

Figure 3-26

disconnected, place the selector switch in the number 5 position (Figure 3-26).

- Turn the flywheel so the second magnet lamination in the flywheel rim is about an inch past the upper coil lamination leg.

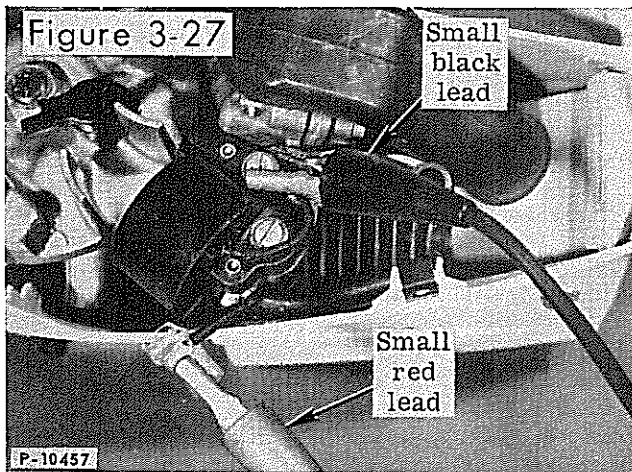


Figure 3-27

- With the Merc-O-Tronic hooked up as in the condenser capacitance test (Figure 3-27), press the red button and hold it for several seconds. The pointer should move to the right and then return to zero. When the red button is released, the pointer should move to the left and then return to zero. If the pointer does not move in this manner, install a new condenser.

COIL POWER TEST

- With the Merc-O-Tronic tester disconnected from the 110 volt outlet, connect the large red lead to the spark plug wire connector and the small black lead to ground (Figure 3-28).
- Disconnect the primary wire from the coil and hold the small red lead in contact with the coil primary terminal on the coil (Figure 3-29).

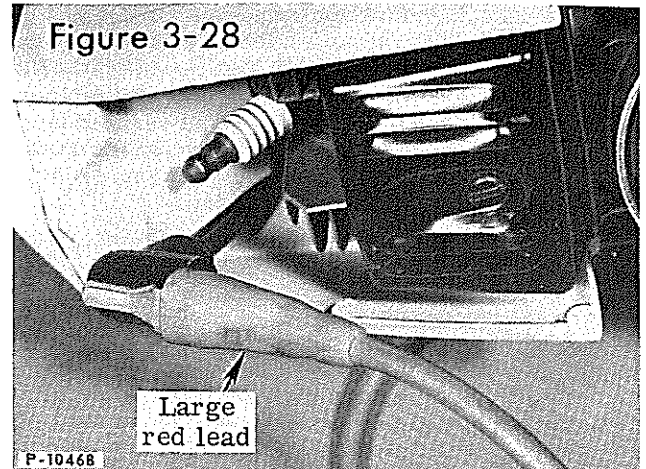


Figure 3-28

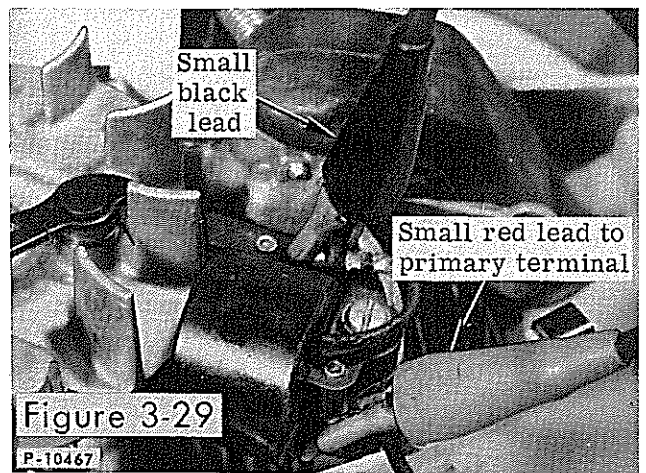


Figure 3-29

- Place the selector switch in the number 1 position. Slowly turn the current control knob toward the HI position until the spark appears in the window of the tester and becomes steady and even. The pointer should indicate no more than 1.5 amperes maximum on the number 1 scale (Figure 3-30). If the spark is faint, intermittant or no spark has occurred at a reading of 1.5 amperes maximum, a new coil should be installed.

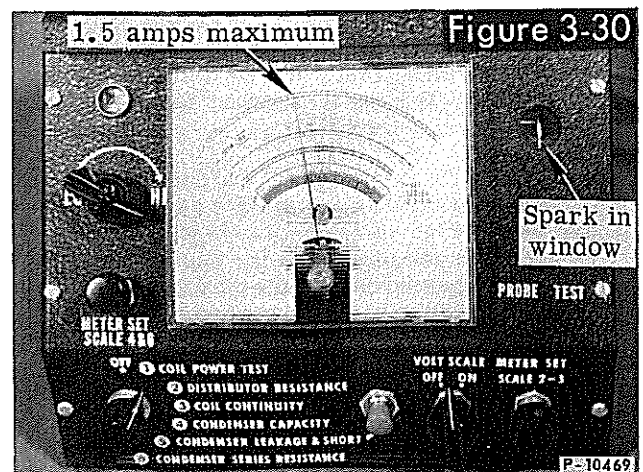


Figure 3-30

- After checking maximum amperage for the steady, even spark in paragraph 3 above, continue to turn the control knob to HI for a high speed test. The spark should remain steady. Turn the selector switch to OFF and remove the small red lead from the coil primary connection. If the spark during this high speed test is intermittent, faint or there is no spark at all, install a new coil.

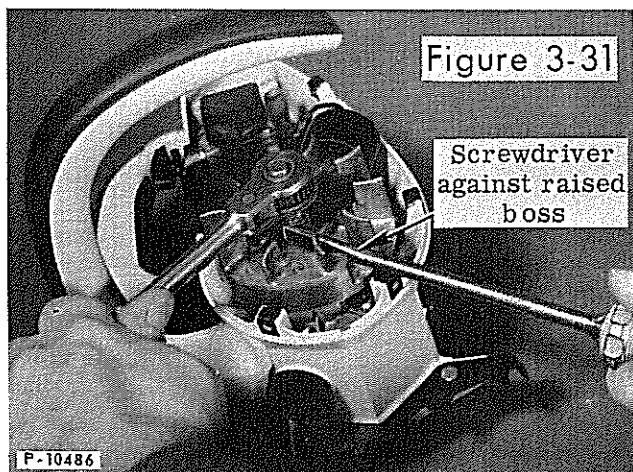
COIL SPECIFICATIONS

Operating Amperage	1.5
Secondary Continuity	50 to 60
Primary Continuity	0.7 to 1.2

FLYWHEEL

REMOVAL

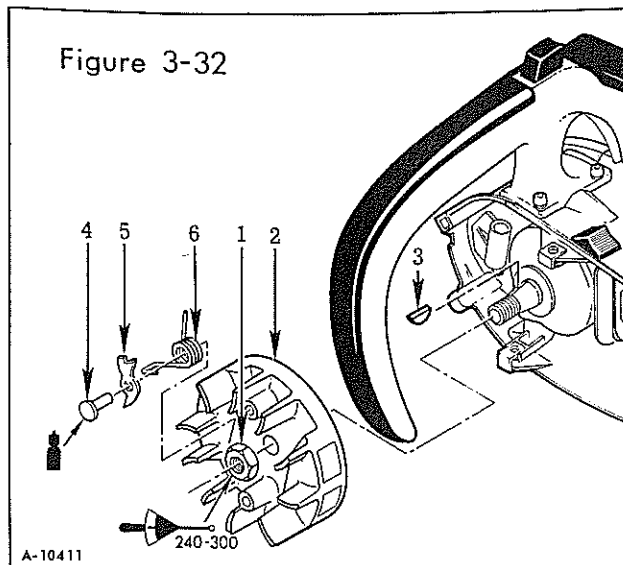
- Place a socket wrench on the flywheel nut. Lock the flywheel with a screwdriver as shown in Figure 3-31. Do not put the screwdriver against the flywheel fins because the fins can be broken. Turn the flywheel nut (1, Figure 3-32) counterclockwise to remove it.



- Gently tap the edges of the flywheel (2) or the crankshaft end with a plastic mallet until the flywheel comes loose. Remove the flywheel and the flywheel key (3) from the crankshaft.
- If the pawls (5) or springs (6) are damaged, pry out the pins (4) with two screwdrivers as shown in Figure 3-33. When installing pawls and/or springs, do not press the pins in so far that the pawls are prevented from moving. If the pins are loose in the pin sockets in the flywheel, apply a drop of Loctite before installing them. If this does not cure the looseness, install a new flywheel.

SERVICING

Install a new flywheel if any fins are broken or chipped,



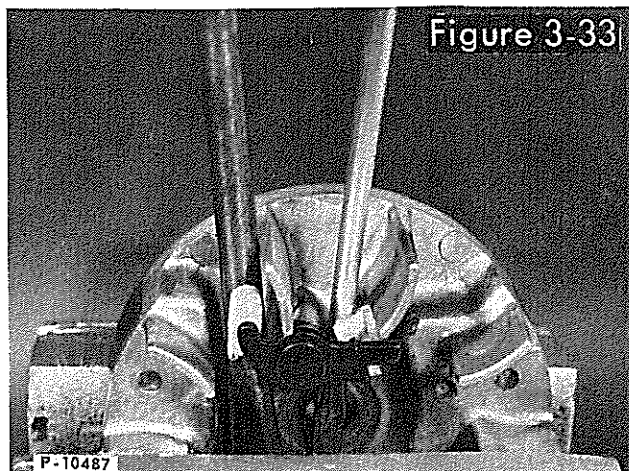
if the flywheel is cracked or if the keyway slot is damaged. The key should be replaced if it is burred or damaged. Loss of flywheel magnetism can cause faulty spark. Install a flywheel known to be good to determine if a weak magnet is causing faulty ignition.

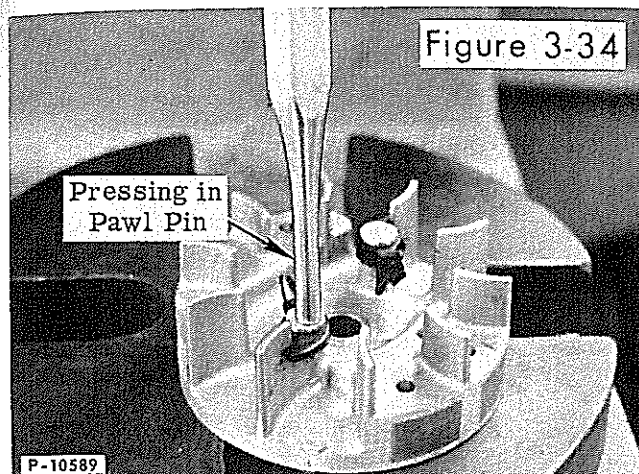
INSTALLATION

- Put the key in the keyway in the crankshaft. Mount the flywheel on the shaft and install the flywheel nut. Tighten the nut to a torque value of 240 to 300 inch pounds.
- Check the gap between the flywheel and the lamination legs. It should be 0.010 inch. For gap adjustment, see "Lamination Gap Adjustment" on page 24.

BREAKER POINTS

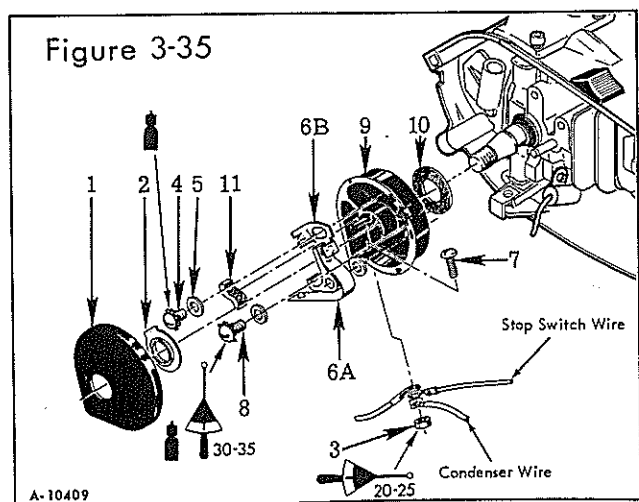
Remove fan housing, flywheel and flywheel key to reach the breaker box cover.





REMOVAL

1. Take off the breaker box cover (1, Figure 3-35) and seal (2).
2. Remove the nut (3) fastening the wire leads to the lower side of the breaker box and remove the wire leads from the end of the mounting screw.
3. Remove the screw (4) and washer (5) fastening the breaker assembly (6) to the box. Remove the wire lead connection screw (7). The breaker assembly is in two parts: a spring-loaded cam (6A) and a base assembly (6B). Remove both parts.
4. Remove the screw (8) attaching the breaker box (9) to the crankcase and lift off the box and seal (10) beneath it. Remove the felt wiper (11).



SERVICING THE BREAKER POINTS

a. What to Look For in The Breaker Box

Inspect the box and cover for damage. Look for oil in the box, on the wiper, the breaker assembly parts

and inside the cover. Excessive oil indicates a leaking crankshaft seal and a new seal will have to be installed. Clean any oil from the breaker points with solvent and blow dry with low (three to five pounds) pressure air.

b. What to Look For in the Breaker Points

Examine the spring loaded cam for wear from the cam and pivot pin. Examine the points for wear, pitting and misalignment. Install a new breaker assembly, rather than try to correct any serious pitting or misalignment. Electrolysis as a dull gray corrosion may form on the points. Corrosion, minor wear and minor pitting can be removed by drawing crocus cloth between the points after the breaker assembly is installed. Hold the points together while drawing the cloth between them. Misalignment can be corrected after installation by bending the spring portion of the spring loaded cam.

c. Corrosion on New Breaker Points

New breaker point assemblies are subject to electrolytic reaction when in storage. Use crocus cloth to remove the corrosion as in b. above.

INSTALLATION

1. Put the breaker assembly base and cam follower in the breaker box. Push the lead connection screw (7, Figure 3-35) through the screw holes in the spring and the side of the breaker box. Place the felt wiper in the box.
2. Place the seal (10), breaker box and breaker assembly on the crankshaft with the pivot pin passing through the breaker assembly base and cam follower.
3. Put a drop of Loctite on the box attaching screw (8) and install the screw. Tighten the screw to a torque value of 30 to 35 inch pounds.
4. Mount the coil primary wire, the wire from the stop switch and the condenser wire on the end of the lead connection screw. Install the nut and tighten it securely. Put a drop of Loctite on the breaker assembly adjustment screw and install it just tight enough to permit setting the timing.
5. Set timing as described in the paragraph "How to Set the Breaker Points" which follows this installation procedure.
6. Install the seal (2) and cover. Make sure the cover is pressed tightly onto the box.
7. Reinstall the flywheel key, flywheel, flywheel nut (tighten to 240 to 300 inch pounds) and fan housing.

HOW TO SET THE BREAKER POINTS

These paragraphs cover setting the breaker points. The breaker point setting however, can be checked without removing the flywheel. See page 30A for how to do this.

1. Use the Merc-O-Tronic tester or a timing light with Timing Guide, P/N 83687, to set the points. Turn the Merc-O-Tronic tester selector switch to the number three position, short the small red and black leads together and adjust the meter set knob for scale 2 and 3 until the meter pointer lines up with the set line on the number three scale.
2. Disconnect the primary wire from the engine and connect it to one of the leads from the Merc-O-Tronic tester or the timing light. Ground the other lead from the tester or timing light on the engine.
3. With the flywheel, flywheel key, breaker box cover and seal removed, reinstall the key in the crankshaft. Put the timing guide on the crankshaft with the guide fitting over the key and the shaft turned so that the outer end of the guide is between the two legs of the lamination as shown in Figure 3-35A.

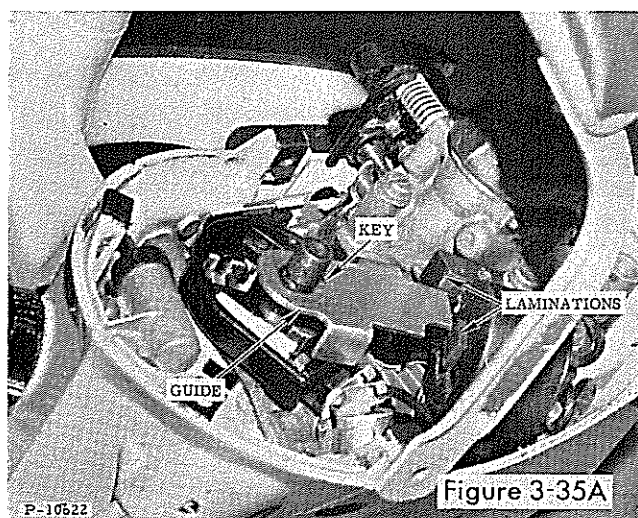
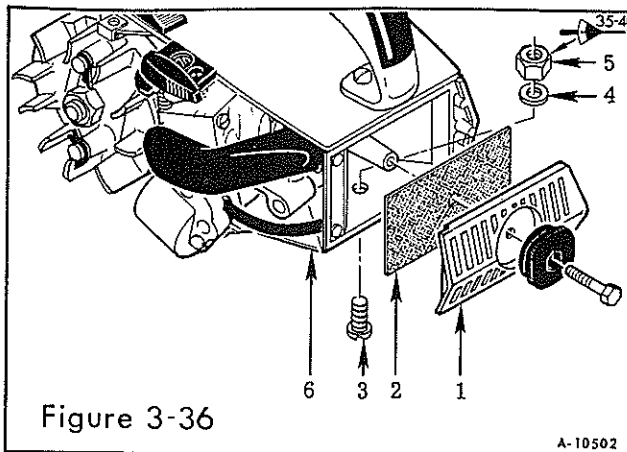


Figure 3-35A

4. With the guide against the leg of the lamination that goes through the center of the coil, the tester pointer should be to the right and the timing light should be on. Turn the shaft counter-clockwise so the guide moves against the upper lamination leg; the tester pointer should move to the left and the timing light should go out. Adjust the breaker points so that these two conditions are met. Tighten the breaker point adjusting screw securely and re-check the adjustment.
5. Remove the guide and key. Reinstall the seal, box cover, key, flywheel and flywheel nut. Tighten the nut to a torque of 240 to 300 inch pounds. Reinstall the primary wire and insulating sleeve. If there is no sleeve, insulate the connection with a coating of Dow Corning Silastic RTV732 or similar non-conductive sealant. Reinstall the fan housing.

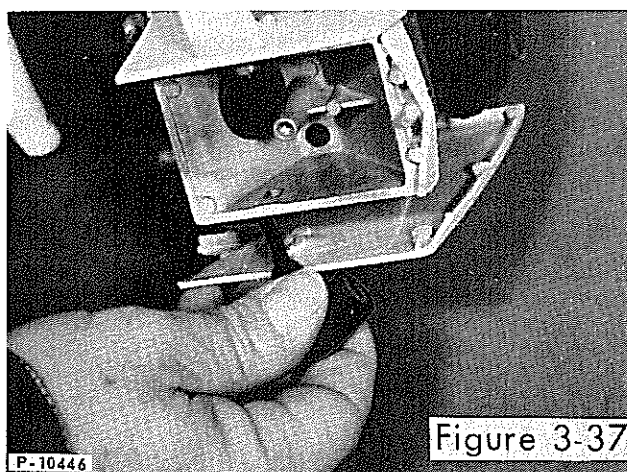
COIL & LAMINATION ASSEMBLY

Remove the fan housing in order to remove the coil and lamination assembly.



REMOVAL

1. In order to free the spark plug wire, it is necessary to loosen the bottom shroud. Remove the air filter cover (1, Figure 3-36) and air filter (2). Remove the screw (3), washer (4) and nut (5) attaching the bottom shroud (6) to the air filter housing. Loosen the two front bottom shroud attaching screws.
2. Disconnect the spark plug wire from the spark plug and slide the wire around to the left side of the saw, passing the wire between the rear of the shroud and the bottom of the housing (Figure 3-37).



3. Turn the flywheel until the magnet laminations are away from the coil lamination. Remove the two screws attaching the coil and lamination assembly to the carburetor assembly (Figure 3-38). Disconnect the primary wire from the coil.

SERVICING THE SPARK PLUG WIRE

a. How to Replace the Spark Plug Wire

If the spark plug wire is frayed or damaged, install a new wire.

1. Pull the old wire out of the socket in the side of the coil.