of Alternative Power Train

On the February 24, 2006 L-42 Surveillance Panel teleconference meeting, the panel approved a motion to allow an alternative power train (engine, transmission and drive shaft) for L-42 testing. Switching power trains requires re-calibrating the stand. Sections 3.5 through 3.6 have been deleted from the L-42 procedure (STP 512A). New Sections 3.5, 3.5.1, 3.5.2, 3.6, 3.6.1, 3.6.2, 6.1.1 and Tables 1 and 2 have been added. Sections 3.8 through 3.9 have been renumbered. Section 3.4.1 has been revised. This change is effective on March 1, 2006.

The updated version of the L-42 test procedure is available in its entirety from the TMC web site (ftp://ftp.astmtmc.cmu.edu/docs/gear/l42/procedure_and_ils) or by contacting the TMC for a hard copy. The revised sections of the L-42 test procedure are attached.

Cory Koglin
Chairman
L-42 Surveillance Panel

John L. Zalar
Administrator
ASTM Test Monitoring Center

Attachment

c: ftp://ftp.astmtmc.cmu.edu/docs/gear/l42/procedure_and_ils/il06-1.pdf

Distribution: Email

Old Sections 3.5 through 3.7.2 are deleted

3.4.1 Torque Meter— Install a torque meter in the driveshaft to measure the torque applied to the pinion. Install a Himmelstein¹ inline torque meter Model numbers MCRT28061T(1-4) or MCRT2661TN(1-4) without a foot mount and having a range of 10,000 lb-in to measure pinion torque. Additional suffix letters only indicate allowable options. Refer to Figures 4, 5, and 6.

3.5 *Power Train:* Use a gasoline powered V-8 GM performance engine capable of supplying specified shock loading torques. The two engines approved for L-42 testing are listed in Table 1 and Table 2. Use an engine and transmission operating angle of $0 \pm 0.5^\circ$ in both engine configurations.

3.5.1 When using the Chevrolet LS-9, 350 in.³ (573 m³) truck engine, adjust engine ignition timing in accordance with manufacturer's specifications. Also, adjust the carburetor idle speed so that the engine will stall when the hand throttle is closed and the transmission is in neutral.

3.5.2 All replacement parts are available through local General Motors dealers. A list of these replacement parts is shown in Table 1 and Table 2. Do not make modifications to the engine that would affect the factory engine displacement or compression ratio.

Table 1
LS-9 Power Train Replacement Parts List

Parts	Part Number
Chevrolet LS-9, 350 in. ³ (573 m ³) truck engine	467377
Four Barrel Carburetor—Rochester Quadrajct	17057213
Intake Manifold	346250 GM
Camshaft	346250 GM
Heads	14034808 GM(Group 269)
Valve Springs Intake	6263796 GM
Valve Springs Exhaust	3911068 GM
Clutch Disk	3836011 GM
Pressure Plate	3837155 GM
Bell Housing	460486 GM
Four Speed Truck Transmission	M-20 GM

Table 2
Ramjet Power Train Replacement Parts List

Parts	Part Number
GM Performance Ramjet 5.7 L Marine Engine, Includes ECM	12495515
5 Speed Transmission	15747134
Bell housing	15998496
Clutch Assembly	15002591
Throw Out Bearing	15705563
Dip stick	10190942
Dip stick Tube	12552920
Flywheel	10105832
Flywheel Bolt (6 req.)	12337973
Pilot Bearing	14061685
Master Cylinder	15727261
Actuating Cylinder	15046288
Pulley, Water Pump	14023155
Pulley, Crankshaft	14023147
Belt	9433720
Starter	10496873
Engine Control Unit	12489488
Throttle body from 2000 Corvette.	17113669
Throttle body TPS Connector	P/N 12116247
Throttle Body actuator motor Connector	P/N 12167121
K&N Inlet air Filter	P/N RD6020

3.6 *Drive Shaft:* - For the Chevrolet LS-9 engine configuration, use welded steel tubing, 3.5 ± 0.2 in, (88.9 ± 0.51 mm) OD, 0.095 ± 0.005 in. (2.41 ± 0.13 mm) wall thickness, 58.5 in. (1486 mm) long from end of spline to eye of U-joint. For the GM Ramjet engine configuration, use welded steel tubing, 3.5 ± 0.2 in, (88.9 ± 0.51 mm) outside diameter, 0.095 ± 0.005 in. (2.41 ± 0.13 mm) wall thickness, 34.5 ± 1 in. (876.3 ± 25.4 mm) long from center weld to center weld. Drive shafts shall be dynamically (spin) balanced.

3.6.1 U-Joint Flange—Part No. 591700 (U-Joint—Spicer 5-200X or Spicer 5-178X)

3.6.2 U-Joint Yoke—Part No. 605056 (U-Joint—Spicer 5-178X or Spicer 5-153X)

Sections 3.8 through 3.9 have been renumbered to 3.7 through 3.8.

6.1.1 The axles are batch specific. Change in the axle batch, throttle settings, torque settings, computer control systems, stand integrity and power train will require the stand to be referenced.

¹ Available from S. Himmelstein and Company, 2490 Pembroke Avenue, Hoffman Estates, IL 60195