COLT 2310, 2510, AND 2712 COMPACT TRACTORS

CHAPTER 8

IGNITION

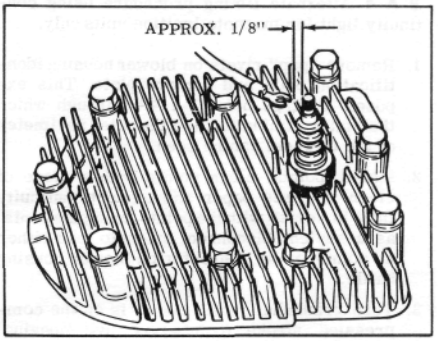

Figure 8-A-1

8-A-1 Check the ignition by removing the high tension lead from the spark plug. Hold the terminal of the high tension lead approximately 1/8" from the spark plug. (Figure 8-A-1) Crank the engine over rapidly. If a spark jumps the 1/4" gap the ignition is serviceable. Remove the spark plug and check, replace if carboned, damaged. Check and set electrode gap at .030. Examine spark plug gasket and replace if damaged or compressed beyond serviceability. Torque spark plug when replacing.

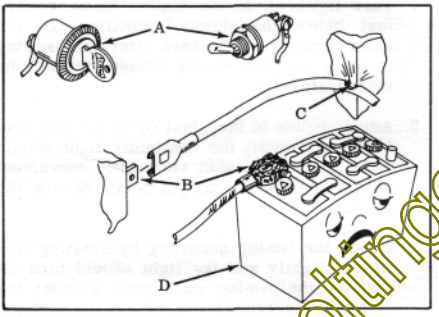

Figure 8-A-2

8-A-2 Ignition failure is, at times, caused by other than ignition parts. See Figure 8-A-2 for examples of external causes of ignition failure. Such items as shorting at grounding devices (A), switches (B), loose, corroded, and disconnected terminals (C) frayed and grounded wires (D) weak or dead batteries.

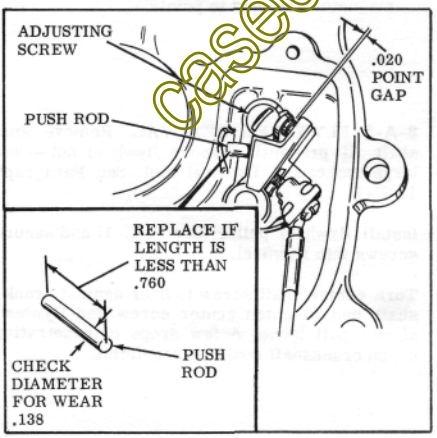

Figure 8-A-3

8-A-3 Procedure for installing points for magneto and battery ignition.

1. Replace push rod. Pull out through point box.
2. Install and align points using the Tecumseh point aligning tool.
3. Adjust point gap by rotating engine to extend the push rod as far out as possible. Push rod will then be on the highest portion of the cam lobe. With rod in this fully extended position, carefully adjust point gap to .020 using the correct thickness (feeler) gauge. Secure locking screw that holds the stationary point. Recheck point gap and correct if necessary.
4. Clean oil and finger prints off contact points by passing a clean, lint free, paper between the closed contacts. THIS IS IMPORTANT!
5. Ignition timing is provided for by the correct point gap setting and by the automatic spark advance mechanism.

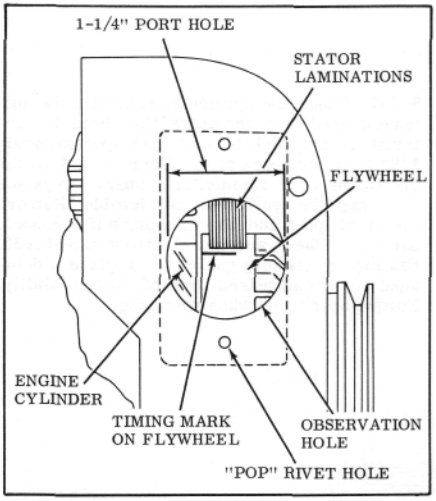

Figure 8-A-4

8-A-4 Alternate timing procedure using continuity light for magneto ignition units only.

1. Remove "pop" rivets on blower housing identification plate and remove plate. This exposes a large hole (1-1/4") through which the stator lamination and the outer perimeter of the flywheel can be seen.
2. Install points, clean points with a piece of clean lint free paper and connect continuity light in series with the points, using the ponts as a switch. Disconnect magneto lead either at points or at connector on blower housing baffle.
3. Turn crankshaft until piston is on the compression stroke (points are just opening) and timing mark on flywheel appears through observation hole.
4. Turn flywheel so the timing mark appears just below the stator lamination. Do not allow crankshaft to turn after this setting is made or your timing adjustment will be inaccurate.
5. Adjust points to the "Just Opening" position. In other words, the continuity light should blink off or on with very little movement of the stationary contact point. Secure the points.
6. Check for timing accuracy by rotating flywheel slightly and the light should turn off just as the timing mark passes under the stator laminations.
7. Replace identification plate and reconnect magneto wire lead to points.

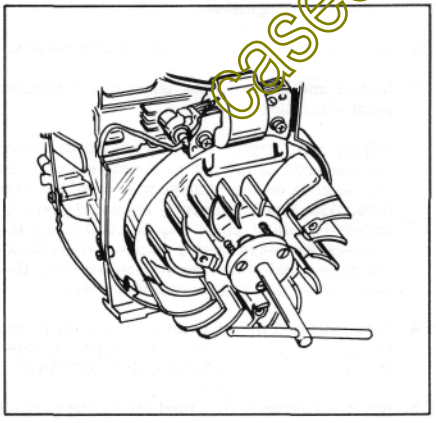

Figure 8-A-5

8-A-5 FLYWHEEL REMOVAL. Remove stub shaft (if present). Remove flywheel nut — use large socket and flywheel tool. See Paragraph 10-C-1.

Install flywheel puller (See 10-C-1) and secure screws into flywheel.

Turn center shaft screw to bear against crankshaft end. Tighten center screw and flywheel should pull loose. A few drops of penetrating oil on crankshaft could be beneficial.

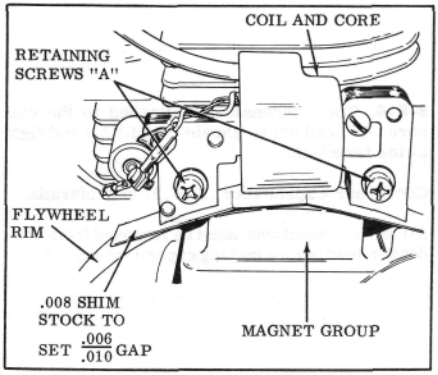

Figure 8-B-1

8-B-1 Magneto air gap .006 - .010. Magneto air gap adjustment.

a. Loosen screws "A" Figure 8-B-1.

b. Turn flywheel to position magnet group under the coil core.

c. Place a piece of .008 shim stock between coil core and magnet group. Press coil core against shim stock, hold and tighten screws "A".

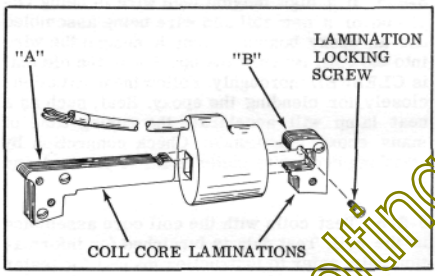

Figure 8-B-2

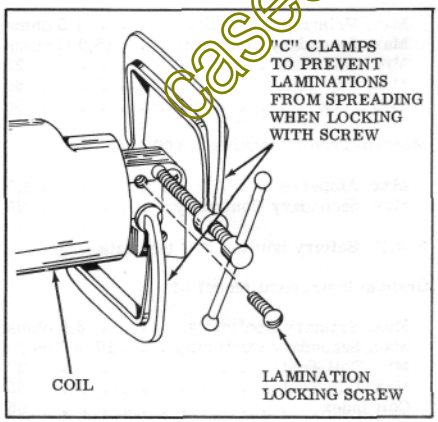

Figure 8-B-3

8-B-2, 8-B-3 Insert coil core leg (Fig. 8-B-2) "A" into coil from high tension lead side. Position coil core leg "B" as illustrated, align screw hole. Place C clamps on lamenations as illustrated to present separation when screw is turned into hole. (Fig. 8-B-3).

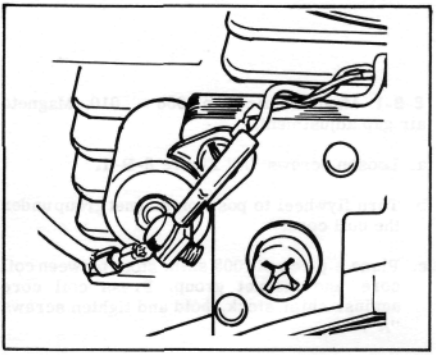

Figure 8-B-4

8-B-4 The condenser is attached to the coil core. All lead wires should be CLEAN and tight at the terminals.

Condenser Capacitance .23 - .29 microfarads.

All wire connections must be removed from condensor lead before making capacitance check.

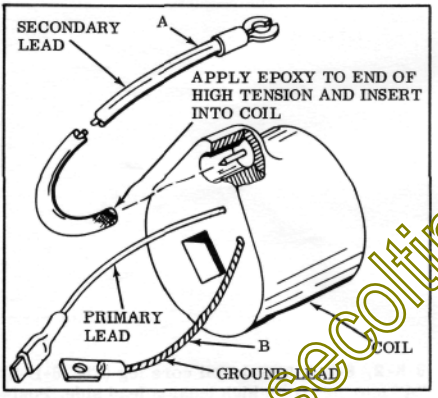

Figure 8-B-5

8-B-5 If a high tension lead wire is being replaced or a new coil and wire being assembled use an epoxy bonding agent to secure the wire into the coil. Be sure the opening in the old coil is CLEANED thoroughly. Follow the instructions closely for blending the epoxy. Heat, such as a heat lamp, will accelerate the curing time of many epoxy compounds. Check connection by attaching continuity meter leads to points A and B.

8-B-6 Test coils with the coil core assembled in the coil. Test data is furnished for information only, refer to instruction manual for tester being used.

Graham Instrument Model 51

Max. Primary Continuity	1.5 ohms
Max. Secondary Continuity	15,000 ohms
Min. Coil Test	25
Max. Gap Test	50
Coil Index	50

Merc-o-Tronic Instrument #60

Max. Amperes	1.7
Max. Secondary Continuity	76

8-B-7 Battery ignition coil test data.

Graham Instrument Model 51

Max. Primary Continuity	8.0 ohms
Max. Secondary Continuity	10,000 ohms
Min. Coil Test	37
Max. Gap Test	65
Coil Index	65

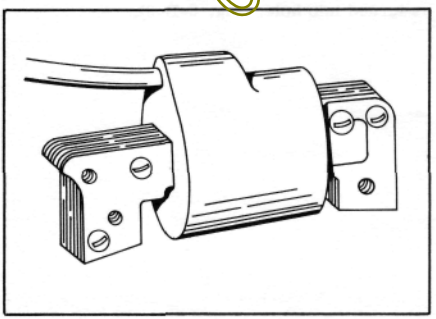

Figure 8-B-6

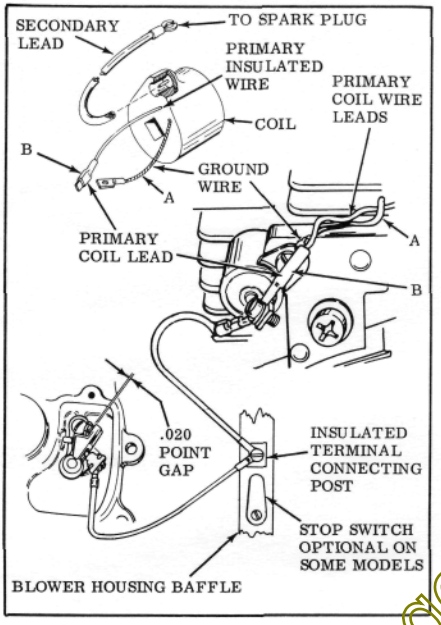

Figure 8-C-1

8-C-1 MAGNETO IGNITION WIRING DIAGRAM. The insulated wire lead (B) from the coil is connected to the condensor along with the lead from the points.

The ground wire (A) from the coil is held to the condensor mounting bracket by the mounting screw which fastens to the magneto laminations.

The secondary lead is connected to the spark plug terminal.

Any loose or dirty connections at any one point in this circuit may cause low voltage at the spark plug or may cause the points to burn prematurely. KEEP CONNECTIONS CLEAN.

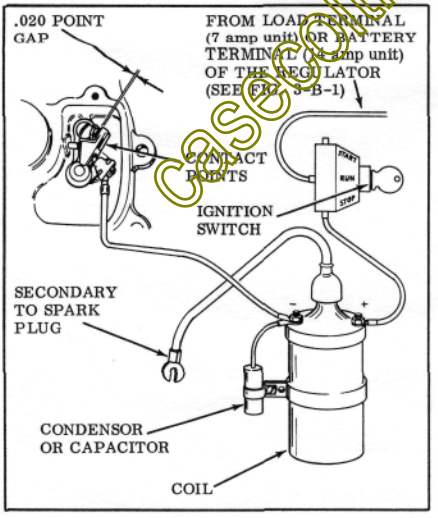

Figure 8-C-2

8-C-2 BATTERY IGNITION WIRING DIAGRAM. Current is supplied by the proper regulator terminal.

> Load terminal of the low capacity 7 Amp unit. Battery terminal of the higher capacity 14 Amp unit.

The ignition switch can be either a toggle or keyed switch depending on the equipment manufacturer's preference.

The wire from the ignition switch is connected to the positive (+) terminal on the coil.

The condensor which is the electrical shock absorber for the points is fastened onto the coil mounting bracket and the lead is connected on the negative (-) terminal of the coil along with the wire lead to the points.

At best, the ignition system is only as good as its weakest point. Keep all connections clean and tight or failures may result.