

## SECTION 3 - IGNITION and ELECTRICAL SYSTEMS

**MERCURY**  
**SNOWMOBILES**

### PART A - FLYWHEEL MAGNETO and THUNDERBOLT IGNITION PARTS REPLACEMENT



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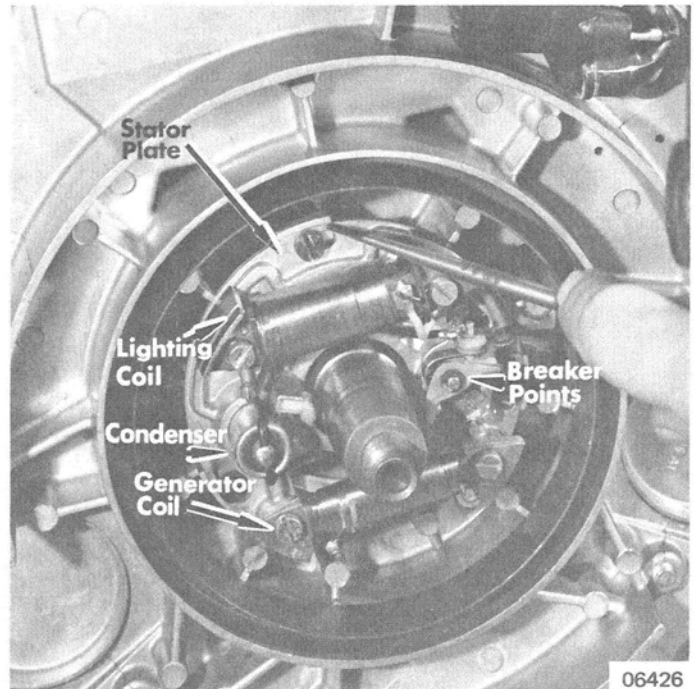
# FLYWHEEL MAGNETO PARTS REPLACEMENT

## MODEL 200

### REMOVAL

1. Remove top cowl.
2. Remove "J" clip and ground wire from recoil starter housing.
3. Remove flywheel housing.
4. Remove flywheel fan assembly.
5. Remove 3 stator leads from terminal block and push grommet thru crankcase slot toward stator.
6. Remove blue ignition coil lead wire from breaker points.
7. Scribe an aligning mark on stator plate and crankcase. (Figure 1)
8. Remove 3 stator plate attaching screws and lift stator off crankshaft, being careful of attached wires.

Figure 1. Scribing Stator Plate



### DISASSEMBLY

1. Remove 2 lighting coil attaching screws and remove ground wire from under coil. Unsolder leads from lighting coil as shown in Figure 2.
2. Remove 2 generator coil attaching screws and unsolder condenser lead from coil. Generator coil now may be removed.
3. Remove condenser lead from breaker points and remove condenser.
4. Remove breaker points attaching screw and remove breaker points.
5. Slide lubrication wick out of holder.

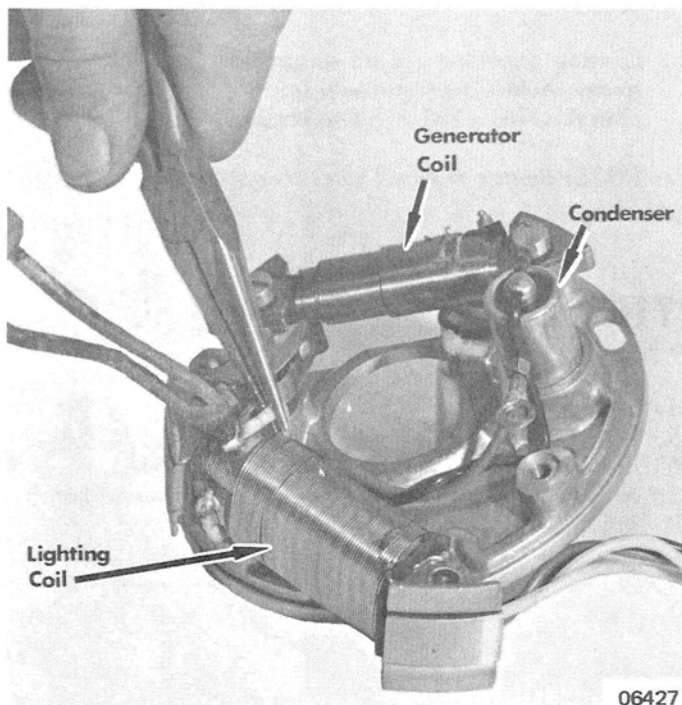


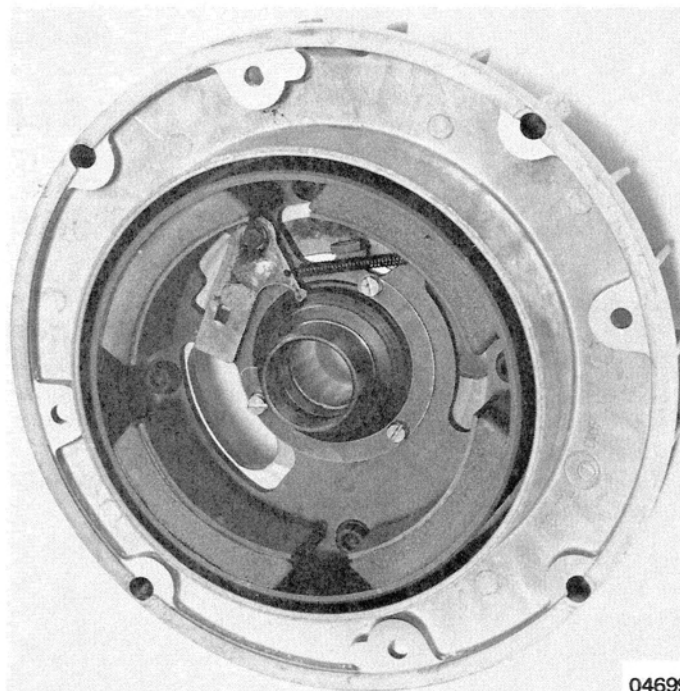
Figure 2. Unsoldering Lighting Coil Leads



## CENTRIFUGAL ADVANCE

A spark advance mechanism is located inside the flywheel. Check to see if mechanism works freely in both directions. If not, remove 3 common head screws which hold cam retainer. Remove horseshoe retainer from advance weight. Clean all parts and inspect for wear. Replace necessary parts and reassemble and recheck. (Figure 3)

Figure 3. Spark Advance



## INSPECTION

1. Visually inspect lead wires for cracks or breaks and breaker points for burned or pitted contact surface.
2. Check spark advance lever and cam in flywheel/fan assembly for wear and freedom of movement.
3. Test components as explained in "Ignition and Electrical System" Section 3B and 3D.
4. Replace lubrication wick, if worn, or lubricate, if dry, with drop of No. 30 oil.

## REASSEMBLY

1. Slide lubrication wick into retainer.
2. Position lighting coil and ground wire on stator plate and attach with 2 screws. Resolder coil leads with resin flux solder.
3. Install breaker points on stator plate.
4. Install condenser in stator plate and carefully stake in place.
5. Position generator coil on stator plate and attach with 2 screws. Solder generator coil lead to condenser lead with resin flux solder and attach to breaker points.

*NOTE: Be sure that lead wires are not pinched under coils.*

## INSTALLATION

1. Insert stator leads thru crankcase slot and blue ignition coil lead thru stator plate. While pulling gently on wires, slide stator over crankshaft. Set stator in place, align marks and attach with 3 screws.
2. Connect leads to terminal block and breaker points.
3. Lubricate rubber grommet and install into crankcase slot, being careful not to damage wire insulation.
4. Install flywheel fan assembly.
5. Adjust points and time engine.
6. Install flywheel cover and rewind starter assembly.
7. Attach "J" clip and ground wire to rewind starter housing.
8. Install top cowl.

# FLYWHEEL MAGNETO PARTS REPLACEMENT

## ROCKET (339cc) and LIGHTNING (398cc)

### REMOVAL

1. Open top cowl.
2. Remove louvered dash panel. Remove lower air baffle and 4 dash attaching screws.
3. Remove spark plug wires from spark plugs and position dash as shown in Figure 1.



Figure 1. Dash Position

4. Remove spark plug lead wire retaining clip from engine shroud.
5. Disconnect wiring harness and remove tab housing and retainer from engine.

6. Remove rewind starter assembly.
7. Remove fan shroud.
8. Remove upper pulley, fan belt, starter hub, lower fan pulley and flywheel dust cover.
9. Remove secondary ignition coil cover and ground wire.
10. Remove secondary ignition coils as an assembly. (Figure 2)
11. Remove flywheel and back plate.

*NOTE: Stator assembly need not be removed from engine for replacement of lighting coil, primary ignition coils, condensers or breaker points. When complete stator assembly is removed, it will be necessary to adjust breaker points and re-time engine at time of replacement.*

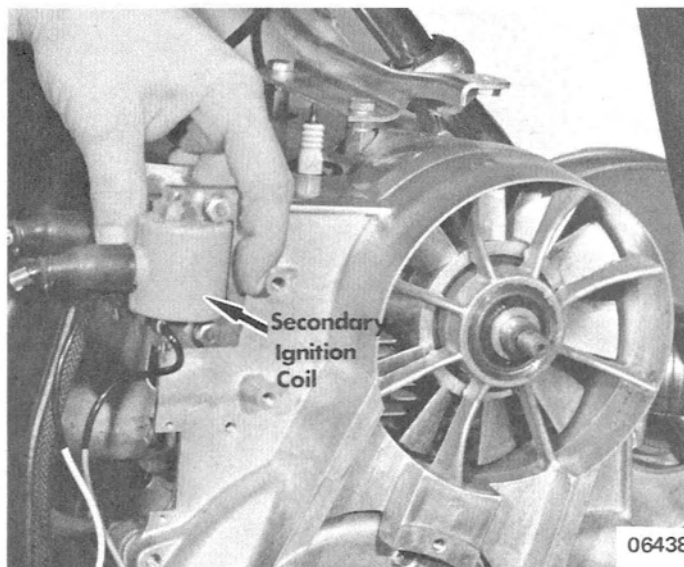


Figure 2. Secondary Ignition Coils Removed

### CENTRIFUGAL ADVANCE

#### REMOVAL

1. Remove flywheel.
2. Remove snap ring from flywheel hub. (Figure 3)
3. Scribe a location mark on flywheel hub and advance cam for reference during reinstallation.
4. Pull movable point cam off flywheel hub.
5. Remove counterweight springs.
6. Remove counterweight lockrings and remove counterweight from flywheel stud, if necessary. Note location and number of spacer washers.

#### CLEANING and INSPECTION

1. Replace all damaged parts.
2. Check cam for rough surface which could cause premature ignition point wear.

#### INSTALLATION

1. Position counterweight and spacer washers on flywheel stud. Secure with lockrings.
2. Align scribe marks (made during removal) on flywheel hub and advance cam. Slide advance cam into position with counterweight ends in respective notches of advance cam.
3. Install snap ring retainer.

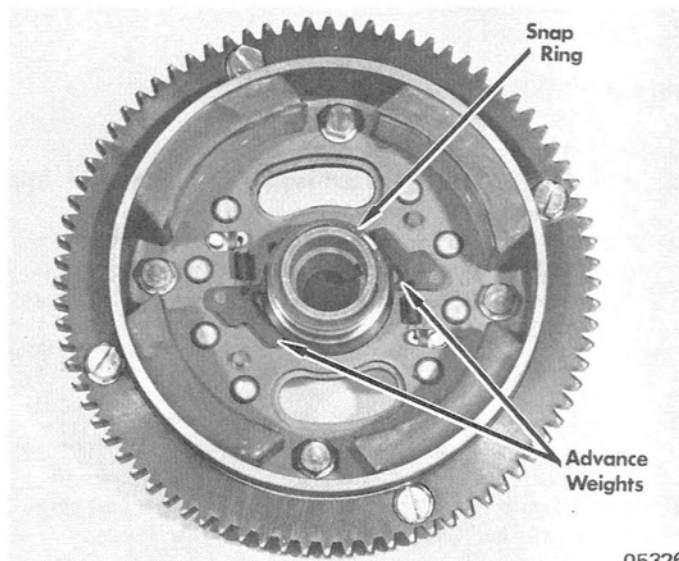


Figure 3. Spark Advance Mechanism

# INSPECTION

1. Visually inspect lead wires for cracks or breaks and breaker assemblies for burned or pitted contact surfaces.
2. Check components as outlined in "Ignition and Electrical Systems" Section 3B and 3D.

3. Check ignition advance cam, levers and springs in flywheel for wear and freedom of movement.
4. Replace lubrication wick, if worn, or lubricate, if dry, with drop of 30 oil.

## COMPONENT PART REPLACEMENT

### BREAKER POINTS and CONDENSERS

1. Remove condenser lead wires from breaker points and unsolder lead wires from condensers.
2. Remove breaker points, condensers and lubrication wick from stator plate by removing attaching screws.
3. Position new breaker points, condensers and lubrication wick on stator plate and secure with attaching screws. (Figure 4)

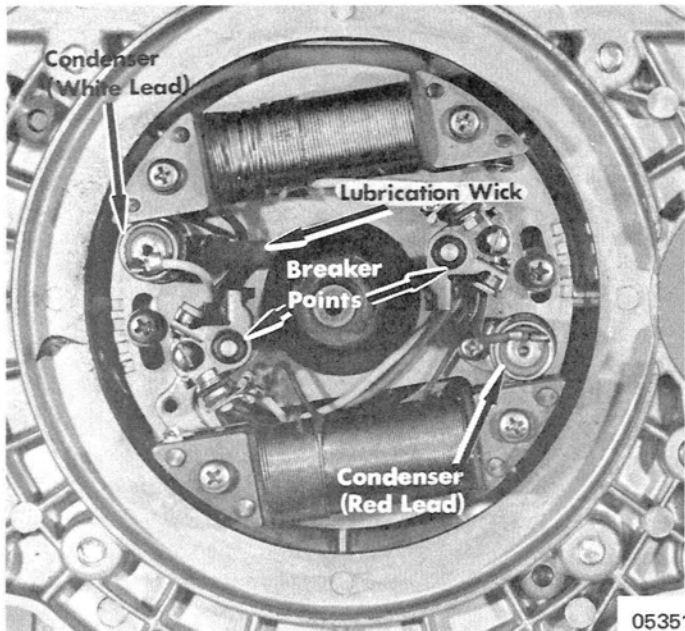


Figure 4. Breaker Point and Condenser Location

4. Secure condenser leads to breaker points and solder lead wires to condensers.
5. Adjust breaker points.

### PRIMARY IGNITION COILS

1. Unsolder ignition coil lead wires from condensers.
2. Remove ignition coil attaching screws and spacer from between ignition coils.
3. Position new ignition coils on stator plate and secure with attaching screws. Ignition coil with red lead (No. 2 cylinder) is on the bottom, and coil with white lead (No. 1

cylinder) is on top. Be sure that spacer washers are placed between ignition coils.

4. Solder ignition coil leads to condensers.

### LIGHTING COIL

1. Remove lighting coil attaching screws.
2. Cut yellow (2) lighting coil leads as close to lighting coil as possible and remove coil.
3. Solder yellow leads from lighting coil to yellow leads from tab housing with resin flux solder and protect with heat shrinkable sleeve or friction tape. (Figure 5)
4. Tape spliced lead wire securely to lighting coil with friction tape to prevent tangling with movable parts of stator or flywheel.

**IMPORTANT: DO NOT** use plastic type electrical tape. A minimum of one layer of tape must be placed between splice and coil.

5. Attach lighting coil to stator plate.

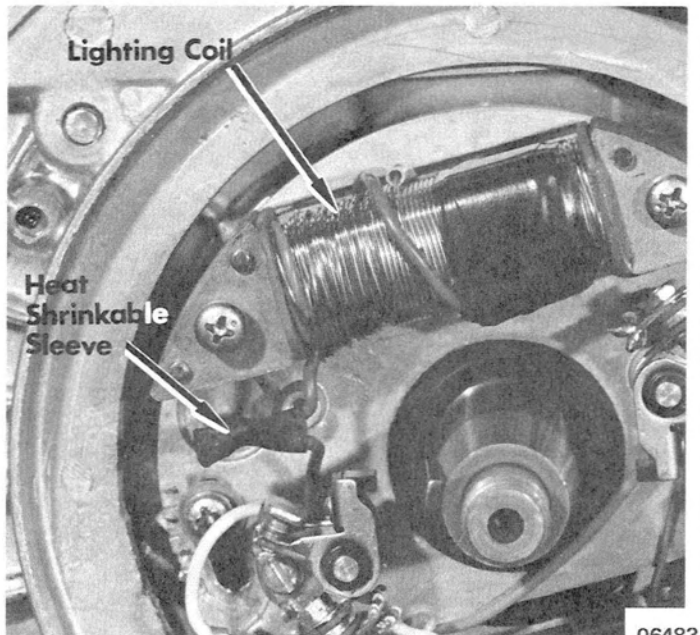


Figure 5. Sleeve Installed on Splice

## INSTALLATION

1. Install back plate, flywheel housing and fan assembly.
2. Connect engine and vehicle wiring harness. Secure tab housing to flywheel housing with retainer and 2 screws.
3. Install ignition coils and coil cover. Be sure that ground wire is attached with lower coil cover screw.
4. Attach spark plug lead retaining clip to engine and spark plug leads to spark plugs.
5. Install dust cover, stator hub, upper and lower fan pulleys

- and fan belt. Make certain that fan belt does not get pinched in upper pulley during installation.
6. Install fan shroud.
7. Install rewind starter.
8. Shift dash back into position and attach dash and air inlet baffle.
9. Install louvered dash panel.
10. Close top cowl.

# FLYWHEEL MAGNETO PARTS REPLACEMENT

## HURRICANE (644cc)

### REMOVAL

1. Open top cowl.
2. Remove 6 phillips head screws and remove fan housing rubber shroud.
3. Remove 7 allen head screws and remove rewind starter.
4. Remove rewind starter ratchet from flywheel fan assembly.
5. Remove flywheel fan assembly as follows:
  - a. Install Modified End Cap Puller (C-91-25733A3) on flywheel. (Figure 1)
  - b. Hold flywheel with Flywheel Holder (C-91-52344), tighten puller center bolt to 45 ft. lbs. maximum and tap center bolt ONCE to free flywheel. If flywheel does not pop loose, tap each side of flywheel alternately, using wood block and hammer (while maintaining torque on center bolt) until flywheel is free.
6. Remove 4 nuts and washers from stator and remove stator.
7. Remove lubrication wick. Remove breaker points by removing attaching screws and nuts. (Figure 2)
8. Position new breaker points and secure with attaching screws and nuts. Install lubrication wick. Install stator with 4 washers and nuts.
9. Adjust breaker points. Refer to "Timing and Adjusting", Section 3C.

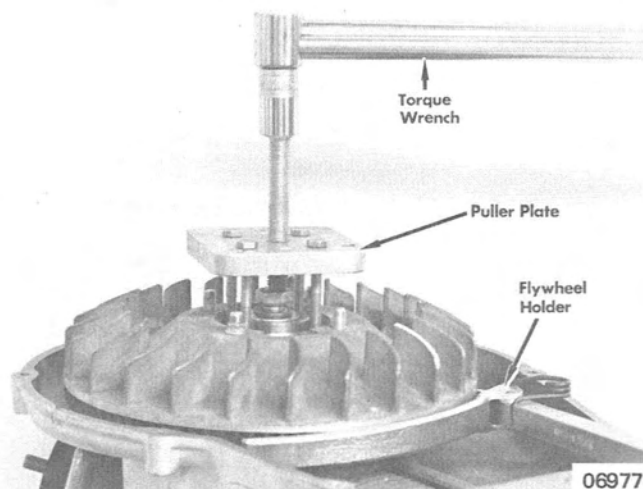


Figure 1. Flywheel Puller Installed

NOTE: Refer to Section 9 - "Tools" for modification template.

**CAUTION:** Puller plate screws can cause damage to advance counterweights, if over-tightened. DO NOT use a wrench. Hand-tighten only.

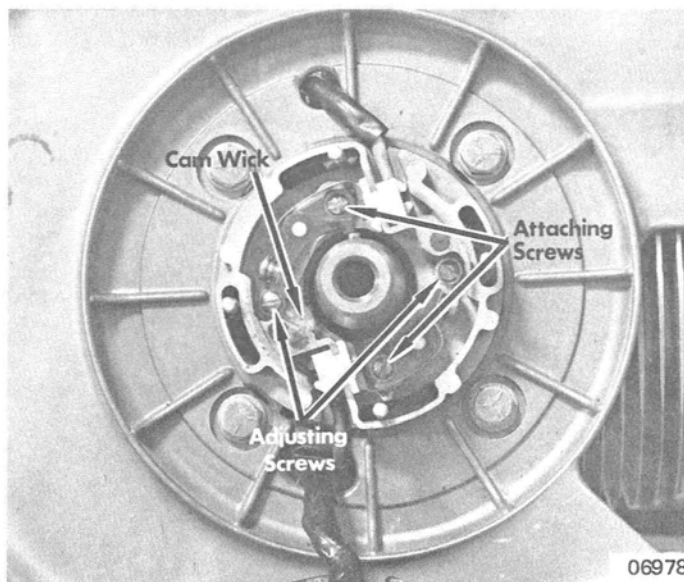


Figure 2. Breaker Points and Cam Wick

### INSPECTION

1. Visually inspect lead wires for cracks or breaks and breaker assemblies for burned or pitted contact surfaces.
2. Check components as outlined in "Ignition and Electrical Systems" Section 3B and 3D.
3. Check ignition advance cam, levers and springs in flywheel for wear and freedom of movement.
4. Replace lubrication wick, if worn, or lubricate, if dry, with drop of 30 oil.

### INSTALLATION

1. Install flywheel fan assembly and torque to specifications. Secure starter ratchet to flywheel.
2. Install fan housing cover and rewind starter assembly.
3. Attach rubber air shroud to fan housing cover.
4. Close top cowl.



# CENTRIFUGAL ADVANCE

## REMOVAL

1. Remove flywheel.
2. Remove screws and remove cam retainer. (Figure 3)
3. Scribe a location mark on flywheel hub and advance cam for reference during reinstallation.
4. Pull movable point cam off flywheel hub.
5. Remove counterweight springs.
6. Remove counterweight lockrings and remove counterweight from flywheel stud, if necessary.

## CLEANING and INSPECTION

1. Replace all damaged parts.
2. Check cam for rough surface which could cause premature ignition point wear.

## INSTALLATION

1. Align scribe mark on flywheel hub and advance cam and install cam. Install cam retainers and secure with screws.
2. Install counterweights and secure with lockrings. (Figure 3)

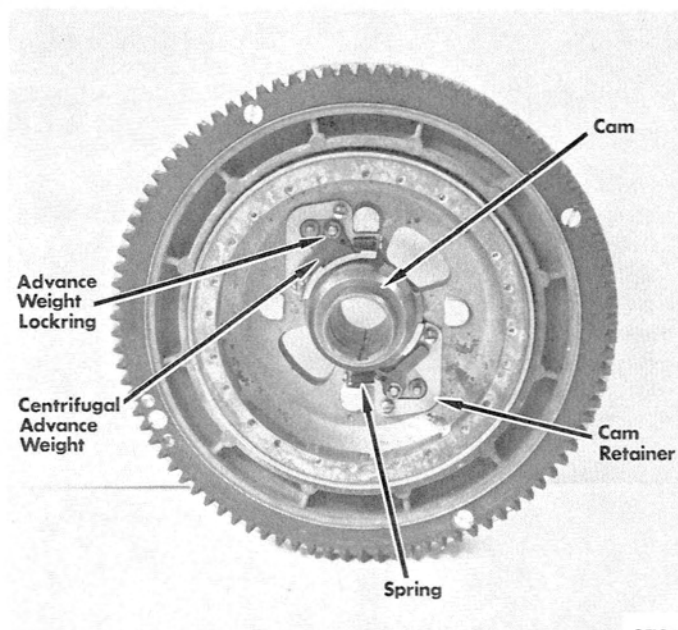


Figure 3. Spark Advance Mechanism

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# FLYWHEEL MAGNETO PARTS REPLACEMENT

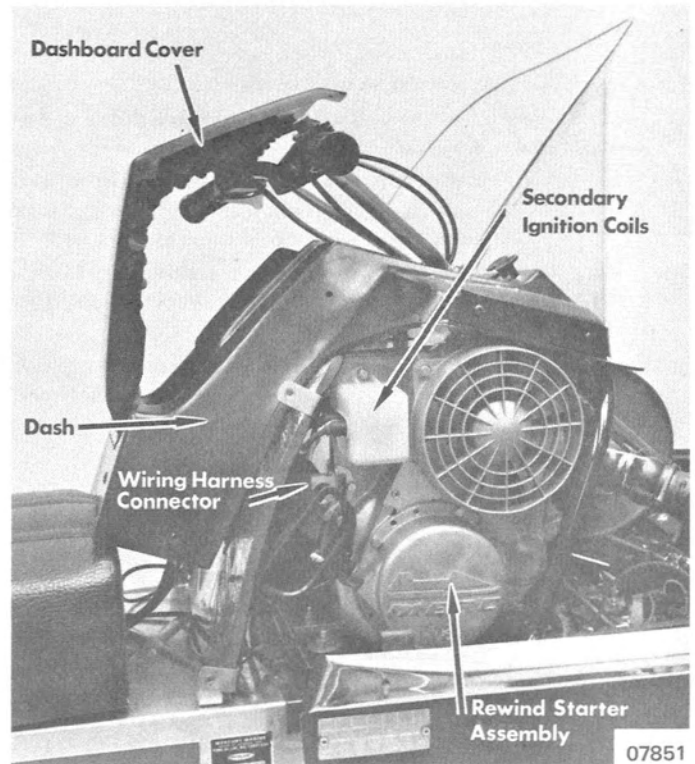
## 440 MAX, 440 M/X and 440 S/R

### REMOVAL

1. Open top cowl and dashboard cover.
2. Remove spark plug wires from spark plugs.
3. Remove dash attaching screws and position dash as shown in Figure 1.
4. Remove spark plug wire retaining clip from engine shroud.
5. Disconnect engine wiring harness and secondary ignition coil wires. Remove wiring harness connector retainer and engine wiring harness connector from fan housing.
6. Remove rewind starter assembly.
7. Remove rewind starter pulley, fan pulley and dust cover (if so equipped) from flywheel.
8. Remove fan housing, secondary ignition coils and fan as one assembly.
9. Remove flywheel (refer to Section 5E).

*NOTE: It is not necessary to remove stator assembly from engine for replacement of lighting coil, primary ignition coils, condensers or breaker points. When complete stator assembly is removed, it will be necessary, however, to adjust breaker points and re-time engine at time of replacement.*

Figure 1. Dash Position



### INSPECTION

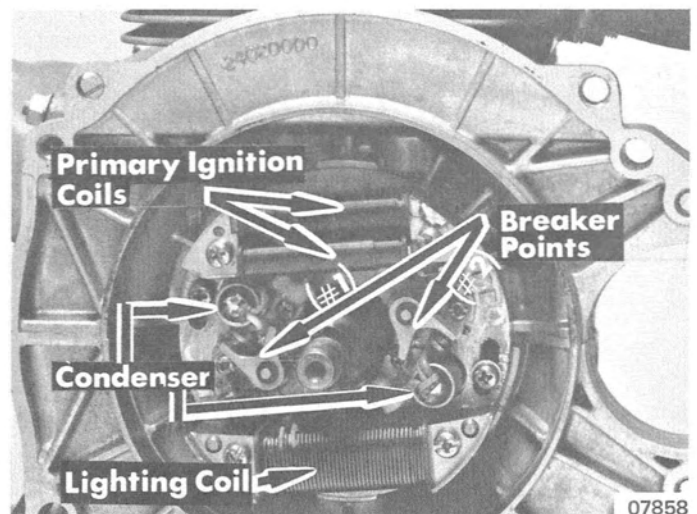
1. Visually inspect lead wires for cracks or breaks and breaker assemblies for burned or pitted contact surfaces.
2. Check components as outlined in "Ignition and Electrical Systems" Sections 3B and 3D.
3. Check ignition advance cam, levers and springs in flywheel for wear and freedom of movement.
4. Replace lubrication wick, if worn, or lubricate, if dry, with drop of 30 oil.
5. Replace parts as necessary.

### COMPONENT PART REPLACEMENT

#### BREAKER POINTS and CONDENSERS

1. Remove condenser lead wires from breaker points and unsolder lead wires from condensers.
2. Remove breaker points, condensers and lubrication wick from stator plate by removing attaching screws.
3. Position new breaker points, condensers and lubrication wick on stator plate and secure with attaching screws. (Figure 2)
4. Secure condenser leads to breaker points and solder lead wires to condensers.
5. Place flywheel in position on crankshaft and adjust breaker points to specifications. (Refer to Sections 3C and 8.)

Figure 2. Breaker Point and Condenser Location



### PRIMARY IGNITION COILS

1. Unsolder ignition coil lead wires from condensers.
2. Remove ignition coil attaching screws and ignition coils from stator plate.
3. Position new ignition coils on stator plate and secure with attaching screws.
4. Solder ignition coil leads to condensers.

### LIGHTING COIL

1. Remove lighting coil attaching screws.
2. Cut yellow (2) lighting coil wires as close to lighting coil as possible and remove coil.
3. Solder yellow leads from new lighting coil to yellow leads from harness connector with resin flux solder and protect with heat shrinkable sleeve or friction tape. (Figure 3)
4. Tape spliced lead wire securely to lighting coil with friction tape to prevent tangling with movable parts of stator of flywheel.

**IMPORTANT: DO NOT** use plastic type electrical tape. A minimum of one layer of tape must be placed between splice and coil.

5. Attach lighting coil to stator plate.

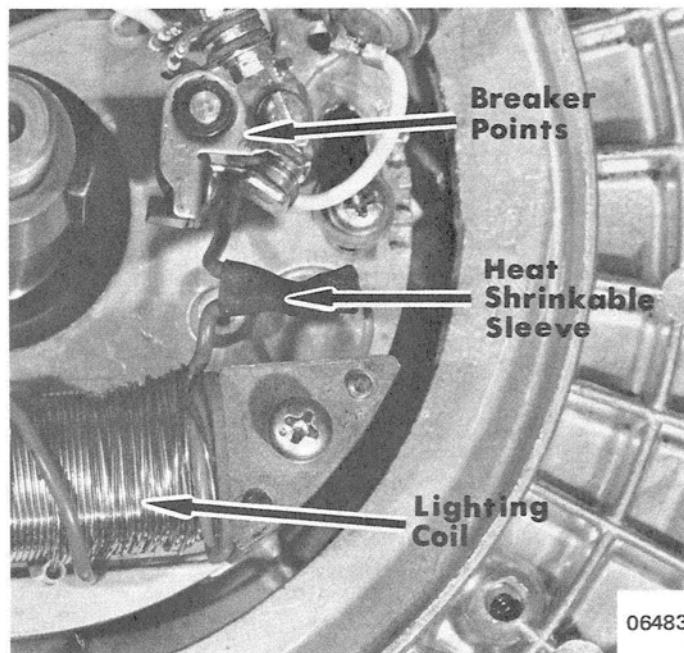


Figure 3. Sleeve Installed on Splice

## INSTALLATION

1. Install flywheel.

*NOTE: If breaker points or stator plate were replaced, it will be necessary to adjust breaker points and re-time engine at this time. (Refer to Sections 3C and 8.)*

2. Install fan housing, secondary ignition coils and fan as one assembly.
3. Install dust cover (if so equipped), fan pulley and rewind starter pulley on flywheel.

*NOTE: Fan belt must be properly positioned on both pulleys.*

4. Install rewind starter assembly.

*NOTE: Ground wire from cowl support bracket must be attached to rewind attaching screw.*

5. Secure engine wiring harness connector to fan housing with retainer and screw.
6. Connect secondary ignition coil wires and wiring harness.
7. Attach spark plug wires to engine shroud with retaining clip.
8. Attach spark plug wires to spark plugs.
9. Move dash into position on chassis and fasten with attaching screws.

**WARNING:** Make sure that throttle return spring is connected to throttle arm on carburetor (if so equipped).

10. Close dashboard cover.
11. Close top cowl.

# CENTRIFUGAL ADVANCE

## REMOVAL

1. Remove flywheel. (Refer to Section 5E.)
2. Scribe a location mark on flywheel hub and advance cam for reference during installation.
3. Remove "E" rings which hold counterweights to flywheel stud. Note location of spacer washers. (Figure 4)
4. Remove counterweight springs and counterweights from flywheel.
5. Align notches in advance cam with retaining arms and remove cam.

## CLEANING and INSPECTION

1. Replace all damaged parts.
2. Check cam for rough surface which could cause premature ignition point wear.

## INSTALLATION

1. Lubricate advance cam with Low Temperature Grease (C-92-59999-12).
2. Install advance cam on flywheel hub by aligning notches in cam with retaining arms on flywheel.
3. Align scribe mark (made in removal) on cam with mark on flywheel.
4. Install counterweights, counterweight springs and washers. Secure with "E" rings.

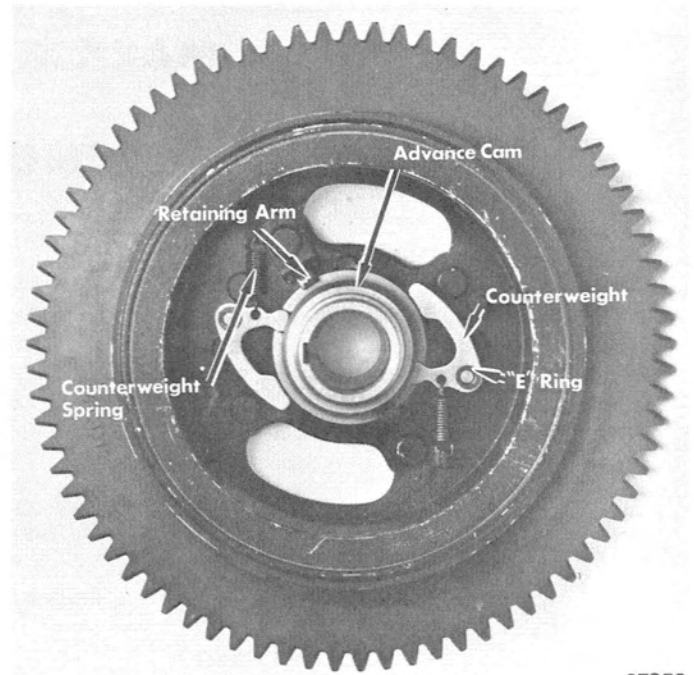


Figure 4. Spark Advance Mechanism

5. Check advance cam for movement on flywheel hub.
6. Install flywheel.

# FLYWHEEL IGNITION PARTS REPLACEMENT MARK I (644cc) and MARK II (644cc)

## REMOVAL

1. Open top cowl.
2. Disconnect battery cables from battery.
3. Remove screws and "D" washers which secure harnesses and wires to fan housing. Remove trigger wires from switchbox terminals (or wires) and stator wires from rectifier and switchbox terminals (or wires).
4. Remove 2 bolts which fasten switchbox cover (if so equipped) and switchbox to fan housing. Position switchbox and wiring harnesses away from fan housing.

*NOTE: Remove rectifier assembly from fan housing on Mark II snowmobiles with CHASSIS Serial No. 3787640 and above.*

5. Remove 7 allen head screws and remove fan housing assembly.
6. Remove flywheel fan assembly as follows:
  - a. Remove recoil starter ratchet.
  - b. Loosen flywheel retaining bolt  $\frac{1}{4}$ ".
  - c. Install End Cap Puller (C-91-25733A3) on flywheel. (Figure 1)

**CAUTION:** Puller plate bolts can cause damage to advance counterweights, if over-tightened. DO NOT use a wrench. Hand-tighten only.

- d. Hold flywheel with Flywheel Holder (C-91-52344), tighten puller center bolt to 45 ft. lbs. maximum and tap center bolt ONCE to free flywheel. If flywheel does not pop loose, tap each side of flywheel alternately, using wood block and hammer (while maintaining torque on center bolt), until flywheel is free.
  - e. Remove fan and flywheel assembly from engine.
7. Remove 4 screws from stator and remove stator and stator support. (Figure 2)
  8. Remove trigger plate adjusting nut from carburetor side of backplate. Move trigger plate assembly away from backplate. Note position of 3 washers in end cap.
  9. Remove 4 cap screws which hold backplate to crankcase. Pull backplate away from engine.
  10. Thread trigger and stator wires thru backplate. (Figure 2) Remove trigger and stator assemblies.

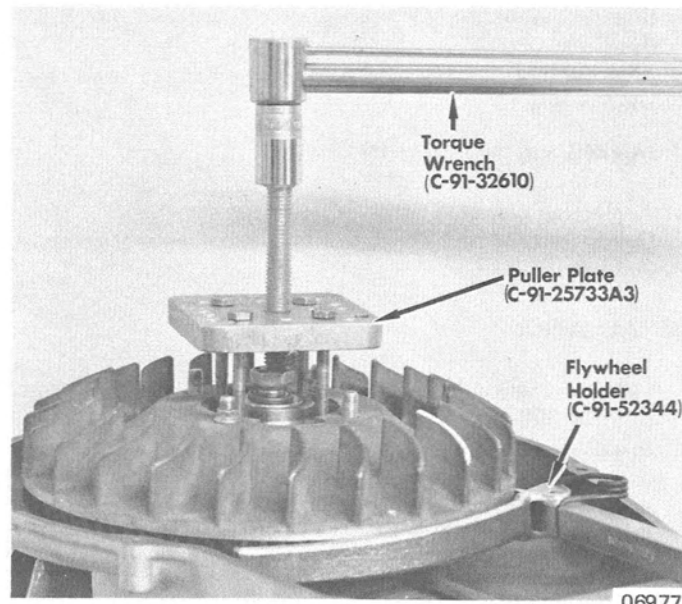


Figure 1. Flywheel Puller Installed

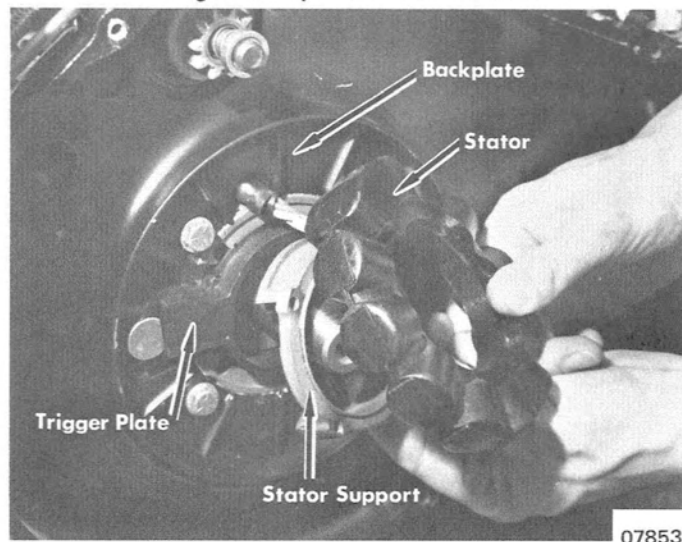


Figure 2. Trigger Assembly

## INSPECTION

1. Visually inspect lead wires for cracks or breaks.
2. Check components as outlined in "Ignition and Electrical

Systems" Sections 3B and 3E.

3. Replace parts as necessary.

## INSTALLATION

*NOTE: Use Loctite Grade A (C-92-32609-1) on all screws and nuts. Refer to Section 8 for all torque specifications.*

1. Thread trigger and stator wires thru backplate.
2. Position backplate against engine and secure with cap screws. Torque to specifications.
3. Install trigger on backplate. For an initial setting, position

trigger adjusting bolt in center of adjusting slot and secure with nut.

*NOTE: Washers (located in end cap) must be in proper position. Wave washer should be between flat washers.*

4. Install stator support and stator with 4 screws. Torque to specifications.



5. Install flywheel, fan and recoil starter ratchet. Torque flywheel and recoil starter ratchet to specifications.
6. Using 7 allen head screws, attach fan housing assembly to backplate. Torque to specifications.
7. Attach switchbox and switchbox cover (if so equipped) to fan housing. Torque to specifications.

*NOTE: Install rectifier assembly on fan housing on Mark II snowmobiles with CHASSIS Serial No. 3787640 and above.*

8. Attach trigger wires to switchbox terminals (or wires) and stator wires to rectifier and switchbox terminals (or wires).

*NOTE: Insulate terminals of switch box and rectifier with Liquid Neoprene (C-92-25711-1). If switchbox is equipped*

*with wires instead of terminals, install new heat shrinkable sleeves over wire connections.*

9. Attach harnesses and wires to fan housing with screws and "D" washers.
10. Connect battery cables to battery.

**CAUTION:** Connect red cable to positive (+) terminal and black cable to negative (-) terminal. Failure to observe correct polarity will result in destruction of rectifier and/or switchbox.

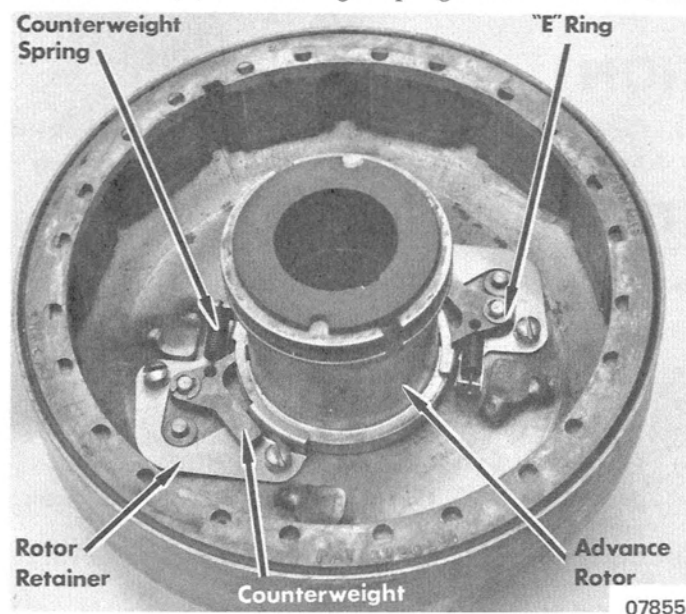
11. Refer to "Ignition and Electrical Systems" Section 3C and adjust engine timing.
12. Close top cowl.

## CENTRIFUGAL ADVANCE

### REMOVAL

1. Remove flywheel. (Refer to Section 5D.)
2. Scribe a location mark on flywheel hub and advance rotor for reference during reinstallation.
3. Remove rotor retainer attaching screws and counterweight "E" rings. (Figure 3)
4. Remove rotor retainers, counterweights and counterweight spring(s) from flywheel.

**IMPORTANT:** Mark II Models ONLY should be equipped with one (1) counterweight spring rather than two, as



shown in Figure 3. Mark II Snowmobiles with CHASSIS Serial No. 3591478 and below were factory-equipped with two counterweight springs. A service modification requires removal of one (1) counterweight spring from these snowmobiles. Mark II snowmobiles with CHASSIS Serial No. 3787640 and above were factory-equipped with one (1) counterweight spring.

5. Pull advance rotor off flywheel hub.

### CLEANING and INSPECTION

1. Replace all worn or bent parts.
2. Check rotor for rough surface which could cause premature failure.

### INSTALLATION

1. Lubricate advance rotor with Low Temperature Grease (C-92-59999-12).
2. Install rotor and align scribe mark on flywheel hub with scribe mark on advance rotor.
3. Install rotor retainers, counterweights and counterweight spring(s) in flywheel. (Figure 3)
4. Fasten rotor retainers with screws and counterweights with lockrings.
5. Check advance rotor for movement on flywheel hub.
6. Install flywheel. (Refer to "Specifications" Section 8 for torque specifications.)



**Figure 3. Spark Advance Mechanism**

# FLYWHEEL IGNITION PARTS REPLACEMENT

## 340 S/T, 400 S/T, 440 S/T, 340 T/T and 440 T/T

### REMOVAL

1. Open top cowl and remove carburetor air intake.
2. Remove exhaust pipe(s) and rewind starter assembly.
3. Remove rewind starter pulley and flywheel sheave(s) from flywheel.
4. Remove flywheel. (Refer to Section 5.)
5. Disconnect trigger and stator wires.
6. Remove stator assembly and trigger assembly attaching bolts. (Figure 1)

*NOTE: If only stator assembly will be replaced, it is not necessary to loosen trigger assembly attaching bolts.*

7. Remove screws, which secure flywheel bell housing (or fan housing), and pull housing with trigger and stator assemblies from crankshaft. On 400 S/T, note position of shim(s) and "O" ring on flywheel bell housing.
8. Remove trigger and stator harnesses from crankcase grommet.
9. Thread trigger and stator harnesses thru flywheel bell housing. Remove trigger and stator assemblies.

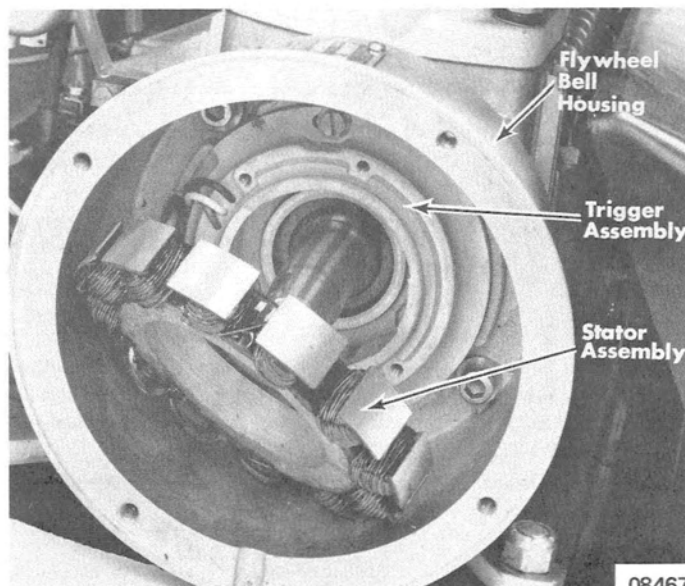


Figure 1. Removing Stator and Trigger Assemblies

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### INSPECTION

1. Visually inspect harness wires and connectors for cracks and breaks.
2. Check components as outlined in "Ignition and Electrical Systems" Sections 3B and 3D. Replace parts as necessary.

### INSTALLATION

1. On 400 S/T, lubricate flywheel bell housing oil seal and "O" ring with a small amount of Multipurpose Lubricant (C-92-63250).
2. Thread trigger and stator harnesses thru hole in flywheel bell housing (or fan housing).
3. Position trigger and stator harnesses in crankcase grommet and housing against crankcase. Secure housing to crankcase with attaching bolts. Torque bolts to specification. (Refer to "Specifications" Section 8).
- IMPORTANT:** On 400 S/T, be sure shim(s) and "O" ring are properly positioned between flywheel bell housing and crankcase. Same shim(s), which were removed, **MUST** be reinstalled.
4. Place trigger assembly in position on flywheel bell housing and secure with attaching bolts. (Figure 1)
5. Refer to "Ignition and Electrical Systems" Section 3C and adjust engine timing. Reinstall spark plugs after timing engine.
6. After timing engine, install stator assembly. (Figure 1)
7. Connect trigger and stator wires.
8. Install and secure flywheel. (Refer to Section 5.)
9. Place flywheel sheave(s) and rewind starter pulley in position on flywheel and secure to flywheel with attaching bolts.
10. Install rewind starter assembly and carburetor air intake.

*NOTE: Wire(s) should be reattached to rewind starter attaching bolt.*

11. Install exhaust pipe(s) and close top cowl.

# FLYWHEEL MAGNETO PARTS REPLACEMENT

## 340 S/R

### REMOVAL

1. Remove rewind starter assembly.
2. Remove rewind starter pulley and lower fan pulley halves from flywheel.
3. Remove flywheel (refer to Section 5).

**NOTE:** It is not necessary to remove stator assembly from

engine for replacement of lighting coils, primary ignition coil or breaker points. Removal of stator assembly will be required for replacement of condensers. If stator assembly is removed or breaker points replaced, it will be necessary to adjust breaker points and re-time engine during installation.

### INSPECTION

1. Visually inspect wires for cracks or breaks and breaker assemblies for burned or pitted contact surfaces.
2. Check components as outlined in "Ignition and Electrical Systems" Sections 3B and 3D.
3. Check flywheel centrifugal advance as outlined, following.
4. Replace lubrication wick, if worn, or lubricate, if dry, with a drop of 30 weight oil.
5. Replace parts as necessary.

## COMPONENT PART REPLACEMENT

### BREAKER POINTS (Figure 1)

1. Disconnect wires from each set of breaker points.
2. Remove breaker point assemblies by removing attaching screws.
3. Position new breaker points and secure to stator plate with attaching screws.
4. Connect wires to breaker points.
5. Place flywheel in position on crankshaft and adjust breaker point gaps to specifications. (Refer to Sections 3C and 8.)

### PRIMARY IGNITION COIL (Figure 1)

1. Unsolder black ignition coil wires from condensers.
2. Remove screws which secure small lighting coil and primary ignition coil to stator plate.
3. Replace old ignition coil with new ignition coil.
4. Secure primary ignition coil, spacers and small lighting coil to stator plate with attaching screws.
5. Solder ignition coil wires to condensers.

### LIGHTING COILS (Figure 1)

**NOTE:** Two lighting coils are mounted on stator plate. One lighting coil (small coil) has a green wire and a green/black wire attached, and the other lighting coil (large coil) has a yellow wire and a yellow/green wire attached.

1. Remove lighting coil attaching screws.
2. Cut 2 lighting coil wires (from coil which is being replaced) as close to lighting coil as possible and remove coil.
3. Splice wires from new lighting coil to wires which were cut from old coil. Solder wires with resin flux solder and protect with heat shrinkable sleeve or friction tape.
4. Tape spliced wires securely to lighting coil with friction tape to prevent tangling with movable parts of flywheel magneto.

**IMPORTANT:** DO NOT use plastic type electrical tape. A minimum of one layer of tape must be placed between splice and lighting coil.

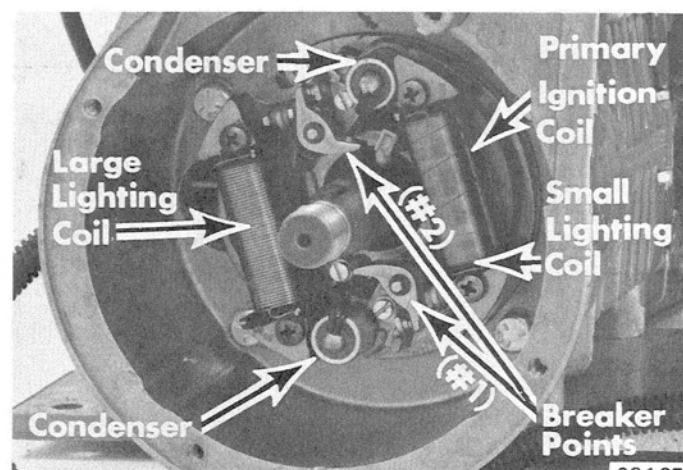


Figure 1. Stator Plate Assembly

5. Place lighting coil in position on stator plate and secure with attaching screws.

### CONDENSERS (Figure 1)

1. Remove stator plate assembly from engine.
2. Unsolder wires from each condenser.
3. Support stator plate with suitable mandrel and press each condenser from stator plate.

**CAUTION:** To avoid damaging stator plate, be sure that stator plate is properly supported when pressing on condensers. Condensers are "Loctited" and staked in place. Stator plate may require heat (applied at base of each condenser) to aid in removal of condensers.

4. Place a thin bead of Loctite Type "A" (C-92-32609) around base of each condenser. Install each condenser into position in stator plate by pressing on bottom of condensers.
5. Solder wires to condensers.
6. Reinstall stator plate assembly on engine.

## INSTALLATION

1. Install flywheel.

*NOTE: If breaker points were replaced or stator plate was removed, it is necessary to adjust breaker point gaps and re-time engine at this time. (Refer to Sections 3C and 8.)*

2. Place fan belt between halves of lower fan pulley and secure fan pulley halves and rewind starter pulley to flywheel.
3. Install rewind starter assembly.

## CENTRIFUGAL ADVANCE

### REMOVAL

1. Remove flywheel. (Refer to Section 5.)
2. Remove screws which secure advance cam retaining brackets to flywheel. (Figure 2) Lift retaining brackets and advance cam from flywheel.
3. Remove "E" ring which holds counterweight to flywheel stud. (Figure 2)
4. Lift counterweight, counterweight spring and brass washer from flywheel.

### CLEANING and INSPECTION

1. Clean and inspect all parts. Replace all damaged or worn parts.
2. Check advance cam for rough surface which could cause premature ignition point wear.

### INSTALLATION

1. Lubricate advance cam, flywheel stud and counterweight with a thin coat of Low Temperature Grease (C-92-59999).
2. Install brass washer, counterweight and counterweight spring in position in flywheel. (Figure 2)
3. Secure counterweight with "E" ring. (Figure 2)
4. Align slot in advance cam with counterweight and install cam.
5. Install advance cam retaining brackets and secure with lockwashers and screws.

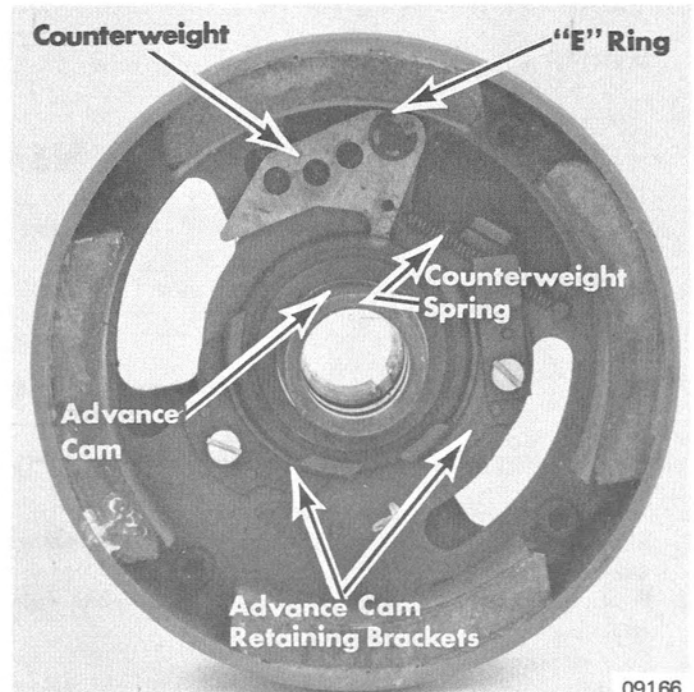


Figure 2. Centrifugal Advance Mechanism

6. Check advance cam for movement on flywheel hub.
7. Install flywheel.