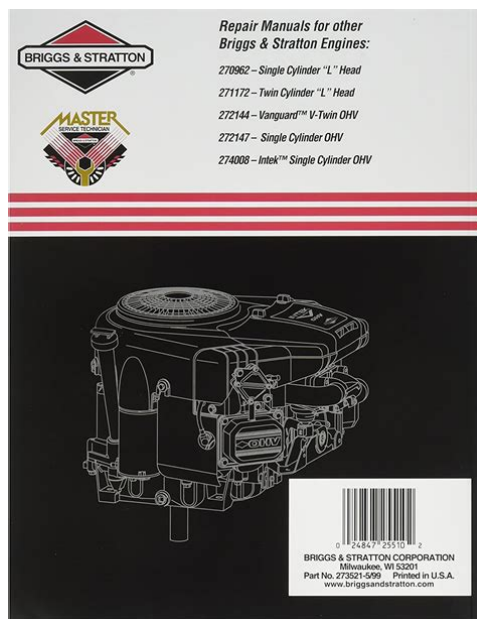


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13. <http://www.meat-travel.pl/userfiles/crown-land-administration-manual.xml>

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Special repair parts, valve guides, valve seat inserts, contact point plunger bushing, etc., are not listed in the regular Parts Lists and part numbers will be found only in this book. The term "Inspect, " "Check, " "Test" and "Replace" are used as follows INSPECT Visual inspection, look for signs of wear, scoring, cracks, stripped threads, etc. CHECK Measure by means of plug gauges, feeler gauges, micrometer, scale, etc. TEST Analyze with proper testing equipment. REPLACE This usually means to take off the old part and reassemble it or replace with a new one. Section 1 1 IGNITION. Section 2 2 CARBURETION. Section 3 3 GOVERNING CONTROL and. Section 4 CARBURETOR LINKAGE 4 GOVERNORS. Section 5 5 COMPRESSION. Section 6 6 STARTERS and CHARGING SYSTEMS. Section 7 7 LUBRICATION. Section 8 8 PISTONS, RINGS, RODS. Section 9 9 CRANKSHAFTS and CAM GEARS. Section 10 10 CYLINDERS and BEARINGS. Section 11 11 SYNCHROBALANCE. Section 12 12 TOOLS. Section 13 13 GENERAL THEORIES OF OPERATION. Dual Circuit Fuse Type. AC Only Circuit. DC Only Circuit. TriCircuit. 10 Amp Regulator. 10 Amp Fuse Type. Index. Test Equipment. Troubleshooting. Armature Air Gap. Timing. Automatic Choke. Auxiliary Drive. Battery Cable Size. Capacity. Maintenance. Bearings Ball Bearing. End Play. Plain

Bearing. Breaker Box or Cover Removal and Installation. Breaker Bushing Check and Replace. Breaker Points Adjustment. Breaker Plunger Check and Replace. Breaker Shaft Remove and Install. Breather Checking and Installation. Camshaft Aluminum Cylinder. Cast Iron Cylinder. FloJet Two Piece Adjustment. Automatic Choke. Fuel Pump. Idling Control. Kerosene Conversion. Repairs. Replacing Float Valve Seat. L.P Fuel. Pulsajet Adjustment. Automatic Choke. Repairs. VacuJet Adjustment. CheckUp Procedure. Clutch, Rewind Starter. Coils See Armature Compression Checking. Condenser Testing and Installation. Counter Balance Systems Installation and Timing. Crankcase Cover End Play. Crankshaft Aluminum Cylinder. <http://static.yuka.ro/img/crown-keyboard-manual.xml>

Cast Iron Cylinder. End Play. Cylinder Head Assembly and Torque. Engine Model System. Extended Oil Fill. 7 1 8.40, 41.8.23 Flywheel Remove and Replace. Timing. Torque. Fuel Recommendation. Overhaul and TuneUp Procedure. 8 8 1.1 6.4.3 to 5 Pin, Piston. Piston Rings. 9 9.2, 3.2, 3 Rectifier, 120 Volt Electric Starter. Remote Controls. RegulatorGenerator. Resizing Cylinder Bore. 7 4 7 11.21, 27, 34.1 to 12.39 to 42.1, 2 Gear Reduction Lubrication. Gear, Ring. General Information. Generator, Starter. Governor Adjusting. Governors Air Vane. Controls. Mechanical. Governed Speed Limits. Identification System Engine. Ignition Flywheel Type Internal Breaker. Flywheel Type External Breaker. MagnaMatic. Magneto See Armature VI INDEX Continued SECTION PAGE Rewind Starter. Electric, Gear Drive 12 Volt and 120 Volt. Electric StarterGenerator. Electric, Belt Drive 12 Volt and 120 Volt. Preface TuneUp and Overhaul Procedure. 1.3.4.1 to 8.II, III.II, III.3 to 5 Valves Check and Installing Guides. Clearance. Refacing Seats. Remove and Install. SECTION Camgear or Shaft Reject Sizes. Common Specifications. Connecting Rod Reject Sizes. Connecting Rod Screw Torque. Crankshaft Reject Size. Cylinder Bearing Reject Size. Cylinder Bore Standard Size. Cylinder Head Torque. Ignition Specifications. Main Bearing Tool Chart. Oil Capacity Chart. Piston Pin Reject Size. Ring Gap Reject Size. Stellite Valves and Rotators. Valve Seat Inserts. Valve Seat Counterbore Tools. As the name indicates, there are four strokes to one complete power cycle Fig. 1 The 4Stroke Cycle a. INTAKE STROKE The piston goes down, creating a vacuum in the cylinder which draws gas through open intake valve into the space above piston. b. COMPRESSION STROKE The piston comes up with both valves closed, highly compressing the gas into the space left between the top of the piston and cylinder head. c.

POWER STROKE At this point the magneto sends high tension current to the spark plug, firing or exploding the compressed gas and driving the piston down. d. EXHAUST STROKE Exhaust valve opens and the upward stroke of the piston forces out all of the burnt gases, thus completing the power cycle. CAUTION Exhaust gases contain carbon monoxide which is odorless and a deadly poison. Proper care must be taken to provide efficient ventilation when running an engine indoors. Fill the crankcase and air cleaner with proper oil before starting engine. See that oil level is maintained. Do not fill the gasoline tank while the engine is running. Avoid spilling gasoline on a hot engine This may cause an explosion and serious injury. However, the use of leadfree, or low lead, gasolines will result in reduced combustion deposits and normally will improve engine life. Therefore, leadfree, or low lead, gasoline may be used, where available. We also recommend that gasoline be purchased in small quantities, not more than a 30day supply. FRESH gasoline minimizes gum deposits, and also insures a fuel with volatility tailored for the season. Detergent oils keep the engine cleaner and retard the formation of gum and varnish deposits. No special additives should be used. OIL SHOULD BE CHANGED AFTER EACH 25 HOURS OF ENGINE OPERATION. More often under dirty operating conditions. In normal running of any engine, small particles of metal from the cylinder walls, pistons and bearings will gradually work into the oil. Dust particles from the air also get into the oil. If the oil is not changed regularly, these foreign particles cause increased friction and a grinding action which shorten the life of the engine. Fresh oil also assists in cooling, for old oil gradually becomes thick and loses its cooling effect as well as its lubricating qualities. The air cleaner should be serviced every 25 hours of engine operation. Dirty operating conditions require

more frequent servicing.

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CLEAN COOLING SYSTEM Grass particles, chaff or dirt may clog the air cooling system, especially after prolonged service in cutting dry grasses. Continued operation with a clogged cooling system may cause severe overheating and possible engine damage. The figures below show the blower housing removed and area to be cleaned. This should be a regular maintenance Operation. Vertical Crankshaft Horizontal Crankshaft 2 GENERAL INFORMATION TuneUp Procedure TUNEUP PROCEDURE A "TuneUp", see the steps listed below, would normally be performed on relatively new engines brought in for minor difficulties. By performing these steps you will either be sure that the engine is functioning properly or will know what major repairs should be made. The steps are also covered in the Overhaul Procedure and will normally be performed as a part of the complete overhaul. STEP NO. 1. 2. 3. 4. 5. 6. 7. 8. 9. STEP NO. 10. Remove air cleaner, check for proper servicing. Check oil level and drain. Clean fuel tank and lines if separate from carburetor. Remove blower housing, inspect rope and rewind assembly and starter clutch. Clean cooling fins and entire engine. Rock flywheel to check compression. Remove carburetor, disassemble and inspect for wear or damage. Wash in solvent, replace parts as necessary and assemble. Set initial adjustment. Inspect crossover tube or intake elbow for damaged gaskets. Check governor blade, linkage and spring for damage or wear, if mechanical also check adjustment. Remove flywheel, check for seal leakage, both flywheel and PTO sides. Check flywheel key. Remove breaker cover and check for proper sealing. 11. 12. 13. 14. 15. 16. 17. 18. 19. 3 Inspect breaker points and condenser. Replace or clean and adjust. Check plunger. Check coil, inspect all wires for breaks, damaged insulation. Be sure lead wires do not touch flywheel. Check stop switch and lead. Replace breaker cover, use sealer where wires enter. Install flywheel, time engine if necessary.

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Remove cylinder head, check gasket, remove spark plug, and clean carbon, inspect valves for seating. Replace cylinder head, torque to specified torque, set spark plug gap or replace plug if necessary. Replace oil and fuel, check muffler for restrictions or damage. Adjust remote control linkage and cable if used, for correct operation. Service air cleaner, check gaskets and element for damage. Naturally these steps could be rearranged in different order but efficiency is obtained when the repair operations are performed in the same sequence every time. The exact procedure will vary according to the engine model being repaired. The Overhaul Procedure can also be used as an index. For information on how to perform most operations listed, refer to the page number or operation. Be careful to locate the instructions covering the specific model being repaired. This checkup will point up possible cause of future failures, which can be corrected at the time. The basic checkup procedure is the same for all engine models, while any variation, by model will be shown under the subject heading. Remove the spark plug. Spin the flywheel rapidly with one end of the ignition cable clipped to the 19051 tester and with the other end of the tester grounded on the cylinder head. Try a new spark plug. The flywheel should rebound sharply, indicating satisfactory compression. 6 TM 5424050114P GENERAL INFORMATION Checkup Check Carburetion Hard Starting, Kickback, or Will Not Start Before making a Carburetion check, be sure the fuel tank has an ample supply of fresh, clean gasoline. On gravity feed FloJet models, see that the shutoff valve is open and fuel flows freely through the fuel line. On all models, inspect and adjust the needle valves. Check to see that the choke closes completely. If engine will not start, remove and inspect the spark plug. If plug is wet, look for 1. 2. 3. 4. 1. 2. 3. 4.

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Overchoking Excessively rich fuel mixture Water in fuel Inlet valve stuck open FloJet carburetor 5.

Loose blade must be tight to shaft or adapter. Loose belt a loose belt like a loose blade can cause a backlash effect, which will counteract engine cranking effort. Starting under load See if the unit is disengaged when engine is started; or if engaged, does not have a heavy starting load. Check remote ChokeAMatic control assembly for proper adjustment. Check interlock system for shorted wires, loose or corroded connections, or defective modules or switches. If plug is dry, look for Vibration 1. 2. 1. 3. 4. Leaking carburetor mounting gaskets Gummy or dirty screen or check valve PulsaJet and VacuJet carburetors Inlet valve stuck shut FloJet carburetors Inoperative pump PulsaJet carburetors 2. 3. 4. 5. A simple check to determine if the fuel is getting to the combustion chamber through the carburetor is to remove the spark plug and pour a small quantity of gasoline through the spark plug hole. Replace the plug. If the engine fires a few times and then quits, look for the same condition as for a dry plug. Cutter blade bent or out of balance Remove and balance Crankshaft bent Replace Worn blade coupling Replace if coupling allows blade to shift, causing unbalance. Mounting bolts loose Tighten Mounting deck or plate cracked Repair or replace. Power Loss 1. 2. 3. 4 Equipment Effecting Engine Operation Frequently, what appears to be a problem with engine operations, such as hard starting, vibration, etc., may be the fault of the equipment powered rather than the engine itself. Since many varied types of equipment are powered by Briggs and Stratton engines, it is not possible to list all of the various conditions that may exist. Listed are the most common effects of equipment problems, and what to look for as the most common cause. Bind or drag in unit If possible, disengage engine and operate unit manually to feel for any binding action.

Grass cuttings buildup under deck. No lubrication in transmission or gear box. Excessive drive belt tension may cause seizure. Noise 1. 2. 7 Cutter blade coupling or pulley an oversize or worn coupling can result in knocking, usually under acceleration. Check for fit, or tightness. It is possible to determine most of the important mechanical features of the engine by merely knowing the model number. Here is how it works A The first one or two digits indicate the CUBIC INCH DISPLACEMENT. A spark miss will be readily apparent. While conducting this test on MagnaMatic equipped engines. Spin the flywheel rapidly with one end of the ignition cable clipped to the 19051 tester and with the other end of the tester grounded on the cylinder head. If electrodes are burned away, or the porcelain is cracked, replace with a new plug. All Models Use an approved tester to test coils and condensers. It is held in place by a Belleville washer and nut or starter clutch. The flywheel key must be in good condition to assure proper location of the flywheel for ignition timing. DO NOT use a steel key under any circumstances. Use only the soft metal key, as originally supplied. The keyway in both flywheel and crankshaft should not be distorted. It is held in place by a nut or starter clutch. The flywheel key must be in good condition to insure proper location of the flywheel for ignition timing. Use only the soft metal key, as originally supplied. 2 The keyway in both flywheel and crankshaft should not be distorted. Use puller shown in Table 1. Leave nut loose on threads of crankshaft for puller to bear against, Fig. 12. Small cast iron flywheels do not require a flywheel puller. See note below. For flywheels or larger diameter place a block of wood under flywheel fin to prevent flywheel turning while loosening nut or starter clutch. Clamp engine base securely. Fig. 11. Fig. 12 Removing Flywheel NOTE To remove small cast iron flywheels without puller holes. Using a rawhide hammer.

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Threads 4 NOTE Care is required not to damage the flywheel fins. If cover is bent or damaged it should be replaced to insure a proper dust seal. Points set too wide will advance spark timing and may cause kick back when starting. Points gapped too close retard spark timing and decrease engine power. Remove Breaker Points Breaker point assemblies of style shown in Fig. 13 are removed by removing condenser and armature wires from breaker points clip. Loosen adjusting lock screw and remove breaker point assembly. Breaker point assemblies of style shown in Fig. 14 are



removed by loosening the screw holding the post. The condenser on these models also includes the breaker point. The condenser is removed by loosening the screw holding the condenser clamp. Fig. 13 Breaker Point Assemblies Fig. 14 Breaker Point Assemblies Fig. 15 Checking Breaker Plunger Hole If the breaker point plunger hole becomes worn excessively, oil will leak past the plunger and may get on the points, causing burning. To check, loosen breaker point mounting screw and move breaker points out of the way. Use reamer 19056, to ream out the old plunger hole. See Fig. 16. This should be done by hand. The reamer should be in alignment with the plunger hole. Drive the bushing 23513, with driver 19057 until the upper end of the bushing is flush with the top of the boss. Fig. 16. Finish ream the bushing with reamer 19058. All reaming chips or dirt must be removed. Fig. 16 Installing Breaker Plunger Bushing 5 TM 5424050114P IGNITION FLYWHEEL TYPE—INTERNAL BREAKER When installing breaker point assemblies, as shown in Fig. 13, be sure the small boss on the magneto plate enters the hole in the point bracket. Mount points to magneto plate or cylinder with lock screw. Fasten the armature lead wire to the breaker points with the clip and screw. If these lead wires do not have terminals, the bare end of the wires can be inserted into the clip and screw tightened to make a good connection.

Do not let the ends of the wire touch the point bracket or magneto plate or ignition will be grounded. Plungers must be inserted with groove at the top when installed or oil will enter breaker box. See Fig. 17. Checking Plunger Adjusting Breaker Point Gap Turn crankshaft until points open to widest gap. Breaker points as shown in Fig. 14 are installed by placing the mounting post of the breaker arm into the recess in the cylinder so that the groove in the post fits the notch in the recess. Tighten the mounting screw securely. Slip the open loop of breaker arm spring through the two holes in the arm, then hook closed loop of spring over the small post protruding from the cylinder. Push flat end of the breaker arm into the groove in the mounting post. This places tension on the spring and pulls arms against the plunger. If condenser post is threaded, attach the coil primary wire and ground wire if furnished with the lockwasher and nut. If primary wire is fastened to condenser with spring fastener, compress spring. Fig. 18, and slip primary wire and ground wire where furnished into hole in condenser post. Release spring. Lay the condenser in place and tighten the condenser clamp securely. Fig. 19 Adjusting Breaker Point Gap Fig. 20 Adjusting Breaker Point Gap Fig. 18 Assembling Condenser and Ignition Wires 6 2 TM 5424050114P IGNITION FLYWHEEL TYPE—INTERNAL BREAKER NOTE Always clean breaker points after adjustment. Open the points and insert a piece of lintless paper. Draw the paper through the points. Open points when removing paper so it will not tear, leaving paper between the points. Adjust Armature Air Gap Three styles of armatures have been used Fig. 23, Illus. 1, 2 and 3. Set air gap between the flywheel and armature as shown in Table 1. With armature up as far as possible, and one screw tightened, slip the proper gauge between armature and flywheel. Fig. 24. Turn flywheel until magnets are directly below the armature.

Loosen the one mounting screw and the magnets should pull the armature down firmly against the thickness gauge. Then tighten the mounting screws. Breaker Point Cover The breaker point cover, Fig. 21, protects the points from dirt. Cover should not be distorted so as to lose its seal around the outer edge. Replace if damaged. NOTE Engines used for winter applications use vented breaker covers. See Engine Parts List. Fig. 23 Armature Style Variations Fig. 21 Breaker Point Cover Install Armature Install governor blade and armature, Fig. 22. The mounting holes in the armature laminations are slotted. Push armature up as far as possible and tighten one mounting screw to hold armature in place. Fig. 24 Adjusting Armature Air Gap FLYWHEEL KEY Inspect key for partial shearing. If sheared, replace. Check flywheel and crankshaft keyways for damage. If damaged, replace with new parts. Insert zinc key into keyway. Slip spring washer over crankshaft with hollow side toward flywheel. To tighten flywheel nut or starter clutch, reverse removal operation. The sealer prevents oil from leaking into the breaker point area. Replace Breaker Points Model Series 193000, 200000, 230000, 243000, 300000, 320000, 19D, 23D Mount the breaker point assembly,

then tighten adjustment screw until the locknut has pushed the ferrule as far as possible toward the head of the adjustment screw. This secures the adjustment screw firmly to the breaker point. Turn crankshaft until points open to widest gap. This makes it easier to assemble and adjust points later if crankshaft is not removed. Remove condenser and upper and lower mounting screws. Loosen lock nut and back off breaker point screw. Fig. 26. Reverse process to install. Adjust and Clean Breaker Points Turn the crankshaft until the points open to their widest gap. Insert a piece of lintless paper and draw the paper between the points.

Open the breaker points to withdraw the paper so the paper will not tear and allow a small portion to remain between the points. Apply additional sealer at the point at which the primary wire passes under the breaker cover. This area must be resealed to prevent the entry of dust and moisture. See Fig. 28. Fig. 26 Breaker Points 8 TM 5424050114P IGNITION Flywheel Type MAGNETRON™ External Breaker ADJUST ARMATURE TIMING WITH BREAKER POINTS MODEL SERIES 193000, 200000, 230000, 243000, 300000, 320000 Remove Flywheel Use puller 19203 or 19068, running puller screws into holes tapped into flywheel. Slip key in place. Install flywheel nut finger tight. Rotate flywheel and crankshaft clockwise until breaker points are just opening. Use a timing light. When points just start to open, arrow on flywheel should line up with arrow on armature bracket, Fig. 31. If arrows do not match, slip off flywheel without disturbing crankshaft position. Slightly loosen mounting screws holding armature bracket to cylinder, Fig. 31. Slip flywheel back on crankshaft. Insert flywheel key. Install flywheel nut finger tight. Move armature and bracket assembly to align arrows. Slip off flywheel, tighten armature bracket bolts. Install key and flywheel. Continue to tighten screws until flywheel loosens, Fig. 30. NOTE Use flywheel nut to protect crankshaft threads. Flywheel key screw should be finger tight. Flywheel nut may be put on loosely, Fig. 33. Fig. 36 Flywheel Timing 10 TM 5424050114P IGNITION Flywheel Type External Breaker REPLACING BREAKER PLUNGER AND BUSHING Model Series 19D, 23D, 193000, 200000, 230000, 243000, 300000, 320000 2 Two styles of plunger bushing have been used. Be sure the plunger does not fall out of the bushing as it is removed. Fig. 40 Inserting Bushing Insert bushing into cylinder. Check to be sure plunger operates freely. Alternate Design Fig. 38 Removing Plunger and Threaded Bushing Fig.

41 To Remove Bushing and Plunger Installing Threaded Bushing and Plunger Pull plunger outward as far as possible. C, to pull the bushing out of the cylinder. CAREFULLY remove the bushing and the remainder of the broken plunger. Do not allow the plunger or chips to drop into the crankcase. Place the new plunger in the bushing with the large end of the plunger opposite the threads on the bushing. Use a hammer and the old bushing to drive the new bushing into the cylinder until the new bushing is flush with the face of the cylinder. Check to be sure the plunger operates freely. Fig. 44. MAGNAMATIC SYSTEM Engine Models 9141923191000231000 Fig. 42 Removing Bushing and Plunger To Install Bushing and Plunger Insert the plunger in the new bushing as shown in Fig. 43. Fig. 45 MagnaMatic System Remove Flywheel Use puller 19203 or 19068, running puller screws into holes tapped into flywheel. Continue to tighten screws until flywheel loosens. Fig. 46. Fig. 43 Inserting New Plunger in Bushing NOTE Use flywheel nut to protect crankshaft threads. Fig. 46 Removing Flywheel Fig. 44 Inserting Plunger and Bushing in Cylinder 12 2 TM 5424050114P IGNITION MagnaMatic Install Rotor If rotor has a set screw, Fig. 48, Illus. 2, place the Woodruff key in keyway on crankshaft, then slide rotor onto crankshaft until the set screw hole in rotor and crankshaft are aligned. Be sure the key remains in place. Tighten the set screw securely, then tighten the lock screw to prevent set screw from loosening. The lock screw is selfthreading and the hole does not require tapping. Split in clamp must be between slots in rotor. Tighten clamp lock screws 60 to 70 inch pounds .7 .8 kg m or 6.8 8.0 newton m. Fig. 49. Fig. 47 Checking Armature Gap MagnaMatic Ignition Remove Rotor The rotor is held in place by means of a Woodruff key and a clamp on later engines, and a Woodruff key and set screw on older engines. Fig. 48.

THE ROTOR CLAMP MUST ALWAYS REMAIN ON THE ROTOR UNLESS THE ROTOR IS IN PLACE ON THE CRANKSHAFT AND WITHIN THE ARMATURE OR A LOSS OF MAGNETISM WILL OCCUR. Fig. 49 Install Rotor Loosen the socket head screw in the rotor ecoup, allowing the clamp to loosen. It may be necessary to use a puller to remove the rotor from the crankshaft. On older models, loosen the small lock screw, then the set screw. Adjust Rotor Timing The rotor and armature are correctly timed at the factory and require timing only if the armature has been removed from the engine, or if the cam gear or crankshaft has been replaced. Use a timing light or insert a piece of tissue paper between the breaker points to determine when points begin to open. With the three armature mounting screws slightly loose, rotate the armature until the arrow on armature lines up with the arrow on rotor as shown in Fig. 50. Align with corresponding number of engine model. On Models 9, align with 9, etc. Retighten armature mounting screws. Fig. 48 Rotor 13 2 TM 5424050114P IGNITION MagnaMatic oval holes in the armature. Tighten them enough to hold the armature in place but loose enough that the armature can be moved for adjustment of rotor timing. See Fig. 50. Attach primary wires from coil and breaker points to the terminal at the upper side of back plate. This terminal is insulated from back plate. Push the ignition cable through the louvered hole at left side of back plate. 2 Fig. 50 Adjusting Rotor Timing Replace Coil or Armature or Both Fig. 52 Shorten Cable Model 9 Usually the coil and armature are not separated, but are left assembled for convenience. However, if one or both need replacement, proceed as follows The coil primary wire and the coil ground wire must be unfastened. Pry out the clips that hold the coil and coil core to the armature. See Fig. 51. The coil core is a slip fit in the coil and can be pushed out of the coil.

NOTE On Model 9 engines, knot the ignition cable before inserting it through the back plate. See Fig. 52. Be sure all wires clear flywheel. Remove Breaker Points Turn crankshaft until points open to widest gap. With terminal screw removed, remove the spring screw. See Fig. 53. Loosen the breaker shaft nut until nut is flush with end of shaft. Tap nut to free breaker arm from tapered end of breaker shaft. Remove nut, lockwasher and breaker arm. Remove breaker plate screw, breaker plate, pivot, insulating plate and eccentric. Pry out breaker shaft oil seal with a sharp pointed tool. Fig. 51 Replace Coil To reassemble, push coil core into coil with rounded side toward the ignition cable. Place coil and core on armature with coil retainer between the coil and armature, with rounded side toward the coil. Hook the lower end of the clips into the armature; then press the upper end onto the coil core, Fig. 51. Fasten the coil ground wire bare double wires to the armature support. Replacing coil, Fig. 51. Now place the assembly against the cylinder around the rotor and bearing support. Insert the three mounting screws together with washer and lockwasher into the three long Fig. 53 Breaker Box Assembly 14 TM 5424050114P IGNITION MagnaMatic Remove Breaker Box Install Breaker Points Remove the two mounting screws, then remove the breaker box, turning it slightly to clear the arm at inner end of breaker shaft. See Fig. 54. Breaker points need not be removed to remove breaker box. Press in the new oil seal with the metal side out. Put new breaker plate on top of insulating plate, taking care that the detent in breaker plate engages hole in insulating plate. Fasten breaker plate screw only enough to put a light tension on the plate. See Fig. 55. Adjust eccentric so that left edge of insulating plate is parallel to edge of box and tighten screw. Fig. 56. This locates the breaker plate so that proper gap adjustments may be made.

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