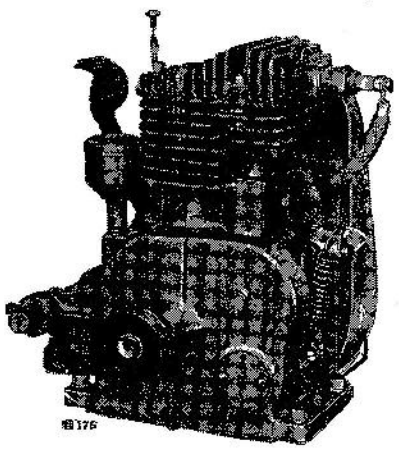
Operating Instructions

MODEL "L"

INCLUDING MODELS "L-1" AND "LA"

Adjustment and Repair Information
Parts List



INDEX

Read these instructions carefully before operating this Motor for the first time.

Guessing how to run it may cause you unnecessary inconvenience, aggravation or failure to receive the fine service that is built into it.

There is a right way to operate the "L" Motor. This book tells you how.

Each Briggs & Stratton Motor is carefully tested and adjusted at the factory before packing for shipment, and if correctly operated will perform beyond your expectations.

DO NOT START THIS MOTOR UNTIL YOU HAVE READ CAREFULLY "STARTING AND OPERATING THE MODEL "L" MOTOR" ON PAGE 3

4 CYCLE

BRIGGS & STRATTON

MILWAUKEE, WIS., U.S.A.

GASOLINE MOTOR


4
CYCLE
BRIGGS & STRATTON
MILWAUKEE, WIS., U.S.A.
GASOLINE
MOTOR

Starting the Model "L" Motor

1. BEFORE STARTING THE MOTOR. Fill the crankcase with Mobiloil Arctic or any other high grade oil not heavier than S. A. E. No. 20. A HEAVIER OIL MUST NOT BE USED. Remove blue oil filler plug located directly under the starter shaft. Crankcase holds one pint. Fill the gas tank with a good grade of **clean** regular gasoline. Tank holds one quart. Do not mix oil and gasoline. See paragraphs 11 to 19.

2. HOW TO START. Pull up the carburetor choke knob. Step down **quickly** on starter pedal and repeat **rapidly** until motor fires. As the motor warms up, gradually adjust choke until motor operates smoothly. Operate carburetor choke the same as you operate the choke on your automobile. A hot motor does not require as much choking as a cold motor. See paragraph 20.

3. FAILURE OF MOTOR TO START. If motor fails to start after a reasonable number of trials do not make any adjustments until you have studied the instructions referred to in the **Servicing Reference Chart**, on page 4.

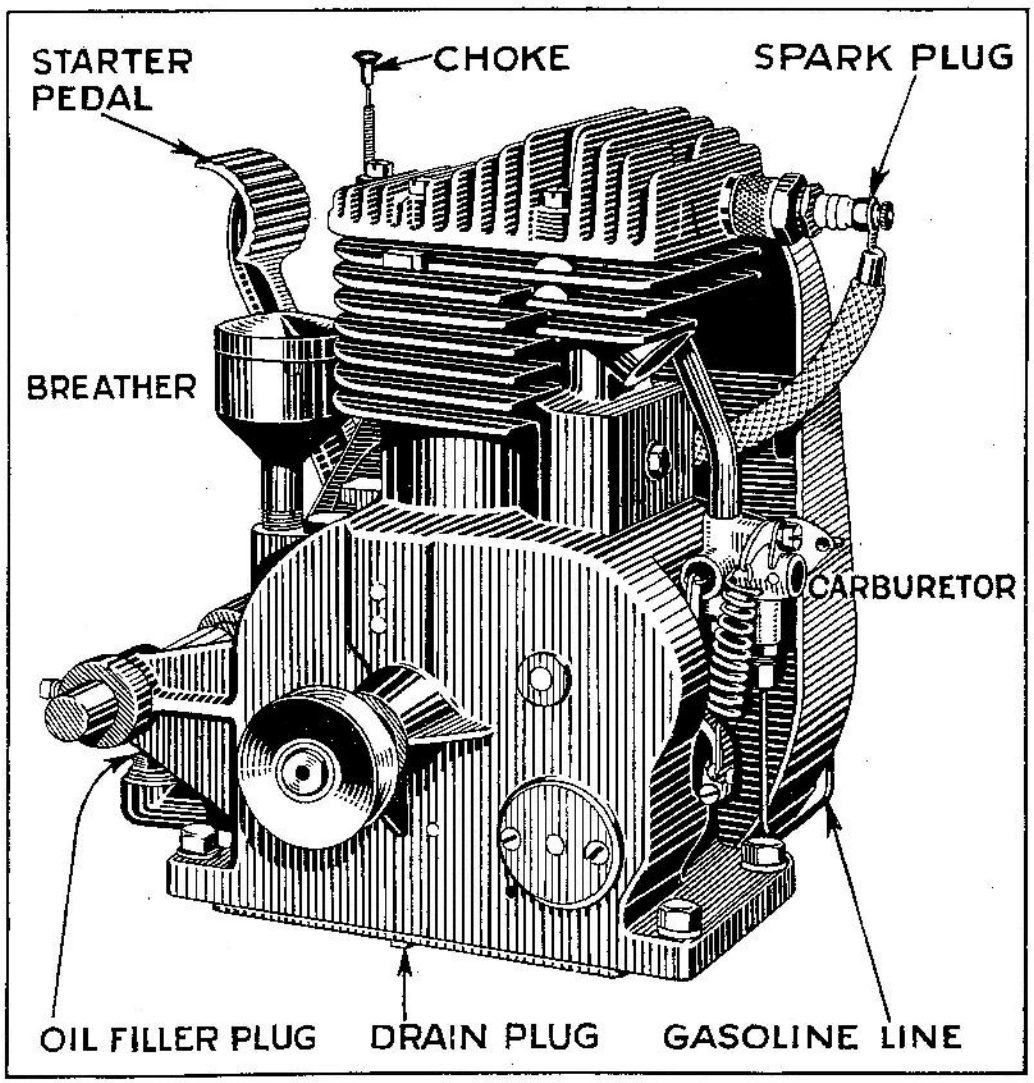
4. HOW TO STOP. Pull the choke knob all the way out and hold until motor stops firing. Some motors have a stop switch or button in the blower housing. Press the button and hold in until the motor stops firing. Remove the blower housing occasionally and clean the stop switch points. This will prevent grounding the spark when you start the motor or when motor is running.

5. GENERAL DATA. You will find your Briggs & Stratton motor substantially built. It is made of high grade materials by skilled workmen, in a factory fully equipped with the most modern machinery. Before it was shipped, it received many tests and careful inspections.

6. Your motor will give you better service if you do not tinker with it. This does not mean, however, that it does not require a certain amount of attention. Give it the right kind of fuel, oil and care. Keep it clean both inside and out. You will be well repaid in trouble-free, satisfactory service.

7. If you should experience any difficulty, follow the instructions referred to in the **Servicing Reference Chart** on page 4. If you cannot easily remedy it, consult your dealer, or a nearby Briggs & Stratton Authorized Central Service Distributor. See page 15.

Briggs & Stratton 4-Cycle Motor, Model "L" — Plate No. 1



Servicing Reference Chart

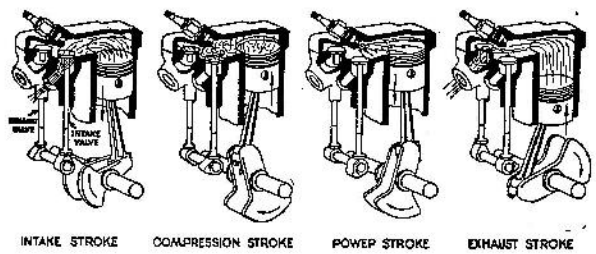
Instructions for Adjustment and Repair

8. OPERATING REQUIREMENTS. A gasoline motor to operate properly must have all parts in correct adjustment to provide good ignition, carburetion, compression and cooling. And of equal importance, the oil and gasoline used must be **clean** and of the recommended grades. The following instructions fully explain the simple adjustments and offer operating recommendations that will assure you complete satisfaction. We urge you to carefully observe them.

9. The reliability, economy and ease of starting which characterize this motor are due in part to the fact that it is of the 4-stroke cycle design commonly called "4-cycle," the same design used in all automotive motors. As the name indicates, there are four strokes to one complete power cycle.

10. HOW A 4-CYCLE MOTOR OPERATES. On the **intake stroke** the piston goes down, producing a vacuum in the cylinder, thereby drawing fuel up through the carburetor so that the space above the piston becomes filled with combustible gas. During this stroke the intake valve is open. Next the piston comes up on the **compression stroke** with both valves closed. At the top of the compression stroke a spark occurs at the spark plug, firing the highly compressed gas. This produces an explosion above the piston which forces it down on the **power stroke.** Both valves are closed. On the next upstroke of the piston, called the **exhaust stroke,** the exhaust valve is open, and the burned gases driven out. See plate No. 2.

The 4-Stroke Cycle
Plate No. 2



11. KEEP THE MOTOR CLEAN. It will pay you to keep your motor clean both inside and outside. See that no dirt or water enters motor when filling with oil or gasoline. As a precautionary measure always wipe off the gasoline cap and oil filler plug, as well as around them before refilling. Dirt in the motor or gasoline tank will cause trouble and even serious damage.

12. USE THE RIGHT KIND OF OIL. Correct lubrication is important. We recommend the use of MOBILOIL "ARCTIC" or other high grade oil with similar characteristics having a low carbon residue and a body not heavier than S. A. E. No. 20. **A heavier oil which might be satisfactory in a tractor or for lubricating farm machinery must NOT be used.** Do not mix oil with the gasoline. This 4-cycle motor is provided with an independent efficient pump and splash lubrication system. The pump maintains the proper oil level in the oil trough and a dipper on the connecting rod dips into the trough throwing the oil to all moving parts. There are no external parts which require separate oiling.

13. ADD OIL REGULARLY. A motor which is run without oil will be ruined within a few minutes. To avoid the possibility of such an occurrence and the resulting expense, always fill the oil reservoir at the blue plug to the top of the filler plug opening after each five hours of motor operation. Capacity of oil reservoir is one pint.

14. CHANGE OIL FREQUENTLY. After every twenty-five hours of motor operation, the oil should be completely drained from the crankcase. Do not remove motor from its mounting base. Remove oil drain plug located in bottom of base plate under motor. The old oil will drain straight down through this hole into the pan or other receptacle you use. We do not recommend flushing out with kerosene. Replace the drain plug, refill with fresh oil and replace the blue filler plug.

15. In the normal running of any motor, 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. Sludge, a gummy mass, forms which clogs up the oil passages. If the oil is not changed regularly, these foreign particles cause increased friction and a grinding action which shortens the life of the motor. Fresh oil also assists in cooling, for old oil gradually becomes thick and loses its cooling as well as its lubricating qualities.

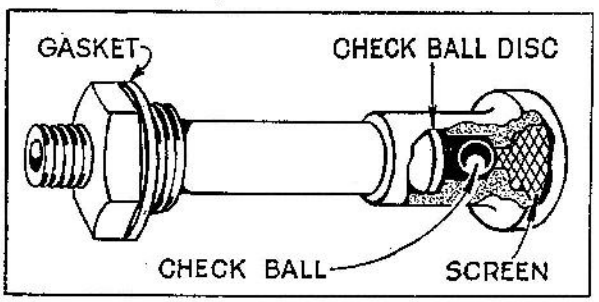
16. USE CLEAN GASOLINE. A good grade of **clean, fresh,** regular gasoline is recommended. Too high test gasoline may form vapor-lock in gas line when motor gets hot. This interrupts the flow of gasoline and causes motor to stop. Be sure that the small vent hole in the gasoline tank cap is not clogged up, for air must enter the tank to allow the gasoline to flow to the carburetor. Test by blowing through top of cap.

17. AVOID GUMMY GASOLINE. If you experience trouble with a gummy, sticky substance with a peculiar sharp obnoxious smell, change to another grade of gasoline. This gum comes from the gasoline and clogs carburetor, gas line, gasoline tank, check valve, etc. You can check your gasoline by evaporating a half pint in an open dish. If a quantity of gum remains, try another kind that is clean and fresh.

18. You can avoid most trouble from gum if you will keep the tank full when you are not using the motor. If you use it only occasionally, drain tank completely and refill when motor is used again. The reason for this is that evaporation of stale gasoline causes most gum deposits.

19. TO CLEAN THE FUEL LINES. Disconnect the gasoline line at the carburetor and also at the gas tank. Blow through the gas line to clear. Remove the gas tank feed pipe which is screwed into the gas tank proper. At its base you will find a screen which may be clogged. To determine whether this pipe itself is clear, blow through the pipe from the screen end. There is a check ball in the base of this pipe which must be free. See plate No. 3. Check ball must close air passage when blowing through opposite end of pipe. When replacing gas pipe in tank, be sure to place gasket between gas tank and gas pipe nut. IMPORTANT: If you find a gummy varnish-like substance, alcohol or acetone will dissolve it. See paragraphs 17 and 18.

Gas Pipe
Plate No. 3



20. CORRECT USE OF THE CHOKE. The correct carburetor setting (see paragraph 23) gives the motor the best mixture to run on when it is hot. For starting, it is necessary to choke the carburetor to get a rich mixture, because cold gasoline does not vaporize readily. A warm or hot motor requires very little choking. Until you become familiar with your motor, however, you may make the mistake of not choking the carburetor enough or you may choke it too much. If motor fails to start after cranking three or four times with the choke up, or closed, try cranking two or three times with the choke part way down and then all the way down, or open. Use motor choke the same as you use an automobile choke.

21. TO PRIME THE MOTOR. The motor may fail to start for the reason that either the carburetor is incorrectly adjusted or dirty, or the fuel line or gas pipe check valve in the gasoline tank is dirty or clogged, or you are out of gasoline. To determine the cause, prime the motor by removing the spark plug and pour

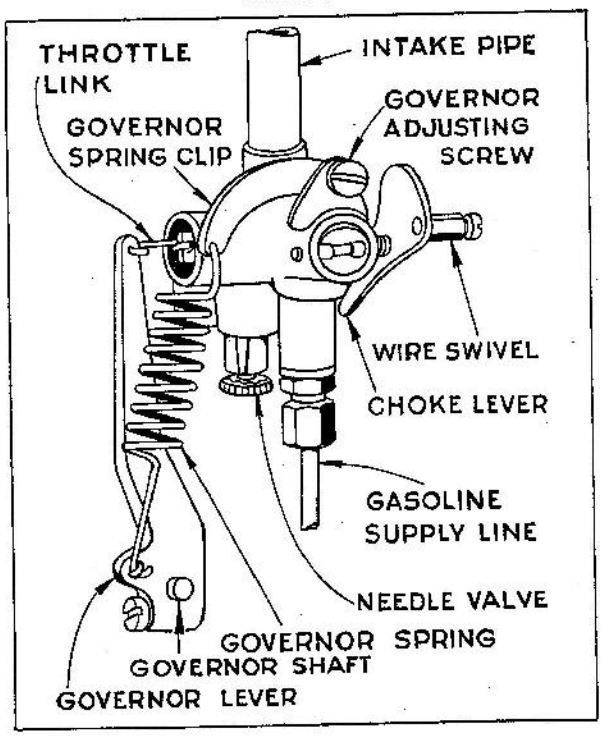
a half teaspoonful of gasoline into the spark plug opening. Replace the spark plug and crank the motor. If it fires for three or four revolutions and stops, the difficulty is definitely in the fuel system. See paragraphs 19, 22 to 25. If motor will not fire at all, check the ignition system, see paragraphs 28 to 40; also compression, paragraphs 42 to 48.

22. TO ADJUST THE CARBURETOR. The carburetor on the model "L" motor is of the suction type. The gasoline supply is regulated by a needle valve. The throttle is automatically controlled by the governor, see paragraph 26.

23. To adjust the carburetor, completely close needle valve by turning to right or clock-wise as far as possible. Do not screw up too tight or use force when closing needle valve, or the seat or taper of needle valve may be damaged. From closed position, open needle valve one to one and a half turns. After the motor has been started and warmed up with the choke wide open, make final adjustment by turning the needle valve to the point at which motor operates most smoothly with full load. This setting will also take care of starting with use of the choke. When starting cold motor, if it is necessary to keep choke partially closed several minutes before motor runs smoothly, carburetor setting is too lean and needle valve should be opened a notch or two — turn to left. If carburetor throttle acts sluggish or motor does not govern smoothly, it is usually caused by a dirty or gummy throttle. See paragraph 25. For governor adjustments see paragraph 26.

24. TO REMOVE AND REPLACE CARBURETOR. Unhook the throttle spring from the throttle spring clip. Disconnect gasoline line from carburetor. Remove two small screws and lockwashers which hold carburetor to crankcase. Loosen carburetor from intake pipe by working from side to side. With carburetor in right hand, hold governor lever with left hand and turn carburetor towards governor lever, permitting open end of throttle link to slip out of hole in governor lever. To replace, reverse the operations as performed above. It is important that the open ends of throttle link are away from the crankcase.

Carburetor and Governor Hook-Up
Plate No. 4



25. TO REMOVE AND REPLACE CARBURETOR THROTTLE. To clean the carburetor throttle, remove the carburetor as explained in the previous paragraph. To remove the throttle, remove screw and lockwasher from throttle. Remove throttle from opposite end of carburetor body. Clean in alcohol or acetone. Do not scrape. To replace, reverse the operations explained above.

26. GOVERNOR — CORRECT MOTOR SPEED. The speed of your model "L" motor is automatically maintained under varying loads by a centrifugal governor. It is operated from the cam gear.

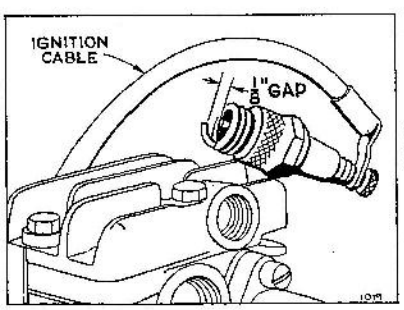
27. The governor was carefully adjusted at the factory to maintain normal speed under load. Do not re-adjust unless absolutely necessary. The speed is regulated by the tension on the throttle spring. Moving the throttle spring clip up increases the motor speed, down decreases the motor speed. The throttle clip set screw should be securely set in the carburetor body. See plate No. 4. Recommended speed is from 1700 to 1900 R.P.M. On washing machine application, adjust motor speed to operate machine agitator at speed recommended by the manufacturer of your washer.

28. RESETTING GOVERNOR LEVER. If the governor lever has been loosened or removed from the governor shaft, it is easily reset. With the carburetor attached to motor and hooked up to governor lever with throttle link, loosen set screw holding governor lever on the shaft. Push the upper end of the governor lever toward the carburetor as far as it will go. Hold it in this position and turn the governor shaft to the right with pliers until it strikes a stop in the crankcase. Then release the governor shaft but hold the governor lever until you tighten the set screw. Be sure that neither governor lever nor governor shaft move while tightening.

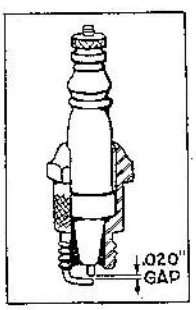
29. THE IGNITION SYSTEM. The spark is produced by a high tension magneto consisting of armature, condenser, contact points and rotating magnets cast in the flywheel. This is a simple self-contained system which is very reliable. It also does away with batteries. The ignition current is sent into the motor cylinder through the ignition cable and spark plug. The magneto itself as well as the cable and spark plug must all be in proper condition and adjustment to insure a good hot spark.

30. TO CHECK FOR SPARK. To prove that a satisfactory spark is being delivered by the magneto, remove the ignition cable from the plug. Hold ignition cable terminal about ⅛" from any metal part of the cylinder head (keep hand on insulated part of the cable to avoid a shock). Turn motor with starter, and if the spark jumps this gap the entire ignition system, with the exception of the spark plug, is O.K. See plate No. 5. (To check spark plug see paragraph 31.) If no spark, check cable, see paragraph 32, and refer to magneto adjustments, paragraphs 33 to 41.

Checking Spark
Plate No. 5



Spark Plug
Plate No. 6

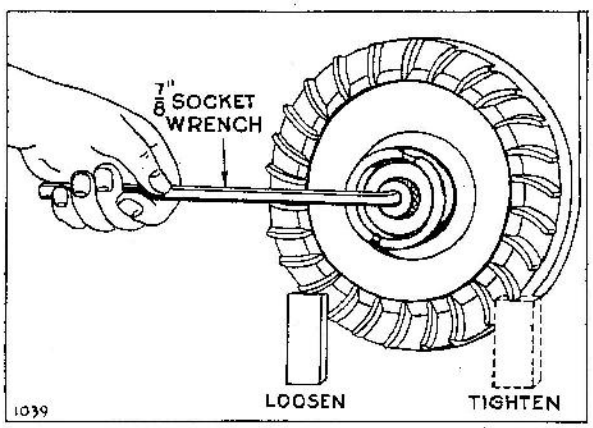


31. SPARK PLUG ADJUSTMENT. Spark plugs should be cleaned occasionally and points reset to .020". Points burn away in service. The porcelain is to prevent the spark from jumping anywhere except at the gap, and if cracked or broken it will prevent plug firing. Water on the outside of the spark plug may permit the high voltage current to leak over the surface of the porcelain. Dirt or carbon on it will do the same thing. Always keep a new plug on hand. We recommend the use of Champion No. 6M or its exact equivalent.

32. IGNITION CABLE. Insulation must not be broken, or soaked with oil or water, or grounded in any way where it touches the motor, or it will interfere with good ignition. Spark plug cable should be soldered to the secondary terminal (small brass plate coming out of the coil). Avoid touching coil with hot soldering iron. See plate No. 10.

33. TO REMOVE AND REPLACE FLYWHEEL. The flywheel is held in place by means of a taper fit, soft key, washer and a right hand threaded ratchet nut. To remove flywheel, remove blower housing. Place a small wood block under flywheel fin on left side. Use a 1" open end wrench on ratchet nut. Tap end of wrench handle lightly with hammer to loosen nut. Tap carefully or broken fin may result which will throw the flywheel out of balance. After nut, ratchet, pawl assembly and washer are removed, loosen flywheel by placing the wood block against end of crankshaft and striking with hammer. Pull off flywheel.

Removing Flywheel
Plate No. 7

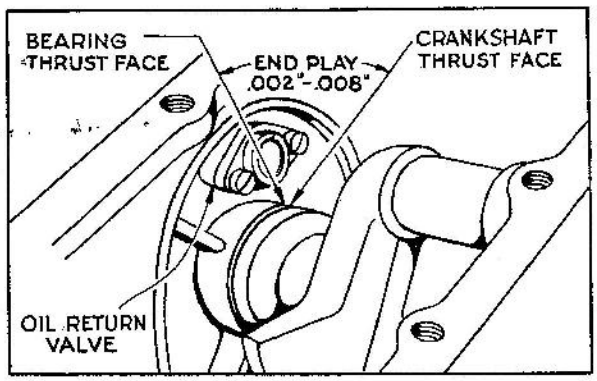


34. To reassemble, locate flywheel on crankshaft with key and install washer, pawl assembly, ratchet and ratchet nut. Turn ratchet nut to right until tight. Then use block under fin on right side of flywheel to hold flywheel rigid and draw nut up very tight by tapping wrench handle with hammer.

35. TO REMOVE AND REPLACE MAGNETO ASSEMBLY. After removing the flywheel as explained in paragraph No. 33, detach the ignition cable from spark plug, and unscrew the three magneto plate mounting screws. To replace use same gasket between the plate and crankcase, or, if damaged, a new gasket, see part numbers 13A10, 66037, 66047 of proper thickness to get correct end play of .002" to .008" between magneto bearing and crankshaft thrust faces, as shown in plate No. 8. Use locking plate assembly 69711 and lockwashers under mounting screws.

36. Magneto assembly is always correctly timed with the motor when the flywheel is assembled to the tapered crankshaft with a key and securely held in place with RIGHT hand threaded ratchet nut. Do not attempt to change the timing by relocating any parts or filing crankshaft timing flat. Always use soft key

Correct End Play
Plate No. 8

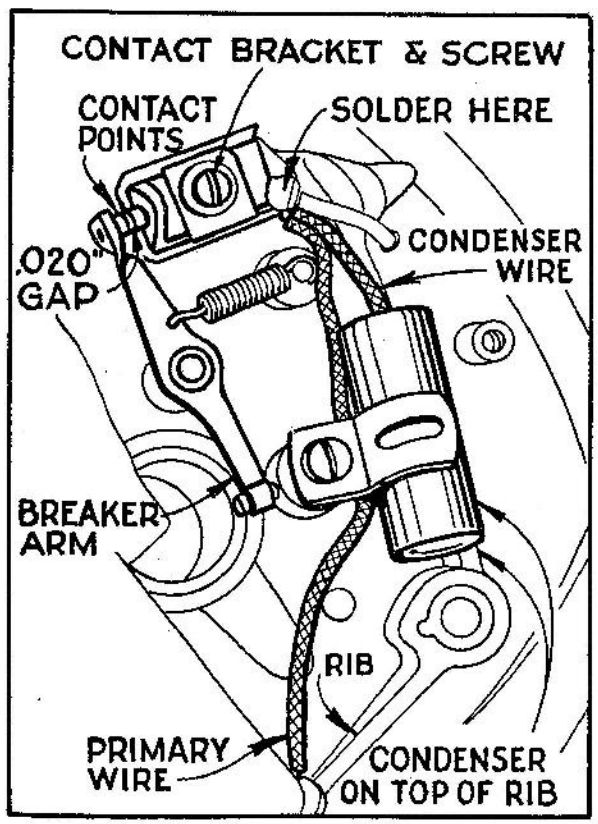


part No. 66403 — if steel key is used and flywheel becomes loose, it will damage the keyway in the crankshaft.

37. TO ADJUST AND CLEAN CONTACT POINTS. Remove blower housing and flywheel. Turn crankshaft by hand to see if contact points open and close properly. Points must be clean and line up squarely to make good electrical contact. Do not file contact points — use fine sand paper or fine grit hone to clean points. Adjust gap to .020" by loosening the contact bracket and moving contact point bracket toward or from breaker arm point. When proper gap is obtained tighten lock screw securely. If either or both points become badly pitted or burned and need replacement, always order part Nos. 13ME and 65489.

38. TO REPLACE CONDENSER. A leaky or weak condenser may cause the motor to start hard, to sputter or misfire under load. If motor misfires after checking gasoline line, carburetor,

Contact Points and Condenser
Plate No. 9



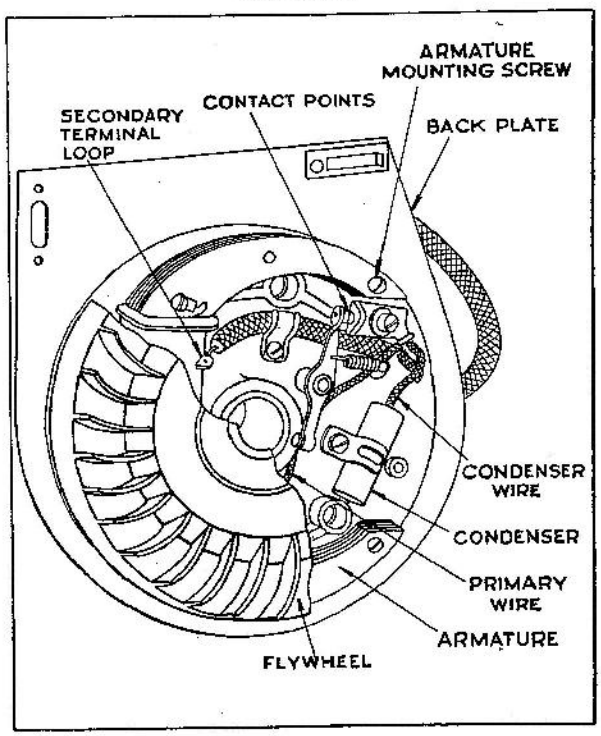
spark plug, cable and contact points, install a new condenser. Both the condenser lead and armature lead must be soldered to contact point bracket, see plate No. 9. Be sure to push armature lead down between condenser bracket and magneto plate so it cannot rub against crankshaft.

39. If after new condenser has been installed the ignition system does not deliver a satisfactory spark, we recommend sending the complete magneto and the flywheel to the nearest Briggs & Stratton Central Service Distributor listed on page 15 for proper adjustment.

40. TO REPLACE AND ADJUST ARMATURE. Remove primary armature and condenser lead wires from contact point bracket, remove ignition cable from secondary terminal loop in coil. Unscrew four armature mounting screws. Save as much of the Hydrolene as possible so that you can insulate high tension terminal when you assemble new armature. Do not use battery compound or tar as it melts and runs over the entire magneto assembly. To install armature, locate it on mounting studs. Place loops under armature mounting screw heads nearest the coil. Then solder ignition cable to the terminal and fill pocket, formed with flap, with melted Hydrolene. Slip insulators over armature and condenser lead wires and solder wires to contact bracket. Tighten armature mounting screws. See plate No. 10.

41. Air gap of .002" to .010" must be maintained between armature shoes and flywheel poles. Gap must only be sufficient to prevent rubbing but not over .010" or poor ignition will result. To check armature shoes for rub, chalk edges and mount flywheel in place. Remove spark plug to release compression. Turn flywheel several revolutions by hand. Remove flywheel and examine edges of armature shoes. High spot will have the chalk rubbed off. File high spots carefully with a fine file until flywheel no longer rubs, but do not remove too much metal.

Complete Magneto Assembly
Plate No. 10



42. CYLINDER HEAD. The cylinder head is held on with six cap screws. When the cylinder head has been removed for the purpose of cleaning carbon or grinding valves, care should be used in replacing it. Use a new gasket if possible. Otherwise, clean the old one and coat both sides with cup grease. We do not recommend the use of shellac on cylinder head gaskets. Tighten each cap screw a little at a time so that the cylinder head is pulled down evenly. Screws need be only moderately tight.

43. COMPRESSION. Proper compression is obtained when valves seat properly, gaskets do not leak and piston and rings are properly fitted. When tuning up a motor, it is always well to check compression. This is done by turning the motor over slowly. If a point of resistance is offered every other revolution, compression should be satisfactory. If motor turns over without compression resistance for a full cycle, a worn piston, piston rings, cylinder wall, or leaky valves or leaky gaskets are present. See that spark plug has a gasket under it and is drawn up tight. Also check cylinder head gasket and tighten cylinder head bolts.

44. VALVE ADJUSTMENT. To check valve clearance remove valve cover plate on cylinder below carburetor. The correct clearance on the exhaust valve is .020" and on the intake valve .010" when the motor is cold. Tappet clearance is adjusted by grinding required amount from the end of valve stem. End of stem must be square with the stem proper.

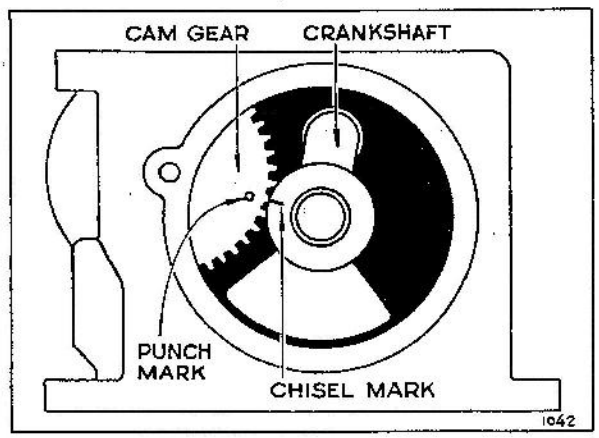
45. To remove valves, remove cylinder head, and if not dismantled, drain oil from crankcase. Invert cylinder. Compress the spring with valve spring compressor No. 69189-T3, and with the end of a screw driver push out the split collars, and release spring compressor. Tilt cylinder back far enough to allow valve to drop, permitting its stem to clear the spring. Pry spring out with end of screw driver.

46. To replace valves and valve springs, compress spring in valve spring compressor. Turn tool to inverted position with collar retainer washer on top. Drop split collar is placed in retainer washer one at a time. When first half of split collar is placed in retainer washer, push it around to the back of valve stem to allow easy placing of second half. Special valve spring compressor tool part No. 69189-T3 is available at the factory at $1.25 net.

47. To reseat valves, grind in same manner as automobile valves. If valves stick they may be coated with gum or carbon. To remove gum use alcohol or acetone. Clean valve stems thoroughly with wire brush or emery cloth. Also scrape all carbon from valve ports.

48. The timing of the valves is taken care of by the meshing of the cam gear with the gear on the crankshaft. These gears are properly meshed when the mark on the cam shaft gear is in line with the mark on the crankshaft collar.

Valve Timing — Plate No. 11



49. PISTON. The piston in the model "L" motor is made of a special aluminum alloy which is very light in weight. The clearance between the piston and cylinder wall is .005" to .0065". This clearance is to compensate for the expansion of aluminum when hot. When piston is removed be sure to clean carbon from head of piston and ring grooves. If piston is out of round or scored it should be replaced.

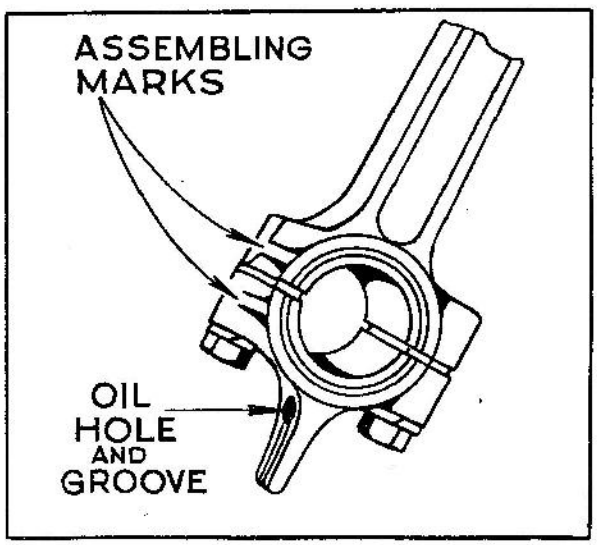
50. When fitting a new piston in the motor, assemble it with the free side pin hole (indicated with an "X" on boss) toward the magneto side. If an oversize piston is necessary, we recommend that reboring of cylinder be done by an Authorized Central Service Distributor or the factory.

51. PISTON RINGS. The piston rings when fitted in the cylinder should have a gap from .007" to .015". The rings should be fitted in the cylinder below the piston ring travel. Before assembling new rings to piston be sure that piston ring grooves are thoroughly cleaned, and rings fit free in the grooves.

52. PISTON PIN. The piston pin is a free fit in one side of the piston and a tight fit in the other. To remove this pin without special equipment, it is advisable to heat the piston in boiling water which causes the aluminum to expand. Cut a wooden pin a little smaller than the size of the piston pin and use this and a hammer to drive the pin out. Drive the pin out through the free fit hole. This hole is toward the magneto side and is indicated with an "X" on the pin hole boss. You should, of course, drive the pin out while the piston is still hot. To easily replace the pin, the piston should be heated.

53. CONNECTING ROD. The connecting rod is also made of a special aluminum alloy which combines strength with light weight. When assembling connecting rod to crankshaft, the oil hole in the lower bearing must be toward the magneto side. See plate No. 12. The assembly marks on cap and rod must be on the same side.

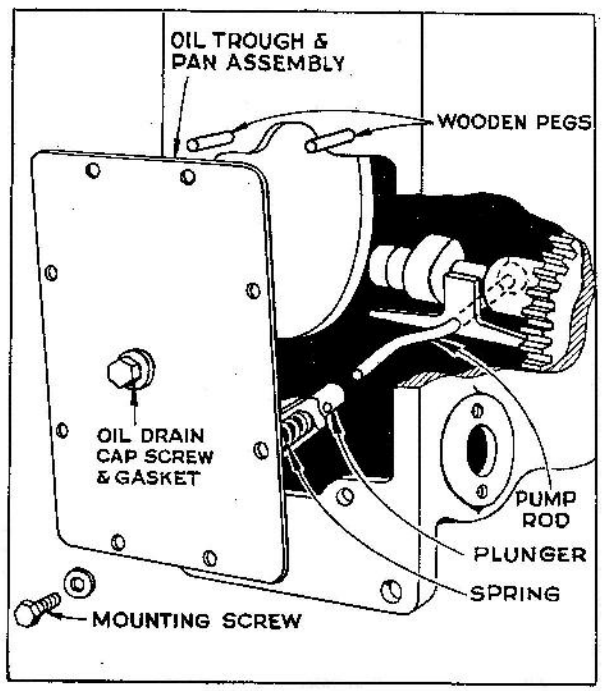
Connecting Rod — Plate No. 12



54. OIL PUMP. The oil pump is permanently assembled to the base. An inoperative pump will result in insufficient lubrication which may score cylinder and piston assembly. To check oil pump, remove base screws. Place pump and base assembly in pan of oil about ¼" below top of oil trough. Work plunger up and down. If oil trough fills up, oil pump is in good operating condition. If clogged, submerge complete unit in gasoline or kerosene for three or four hours to loosen accumulated sludge or gum. If still inoperative it should be replaced. In assembling, be sure that spring and plunger are in place.

55. TO ASSEMBLE OIL PUMP. The oil pump is operated from an eccentric on the cam gear, and care should be taken to assemble the parts correctly to insure positive pump action and prevent any oil leak. Place the crankcase in the position shown in plate No. 13. Insert the straight end of the pump rod into the hole in crankcase until flat tongue rests against the cam of the cam gear. Support the gasket against the bottom of the crankcase with two temporary wooden pegs that are small enough to pass through the holes in the oil trough and pan assembly and can be easily removed when assembling screws. Insert the plunger spring and pump plunger with the larger hole in the plunger toward the top, then insert the end of the pump rod into the plunger hole and fasten pan with screws and fibre washers. Be sure the oil drain plug is tight to prevent oil leakage.

Oil Pump — Plate No. 13



56. OIL LEAKS. If oil leaks from either end of crankshaft, remove base plate from motor. Oil return valves are screwed into crankcase and magneto back plate at base of main bearings. Remove oil return valve and clean or flush with gasoline and blow out any dirt lodged under the small disc. See plate No. 8.

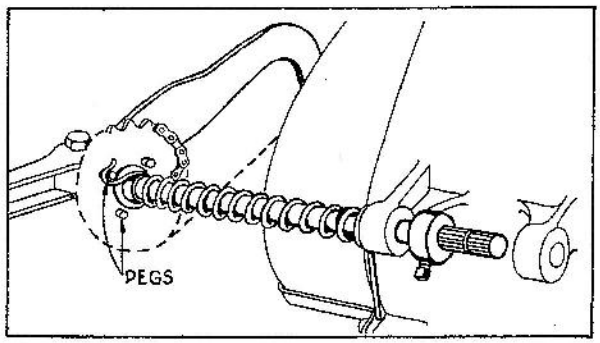
57. CARBON. Excessive carbon is caused by improper grade of oil — too much oil, usually the result of piston rings not seating properly or sticking — carburetor set too rich — or long service. An unusual amount of carbon is noticeable by motor knocking or loss of power. Occasionally remove carbon from piston head, cylinder head and top of cylinder bore.

58. MUFFLER OR EXHAUST HOSE FITTING. After long periods of service it is possible that the muffler, exhaust hose fitting, or the exhaust tubing will become clogged and reduce motor power. To check the muffler run water into the open end. If full streams of water come out of the small holes at the opposite end it is O. K. If not, it should be replaced.

59. EXHAUST TUBING. A certain amount of water forms inside of the exhaust tube after it cools off due to condensation. After

motor is stopped, place exhaust tube so that water from condensation cannot drain into exhaust port of motor to corrode the mechanical parts and eventually result in trouble. If exhaust pipe is too long, or clogged, back pressure will reduce motor power.

Starter Pedal Adjustment — Plate No. 14



60. OVERLOAD. Always be sure that the machine the motor is operating is well lubricated and running freely. If it is not, it may cause the motor to become overloaded resulting in it overheating, losing power, or even stopping entirely.

61. STARTER PEDAL ADJUSTMENT. The starter pedal is bolted to a serrated starter shaft. To adjust, loosen bolt and set pedal to desired position. Adjust the pedal to get the longest possible stroke without striking any part of the machine. The starter return spring must have sufficient tension to return lever against its stop on blower housing. To increase tension of spring move hook at end of spring back to next peg. See plate No. 14. Broken chains can easily be repaired with standard repair links, order assembly No. 69928.

62. PARTS. All parts should be ordered from your dealer or the nearest Authorized Briggs & Stratton Service Distributor, listed on page 15.

Repair Parts

63. To assure continued satisfactory performance, do not attempt to use substitute repair parts when overhauling or repairing the Briggs & Stratton Motor. Insist that all repair parts be original Briggs & Stratton parts.

64. ALWAYS GIVE TYPE, MODEL AND SERIAL NUMBERS. Briggs & Stratton motors are identified by a type number, model letter and a serial number. This information is stamped on a metal plate attached to the blower housing.

65. When writing to the factory or to a Central Service Distributor for service information, or when ordering new parts, be sure to specify the type number, the model, and the serial number of the motor to be serviced. This will assure prompt and efficient service without unnecessary correspondence.

66. HOW TO MAKE OUT PARTS ORDERS. Print your name and address plainly and correctly. Do not abbreviate name of town or state. Specify on the order how shipment to you is to be made. This will assist in giving prompt and efficient service.

67. Give part number and name of parts wanted. (Do not use number cast on parts.) You will find the part number, names and prices on pages 11 to 13, and parts illustrations on page 14.

68. After you have made out order, check back to see that you have followed all instructions and have accurately listed what you want.

69. Shipments will be made C. O. D. or send remittance with order to cover parts and add what you think will be sufficient for postage. Send postal or express money order, bank draft or certified check for this amount. Do not send currency in a letter. It is not safe.

70. PRICES. All prices in this book are subject to change without notice. In case of change in prices, orders will be filled at current prices. All prices shown are F. O. B. Factory at Milwaukee, Wis., or nearest Authorized Central Service Distributor. Prices higher in Canada.

Model "L" Parts List

PART NUMBER	NAME	PRICE EACH
7BC	Spark Plug with Gasket	$ 0.65
7B24	Spark Plug Gasket	.05
7B35	Screw	.01
7K26	Governor Lever Cotter Pin	.01
7K47	Governor Crank Cotter Pin	.01
7T17	Lockwasher	.01
7W8	Cable Clamp Screw	.01
13AJ	Oil Pump Plunger	.20
13A2	Connecting Rod Lockwasher	.01
13A10	Magneto Plate Gasket — .015" thick	.05
13A11	Pulley Mounting Nut	.05
13A27	Connecting Rod Screw	.05
13A34	Connecting Rod Shim	.05
13A40	Oil Pump Plunger Spring	.10
13B30	Lockwasher	.01
13K3	Governor Gear Washer	.05
13K9	Choke Wire Casing Clamp	.05
13ME	Contact Point Bracket	.50
13M13	Breaker Arm Spring	.05
13M21	Contact Bracket Shim	.05
13M22	Ignition Cable Clamp	.05
13M36	Screw	.05
13M47	Condenser Mounting Screw	.01
590E	Valve Cover Plate Washer	.05
796E	Contact Bracket Washer	.05
1992B	Governor Gear Spacer	.05
3160B	Governor Gear Spacer	.05
29652	Condenser	1.50
29657	Armature	6.00
29825	Gas Tank	1.25
29865	Gas Tank Assembly	1.75
37346	Air Guide Rivet ... Dozen	.05
61009	Oil Ring — .010" Oversize	1.00
61010	Compression Ring — .010" Oversize	.50
61012	Compression Ring — .020" Oversize	.50
61013	Compression Ring — .030" Oversize	.50
61016	Oil Ring — .020" Oversize	1.00
61017	Oil Ring — .030" Oversize	1.00
61042	Oil Filler Elbow NOTE: No. 61086 used on side of crankcase.	.45
61067	Cam Gear	5.00
61086	Oil Filler Elbow	.45
61136	Oil Filler Cap	.25
61137	Starter Pedal (Straight) NOTE: No. 61144 — 9¼" long.	1.50
61138	Starter Pedal (Dog Leg)	1.50
61139	Starter Pedal (Right Hand Offset)	1.50
61140	Starter Pedal (2¾" — Left Hand Offset) NOTE: No. 61141 (1¾" — Left Hand Offset). No. 61143 (3⅝" — Left Hand Offset).	1.50
61141	Starter Pedal	1.50
61142	Hand Lever	1.50
61143	Starter Pedal	1.50
61144	Starter Pedal	1.50
61175	Starter Pedal (Goose Neck)	1.50
61222	Cylinder Head	2.25
61274	Oil Ring — Standard NOTE: For Oversizes, see Nos. 61324 — .010", 61325 — .020", 61326 — .030". NOTE: Specify No. 68161 for ⅛" wide Oil Ring used on earlier motors.	.50
61324	Oil Ring — .010" Oversize	1.00
61325	Oil Ring — .020" Oversize	1.00
61326	Oil Ring — .030" Oversize	1.00
62000	Starter Chain Washer	.01
62007	Gas Tank Mounting Clamp	.05
62013	Throttle Clip Plate	.05
62015	Starter Ratchet Guard	.25
62016	Throttle Spring Clip	.05
62025	Pulley Half — 3⅝" Diam. NOTE: Order 2 for one pulley.	.35
62091	Magneto Plate Air Guide	.40
62154	Valve Cover Plate	.20
63058	Gas Line Connector	.35
63092	Mounting Spacer ($\frac{7}{16}$" diam. hole — ⅜" thick) NOTE: No. 63160 with 17/32" diam. hole — ⅜" thick. No. 63289 with $\frac{7}{16}$" diam. hole — 1¼" long.	.05
63137	"V" Belt Pulley	.85
63160	Mounting Spacer	.05
63176	Pulley Mounting Stud	.35
63289	Mounting Spacer	.10
63436	Piston Pin — .005" Oversize	.30
64139	Starter Chain Pin	.10
65046	Choke Wire Casing — 40½" Long NOTE: Specify other lengths in inches.	.40
65126	Throttle Spring	.15
65194	Contact Bracket Washer	.05
65294	Gas Pipe Washer	.05
65314	Contact Bracket Insulator	.05
65324	Oil Drain Plug Washer	.05
65367	Ratchet Nut Felt Washer	.01
65451	Compression Ring — Standard NOTE: For Oversizes, see Nos. 61010 — .010", 61012 — .020", 61013 — .030".	.35
65489	Contact Breaker Arm	.75
65522	Blower Housing Bracket	.10
65534	Filler Cap Washer	.05
65607	Oil Return Valve Gasket	.05
65617	Valve Cover Plate Gasket	.10
65687	Oil Pump and Base Gasket	.20
65725	Armature Lead Insulator	.05
65735	Condenser Lead Insulator	.05
65787	Gas Line Connector Gasket	.05
65847	Ignition Cable Sleeve	.10
65863	Piston Pin — Standard NOTE: For Oversize, order No. 63436.	.30
65906	Valve Springs	.15
66016	Throttle Link	.05
66037	Magneto Plate Gasket — .005"	.05
66047	Magneto Plate Gasket — .009"	.05
66056	Starter Return Spring	.50
66246	Piston Pin Lock	.05
66403	Flywheel Key	.05
66576	Crankshaft	7.00
66662	Pulley Half — 2⅞" Diam. NOTE: Order 2 for one pulley.	.25
66679	Magneto Flywheel	9.20
66733	Starter Ratchet	.60
66743	Starter Ratchet Nut NOTE: No. 66903 has left hand thread for 68133 Pulley Stud. No. 67653 has left hand thread for 67633 Pulley Stud.	.30
66903	Ratchet Nut	.30
66916	Valve Tappet	1.00
67072	Contact Bracket Washer	.05
67083	Carburetor Needle Valve	.25
67112	Pulley Half — 4⅜" Diam. NOTE: Order 2 for one pulley.	.35
67429	Starter Pawl Assembly	.70
67569	Starter Chain Link NOTE: Use No. 64139 Steel Pin to assemble chain to lever.	.02
67633	Pulley Stud	.35
67653	Starter Ratchet Nut	.50
67753	Flywheel Washer	.20
67882	Pulley Half — 3" Diam. NOTE: Order 2 for one pulley.	.25
67902	Governor Gear Thrust Washer	.10
68022	Upper Blower Housing Bracket	.10
68122	Cam Shaft Plug	.01
68133	Pulley Drive Stud NOTE: No. 63176 — ½" diam., 2¾" long, $\frac{5}{16}$", No. 18 left hand thread, with $\frac{5}{16}$" hole through stud. Used with No. 66903. No. 67633 — ½" diam., with flat left hand thread. Used with No. 67653.	.35
68161	Oil Ring — Standard NOTE: For Oversizes in narrow oil ring see Nos. 61009 — .010", 61016 — .020", 61017 — .030".	.50

PART NUMBER	NAME	PRICE EACH
68283	Valve Spring Retainer Collars	.10
68293	Valve Spring Retainer Washer	.10
68333	Cam Gear Shaft	.40
68449	Exhaust Muffler	1.25
68643	Governor Crank	.80
68652	Spark Plug Wrench	.20
68653	Governor Crank Bushing	.20
68743	Carburetor Throttle	1.00
68753	Carburetor Intake Pipe	.50
68801	Governor Lever	.50
68803	Starter Shaft Set Collar	.30
68821	Starter Shaft Sprocket	.25
68881	Starter Spring Bushing	.05
68923	Intake and Exhaust Valve	.75
69004	Cylinder Head Gasket	.25
67054	Magneto Plate and Bearing	2.25
69105	Governor Shaft and Flange	.40
69130	Oil Pump Rod	.30
69131	Carburetor Assembly	4.00
	Includes: 63058 Connector 65787 Gasket 67083 Needle Valve 68743 Throttle 69350 Body 91122 Lockwasher 91250 Screw 91253 Swivel Screw	
69189	Cylinder Assembly	26.75
	Includes: 7T17 Lockwasher 61067 Cam Gear 65906 Valve Spring 66916 Valve Tappet 68122 Cam Shaft Plug 68283 Collar 68293 Retainer 68333 Cam Shaft 68923 Valves 69213 Cylinder 69992 Oil Return Valve	
	NOTE: No. 69309 Cylinder Assembly with oil filler on side of crank case.	
69190	Oil Pump and Base	2.00
69194	Governor Gear	1.50
69213	Cylinder with Bearing	17.50
	NOTE: No. 69310 Cylinder with oil filler on side of crankcase.	
69218	Magneto Plate Air Guide	.60
69220	Connecting Rod	4.50
	Includes: 13A2 Lockwashers 13A27 Cap Screws 13A34 Shims	
69221	Gas Tank Cap	
69238	"V" Belt Pulley — 4⅜" Diam., 1" Hub	1.00
69243	Gas Tank Pipe	.45
69245	"V" Belt Pulley — 3" Diam.	.85
	NOTE: No. 63137 Pulley — 2¼" Diam. No. 69238 Pulley — 4⅜" Diam. No. 69368 Pulley — 3" Diam., 1½" Hub. No. 69414 Pulley — 3" Diam., 1" Hub — ⅛" spacer between pulley halves.	
69259	Breather Tube	.75
69270	Choke Wire and Knob — 41" Long	.35
	NOTE: Specify other lengths in inches.	
69275	Ignition Cable	.50
	NOTE: No. 69382 — $\frac{7}{16}$" Diam. — with braided sleeve used on later motors.	
69278	Magneto Plate Air Guide	.60
69282	Crankshaft Bearing	1.25
69308	Blower Housing	1.35
69309	Cylinder Assembly	26.75
	Includes: 69310 Cylinder and Bearing	
69310	Cylinder with Bearing	17.50
69312	Starter Chain	1.25

PART NUMBER	NAME	PRICE EACH
69333	Lever and Shaft Assembly	3.50
	Includes: 7T17 Lockwasher 62015 Ratchet Guard 64139 Pin Assembly 68821 Sprocket 69312 Chain 69334 Lever and Shaft 90728 Screws	
	NOTE: For lever and shaft without ratchet guard, order No. 69453.	
69334	Lever and Shaft	2.00
	NOTE: No. 69333 includes 7T17, 62015, 64139, 68821, 69312, 69334, 90728.	
69339	Gasoline Line — 14" Long	
	NOTE: Gas lines available in the following standard lengths: 69324 — 6" long 69326 — 22" long 69335 — 19" long 69357 — 40" long 69358 — 30" long 69374 — 26⅛" long 69404 — 16" long 69451 — 7½" long 69502 — 9½" long 69700 — 24" long	
69340	Crankshaft Guard	.25
69346	Crankshaft Bearing	1.25
69350	Carburetor Body	2.25
69351	Blower Housing	1.35
69368	"V" Belt Pulley	1.00
69382	Ignition Cable	.50
	NOTE: Earlier motors used No. 69275 and No. 65847 Sleeve.	
69414	"V" Belt Pulley	1.00
69453	Lever and Shaft Assembly	3.25
	NOTE: Same as No. 69333 less 7T17, 62015, 90077.	
69469	Magneto Plate Assembly	12.00
	Includes: 69218 Air Guide All other parts same as No. 69570.	
69568	Magneto Plate Assembly	12.00
	Includes: 69278 Air Guide All other parts same as No. 69570.	
69570	Magneto Plate Assembly	12.00
	Includes: 7T17 Lockwasher 7W8 Screw 13A10 Gasket — .015" thick 13ME Contact Bracket 13M13 Spring 13M21 Shim 13M22 Clamp 13M36 Armature Screw 13M47 Condenser Screw 796E Washer 29652 Condenser 29657 Armature 62091 Air Guide 65194 Washer 65314 Insulator 65489 Breaker Arm 65725 Insulator 65735 Insulator 66037 Gasket 66047 Gasket 67072 Washer 69054 Plate and Bearing 69382 Ignition Cable	
	NOTE: No. 69469 has stop switch on starter pedal side. No. 69568 has stop switch on carburetor side.	
69571	Blower Housing	1.35
	NOTE: No. 69308 with stop switch on starter pedal side. No. 69351 with stop switch on carburetor side.	
69700	Gasoline Line	.70

PART NUMBER	NAME	PRICE EACH
69783	Piston Assembly — Standard	4.75
	Includes:	
	65451 Compression Ring	
	66246 Pin Locks	
	68161 Oil Ring	
	69917 Piston	
	NOTE: For Oversizes, see Nos. 69822 — .010", 69823 — .020", 69824 — .030".	
69822	Piston Assembly — .010" Oversize	6.00
	Includes:	
	61010 Compression Rings	
	61324 Oil Ring	
	66246 Pin Locks	
	69918 Piston	
69823	Piston Assembly — .020" Oversize	6.00
	Includes:	
	61012 Compression Rings	
	61325 Oil Ring	
	66246 Pin Locks	
	69919 Piston	
69824	Piston Assembly — .030" Oversize	6.00
	Includes:	
	61013 Compression Rings	
	61326 Oil Ring	
	66246 Pin Locks	
	69920 Piston	
69917	Piston — Standard	3.50
	NOTE: For Oversizes, see Nos. 69918 — .010", 69919 — .020", 69920 — .030".	
69918	Piston — .010" Oversize	4.00
69919	Piston — .020" Oversize	4.00
69920	Piston — .030" Oversize	4.00
69992	Oil Return Valve	.35
90077	Ratchet Guard Screw	.05
90597	Governor Flange Screw	.05

PART NUMBER	NAME	PRICE EACH
90680	Set Screw	.05
90699	Lockwasher	.01
90832	Lockwasher	.01
90886	Oil Filler Plug	.10
90891	Cap Screw	.05
90902	Magneto Plate Screw	.05
90916	Blower Housing Screw	.05
91122	Lockwasher	.01
91157	Left Hand Thread Nut	.05
91162	Cylinder Head Screw	.10
91205	Muffler Elbow — 90°	.35
91219	Muffler Elbow — 45°	.40
91223	Pulley Set Screw	.05
91239	Casing Clamp Screw	.01
91242	Muffler Elbow Locknut	.05
91246	Muffler Elbow — 45°, ¾" Diam.	.40
	NOTE: No. 91205 — 90° Elbow. No. 91219 — 45° Street Elbow.	
91247	Starter Pedal Bolt	.15
91248	Starter Pedal Nut	.05
91250	Throttle Screw	.05
91252	Throttle Clip Screw	.05
91253	Carburetor Swivel Screw	.05
91254	Muffler Nipple — ¾" Long	.25
91270	Armature Mounting Screw	.05
91281	Magneto Plate Lockwasher	.01
91299	Muffler Nipple — 2½" Long	.15
91300	Oil Drain Cap Screw	.05
	NOTE: No. 91303 with screw driver slot.	
91303	Oil Drain Cap Screw	.10
91376	Muffler Nipple — 6" Long	.30
91388	Lockwasher	.01
91389	Valve Cover Plate Screw	.05

Briggs & Stratton Gasoline Motors are precision built and require **original** Briggs & Stratton replacement parts in order to obtain satisfactory results. Service that is not reliable or continuous becomes expensive at any price.

Users will find that the prices paid for **original** repair parts are well worth the investment when the service delivered is compared with that afforded by substitute parts. **Original** Briggs & Stratton repair parts can be obtained through all Authorized Central Service Distributors. See page 15.

Plate No. 15

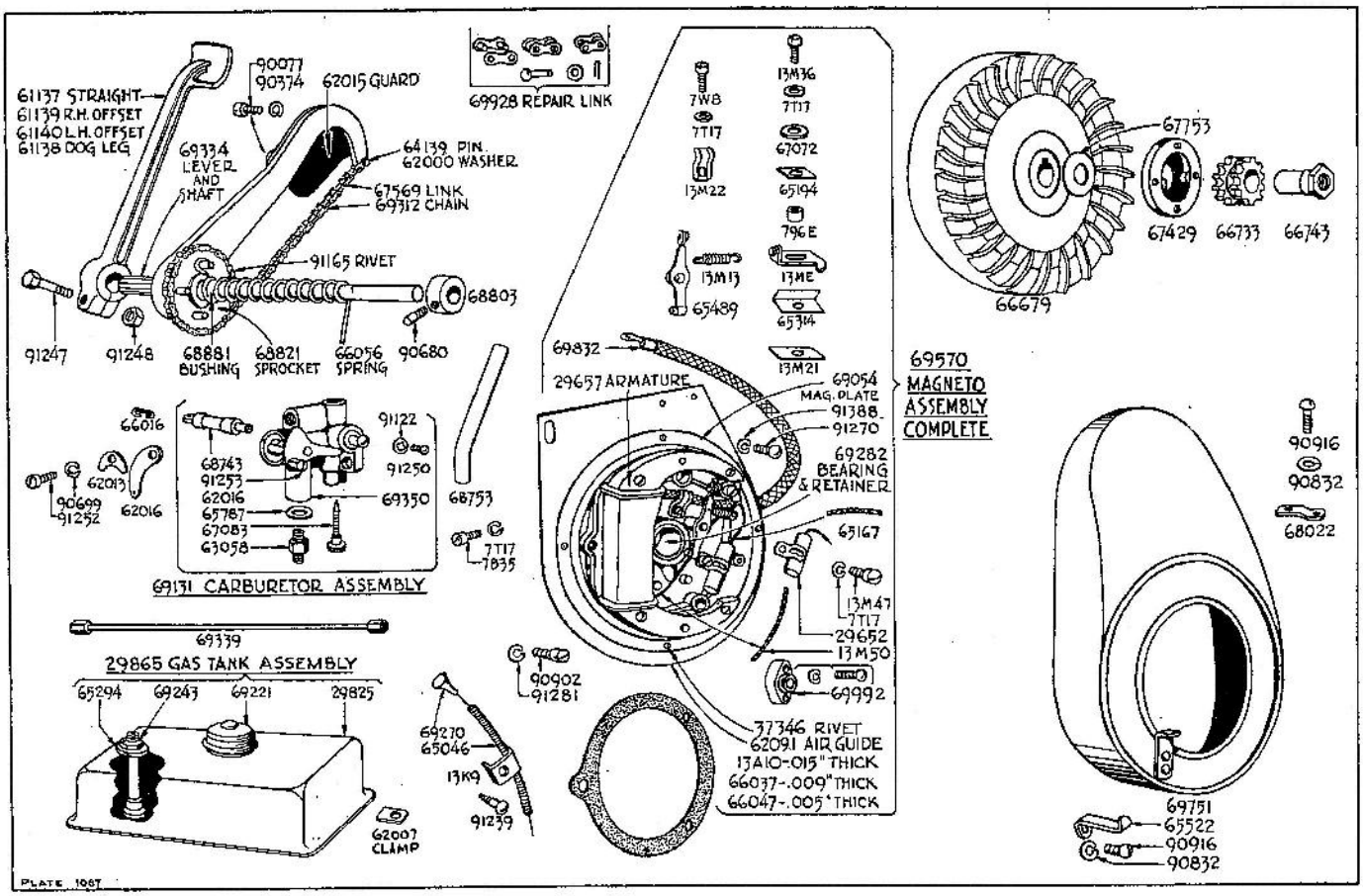
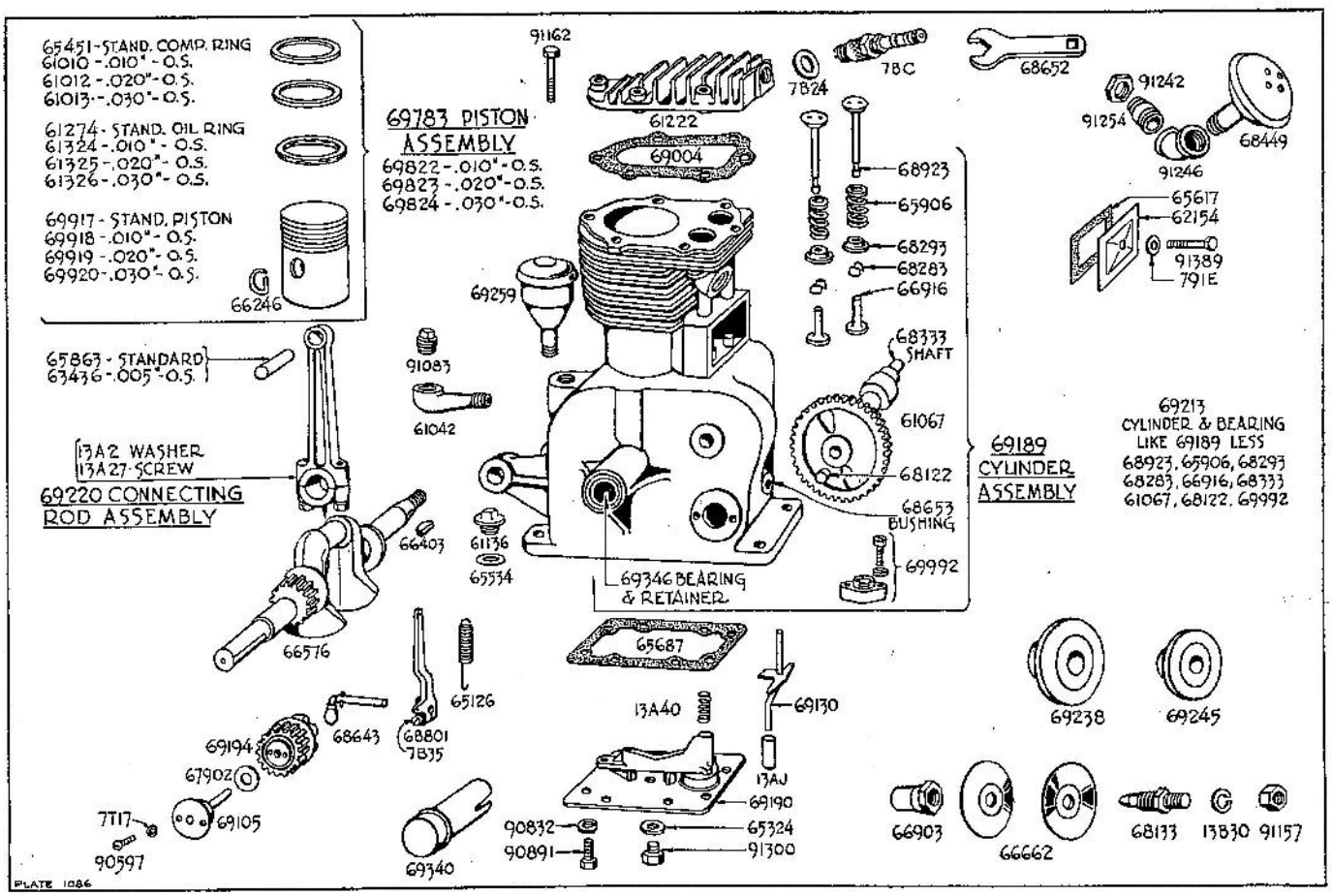


Plate No. 16



Assemblies include all parts shown in brackets

Nation-Wide Service Organization

71. To provide prompt and efficient service on Briggs & Stratton motors, Authorized Central Service Distributors are located in the principal cities of the United States and Canada.

72. Each Authorized Central Service Distributor listed on this page carries a complete stock of original Briggs & Stratton repair parts. Each Distributor is equipped with special factory service tools and factory-trained mechanics, assuring expert repair service on all Briggs & Stratton motors.

73. All Authorized Central Service Distributors are instructed by the factory to replace free of charge all parts found to be defective in either material or workmanship, according to the conditions of the Briggs & Stratton Guarantee.

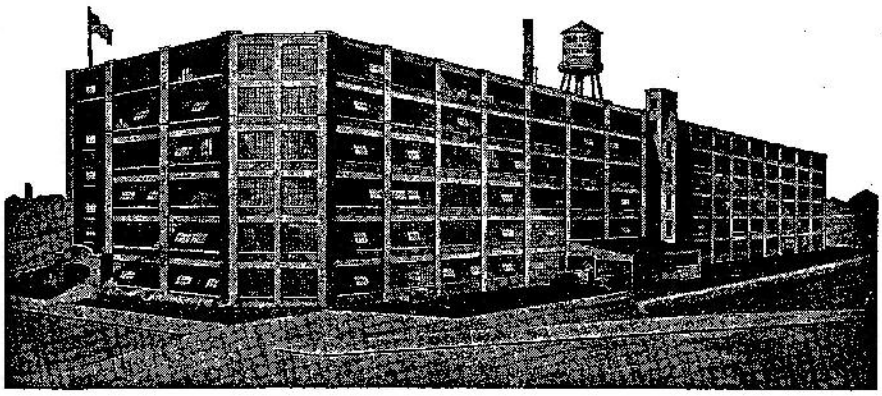
74. All gratis work done under the guarantee is the responsibility of the Central Service Distributor until all the material involved and supporting facts are submitted to and approved by the factory. In a difference of opinion regarding a Central Service Distributors' decision, their terms should be accepted and, either through them or direct, have all materials and supporting facts submitted to the factory for review.

75. Genuine Briggs & Stratton service will assure continuous motor satisfaction. Our long experience in motor maintenance prompts us to urge that all service work be done by an Authorized Central Service Distributor or at our factory. Mechanics unfamiliar with Briggs & Stratton products or without proper tools should not be permitted to make major repairs.

76. Parts and repair work are F. O. B. Factory or any Authorized Briggs & Stratton Central Service Distributor.

Authorized Central Service Distributors

STATE	CITY	NAME	LOCATION
Alabama	Birmingham	Birmingham Electric Battery Co.	Ave. B and 23rd St.
Arizona	Phoenix	Motor Supply Co.	315 N. Central Ave.
California	Los Angeles	Electric Equipment Co., Inc.	1240 S. Hope St.
California	San Francisco	Automotive Service, Inc.	930 Van Ness Ave.
Colorado	Denver	Spitzer Electrical Co.	43 W. 9th Ave.
Florida	Miami	Electrical Equipment Co.	42 N. W. 4th St.
Florida	Tampa	Spencer Auto Electric Co.	607 E. Cass St.
Georgia	Atlanta	Auto Electric & Magneto Co.	477 Spring St., N. W.
Illinois	Chicago	Mid-States Auto Electric Co.	2446 Indiana Ave.
Indiana	Indianapolis	Gulling Auto Electric Co.	450 N. Capitol Ave.
Iowa	Des Moines	Magneto Carburetor & Electric Co.	1216 Grand Ave.
Kansas	Wichita	The E. S. Cowie Electric Co.	230 S. Topeka Ave.
Kentucky	Lexington	Kentucky Ignition Co., Inc.	Rose and Vine Sts.
Louisiana	New Orleans	Suhren, Inc.	1319 St. Charles Ave.
Louisiana	Shreveport	Chain Battery & Automotive Supply Co.	Marshall & Cotton Sts.
Massachusetts	Boston	Wm. H. Flaherty Co.	48-52 Cummington St.
Michigan	Detroit	Auto Electric & Service Corp.	90 Selden Ave.
Minnesota	Minneapolis	Reinhard Bros. Co., Inc.	11 S. Ninth St.
Missouri	Kansas City	The E. S. Cowie Electric Co.	1819 Wyandotte St.
Missouri	St. Louis	Medart Auto Electric Co.	3134 Washington Blvd.
Nebraska	Lincoln	Carl A. Anderson, Inc.	1637 P St.
Nebraska	Omaha	Carl A. Anderson, Inc.	1514 Jones St.
New York	Buffalo	The Battery & Starter Co., Inc.	681 Main St.
New York	New York	The Durham Co., Inc.	17 W. 60th St.
New York	Syracuse	The Durham Co., Inc.	601 W. Genesee St.
North Carolina	Charlotte	Carolina Rim & Wheel Co.	312 N. Graham St.
North Dakota	Minot	Reinhard Bros. Co., Inc.	14-16 First St., S. E.
Ohio	Toledo	The Electric Po ɜer Maintenance Co.	26-30 Seventeenth St.
Oklahoma	Oklahoma City	American Electric Ignition Co.	725 N. Broadway
Oregon	Portland	Sunset Electric Co.	9th and Glisan Sts.
Pennsylvania	Philadelphia	Auto Equipment & Service Co., Inc.	1522 Fairmount Ave.
Pennsylvania	Pittsburgh	Pitt Auto Electric Co.	4951 Center Ave.
South Dakota	Aberdeen	Reinhard Bros. Co., Inc.	317 S. Lincoln St.
Tennessee	Knoxville	R. T. Clapp Co.	401-407 N. Broadway
Tennessee	Memphis	Automotive Electric Service Co.	1095 Union Ave.
Texas	Amarillo	The E. S. Cowie Electric Co.	7th & Van Buren Sts.
Texas	Dallas	Beard & Stone Electric Co., Inc.	Bryan and Olive Sts.
Texas	El Paso	Motor Supply Co.	308 Chihuahua St.
Texas	Houston	Beard & Stone Electric Co., Inc.	Milam St. and Polk Ave.
Texas	San Antonio	S. X. Callahan	425 N. Flores St.
Utah	Salt Lake City	Motor Equipment Co.	601 S. State
Washington	Seattle	Sunset Electric Co.	1530 11th Ave.
Wisconsin	Milwaukee	Wisconsin Magneto Co.	918 N. Broadway
DOMINION OF CANADA			
Manitoba	Winnipeg	Beattie Auto Electric, Ltd.	176 Fort St.
Ontario	Toronto-5	Auto Electric Service Co., Ltd.	15 Breadalbane St.



EAST PLANT

WHERE BRIGGS AND STRATTON MOTORS ARE MADE

YOUR Model "L" Gasoline Motor was manufactured in this modern Briggs & Stratton Factory at Milwaukee, Wisconsin. More small gasoline motors are produced here than in any other single plant in the world. The building is complete with all modern facilities for precision construction, economical production, rigid inspection and thorough testing. Briggs & Stratton gasoline motors, made here, are shipped to all parts of the world. They have earned an enviable reputation everywhere for reliable low cost service under widely varying conditions.

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