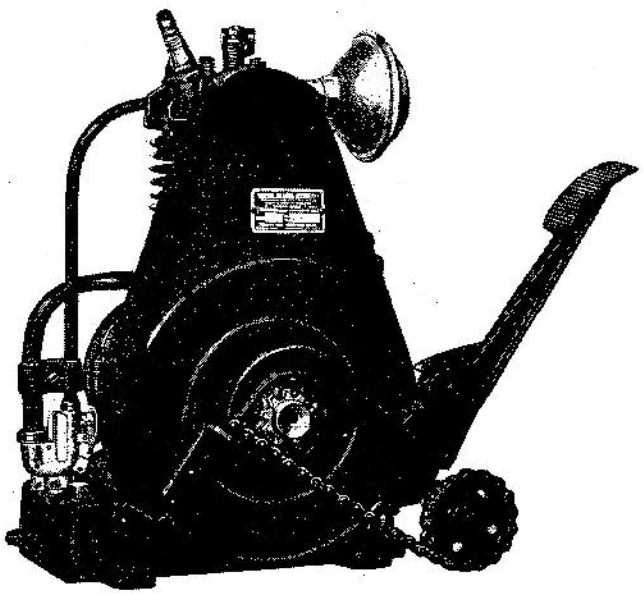
Operating Instructions

MODEL "FH"

INCLUDING MODEL "FH-1"

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 "FH" 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 "FH" MOTOR" ON PAGE 2

4 CYCLE

BRIGGS & STRATTON

MILWAUKEE, WIS., U.S.A.

GASOLINE MOTOR

This Gasoline Motor Is Your Faithful Friend

Treat it as a Friend

1. This Briggs & Stratton Gasoline Motor embodies the most modern principles of gasoline motor construction. It is made of high-grade materials and is built by skilled craftsmen. Before it left the Briggs & Stratton factory it was put through many rigid tests, was carefully inspected and found to be in first class condition to give satisfactory service.

2. The less you tinker with the Briggs & Stratton Gasoline Motor the better service it will give you. This does not mean, however, that your motor does not require a certain amount of attention, for it is only a machine. It cannot tell you its wants but depends on you to give it the right kind of fuel, oil and care.

3. This operating manual gives you the following information:

4. If this instruction book does not help you locate some specific trouble in your motor, then something too serious for you to correct has occurred. This means that it will be best to leave the motor alone and let an expert do the work. Consult your dealer first. He will help you, or will refer you to a nearby Briggs & Stratton service station or advise you to return the motor to the factory.

The Guarantee

5. The Briggs & Stratton Corporation will replace for the original purchaser, free of charge, any part or parts found upon examination at our factory at Milwaukee, Wisconsin, to be defective under normal use and service, on account of defect in material or workmanship, providing the motor is within the guarantee period. All transporation charges on parts submitted for replacement under the guarantee must be paid by purchaser.

What the Guarantee DOES NOT Include

6. The guarantee does not cover the free replacement of parts, because of wear occasioned by use. It does not cover the labor cost of replacing parts, neither is it effective if the motor has been the subject of misuse, negligence or accidents, nor if the motor has been repaired or altered outside of our Milwaukee factory or authorized service stations in any way which, in our judgment, affects its condition or operation.

Keep Your Motor Clean

7. It is important to keep your motor clean both inside and outside. This extra care will repay you many times in better service.

8. See that no dirt 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.

Failure to Follow These Instructions Voids Your Guarantee

Use the Right Kind of Oil

9. We recommend the use of MOBILOIL "ARCTIC" or other high grade oil of similar characteristics having low carbon residue and a body not heavier than S. A. E. No. 20. A grade of heavy oil which might be satisfactory in a tractor or for lubricating farm machinery must NOT be used.

Put Oil in Every Day

10. 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 this would cause, always fill the oil reservoir to the level of the filler plug opening every day the motor is used.

Change Oil at Least Once for Every Twenty-five Hours Motor Runs

11. After every twenty-five hours of operation, the old oil must be completely drained from crankcase by removing oil filler plug and tipping the motor or suck out with oil gun. Drain out the oil when the motor is hot, because hot oil drains out quickly and thoroughly. Note that after complete draining refill with fresh oil. We do not recommend flushing out with kerosene. 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 forms a gummy mass which clogs up the oil passages. If oil is not changed regularly, these foreign particles cause increased friction and grinding action which shortens the life of the motor.

Air Cleaner

12. For use outdoors or where there is much dirt or dust, air cleaner must be used or guarantee is void. We have developed an air cleaner which slips into the carburetor air opening. This is supplied only at an extra cost when ordered and is not standard equipment on the motor. We recommend its use generally, however, to keep the dust and dirt out of the cylinder, thus reducing wear. The air cleaner proper can be removed from the tube by merely pulling same off. EVERY DAY the air cleaner should be rinsed or cleaned in kerosene to remove all dirt which may accumulate. Then dip in old crank case oil and replace.

Starting the Motor for the First Time

Use the Right Kind of Oil

13. Be sure there is oil in the motor before you attempt to start it, and make sure that you use the right kind of oil. A comparatively light oil must be used. WE RECOMMEND MOBILOIL "ARCTIC" for all year round use.

Do Not Mix Oil With the Gasoline

14. Do not mix oil with the gasoline. It must not be done in this 4-cycle motor for it is provided with a complete lubrication system which includes an oil pump and an oil trough into which the connecting rod dips. This system provides adequate lubrication for all parts of the motor. The oil is also effective in cooling the motor by carrying heat away from the piston and cylinder walls.

Fill the Oil Reservoir

15. The oil filler plug is in either end of the crankcase, one below the breather and other beside the carburetor. With motor level remove filler plug and pour in oil until it rises to the level of the filler plug opening. The capacity of the oil reservoir is 1 pint.

Fill the Gasoline Tank

16. The gasoline tank is in the base, and it is filled by removing the red gasoline filler plug. The capacity ¼ gallon. Good grade gasoline is recommended which leaves minimum gummy substance. Be sure that the small vent hole in the gasoline tank plug is not clogged up, for air must enter the tank to allow the gasoline to flow to the carburetor. Test by running wire through the hole in plug.

Spark

17. A spark will be supplied to the spark plug as soon as you crank the motor, the source of ignition being a magneto built into the flywheel. When starting motor it is not necessary to turn on any switch in order to turn on the ignition.

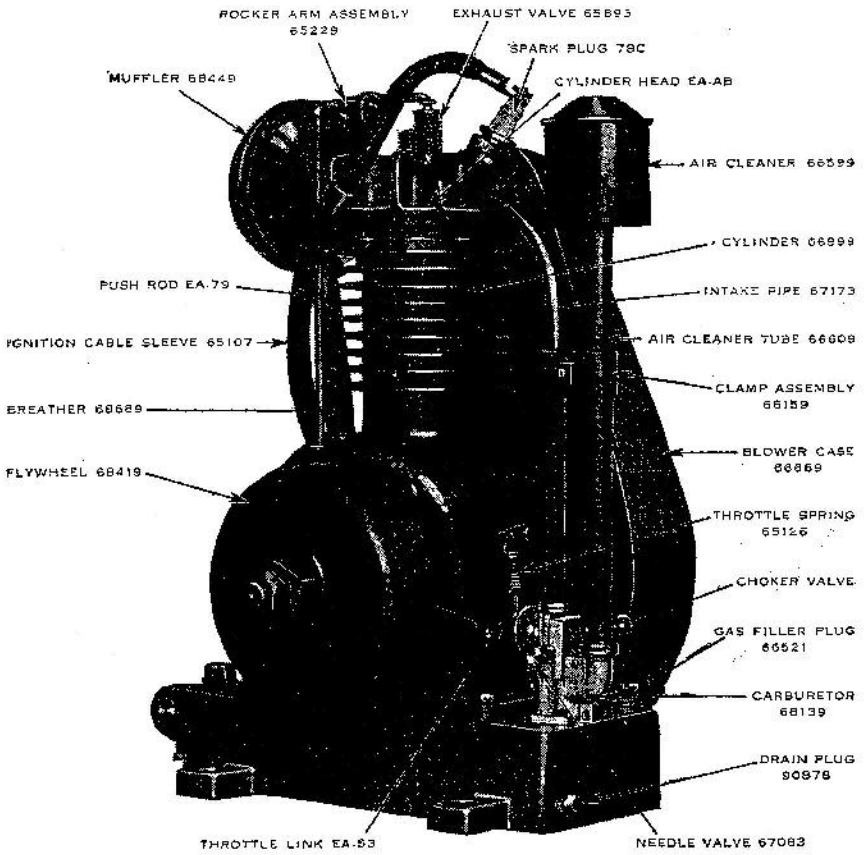


FIG. 1—MODEL "FH" MOTOR

Cranking

18. First turn the choke valve, located in the choke tube, into the closed position to choke carburetor (See Figures 1 and 2). Closing the choke shutter chokes off air going to the carburetor the same as the choke on an automobile.

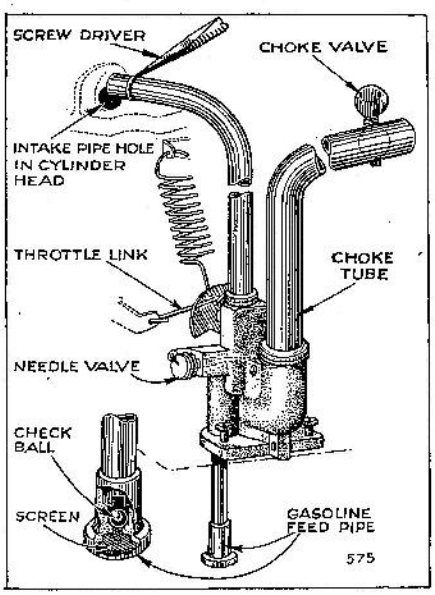


FIG. 2—CARBURETOR

19. Step down on starter pedal giving it a fast kick and repeat before motor stops turning, pumping quickly until the motor fires. Immediately after motor starts, gradually open choke shutter by slowly turning choke valve into open position until motor runs smoothly with choke wide open. If motor is cold, it may slow down or sputter. In this case close choke again for a few seconds. If the motor stops, you have probably choked it too much or not enough. You will soon learn to judge the correct operation of the choke lever so that the motor can be quickly started and kept running without difficulty.

20. You should also remember that very slow cranking may not start the motor because of the fact that the spark is produced by the magneto which requires a certain amount of speed before it produces a spark at the plug.

Stopping Motor

To stop motor, press on the red stop button until motor stops turning.

What to Do When Motor Will Not Start

The Correct Use of the Choke

21. With gasoline vapor in the motor, this vapor compressed and a spark at the spark plug, there is not much question about starting the motor. Of course it sometimes happens that the gasoline mixture is not right and will not fire properly. This is perhaps the most common cause of failure to start, particularly in a new motor with which you are not thoroughly familiar.

22. The correct carburetor setting is one which gives a good operating mixture when the motor is hot. Because gasoline does not vaporize so well when cold, it is necessary to choke the carburetor in order to cut down the amount of air and give a mixture which is approximately correct for starting. Until you become perfectly familiar with your motor, however, you may make the mistake of not choking the motor enough or you may choke it too much so as to get a lot of raw gasoline in the motor. If you have choked the carburetor three or four times while cranking, try cranking two or three times without choking. Then, if the trouble was due to choking too much you will find that the motor will start as the excess gasoline is driven out through the exhaust pipe.

Checking the Spark

23. To be sure that you have a spark at the spark plug you can remove the wire from the plug and hold it within approximately ⅛" of any metal part of the motor (see Fig. 3). Keep the hand back on the insulated part of the wire so

that you will not get a shock. Then crank the motor and see if a spark will jump this ⅛" gap. If it does, you will know that the spark is amply strong to jump the small gap at the spark plug when under compression in the motor. This test is evidence that the entire ignition system is working satisfactorily. If there is no spark, check the various items on the trouble remedy chart, or see your local dealer or nearest Briggs & Stratton service station.

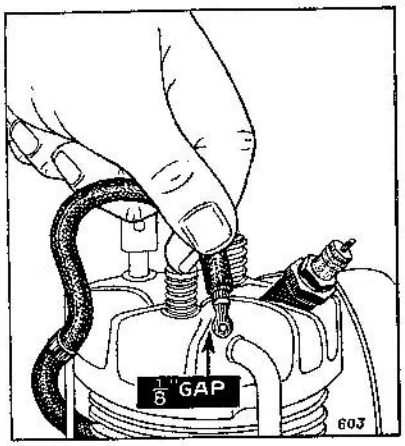


FIG. 3—CHECKING SPARK

Checking Spark Plug

24. It sometimes happens that a spark plug porcelain is cracked or broken so that the spark jumps through from the center electrode to the shell of the spark plug and does not jump at the gap inside of the cylinder (see Fig. 4). This, of course, prevents the motor from firing. The simplest way to check a spark plug is to try a new one and you will find it advisable to have a spare spark plug on hand for testing. If the motor starts with the new plug, then you know that the old one is at fault and should be discarded. The gap at the spark plug should be somewhat less than ½" (to be exact, .020").

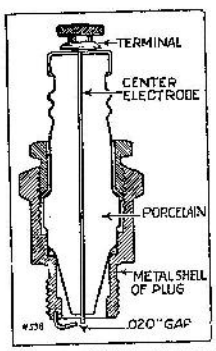


FIG. 4—SPARK PLUG

Priming the Motor

25. On the suction stroke, the motor draws gasoline up through the carburetor, mixes it with air, and feeds a combustible mixture to the cylinder. However, if the magneto produces a good spark and a good spark plug is in the cylinder head (set with a gap of .020") and still you cannot start the motor, it is advisable to remove the spark plug and pour in about a half teaspoonful of gasoline. This should run the motor three or four revolutions to show you that it is in operating condition, even if there is no gasoline in the tank and the carburetor is not functioning. Difficulty in the carburetor, however, is extremely unlikely, for the new motor you have was thoroughly tested under its own power and was operating perfectly before it was shipped from the factory.

Cleaning the Gasoline Line

26. If the motor will run after the cylinder has been primed with gasoline, but will not run otherwise, it is possible that the gas pipe from the base to the carburetor is stopped up. Unscrew the carburetor from the base. (See Figs. 2 and 10 and read paragraph No. 53 on page 7.) Remove the gasoline feed pipe from the carburetor noting particularly the length of the pipe before loosening the lock nut so that the pipe can be properly assembled back to the carburetor. Wash out the screen in alcohol and blow through the screen end of the pipe. The check ball as shown in Fig. 2 prevents air from passing through when blown from the opposite end.

Adjusting Carburetor

27. The carburetor is properly adjusted at the factory but if you think the adjustment has been tampered with you can adjust it over again in accordance with the instructions given on pages 6 and 7.

Testing Compression

28. The motor to run properly must have good compression. You can test this by turning the motor over by hand to make sure there is one point in its rotation where it turns harder than it does at other points. This is due to the upward motion of the piston compressing the fuel mixture. If the flywheel is released it should rock back and should do this two or three times before the compression all leaks away. If there is no compression, read paragraphs 54 to 59.

Starter

29. To crank the motor successfully, it is necessary that after depressing the starter pedal, it should come up quickly with your foot, so that the motor can be spun or pumped. Should starter pedal stay down or come up slowly, put a little kerosene on the starter lever return spring to loosen it.

Trouble Remedy Chart

Motor Will Not Start

How Your Model "FH" Motor Works

The 4-Cycle Principle

30. The reliability, economy and ease of starting which characterize your Briggs & Stratton motor are due in part to the fact that it is designed on the 4-cycle principle which is the basis of the design of all automobile motors. In the

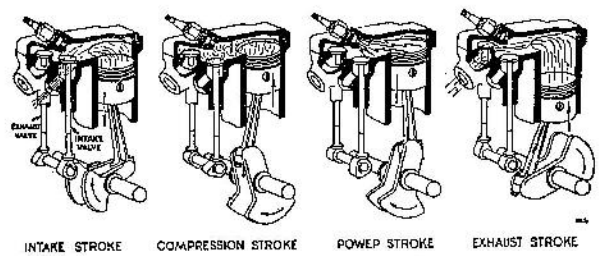


FIG. 6—4-CYCLE PRINCIPLE

common term "4-Cycle Motor" we leave out the word "Stroke" for this description as applied to a motor really means that there are four strokes to one cycle, a cycle being a series or round of events.

31. In our 4-cycle motor the events are illustrated in Fig. 5. On the intake stroke (illustration at the left), we have the piston going 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. In the next illustration we find the piston coming 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 gas. This produces an explosion above the piston which forces it down on the power stroke. Both valves are closed on the power stroke. On the next upstroke of the piston, the exhaust stroke, with the exhaust valve open, the burned gas is driven out.

The Ignition

32. The spark which fires the gas in your motor is produced by a magneto built in the flywheel. This is a simple self contained system which is very reliable. It also does away with batteries and wiring with the exception of the high tension wire to the spark plug and the single wire which comes out to the red stop button. The magneto contains a coil, a condenser, a pair of contact points and a rotating magnet cast into the flywheel. This rotating magnet is properly timed with relation to the magneto by keying the flywheel to the crankshaft.

The Carburetor

33. The carburetor is a device for properly mixing gasoline vapor with air and feeding it in correct amounts to the motor.

The Lubrication

34. The lubrication of your Model "FH" Motor is taken care of by a pump which is operated from an eccentric on the cam gear. This pump keeps a trough, into which the connecting rod dips, constantly full of oil. The dipping of the connecting rod then throws oil to all moving parts of the motor. Oil is splashed to the main bearings, and return ducts are provided for draining oil back into the crankcase.

The Cooling

35. The cylinder is cooled by air as are the cylinders of modern airplane motors. The rotation of the flywheel blows air all around the cylinder which is covered with thin metal fins to help carry heat away from the cylinder walls. As previously mentioned, the oil also assists in cooling. In cooling the motor, the lighter portions of oil are gradually driven off and unless frequently changed, the oil which remains becomes too heavy to lubricate or cool the motor effectively. See paragraphs No. 9 to 15, page 2.

Construction and Maintenance

Ignition System

36. Removing the Flywheel and Magneto. To inspect the magneto or check up on the contact point setting, it is necessary to remove the flywheel. This is done by unscrewing the nut or pulley which holds it in place. A right-hand

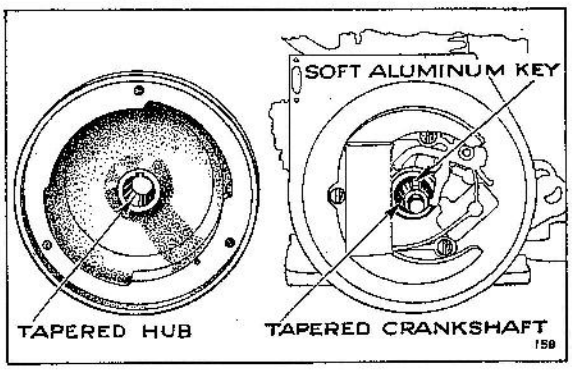


FIG. 6—MAGNETO FLYWHEEL AND CRANKSHAFT TAPER

thread is used, so the nut or pulley should be turned to the left and started by tapping the wrench handle or a bar

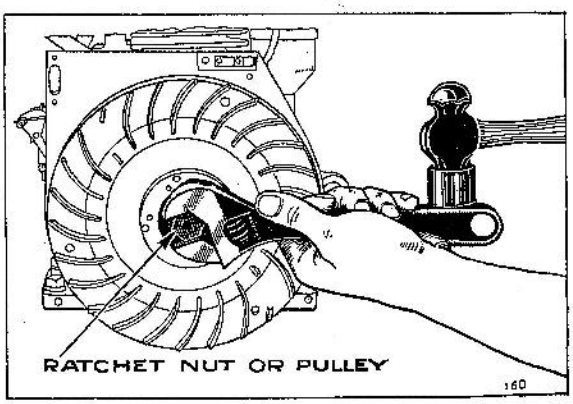


FIG. 7—TIGHTENING FLYWHEEL

through the holes in the pulley with a hammer. Then place a block of wood against the end of the crankshaft and strike it to loosen the flywheel. The magneto is removed by taking out three screws.

37. Replacing Magneto. Magneto should be assembled to crankcase with proper gaskets so that end play of crankshaft is not less than .002" or more than .008".

38. Replacing the Flywheel. When completing any necessary work, replace the flywheel, being sure to use the soft flywheel key supplied. The key is only for the purpose of locating the flywheel on the crankshaft in the correct position so that the magneto will be correctly timed. The flywheel is driven, however, by being a tight taper fit on the taper of the crankshaft. This taper is shown in Fig. 6. In case the flywheel should come loose, the soft flywheel key is designed to shear off so that no damage will be done. Therefore, a STEEL KEY SHOULD NEVER BE USED. After the flywheel is in place, has been located with the key and nut or pulley has been screwed up, this nut or pulley should be made VERY TIGHT. This can be done as shown in Fig. 7 by striking the wrench handle or bar with a hammer.

39. Spark Plug. A sectional view of the spark plug is shown in Fig. 4, on page 4. The purpose of the porcelain is to prevent the spark from jumping anywhere except at the gap in the cylinder. If the porcelain is cracked or broken, however, the spark may jump through to the shell of the spark plug. This will prevent the motor firing. Water on the outside of the spark plug may permit the high voltage spark current to leak over the surface of the porcelain. Carbon deposits on the porcelain inside of the cylinder will do the same thing. The spark plug should, therefore, be removed to see that the porcelain is not heavily coated with carbon. It can be cleaned by taking the plug apart and washing off the carbon with gasoline or cleaning with some kitchen scouring powder. When the plug has been put together again, the gap should be set at .020".

40. Stop Button. See that the stop button is not bent or held down by the blower case so that it makes contact continuously. To check this it may be necessary to remove the

blower case. See that the button is not shorted with dirt, water or oil. Also check the small wire which runs down to the magneto to see that it is not grounded.

41. Contact Points. While the magneto plate is still on the motor, you can turn the crankshaft by hand and see if the contact points open and close properly. They should have a gap of .020". Adjustment is made by loosening the contact bracket screw and moving the bracket to desired position. The contact point surfaces should be clean and the faces of the points square so that when they come together they make good electrical contact. If points become badly

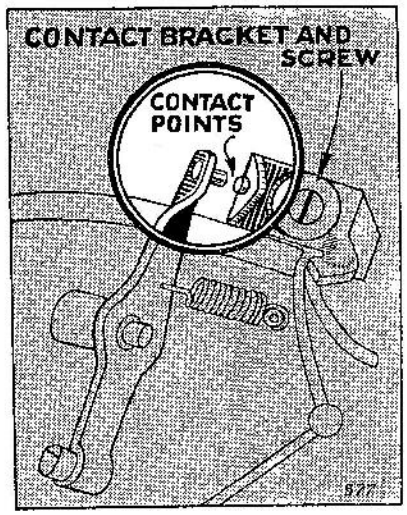


FIG. 8—CONTACT POINTS

burned or pitted it may be necessary to replace them with new ones. When checking up the contact points be sure that all parts of the magneto are clean and free from grease, water and dirt. Small metal particles, in particular, will cause trouble and prevent the magneto from firing. The various parts can be washed off with gasoline on a clean rag. Avoid getting gasoline on the coil. Dry off the magneto with another clean rag before putting it in service again.

42. Inspect the soldered terminal on the condenser and the contact bracket.

43. Spark Plug Cable. Check the spark plug cable to see that the insulation is not broken, soaked with oil or water, grounding it, especially at some point where it touches the motor or is very near to the motor. It may be necessary to remove the flywheel and magneto in order to check this cable all the way to the magneto coil. UNDER NO CIRCUMSTANCES SHOULD THE CABLE BE SOLDERED TO THE COIL as heat damages the coil insulation. A twisted connection is sufficient as the cable is held securely by a clip. When checking the cable, also check the ground wire which goes up to the red stop button to see that the insulation is not broken so that the wire rubs on some metal part of the motor.

44. Condenser, Coil and Magnet. If you have not located the trouble up to this point, it is probably in the condenser, the coil or the magnet. Under these circumstances, you should see your dealer or send in the complete magneto with flywheel to the Briggs & Stratton factory, or to the nearest Briggs & Stratton service station.

Governor

45. The Model "FH" motor is equipped with a centrifugal type governor, which automatically holds the motor speed normal under load. The governor parts are assembled as described below, see Fig. 9.

46. The Governor Assembly and Hook-up. The governor arm (A) must have the shape as shown in side view. The arm is placed over the crankshaft with the ears to the right and the small slot over the pin (B). The governor arm (A) should then be held in place while sliding spool (C) on far enough to pass the pins (D) through the slots in the governor arm fork. The spool (C) must have a free sliding fit over the crankshaft. The governor flywheel (E) with the weights (F) fitted loosely over the pins (G) and the washer (H) working freely between the two inner pins (G) is then placed over the end of the crankshaft and tightened in place with a lockwasher and nut.

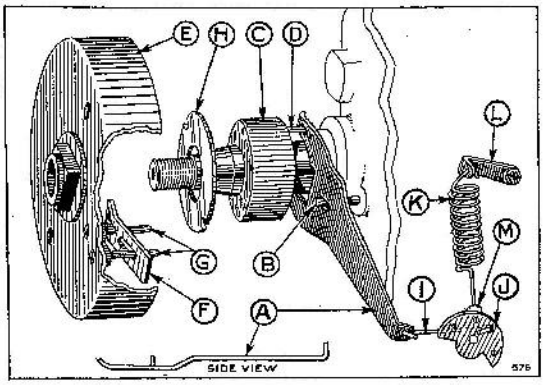


FIG. 9—GOVERNOR ASSEMBLY AND HOOK-UP

47. The throttle link (I) is hooked through the largest of the four holes in throttle lever (J) and the governor arm as shown. The throttle spring (K) must have coiled end hooked through the spring clip (L) and the long end hooked through the small ear (M) back of the throttle lever (J).

48. Checking Governor Parts. After the governor is hooked up as outlined in the above paragraphs, it should then be checked back to see that all parts work properly. The governor arm (A) must have enough free movement sideways to move the throttle lever (J) from the right stop to the left stop. The link (I) should not bind in the holes at any time.

49. Governor Adjustment. In the event that the throttle lever does not have free movement from the right stop to the left stop on the carburetor body, the exposed end of the governor arm (A) may have been bent out of shape. The long end of the arm (A) can easily be bent right or left to get proper movement of the lever (J). When change in motor speed is desired, the spring clip (L) may be moved up or down. Moving it up increases motor speed and down decreases speed.

Carburetor

50. The carburetor used on your Model "FH" Motor is shown in Fig. 10. As received from the factory it is prop-

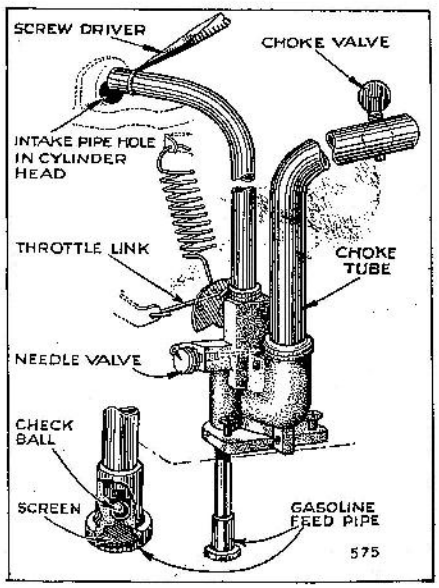


FIG. 10—CARBURETOR

erly adjusted. However, if it has been tampered with, it can be adjusted over again as follows:

51. Hook-up. First make sure that the throttle link has one end hooked through the hole in the governor arm and the other end hooked through the large hole in the throttle lever as shown in Fig. 9. The coiled end of throttle spring is hooked through the throttle spring clip and the other end

is hooked through the hole in the small ear back of the throttle lever.

52. To Adjust Carburetor. Completely close needle valve by turning to right or clockwise with fingers as far as possible. From closed position open needle valve by turning to left or counterclockwise about one to one and one-half turns, lining up setting mark notched in the face of needle valve wheel with the small pin directly on the side of it. (See illustration No. 10.) After the motor has been started, warmed up and running with the choke wide open, turn needle valve a notch at a time in either direction, to final needle valve setting point at which motor operates most smoothly. This final setting point should be with the needle valve turned to the right, or lean, as far as possible, but so motor will still run smoothly with full load. When this final needle valve setting has been determined, do not change it again. This setting will take care of future starting and running.

53. Removing and Replacing Carburetor. Remove clamps from the choke tube and the intake pipe. Pull the choke tube out of the carburetor. Unscrew carburetor from base. Remove intake pipe by giving it a fast pull so as to slip the end of pipe out of cylinder head. Unhook the throttle spring and link, noting the manner in which they are hooked, so they can be properly assembled again. To replace the carburetor, reverse the operations performed above. When replacing the intake pipe, use some tool such as a screw driver, to spring the end of pipe into the hole in cylinder head as shown in Fig. 10.

Compression

54. Compression in the motor is obtained by having valves, which seat properly, gaskets, which are tight, a spark plug which does not leak, and piston and piston rings, which are properly fitted.

Valves

55. The valves are properly fitted, when the motor comes from the factory. The exhaust valve is operated by a rocker arm and the intake valve is operated by suction caused by the piston moving down. After long periods of use the valves should be ground in. The cylinder head must be removed to do this. To grind the exhaust valve, remove the spring retainer collar and spring. Due to special tools required in removing and replacing intake valve, it is possible to grind the valve with the spring in place.

IMPORTANT—The cylinder head must be thoroughly washed in gasoline before placing back on the cylinder.

With the rocker arm fitted over the push rod, there must be a clearance of about four times the thickness of a piece of newspaper between the end of the exhaust valve stem and rocker arm when the push rod is in its lowest position. (To be exact the clearance should be .012".) See Fig. 11.

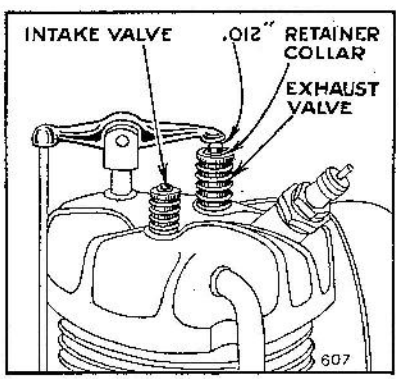


FIG. 11—CYLINDER HEAD

Depress intake valve several times. It should snap up freely when released. If sticky, put a few drops of kerosene, not oil, on valve stem, and work valve until free. If proper facilities are not available to grind the valves, the cylinder head assembly should be sent to the nearest authorized Briggs & Stratton Service Station for repairs.

Cylinder Head

56. The cylinder head is held on with 4 cap screws, two of which are thick head and the other two thin head. The thin head screws are used on the side of the muffler opening and the intake pipe hole. 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 gasket. In tightening the four cap screws, tighten them a little at a time so that the cylinder head is pulled down evenly rather than all on one side first.

Worn or Scored Piston, Rings or Cylinder

57. This will occur only after long use of the motor, unless it was run without oil, oil not the quality and grade recommended, oil not changed regularly, or run with continuous overload.

58. When diameter of cylinder at center is .005" or more, larger than diameter of cylinder at the ends (top and bottom), cylinders should be reground to necessary oversize, which is .010", .020", or .030" as required and fitted with the corresponding oversize piston and rings. An authorized Briggs & Stratton Service Station should make the repairs.

Piston

59. The piston in the model "FH" motor is made of the best grade of gray iron. The standard clearance between the piston and cylinder wall is .002". The piston rings, when fitted into the cylinder, should have from .007" to .012" gap.

Piston Pin

60. The piston pin is a push fit in one side of the piston (indicated by the notch) and a force fit in the other side. To remove this pin without special equipment remove pin lock ring from the push fit side, and with a wooden pin slightly smaller than the size of the piston pin, drive pin out. To replace pin, insert from the push fit side, driving pin in far enough to permit assembling of locking ring in the groove in the piston pin hole.

Connecting Rod

61. The piston pin end of the rod is provided with a removable bronze bushing. The lower bearing is of conventional type used with splash lubrication and should it become loose,

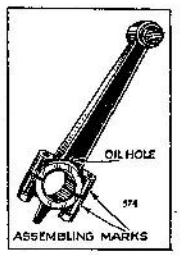


FIG. 12—CONNECTING ROD

can be refitted. When replacing the connecting rod, the oil hole must be toward the magneto and the assembling marks must be on same side of rod as shown in Fig. 12.

Timing

62. The Model "FH" motor is properly timed as outlined in the following paragraphs. For illustration see Fig. 13.

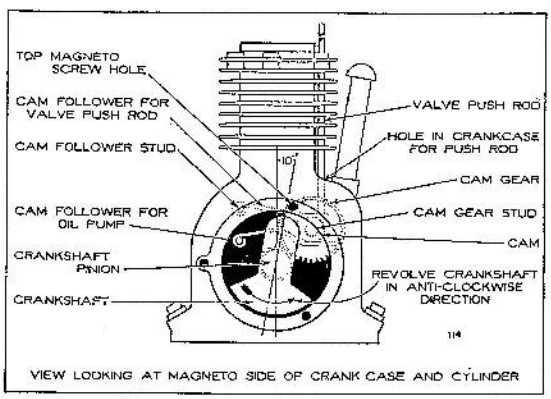


FIG. 13—TIMING

63. With the cam followers in place, insert the exhaust valve push rod through the small hole on top of the crankcase so that the flat end of rod rests on the upper cam follower. Then place the cam gear on its stud so that the cam lobe is toward the crankcase wall and between the two cam followers. Place finger on top of push rod and

press lightly (being careful not to bend rod so that it will bind against the side of the small hole in crankcase) while rotating the cam gear to the right or clockwise several times until you become familiar with the point where push rod begins to rise. With the cam gear set in this position, insert crankshaft, gear end first, into bearing in crankcase, with crankshaft in position of timing line (that is, with throw of crank up and crankshaft's heavy counterweight at bottom, having center of throw 10° to the right of center line, almost in line with top magneto screw hole). With crankshaft in this position, mesh its gear with cam gear. Motor should then be in correct time.

64. How to Check Timing. Revolve crankshaft in anti-clockwise direction holding finger lightly on top of valve push rod, and again experimenting for rising position of the rod, as in paragraph 63. The valve push rod should begin to rise when crankshaft is in position shown in Fig. 13. (10° to the right of Center Line or almost in line with Top Magneto Screw Hole.)

65. How to Correct Timing. If crankshaft is not in correct position as indicated in Fig. 13, disengage crankshaft gear from cam gear by withdrawing crankshaft slightly, and turn crankshaft in necessary direction to correct its position and mesh again with cam gear. Then recheck as in paragraph 64.

Exhaust Pipe and Muffler

66. After long periods of service it is possible that the muffler will become clogged to the point where it will affect the motor's power. To check the muffler you can unscrew it from the motor and run water into the open end of the muffler. If full streams of water come out of the small holes at the end of the muffler, you will know that it is not clogged up. If the water runs through very slowly, however, the muffler is probably clogged and should be replaced with a new one. NOTE—If flexible exhaust tube is used on this motor, there is a certain amount of water formed inside of the tube after the motor cools off due to condensation. If the tube is above the level of the exhaust port then the tube should be removed from the motor when the motor is not in use so as to prevent the water from going into the motor. Water inside of the motor will corrode the mechanical parts and eventually result in hard starting of the motor and trouble in operating it.

Effect of Load on Motor Operation

67. We have covered practically every condition that could possibly affect the operation of your Model "FH" Motor. Of necessity, however we have not been able to touch on conditions in the machine which the motor is driving. It is just as important to check up on the machine as it is to take care of the motor. The machine should not be overloaded, should be lubricated regularly and should be inspected to see that the belt or chain drive is in good condition.

Important

Follow These Instructions When Ordering Parts or When Writing for Information

A. Before ordering parts

Check up with your dealer if it is possible to do so, in regard to parts you believe are needed. He will assist you on any service that is necessary and will help you select the correct parts for your motor.

B. Give model letters and number of motor

This information is most important as we make many gasoline motors in various types and sizes. You will find the model letters and motor number on the brass plate at the side of the motor.

C. Give name and catalog number of parts wanted

You will find part numbers and description in section following parts illustrations. (Do not use numbers cast on parts.)

D. Send remittance with order to cover parts plus postage

Prices of parts are given in the pages which follow. Add what you think will be sufficient for postage and send postal or express money order for this amount. Do not send currency in a letter. It is not safe. By following these suggestions carefully you will avoid delay and added expense usually connected with C. O. D. shipments.

E. Be sure your name and address are given plainly and correctly.

Print name and address. Do not abbreviate name of town or state.

F. Always specify on the order how shipment to you is to be made.

G. Address your order or letter to Briggs & Stratton Corporation, Milwaukee, Wisconsin, or Authorized Service Distributor, attention of Service Department.

H. After you have made out order, check back to see that you have followed these instructions accurately.

This will save time and money for you and assist in giving prompt and efficient service.

I. When returning motor or parts to factory or service station.

If your motor or parts are returned for any reason, be sure your name and address are on both the inside and outside of the package.

Model and motor number must always be given from which parts were taken, to insure prompt and accurate service.

You should also write, explaining fully the reason for the return and exactly what is to be done with it.

All return shipments must be prepaid, or they will not be accepted.

Prices

Note—All prices in this book are subject to change without notice. In case of change in price, orders will be filled at current prices. All prices shown are F. O. B. our factory in Milwaukee, Wis. Prices higher in Canada.

Plate No. 598—Parts of Cylinder

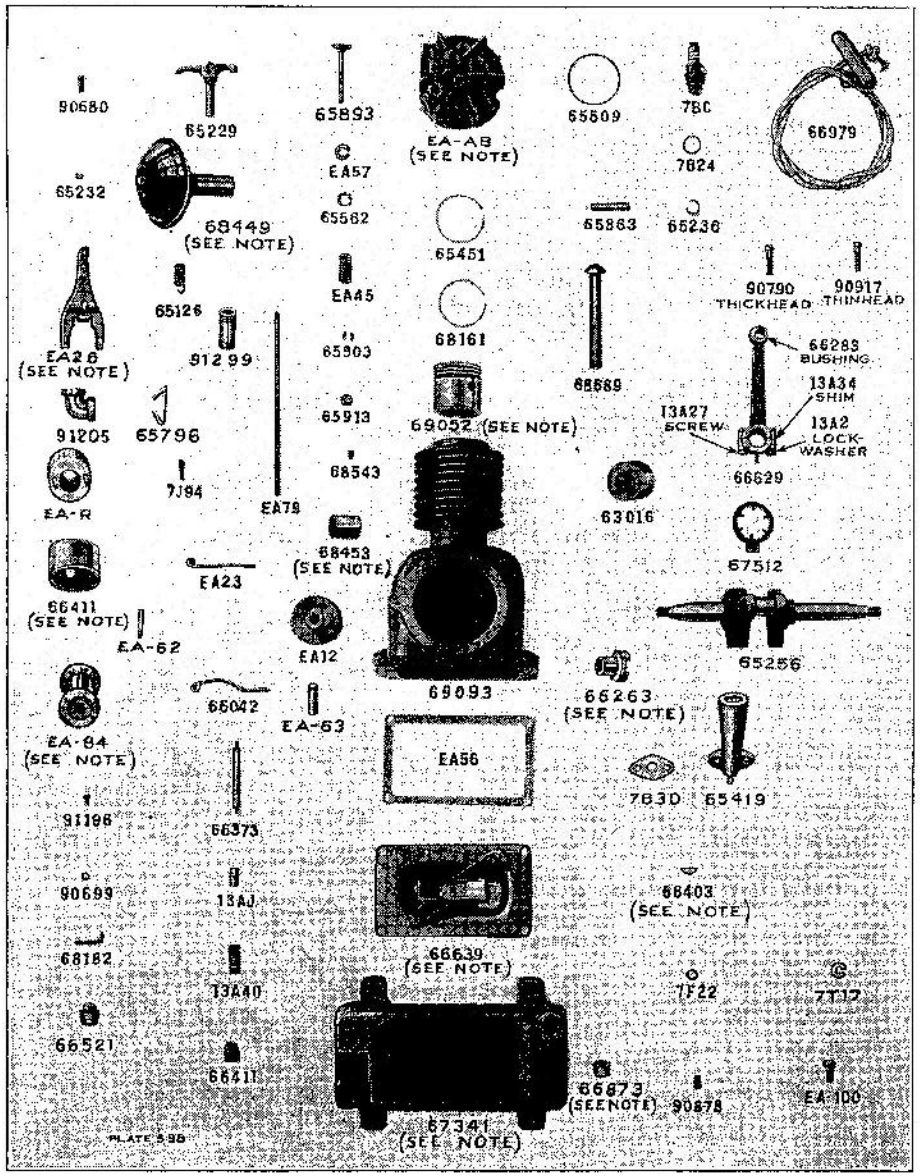


Plate No. 596—Parts of Magneto and Governor

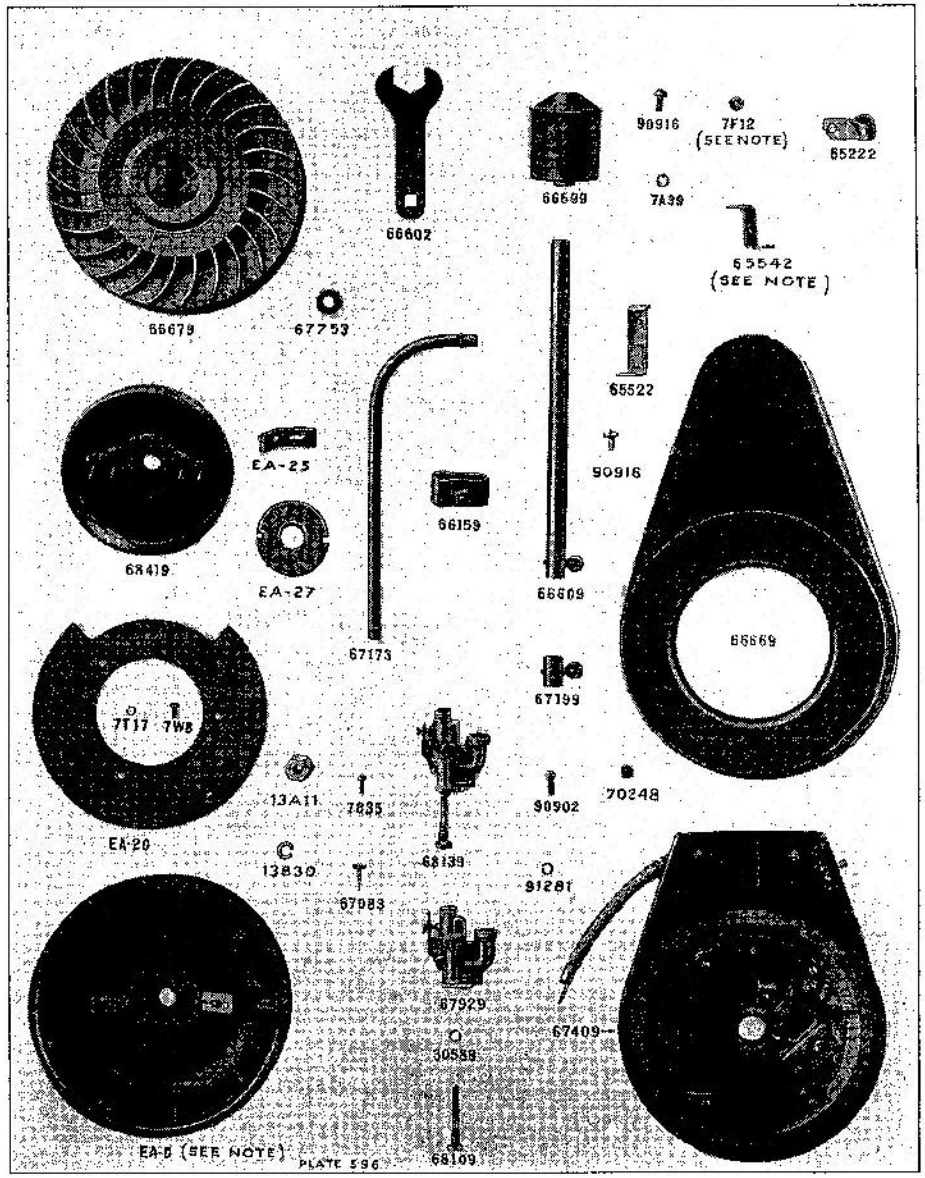


Plate No. 600—Magneto Parts and Bases

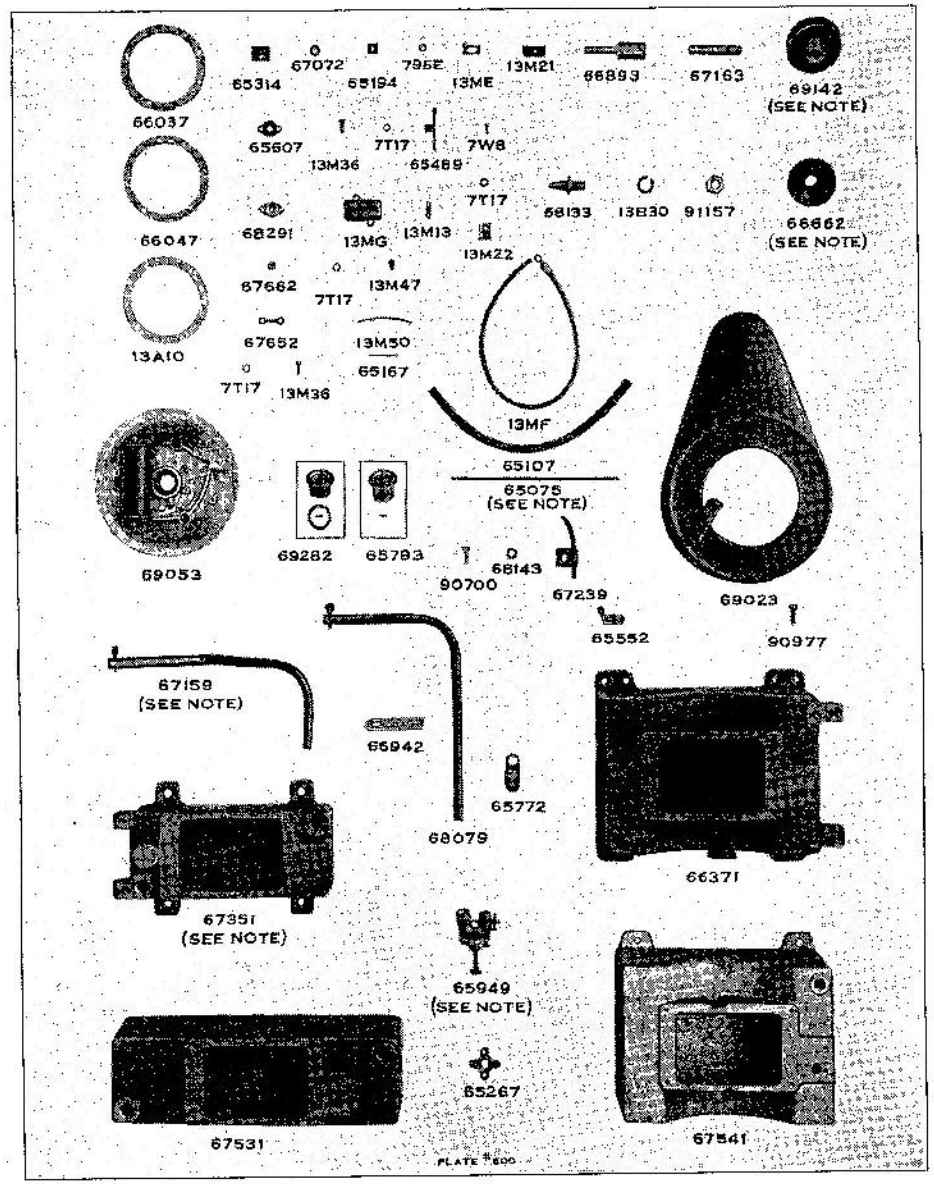
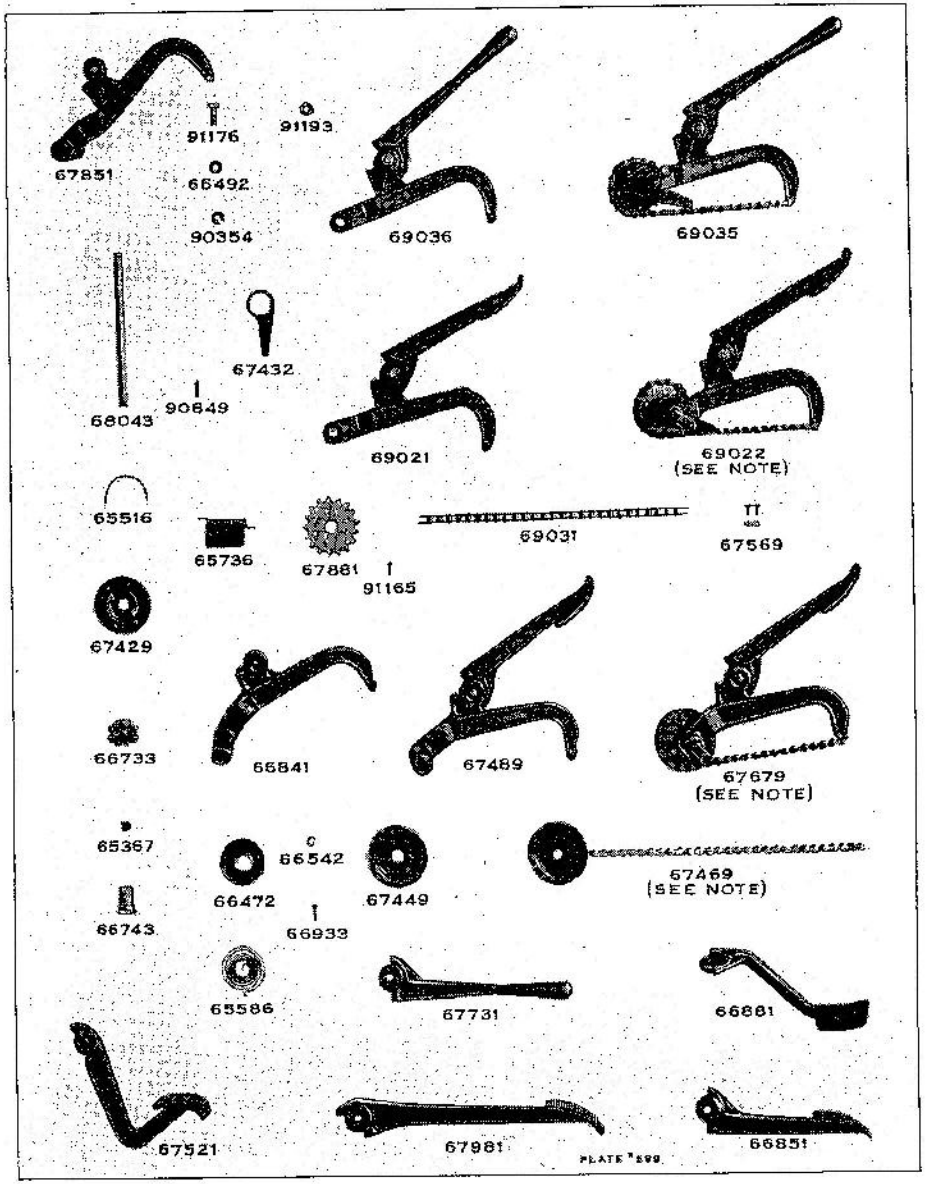


Plate No. 599—Starter Parts



MODEL AND MOTOR NUMBER MUST BE GIVEN WHEN WRITING OR ORDERING PARTS.

Plate No. 597—Tillotson Carburetor Parts

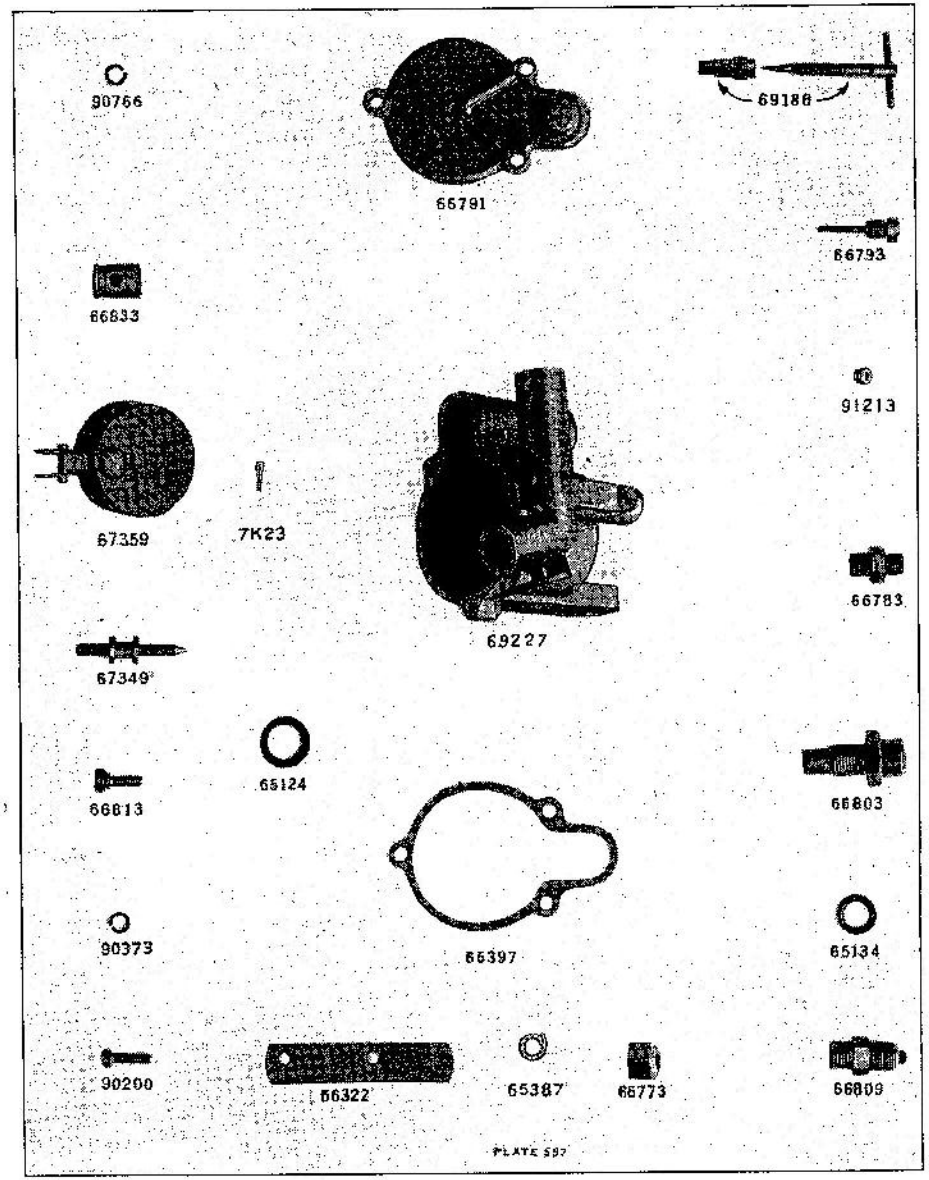
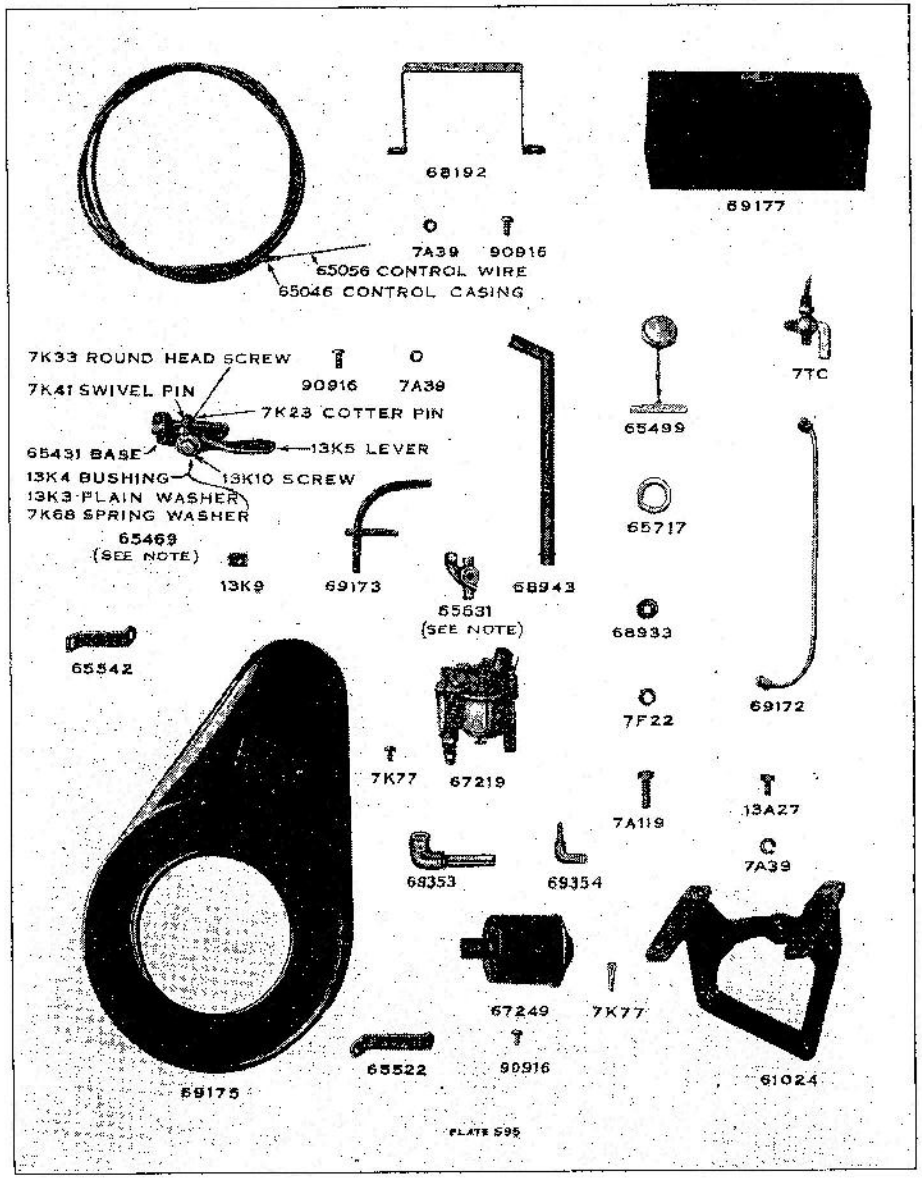


Plate No. 595—Hand Control Parts



MODEL AND MOTOR NUMBER MUST BE GIVEN WHEN WRITING OR ORDERING PARTS.

PARTS AND PRICE LIST

Part No.	Name	Where Used	Price Each
*EAAB	Cylinder Head—Includes 1—No. 69803 Cylinder Head 1—No. EA15 Intake Valve 1—No. EA45 Ex. Valve Spring 1—No. EA46 Intake Valve Spring 1—No. EA57 Valve Spring Gasket 1—No. 65913 Exhaust Valve Sleeve Retainer 1—No. EA86 Intake Valve Collar 2—No. 65562 Valve Spring Washer 1—No. 67133 Exhaust Valve 1—No. 65903 Ex. Valve Sleeve (2 Halves)		$ 6.75
	Note: No. 65299 cylinder head assembly complete with: 1—EAAB Cylinder Head 1—65229 Rocker Arm 1—65232 Slug for Set Screw 1—90680 Set Screw		8.35
*EAD	Governor Flywheel—Includes 1—No. EA4 Flywheel 2—No. EA25 Weights 1—No. EA27 Washer 4—No. 90831 Escutcheon Pins		5.00
	Note: No. EA4 Governor Flywheel consists of cast iron flywheel only—used on motors without a governor		4.75
	No. 66969 Governor Flywheel consists of cast iron flywheel—2 No. EA25 weights; 1 No. EA27 washer; 4 No. 90831 escutcheon pins. This flywheel has a machined shoulder on the hub and must be used when No. 66541 left hand starting and belt pulley is used		5.25
	No. 67019 Governor Flywheel (special). This is a duplicate of No. EA-D except that there are two 3/8" dowel holes on the face of the hub, 1 7/8" apart		5.25
	No. 67779 Governor Flywheel (special). This is a duplicate of No. EA-D except that the hub has a 1" diameter flat faced and then beveled off from this diameter. This is used on those motors which have belt pulleys No. 66662 or No. 67882 mounted against the face of the governor flywheel hub		5.25
EAR	Governor Spool Assembly		.50
EA4	Cast Iron Governor Flywheel Less Weights		4.75
EA12	Cam Gear	Crankcase	1.50
EA15	Intake Valve (Not illustrated)	Cylinder Head Assembly	.75
EA20	Air Deflector		.20
EA23	Cam Follower	Valve Push Rod	.20
EA25	Governor Weight	Governor Flywheel	.10
*EA26	Governor Arm **Note: When ordering No. EA26 for a motor previous to serial No. 69857, also order 65796 throttle link.**		.10
EA27	Governor Weight Washer	Governor Flywheel	.05
EA30	Spring Clip (See Note Under 91196)		.05
EA45	Spring	Exhaust Valve	.15
EA46	Spring (Not illustrated)	Intake Valve	.15
EA53	Throttle Link (See 65796)		.10
EA56	Gasket	Oil Pan	.05
EA57	Gasket	Valve Spring	.05
EA62	Cam Follower Stud	Cylinder Assembly	.10
EA63	Cam Gear Stud	Cylinder Assembly	.10
EA79	Push Rod	Rocker Arm	.20
EA81	Intake Pipe (See 67173)		.75
*EA84	Drive Pulley (tapped to fit crankshaft) 1 1/4" Dia. x 1 3/8" face flanged flat belt pulley	Crankshaft	1.60
	Note: No. 65731 Flat Belt Pulley 2 1/8" Dia. x 1 1/8" face flanged—(fits over crankshaft and held on with No. 13A11 Nut)		1.75
EA86	Intake Valve Collar (Not illustrated)	Cylinder Head Assembly	.05
EA97	Drain Plug (See Note Under 90878)		.10
EA100	Screw	Cylinder to Base	.05
EA108	Base (See 67531)		9.00
EA117	3/8" Pipe Plug (See 66521)	Base	.10
EA118	Taper Pin (Not illustrated)	Governor Arm on Cyl. Assembly	.05
EA120	Base (See 67341)		6.00
7A39	Lockwasher	3—for Bracket 61024 1—Blower Case Clamp—Top 4—for Strap No. 68192 1—Casing Tube Assembly	.01
7A42	Steel Flywheel Key		.10
*7A119	Screw	Carburetor Mounting	.05
	Note: This is used only on motors with a Tillotson Carburetor and No. 61024 Gas Tank Bracket.		
7BC	Spark Plug with 7B24 Gasket		.65
7B24	Gasket	Spark Plug	.05
7B30	Gasket	Breather No. 65419	.10
7B35	Screw	Carburetor to Base	.01
*7F12	Nut **Note: Used on upper blower case bracket which has screw brazed on bracket.**		.05
7F22	Lockwasher	4—Cylinder to Base 1—No. 67219 Carburetor Mounting	.01
7J94	Cotter Pin	Cam Follower	.01
7K23	Cotter Pin	1—Carburetor 67219 1—Carburetor Control Assembly	.01
7K33	Machine Screw	1—Carb. Control Assem.	.05
7K41	Swivel Pin	1—Carb. Control Assem.	.20
7K68	Spring Washer	1—Carb. Control Assem.	.10
*7K77	Screw **Note: This is used only on motors with a Tillotson Carburetor and No. 61112 Gas Tank Bracket.**	1—Air Cleaner Elbow.	.01
*7TC	Shut Off Valve Replaced by 65749. **Note: This is used only on motors with a Tillotson Carburetor.**		
7T17	Lock Washer	1—No. EA30 Throttle Spring Clip 2—Mag. Crankcase Cover Oil Sucker 1—Cable Clamp—Magneto 2—Condenser—Magneto 1—Contact Bracket 3—Air Deflector	.01
7W8	Screw	1—No. EA30 Throttle Spring Clip 3—Air Deflector 1—Cable Clamp—Magneto	.01
13AJ	Pump Plunger	Oil Pump	.20
13A2	Lock Washer	Connecting Rod	.01
13A10	Gasket .015 thick	Magneto Crankcase Cover	.05
13A11	Nut	Governor Flywheel side of Crankshaft	.05
13A27	Screw	2—Connecting Rod 3—For Tank Bracket No. 61024 to Crankcase	.05
13A34	Shim	Connecting Rod	.05
13A40	Spring	Oil Pump Plunger	.10

***Before ordering read the NOTE immediately below this part number.**

MODEL AND MOTOR NUMBER MUST BE GIVEN WHEN WRITING OR ORDERING PARTS

PARTS AND PRICE LIST, Continued

Part No.	Name	Where Used	Price Each
13B30	Lockwasher	Governor Flywheel	.01
13K3	Plain Washer	1—Carb. Control Assem.	.05
13K4	Bushing	1—Carb. Control Assem.	.10
13K5	Lever	1—Carb. Control Assem.	.50
*13K9	Clamp	Control Casing	.01
	Note: See No. 65762.		
13K10	Cap Screw	1—Carb. Control Assem.	05
13ME	Contact Bracket	Magneto	.50
13MF	Ignition Cable	Magneto	.50
13MG			
	Replaced by 29652		
13M13	Breaker Arm Spring	Magneto	.05
13M21	Bracket Shim	Magneto	.05
13M22	Ignition Cable Clamp	Magneto	.05
13M36	Screw	1—Cont. Bracket—Mag. 2—Mag. Crankcase Cover Oil Sucker	.05
13M47	Screw	Condenser—Magneto	.01
13M50	Armature Lead Insu.	Magneto	.05
796E	Washer (Fibre)	Magneto	.05
3058B	Nut	Gasoline Pipe to Carb.	.05
29652	Condenser	Magneto	1.50
29657	Armature	Magneto	6.00
61005	Pedal—¼" Offset to Outside—Otherwise Like 66851		.75
*61024	Gas Tank Bracket with 3 Mounting Holes		2.75
	Note: This is used only on motors with a Tillotson Carburetor, and No. 69177 Gas Tank. No. 61112 Gas Tank Bracket—Like 61024 but with 2 mounting holes only—used on some motors with Tillotson Carburetor		2.75
61025	Base (See 67341)		6.00
61112	Gas Tank Bracket (See Note Under 61024)		2.75
61179	Starter Pedal	1—68009 Assem.	.75
*63016	Taper Collar		.50
	Note: Used on crankshaft of some motors with Tillotson Carburetor.		
63436	Piston Pin .005" Over Size		.30
*65046	Control Casing, 40½" long		.40
	Note: No. 65166 Control Casing, 61½" long		.50
	No. 65336 Control Casing, 35" long		.35
	No. 65436 Control Casing, 46½" long		.40
	No. 66146 Control Casing, 47⅝" long		.40
	No. 66366 Control Casing, 41⅛" long		.40
	Used only on motors with hand control.		
*65056	Control Wire, 43½" long		.25
	Note: No. 65156 Control Wire, 64" long		.30
	No. 65326 Control Wire, 37½" long		.20
	No. 65426 Control Wire, 48¾" long		.25
	No. 66136 Control Wire, 51" long		.25
	No. 66356 Control Wire, 43⅝" long		.25
	Used only on motors with hand control.		
*65075	Mag. Ground Wire, 7" lg.	Stop Switch to Mag.	.05
	Note: No. 65769, 24" long		.15
	No. 69089, 36" long		.20
65107	Ignition Cable Sleeve	Magneto	.10
65124	Gasket—Inlet Valve Seat	Carburetor No. 67219	.05
65126	Throttle Spring		.15
65134	Gasket—Needle Valve Adj. Screw—Carburetor No. 67219		.05
65167	Armature Lead Insulator 1½" long—Magneto		.05
65194	Washer (Square Bakelite)—Magneto		.05
65222	Ignition Cable Clamp		.10
65229	Rocker Arm Assembly—includes		1.50
	No. 65861 Rocker Arm		1.00
	No. 69011 Rocker Arm Fork		.50
	No. 65303 Rocker Arm Pin		.10
65232	Slug	Rocker Arm Set Screw	.01
65236	Piston Pin Lock—Replaced by No. 66246.		
*65256	Crankshaft		6.50
	Note: This replaces the old No. 66059 crankshaft. On service orders for No. 65256 to be used on motors previous to serial No. 54900 a thrust washer No. 67512 is included. This is assembled between the crankcase bearing and the thrust face on the crankshaft.		
*65267	Gasket	Carburetor No. 65949	.05
	Note: Used previous to serial No. 26437.		
65271	Base (see 67541)		8.00
65299	Cylinder Head Assembly Complete		8.35
65303	Rocker Arm Pin (not illustrated)		.10
65314	Insulator	Contact Bracket	.05
65367	Felt Washer	Starter Ratchet Nut	.01
65387	Stuffing Box Packing	No. 67219 Carburetor	.05
65397	Float Bowl Cover Gasket	No. 67219 Carburetor	.05
65411	Oil Filler Plug	Crankcase	.15
*65419	Breather Assembly		1.90
	Note: This breather was used previous to serial No. 29705. This is held to cylinder with 1 No. 7B30 gasket; 2 No. 7B33 lock washers and 2 No. 90810 screws.		
65431	Control Lever Base		.45
*65451	Piston Ring—Std.	Piston	.35
	Note: See No. 69052 for oversize rings.		
*65469	Carburetor Control Assembly—includes		1.50
	1—No. 13K5 Control Lever		.50
	1—No. 65431 Control Lever Base		.45
	1—No. 13K7 Control Lever Bushing		.10
	1—No. 7K68 Spring Washer		.10
	1—No. 13K3 Plain Washer		.05
	1—No. 13K10 Cap Screw		.05
	1—No. 7K33 Machine Screw		.05
	1—No. 7K41 Swivel Pin		.20
	1—No. 7K23 Cotter Pin		.01
	Note: For this same assembly with No. 65631 base—See No. 65589. Used only on motors with hand control.		
65489	Breaker Arm	Magneto	.75
*65499	Gas Tank Cap with 65717 Gasket	No. 69177 Gas Tank	.60
	Note: This is used with motors having a Tillotson carburetor.		
65509	Gasket	Cylinder Head	.10
65516	Spring	Pawl Assembly	.10
65522	Clamp	Blower Case—Side	.10
*65542	Bracket	Blower Case—Upper	.10
	Note: Where screw is brazed to bracket order 1 No. 65542 bracket and 1 No. 90916 screw.		
*65552	Bracket	Blower Case—Side	.15
	Note: Used in conjunction with bases No. 65271, No. 65721, No. 66371 and No. 67541.		
65562	Washer	Exhaust Valve	.05
*65586	Foot Starter Lever Return Spring (see 65736)		.35
	Note: This spring was used previous to motor serial No. 57100.		
*65589	Carburetor Control Assembly, includes (not illustrated), see 65469		1.50
	1—No. 65631 Control Lever Base		.45
	1—No. 90802 Screw		.05
	1—No. 91168 Nut		.05
	Note: Except for the above items this is a duplicate of No. 65469.		
65607	Gasket	Oil Sucker Valve	.05
65631	Control Lever Base (see 65589)	Carburetor Control Assembly No. 65589	.45
*65637	Rubber Cover (not illustrated)	Spark Plug	.50
	Note: Used only on some installations.		
65717	Gasket	Gas Tank Cap No. 65499	.05

***Before ordering read the NOTE immediately below this part number.**

MODEL AND MOTOR NUMBER MUST BE GIVEN WHEN WRITING OR ORDERING PARTS.

PARTS AND PRICE LIST, Continued

Part No.	Name	Where Used	Price Each
65721	Special Base (see 66371)		10.00
65722	Clamp	2—66159 Clamp Assem.	.10
65731	Belt Pulley (see EA84)		1.75
*65736	Lever Return Spring	Starter Unit	.20
	Note: Used after serial No. 57100 (see 65586).		
*65762	Clamp	Side—Blower Case	.05
	Note: This is used only on some motors using No. 66371, No. 65271 or No. 67541 base.		
63769	Ground Wire 24" Lg. (see 65075)		.15
*65772	Choker Plate	Carburetor No. 65949.	
	Note: Replaced by No. 67199 Choker Tube.		
*65793	Bearing	Mag. Crankcase Cover	1.25
	Note: Used previous to serial No. 99650 (see No. 69282).		
*65796	Throttle Link—Used after serial No. 69857	Gov. Arm to Carburetor	.10
	Note: No. EA53 Throttle Link used previous to serial No. 69857		.10
65861	Rocker Arm	1—65229 Assembly	1.00
*65863	Piston Pin with 2 Pinlocks	Piston	.30
	Note: For .005" O. Size Pin—specify No. 63436		.30
*65893	Exhaust Valve (replaced by No. 67133 valve)		1.75
65903	Exhaust Valve Sleeve (consisting of 2 halves)		.10
65913	Exhaust Valve Sleeve Retainer		.10
*65949	Carburetor "Brass"—includes		3.50
	Carburetor body with No. 66643 adjusting needle valve; No. 67109 gas pipe 2 1/16" long and No. 65373 lock nut and No. 7K23 cotter pin for throttle spring connection. **This carburetor assembly is used with bases No. EA120, No. 66641, No. 66761, No. 66931 —used previous to serial No. 26437.**		
	Note: No. 65959 carburetor—standard—this is a duplicate of No. 65949 except use No. 67119 gas pipe whose overall length is 3 1/8". Used in conjunction with base No. EA108. Used previous to serial No. 26437		3.50
	No. 65969 Carburetor—standard—this is duplicate of No. 65949 except use No. 67129 gas pipe whose overall length is 3 3/16". This carburetor used in conjunction with base No. 65271. Used previous to serial No. 26437		3.50
	No. 66759 Carburetor—similar to No. 65949 but with gas pipe assembly No. 66689. Used in conjunction with base No. 66371. For pipe 66689. See Note under No. 68109		3.50
65953	Casing Tube Less Bracket		.45
65959	Carburetor (See Note Under 65949)		3.50
65969	Carburetor (See Note Under 65949)		3.50
65979	Gasoline Pipe (See Note Under 68109)		1.00
65989	Gasoline Pipe (See Note Under 68109)		1.00
65999	Gas Pipe (See Note Under 68109)		1.00
66037	Gasket .005 thick	Mag. Crankcase Cover.	.05
66042	Cam Follower	Oil Pump	.25
66047	Gasket .009 thick	Mag. Crankcase Cover.	.05
66059	Crankshaft—Replaced by 65256		
66159	Clamp Assembly—includes	Choke Tube or Air Cleaner Tube	.20
	2—No. 65722 Clamps		.10
	1—No. 90835 Stove Bolt and Nut		.05
66246	Piston Pin Lock		.05
*66263	Bearing	Cylinder	1.50
	Note: This bearing used on motors previous to serial No. 65991 and on motors between serial Nos. 66000 to 66007 incl. See No. 68453.		
66283	Bearing	Connecting Rod—Upper	.40
66322	Air Cleaner Clip	Carburetor No. 67219	.15
66363	Oil Trough Retainer Stud (See 66639)		.10

Part No.	Name	Where Used	Price Each
*66371	Base—Special—One Gallon—Used previous to serial No. 26437. It has lugs for the starter shaft. Carburetor No. 66759 with gas pipe No. 66689 is used in conjunction with this base		9.00
	Note: No. 65721 Base Special. This is a one gallon base with a platform cast on the side of the base; used previous to serial No. 26437		10.00
66373	Push Rod	Oil Pump	.10
66399	Gas Pipe (See Note Under 68109)		1.00
*66403	Flywheel Key (Aluminum Alloy)	Crankshaft	.05
	Note: 7A42 Steel Woodruff Key		.10
*66411	Rope Starter Pulley — Right Hand used on magneto flywheel side		1.00
	Note: No. 66691 Left Hand Starter Pulley with hub faced off. Used on governor flywheel side		1.70
	No. 66541 Left Hand Starter Pulley, which has a special counter bore and face for belt at its hub, and must be used in conjunction with No. 66969 Governor Flywheel		1.00
66472	Spring Case Cover	Starter Unit No. 67679	.10
66492	Washer	Starter Unit	.10
*66521	Gas Filler Plug—with drilled Hole — 1/2" Pipe Plug	Base	.10
	Note: For 3/8" Pipe Plug, order No. EA117 prior to serial No. 2180		.10
	No. 91083 Pipe Plug same as 66521 but without drilled hole		.10
66541	Left Hand Starter Pulley (See 66411)		1.00
66542	Washer	Spring Case on Starter 67679	.01
66592	Blower Case (See Note Under 66669)		1.00
66599	Air Cleaner		1.25
66602	Spark Plug Wrench		.20
66609	Choke Tube Assem.—For use with Air Cleaner		.75
66629	Connecting Rod Assembly—Includes 2—No. 13A2 Lock Washers 2—No. 13A27 Screws 2—No. 13A34 Shims 1—No. 66283 Upper Bushing		3.25
66633	V-Belt Pulley (See Note Under 69142)		1.10
*66639	Oil Pump Assembly Complete, includes		2.00
	1—No. 66649 Oil Pan		1.65
	1—No. 66659 Oil Trough		.35
	1—No. 66363 Retainer Stud		.10
	1—No. 13AJ Pump Plunger		.20
	1—No. 13A40 Pump Spring		.10
	Note: No. 67059 Pump Assembly is a duplicate of No. 66639 except that four holes are pierced in the pan. This assembly is used on motors using a Tillotson carburetor		2.00
66641	Base (see 67351)		6.00
66649	Oil Pan (see 66639)		1.65
66659	Oil Trough		.35
*66662	Pulley Half, 2 7/8" Diameter		.25
	Note: No. 67112 Pulley Half, 4 3/8" dia.		.40
	No. 67882 Pulley Half, 3" dia.		.25
	No. 67932 Pulley Half, 2" dia. used with washer No. 67942		.20
*66669	Blower Case Assembly — Rope starter type with stop button on exhaust side.	Magneto Side	1.35
	Note: No. 69083 Blower Case—rope starter type with stop button on carburetor side.	Magneto side	1.35
	No. 66592 Blower Case—This is used with those motors with a blower case over the governor flywheel		1.00
*66679	Magneto Flywheel		9.20

***Before ordering read the NOTE immediately below this part number.**

MODEL AND MOTOR NUMBER MUST BE GIVEN WHEN WRITING OR ORDERING PARTS.

PARTS AND PRICE LIST, Continued

Part No.	Name	Where Used	Price Each
	Note: No. 67149 Magneto Flywheel—special —is a duplicate of No. 66679 except for a 1 13/16" diameter counterbore, 1/8" deep, at the pulley face. This takes a special pulley which is furnished by "customer"		9.20
66691	Left Hand Starter Pulley (see 66411)		1.70
66733	Ratchet	Starter	.60
*66743	Ratchet Nut — Not threaded through	Starter	.30
	Note: No. 67653 Ratchet Nut—takes stud No. 67633. For stud No. 67633 see under No. 67163		.50
	No. 66963 Ratchet Nut similar to No. 66743 but threaded through and takes stud No. 67163		.35
	No. 66903 Ratchet Nut—7/16" 18 S. A. E. R. H. Thd. on inside and 7/16" 18 S. A. E. L. H. Thd. on inside of outer end. Takes stud No. 68133		.30
	Note: Some motors previous to serial No. 50100 used a No. 66903 ratchet nut with a 7/16" 18 S. A. E. R. H. stud on the outer end. This early type can be replaced by ordering the present No. 66903 with No. 68133 drive stud, No. 67753 washer and No. 91157 nut.		
66759	Carburetor (see 65949)		3.50
66761	Base (see 67351))		6.00
66773	Stuffing Box Nut	No. 67219 Carburetor	.15
66783	Stuffing Box Gland	No. 67219 Carburetor	.25
66791	Float Bowl Cover	No. 67219 Carburetor	.25
66793	Float Lever Pinion Screw	No. 67219 Carburetor	.10
66803	Inlet Valve Seat	No. 67219 Carburetor	.50
66809	Carburetor Connector	No. 67219 Carburetor	.25
66813	Cover Vent Screw	No. 67219 Carburetor	.20
66833	Venturi	No. 67219 Carburetor	.15
66841	Starter Lever	Starter	1.00
*66851	Starter Pedal	Starter Unit	.75
	Note: No. 61005 Pedal—like 66851 but 1/4" offset to outside		.75
*66873	Drain Plug (special)		.10
	Note: This plug has a screw driver slot and fits flush with the end of base—Used on some installations.		
*66881	Starter Pedal — 2 13/16" offset to outside	No. 69032 Starter Unit	.75
	Note: No. 68431 special pedal similar to 66881 but with 4 7/16" offset to outside		1.00
	No. 67161 pedal with 1" offset to inside		.75
66883	Starter Shaft	1—67679 Starter	.50
66891	Starter Lever (see 67699 under 67679)		1.00
*66893	Shaft extension with 1/2" diameter by 1 13/16" long stud with flat—For belt pulley on some installations		.75
	Note: No. 67293 shaft extension—1 3/4" dia. with 1/2" dia. by 1" long stud for pulley on some installations		.50
66903	Ratchet Nut (see Note under 66743)		.30
66931	Base (see 67351)		6.00
66933	Chain Retainer Pin	No. 67679 Type Starter	.06
66942	Bracket—3" long	No. 68079 Choke Tube.	.10
66943	Shaft Extension (see 67163)		.20
66963	Ratchet Nut (see Note under 66743)		.35
66969	Governor Flywheel (see Note under EAD)		5.25
66979	Starter Rope and Grip Starter Pulley		.50
67001	Starter Lever (see 67869)		1.00
67019	Governor Flywheel (see Note under EAD)		5.25
67031	Starter Lever (for governor side, see 68749)		2.00
67059	Oil Pump and Pan Assembly (see 66639)		2.00
67072	Con. Bracket Washer	Magneto	.05
67083	Needle Valve	Carburetor	.25
67109	Gas Pipe (see Note under 68109)		1.00
67112	Pulley Half 4 3/8" dia.		.40
67119	Gas Pipe (See Note Under 68109)		1.00
67129	Gas Pipe (See Note Under 68109)		1.00
67133	Exhaust Valve	1—Cyl. Head Assemb.	1.75
67139	Gasoline Pipe (see Note under 68109)		1.00
67149	Magneto Flywheel (see Note under 66679)		9.20
*67159	Choke Tube Assembly—long type which extends around cylinder and through to exhaust side. Used on some kick starter motors		1.00
	No. 67579 Short Choke Tube about 4" high with 5 3/4" right angle bend. Used on some kick starter motors		.75
67161	Starter Pedal with 1" offset to inside		.75
*67163	Shaft Extension with 7/16"—18 S. A. E. Thd. on one end and 1/2" dia. stud at other end for belt pulley. Used with ratchet nut No. 66963.		.35
	Note: No. 66943 shaft extension similar to No. 67163 but with 7/16" hole drilled through the 1/2" dia. stud. Used with ratchet nut No. 66963.		.20
	No. 67633 Pulley Stud with 1/2"—20 S. A. E. left hand thread at one end. Used on magneto side of motor		.35
67171	Starter Lever	1—68009 Assembly	1.00
*67173	Intake Pipe—Standard		.75
	Note: Used on all motors after serial No. 26437 in conjunction with carburetors No. 68499, 68509, 68139 and 68819.		
	No. EA81 Intake Pipe—standard—used on all motors previous to serial No. 26437 in conjunction with all brass carburetors		.75
	No. 68003 Intake Pipe—special—used where standard No. 67173 intake pipe would interfere with the gear housing on the wash machine. This pipe has 3 5/8" radius at the bend		.75
	No. 68853 Intake Pipe—special—this has a sharp bend at the upper end		.75
67199	Short Choke Tube Assembly		.65
*67219	Carburetor "Tillotson"		7.75
	Note: This is a special carburetor used with a separate gas tank, which is mounted on the side opposite the magneto flywheel.		
*67239	Control Casing Tube Assembly—Used on some motors with Tillotson carburetor and hand controls		.75
	Note: To order the tube alone without the bracket, specify No. 65953		.45
	Note: For tube assembly similar to No. 67239 but with the bracket brazed on right side of tube, specify No. 69362		.75
67249	Air Cleaner—Used with Tillotson carburetor No. 67219		1.50
67293	Shaft Extension (see 66893)		.50
*67341	Base (standard) Rope Starter type, takes carburetor No. 68139.		6.00
	Note: No. EA120 Base — standard — rope starter type—takes carburetor No. 65949. Used previous to serial No. 26437		6.00
	No. 61025 Base—standard—used on motors with a Tillotson carburetor		6.00
67349	Inlet Valve	No. 67219 Carburetor	1.00
*67351	Base (standard)		6.00
	Note: Used on motors with a kick starter, after serial No. 26437—takes carburetor No. 68139.		

***Before ordering read the NOTE immediately below this part number.**

MODEL AND MOTOR NUMBER MUST BE GIVEN WHEN WRITING OR ORDERING PARTS.

PARTS AND PRICE LIST, Continued

Part No.	Name	Where Used	Price Each
67351 (Cont.)	No. 66641—Base similar to No. 67351 base but takes carburetor No. 65949. Used previous to serial No. 26437		6.00
	No. 67371 Base—kick starter type—used only on motors having two blower cases. Used after serial No. 26437. This base takes die cast carburetor No. 68139		6.00
	Note: No. 66931 Base—This is a duplicate of No. 67371 except it is used only on motors with two blower cases previous to serial No. 26437. This base takes brass carburetor No. 65949		6.00
	No. 67361 Base—standard—This is a duplicate of No. 67351 except for the addition of a ⅜" 24 tapped hole in the center boss on top of base on starter shaft side. Used on some motors only after serial No. 26437		6.00
	No. 66761 Base—standard—is a duplicate of No. 67361 except that it takes brass carburetor. Used on some motors only previous to serial No. 26437		6.00
67359	Float	No. 67219 Carburetor	1.00
67361	Base (see 67351)		6.00
67369	Starter Chain (see 69031)		1.25
67371	Base (see 67351)		6.00
*67409	Magneto Assembly Complete with Air Guide—Stop switch on exhaust side		12.00
	Note: No. 68379 Magneto Assembly—Stop switch on carburetor side		12.00
	No. 69176 Magneto Assembly—Same as No. 68379 except for use on motors with Tillotson carburetor and without a stop switch		12.00
*67429	Pawl Assembly with Spring No. 65516	Starter on Mag. flywheel side	.70
	Note: No. 68719 Pawl Assembly.	Starter on Gov. flywheel side	.70
67432	Spring Lock	Starter Unit	.10
67449	Spring Case Less Cover	No. 67679 Style Starter	.25
67459	Spring Case with chain but less spring		1.65
*67469	Sheave Assembly complete with return spring and chain. Used with No. 67679 Starter Unit		2.00
	Note For this same assembly used with starter on governor side order No. 68729		2.00
	Note: For 68529 Sheave assembly same as No. 67469 but less chain		.75
	Note: No. 67459 Spring case with chain less return spring including:		1.65
	1—No. 67449 Spring Case 1—No. 66933 Retainer Pin 1—No. 67369 Starter Chain 1—No. 66542 Washer		
67461	Gov. Flywheel Housing (See Note Under 68419)		.75
67489	Starter Pedal and Lever Assembly—including		1.75
	1—No. 66841 Starter Lever 1—No. 66851 Starter Pedal *1—No. 90895 Cap Screw ⅜"—16 U.S.S. Thd.		
	Note: Previous to serial No. 12327, No. 90686 cap screw ⅜" 24 S. A. E. threads was used instead of No. 90895. 1—No. 66492 Steel Washer 1—No. 90354 Lockwasher		
67512	Thrust Washer—used in conjunction with 65256 crankshaft since ser. No. 54900	Crankshaft	.15
67521	Starter Pedal	No. 69037 Star. Assem.	.75
*67531	Base—special		9.00
	Note: This is a "3" quart base used on some motors after serial No. 26437. This base takes carburetor No. 68499.		
	EA108 Base—This is a duplicate of No. 67531 except that it is used on some motors previous to serial No. 26437 and takes carburetor No. 65959		9.00
*67541	Base, rope starter type		8.00
	Note: This is a gallon base used on some motors after serial No. 26437 and takes carburetor No. 68509		8.00
	No. 65271 base is a duplicate of No. 67541 except that it is used on some motors previous to serial No. 26437 and takes carburetor No. 65969		8.00
67549	Shut-off Valve Less screen	Gas Tank	.90
67569	Connecting Link	Starter Chain—See 69928	.02
67579	Choke Tube Assembly (see Note under 67159)		.75
67589	Pedal and Lever Assembly (see 67679)		1.75
67633	Pulley Stud (see 67163)		.35
67652	Oil Sucker Valve Guide	Magneto Plate	.05
67653	Ratchet Nut (see Note under 66743)		.50
67662	Oil Sucker Valve	Magneto Plate	.05
67673	Starter Shaft (for governor side; see 68749)		.50
*67679	Starter Unit Assembly, includes—		4.50
	1—No. 67489 Pedal and Lever Assembly 1—No. 67569 Master Link 1—No. 67469 Sheave Assembly		
	Note: To replace this unit complete order No. 69022.		
	No. 67699 Starter Unit Assem. includes—		
	1—No. 67589 Pedal and Lever Assembly—including—		1.75
	1—No. 66881 Starter Pedal 1—No. 66891 Starter Lever 1—No. 91166 Nut for holding pedal to lever		1.00
	Except for the pedal and lever and the addition of the checknut, this unit is a duplicate of No. 67679.		
	Lever No. 66891 is like No. 66841 except for the addition of a 1" diameter counter bore ⅛" deep, opposite the pedal face.		
	Note: To replace No. 67699 unit complete, order No. 69032. See No. 69022.		
	No. 67869 Starter Unit Assembly, includes—		
	1—No. 67859 Pedal and Lever Assembly, including—		1.75
	1—No. 67001 Starter Lever 1—No. 66851 Starter Pedal		1.00
	Except for the lever this unit is a duplicate of No. 67679.		
	This lever is like No. 66841 except that it has a ratchet guard cast on the lever and is used on some motors where the drive is on the magneto side.		
	Note: To replace No. 67869 unit complete, order No. 69067. See under No. 69022.		
	No. 67919 Starter Unit Assem., including—		
	1—No. 67909 Pedal and Lever Assembly, including—		1.75
	1—No. 66841 Starter Lever 1—No. 66881 Starter Pedal		
	Except for the pedal this unit is a duplicate of No. 67679.		
	Note: To replace No. 67919 unit complete, order No. 69032. See under No. 69022.		
	No. 68799 Starter Unit Assem., includes—		
	1—No. 68789 Starter Handle and Lever Assembly, includes—		1.75

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MODEL AND MOTOR NUMBER MUST BE GIVEN WHEN WRITING OR ORDERING PARTS

PARTS AND PRICE LIST, Continued

Part No.	Name — Where Used	Price Each
*67679 (Cont'd)	1—No. 66841 Starter Lever 1—No. 67731 Starter Handle Except for the starter handle this is a duplicate of No. 67679.	
	Note: To replace No. 68799 unit complete, order No. 69035.	
	No. 68019 Starter Unit Assem., includes— 1—No. 68009 Pedal and Lever Assembly, including	1.75
	1—No. 61179 Starter Pedal	.75
	1—No. 67171 Starter Lever	1.00
	Except for the pedal and lever this unit is a duplicate of No. 67679.	
	The lever is like No. 66841 except the hole for the pedal is a ¾" drill instead of a ⅜"—16 Tap. The pedal is offset 1" to the inside and has a ⅜"—16 Tap. hole for mounting.	
	Note: To replace unit No. 68019 complete, order No. 69069. See under No. 69022.	
	No. 68439 Starter Unit Assem., includes— 1—No. 68429 Pedal and Lever Assembly, including	1.75
	1—No. 66841 Starter Lever 1—No. 67521 Starter Pedal	
	Except for the pedal, this unit is a duplicate of No. 67679.	
	Note: To replace unit No. 68439 complete, order No. 69037. See under No. 69022.	
	No. 69014 Starter Unit Assem., includes— 1—No. 69015 Pedal and Lever Assembly, including—	1.75
	1—No. 66841 Starter Lever 1—No. 67981 Starter Pedal	
	Except for the pedal this is a duplicate of No. 67679.	
	No. 68749 Starter Unit Assem., includes—. 1—No. 68739 Pedal and Lever Assembly, including	3.00
	1—No. 67031 Starter Lever	2.00
	1—No. 66851 Starter Pedal 1—No. 67673 Starter Shaft	.50
	1—No. 68729 Sheave Assembly complete, including	2.00
	1—No. 67459 Spring Case 1—No. 66472 Spring Cover 1—No. 65586 Spring	
	Except for the above lever, shaft and sheave this is a duplicate of No. 67679.	
	This is a unit used on some motors, where the starter ratchet is on the governor flywheel side of motor.	
	Note: To replace this complete unit order No. 69086.	
	Note: The above starter units were used previous to serial No. 57100.	
67699	Starter Assembly (see Note under 67679), replaced by 69032.	
67731	Starter Handle .....No. 69035 Starter Unit	.75
67733	Muffler Tube (See Note Under 91299)	.15
67753	Washer .....Magneto Flywheel	.05
67779	Governor Flywheel (see Note under EAD)	5.25
*67781	Sprocket **Note: Used after serial No. 57100.**	.20
67791	V-Belt Pulley (See Note Under 69142)	3.00
67851	Starter Lever .....No. 69021 Type Starter	1.00
67859	Pedal and Lever Assembly (see 67869 under 67679)	1.75
67869	Starter Unit (see 67679), replaced by 69067.	
67882	Pulley Half, 3" diameter	.25
67909	Pedal and Lever Assembly (see 67919)	1.75

Part No.	Name — Where Used	Price Each
67919	Starter Unit Assembly (see 67679), replaced by 69032.	
67929	Carburetor Body Assembly, includes— Carburetor body riveted together. 1—No. 67083 Needle Valve 1—No. 67113 Stop Pin 1—No. 65636 Spring	2.00
67932	Pulley Half, 2" diameter (see 66662)	.20
67942	Washer, used with pulley half 67932	.05
67981	Starter Pedal .....Starter Unit	.75
68003	Intake Pipe (see 67173)	.75
68009	Pedal and Lever Assembly (see 68019)	1.75
68019	Starter Unit (see 67679), replaced by 69069.	
*68043	Starter Shaft — used after ser. No. 57100 No. 69022 Style Starter Unit	.35
	Note: No. 66883 Starter Shaft. Used with No. 67679 style starter—used previous to serial No. 57100	.50
	No. 67673 Starter Shaft. Used with starter No. 68749 which is used on governor side of motor	.50
	No.68053 Starter Shaft, 10" long	.50
68053	Starter Shaft, 10" long—Used on some installations only	.50
*68079	Choke Tube Assembly **Note: This tube is about 10¾" high with a 7" long right angle offset. This tube used on some installations only.**	1.25
*68109	Gas Pipe with nut No. 3058-B—2⅝" overall length, for use with No. 67341 and No. 67351 bases	.45
	Note: No. 68819 Gas Pipe, 3⅛" overall length. This is used on a combination motor and generator base, base being furnished by customer	1.00
	No. 67139 Gas Pipe, 3" overall length. This is used on a combination motor and generator base, base being furnished by customer	1.00
	***No. 65979 Gas Pipe, 2⅛" overall length, includes—** 1—No. 65833 Jet 1—No. 65034 Jet Washer	1.00
	This is used in conjunction with No. EA-120 base—Used on carburetor No. 65949 previous to serial No. 5500.	
	Note: After serial No. 5500 and previous to serial No. 26437 use gas pipe No. 67109	1.00
	***No. 65989 Gas Pipe, 3⅜" overall length, includes—** 1—No. 66243 Jet 1—No. 65034 Jet Washer	1.00
	This is used in conjunction with No. EA-108 and No. 65771 bases. Used on carburetor No. 65959 previous to serial No. 5500.	
	Note: After serial No. 5500 and previous to serial No. 26437 use gas pipe No. 67119	1.00
	***No. 65999 Gas Pipe, 3¾" overall length, includes—** 1—No. 66243 Jet 1—No. 65034 Jet Washer	1.00
	This is used in conjunction with base No. 65271. Used on carburetor No. 65969 previous to serial No. 5500.	
	Note: After serial No. 5500 and previous to serial No. 26437 use gas pipe No. 67129	1.00
	No. 66399 Gas Pipe, 3⅛" overall length, includes—	1.00

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MODEL AND MOTOR NUMBER MUST BE GIVEN WHEN WRITING OR ORDERING PARTS.

PARTS AND PRICE LIST, Continued

Part No.	Name Where Used	Price Each
68109 (Cont.)	1—No. 66243 Jet 1—No. 65034 Jet Washer This is used with a combination motor and generator base which base is furnished by customer.	
	No. 66689 Gas Pipe, includes—	.80
	1—No. 66243 Jet 1—No. 65034 Jet Washer This is a formed pipe and used with No. 66371 base. Used on carburetor No. 66759.	
	No. 68489 Gas Pipe Assembly—3⅜" overall length	.45
	Used in conjunction with No. 67531 base after serial No. 26437.	
	No. 68479 Gas Pipe Assembly—3⅞" overall length	.45
	Used in conjunction with No. 67541 base after serial No. 26437.	
*68133	Pulley Stud—with ⅞"—18 S. A. E. left hand thd. at both ends. Used with ratchet nut No. 66903	.35
	Note: This pulley stud takes the following with pulley halves: 1—No. 13B30 Lock Washer 1—No. 91157 Hexagon Nut	
	Note: The following washers used as pulley half spacers on some motors:	
	No. 66572 Washer, 3/32" thick	.05
	No. 67942 Washer, 1/16" thick	.05
	No. 67753 Washer, 5/32" thick	.05
*68139	Carburetor, standard, includes— 1—No. 68109 Gas Pipe 1—No. 3058-B Nut 1—No. 67929 Sub Assembly	2.50
	Note: This carburetor used in conjunction with No. 67341, 67351, 67361, and 67371 bases after serial No. 26437.	
	No. 68499 Carburetor, standard. This is a duplicate of No. 68139 except use gas pipe No. 68489 whose overall length is 2 11/32". This is used in conjunction with No. 67531 base after serial No. 26437.	2.50
	No. 68509 Carburetor — standard — this is a duplicate of No. 68139 except use gas pipe No. 68479 whose overall length is 2 31/32". This is used in conjunction with No. 67541 base after serial No. 26437.	2.50
68143	Spacer—Used in conjunction with control casing tube assembly on some motors with manual throttle controls	.10
*68161	Oil Ring .....Piston Note: For oversize rings see No. 69052.	.50
*68171	Piston Note: For oversize piston see No. 69052.	2.50
68182	Throttle Spring Clip with ¼" mounting hole —used after serial No. 100,000	.05
	Note: No. EA-30 Spring Clip with ⅞" hole, used previous to serial No. 100,000	.05
*68192	Gas Tank Strap **Note: This is used on motors with a Tillotson Carburetor.**	.35
68291	Oil Sucker Valve Housing— Replaced by No. 69992.	
68379	Magneto Assem.—Stop Switch on Carb. Side	12.00
*68419	Governor Flywheel Housing includes: No. 67461 Stamped Steel Shell with cast hub, 2 No. EA25 weights, 1 No. EA27 Washer and 4 No. 91170 Pins, ..Governor side	1.25
68419 (Cont'd)	No. 67461 Governor Flywheel Housing used on some motors with hand throttle controls and no governor.	
68429	Pedal and Lever Assembly (See 68439 under 67679)	1.75
68431	Starter Pedal (See 66881)	1.00
68439	Starter Unit (See Note under 67679)— Replaced by 69037.	
*68449	Muffler	1.25
	Note: No. 68829 is similar to No. 68449 except it is used on motors where the muffler is fastened to the end of a flexible tube	2.50
	No. EA-0 Muffler is used on motors which use a Tillotson Carburetor. This muffler is a long cylindrical type	2.50
*68453	Bearing—Straight Steel Shell Babbit Lined **Note: Used on motors after serial No. 66007 and on motors between Nos. 65991 and 66000 inclusive. See 66263.**	1.00
68499	Carburetor (See Note Under 68139)	2.50
68509	Carburetor (See Note Under 68139)	2.50
68529	Sheave Assembly (See 67469)	.75
68543	Bearing Retainer Pin. Bearing No. 68453	.05
68689	Breather Tube — Standard — started with serial No. 29705	1.00
68719	**Pawl Assembly for Starter on Governor Flywheel Side**	.70
68729	Sheave Assembly (See Note under 67469)	2.00
68739	**Pedal and Lever Assembly (See 68749 under 67679)**	3.00
68749	Starter Unit (Replaced by 69086)—See 67679	
68789	Starter Handle and Lever Assem. (See 68799)	1.75
68799	Starter Unit (Replaced by 69035)	
68819	Gasoline Pipe (See Note under 68109)	1.00
68829	Muffler (See Note Under 68449)	2.50
68853	Intake Pipe (See 67173)	.75
*68933	Carburetor Mounting Bushing **Note: This is used on motors with a Tillotson Carburetor**	.10
*68943	Intake Pipe **Note: Used in conjunction with Tillotson Carburetor No. 67219.**	.75
68989	Cylinder Assem. (See Note Under 69093)	12.75
69011	Rocker Arm Fork....1—65229 Assembly	.50
69014	**Starter Unit (See Note under 67679). This unit is replaced by 69022 with Pedal 67981 instead of Pedal 66851.**	
69015	Pedal and Lever Assembly (See 69014)	1.75
69021	Pedal and Lever Assembly—Includes 1—No. 67851 Starter Lever 1—No. 66851 Starter Pedal 1—No. 66492 Washer 1—No. 90354 Lock Washer 1—No. 91176 Cap Screw 1—No. 91193 Nut	1.75
*69022	Starter Unit Assembly—includes 1—No. 90849 Cotter Pin 1—No. 69021 Pedal and Lever Assembly 1—No. 67569 Master Link 1—No. 69031 Starter Chain 1—No. 68043 Starter Shaft 1—No. 67432 Spring Lock 1—No. 67881 Sprocket **1—No. 65736 Lever Return Spring** 1—No. 91165 Round Head Rivet. **Note: This unit is used after serial No. 57100.**	4.15
	No. 69032 Starter unit includes 1—No. 69033 Pedal and Lever assembly—including 1—No. 67851 Starter Lever	4.15 1.75

***Before ordering read the NOTE immediately below this part number.**

MODEL AND MOTOR NUMBER MUST BE GIVEN WHEN WRITING OR ORDERING PARTS.

PARTS AND PRICE LIST, Continued

Part No.	Name	Where Used	Price Each
69022 (Cont.)	1—No. 66881 Starter Pedal		
	Except for No. 66881 Starter Pedal this is a duplicate of No. 69022.		
	No. 69034 Starter unit assembly		3.40
	This is a duplicate of No. 69022 except that NO pedal is furnished.		
	No. 69037 Starter unit assembly—includes		4.15
	1—No. 69038 Pedal and Lever assembly—including		1.75
	1—No. 67851 Starter Lever		
	1—No. 67521 Starter Pedal		
	Except for No. 67521 Starter Pedal this is a duplicate of No. 69022.		
	No. 69064 Starter unit assembly—includes		4.15
	1—No. 69065 Pedal and Lever assembly—including		1.75
	1—No. 68421 Starter Lever		1.00
	1—No. 66881 Starter Pedal		
	Except for the pedal and lever this is a duplicate of No. 69022.		
	This is a lever with a notch at the starter shaft hub and a short pedal offset 2⅛" to the outside.		
	No. 69067 Starter unit assembly—includes		4.15
	1—No. 69068 Pedal and Lever assembly—includes		1.75
	1—No. 68191 Starter Lever		1.00
	1—No. 66851 Starter Pedal		
	Except for the pedal and lever this is a duplicate of No. 69022.		
	No. 68191 Starter Lever has a ratchet guard cast on.		
	No. 69069 Starter unit assembly—includes		4.15
	1—No. 69070 Pedal and Lever assembly—includes		1.75
	1—No. 67851 Starter Lever		
	1—No. 67161 Starter Pedal		
	Except for the pedal, this is a duplicate of No. 69022.		
	No. 68191 Starter Lever has a ratchet guard cast on.		
	No. 69069 Starter unit assembly—includes		4.15
	1—No. 69070 Pedal and Lever assembly—includes		1.75
	1—No. 67851 Starter Lever		
	1—No. 67161 Starter Pedal		
	Except for the pedal, this is a duplicate of No. 69022.		
	No. 67161 Pedal is short and is offset 1" to the inside.		
	No. 69081 Starter unit assembly—includes		4.40
	1—No. 69082 Pedal and Lever assembly—includes		2.00
	1—No. 67851 Starter Lever		
	1—No. 68431 Starter Pedal		2.00
	Except for the pedal, this is a duplicate of No. 69022.		
	No. 68431 Pedal is offset 4⅛" to the inside.		
	No. 69086 Starter unit assembly—to fit the governor side of motor only		4.75
	This unit is consisted of the following:		
	1—No. 69087 Pedal and Lever assembly		2.25
	1—No. 68481 Lever (This is the opposite hand of No. 67851)		1.50
	Except for the lever, this is a duplicate of No. 69021.		
	1—No. 65836 Lever Return Spring (Special), opposite hand of No. 65736		.25
	1—No. 68433 Starter Shaft (Special)		.40
	Note: Except for the above special parts, this is a duplicate of No. 69022.		
	This assembly replaces No. 68749—See under No. 67679.		
	No. 69147 Starter unit assembly—includes		4.15
	1—No. 69148 Pedal and Lever assembly—includes		1.75
	1—No. 68971 Starter Lever		1.00
	1—No. 61005 Starter Pedal		
	Except for the pedal and lever this is a duplicate of No. 69022. No. 68971 lever has a guard over the ratchet and is used on some motors where the drive pulley is on the opposite side of starter ratchet.		
	No. 61005 pedal is short and offset ¼" to the outside.		
	No. 69301 Starter unit assembly—includes		4.15
	1—No. 69302 Pedal and Lever assembly—includes		1.75
	1—No. 67851 Starter Lever		
	1—No. 68711 Starter Pedal		
	Except for the pedal, this is a duplicate of No. 69022.		
	No. 68711 Pedal is like No. 66881 but with a longer ear for pedal stop.		
	No. 69319 Starter unit assembly—includes		4.15
	1—No. 69320 Pedal and Lever assembly—includes		1.75
	1—No. 68971 Starter Lever		1.00
	1—No. 66851 Starter Pedal		
	Except for the lever this is a duplicate of No. 69022.		
	This lever is like the one use on No. 69147 Starter unit.		
*69023	Blower Case assembly — Kick-starter type with stop button on exhaust side		1.35
	Note: No. 69066 Blower case same as No. 69023 but stop button on carburetor side.		
*69031	Starter Chain—used after serial No. 57100	No. 69022 style Starter Unit	1.25
	Note: No. 67369 Chain used on No. 67679 style Starter unit, used previous to serial No. 57100.		
*69035	Starter unit assembly—includes		4.15
	1—No. 69036 Starter Handle and Lever assembly.		
	Note: Except for starter handle, this is a duplicate of No. 69022.		
69036	**Starter Handle and Lever assembly—includes**		1.75
	1—No. 67851 Starter Lever		
	1—No. 67731 Starter Handle		
*69052	**Piston assembly—standard—includes**		3.75
	1—No. 68171 Piston	2—No. 65451 Compression Rings	
	1—No. 68161 Oil Ring	2—No. 66246 Pin Locks	
	Note: No. 69160 Piston assembly .010" oversize—includes		5.00
	1—No. 61011 Piston .010" oversize		3.00
	2—No. 61010 Comp. Rings .010" oversize		.50
	1—No. 61009 Oil Ring .010" oversize		1.00
	2—No. 66246 Pin Locks		.05
	No. 69163 Piston assembly .020" oversize—includes		5.00

***Before ordering read the NOTE immediately below this part number.**

MODEL AND MOTOR NUMBER MUST BE GIVEN WHEN WRITING OR ORDERING PARTS.

PARTS AND PRICE LIST, Continued

Part No.	Name — Where Used	Price Each
69052 (Cont.)	1—No. 61014 Piston .020" oversize	3.00
	2—No. 61012 Comp. Rings .020" oversize	.50
	1—No. 61016 Oil Ring .020" oversize	1.00
	2—No. 66246 Pin Locks	.05
	No. 69164 Piston assembly .030" oversize —includes	5.00
	1—No. 61015 Piston .030" oversize	3.00
	2—No. 61013 Comp. Rings .030" oversize	.50
	1—No. 61017 Oil Ring .030" oversize	1.00
	2—No. 66246 Pin Locks	.05
	No. 66069 Piston assembly, used previous to serial No. 57085, has been replaced by No. 69052.	
69053	Magneto Cover Plate with Bearing and Armature only	8.25
	Consists of	
	1—No. 29657 Armature	
	1—No. 69054 Armature Plate	
	1—No. 13A10 Gasket .015" thick	
	1—No. 66037 Gasket .005" thick	
	1—No. 66047 Gasket .009" thick	
	4—No. 37346 Rivets	
69054	Armature Plate	2.25
69066	Blower Case (See Note Under 69023)	1.35
69083	Blower Case — Rope starter type with stop button on carburetor side	1.35
69086	Starter Unit (See Note Under 67679)	4.75
69089	Ground Wire, 36" long (See 65075)	.20
*69093	Cylinder assembly—includes	12.75
	1—Cylinder	
	1—No. 68453 Straight Steel Shell Bearing	
	2—No. EA62 Cam Follower Studs	
	1—No. EA118 Taper Pin for Governor Arm	
	1—No. 68543 Bearing Retainer Pin	
	This assembly is used in conjunction with No. EAD cast iron flywheel.	
	Note: No. 68989 Cylinder assembly used previous to serial No. 65991 (except serials Nos. 66000 to 66007 Incl.). This cylinder uses No. 66263 Bearing, and No. 67023 Bearing Retainer Pin. Otherwise like No. 69093.	
	To replace complete Cylinder assembly No. 68989 order No. 69093.	
	No. 66999 Cylinder assembly used starting with serial No. 3935 and up to serial No. 29705 and takes No. 65419 Breather. Replaced by No. 69279 which is the same as No. 69093 but with Breather No. 68689 in addition	13.50
	No. 66619 Cylinder assembly—used previous to serial No. 3935. This cylinder has only one oil filler hole. To replace No. 66619 order No. 69279 Cylinder assembly with No. 65411 Plug	13.50
	No. 69097 Cylinder assembly. This is used on those motors which have the small stamped governor flywheel No. 68419 and No. 68453 Cylinder Bearing	12.75
	No. 68809 Cylinder assembly. This is used on those motors which have the small stamped governor flywheel and No. 66263 Cylinder Bearing. Replaced by Cylinder assembly No. 69097	12.75
	No. 69174 Cylinder assembly. This is used on those motors which use a Tillotson Carburetor and No. 61024 Gas Tank Bracket	12.75
	No. 69356 Cylinder assembly similar to No. 69174 but used on those motors which use a No. 61112 Gas Tank Bracket. For Bracket No. 61112—See No. 61024	12.75
*69142	Belt Pulley 2⅞" Dia. "V" Pulley Halves riveted to hub for threading onto crankshaft	.85
	Note: No. 66633 "V" Belt Pulley, 2" outside diameter without hub—threaded to fit end of crankshaft	1.10
	No. 67791, 3" Dia. "V" Belt Pulley with 1¼" Dia. x 1⅜" long hub threaded to fit crankshaft	3.00
*69172	Gas Pipe	.55
	Note: This is used on those motors which have a Tillotson Carburetor and a No. 61024 Gas Tank Bracket.	
	No. 69335 Gasoline Pipe	.30
	Note: This is used on those motors which have a Tillotson Carburetor and a No. 61112 Gas Tank Bracket.	
69173	Control Casing Tube assembly	.55
	Note: In this tube assembly the tube comes through a hole in the bracket. This is used on some motors using a Tillotson Carburetor.	
69175	Blower Case assembly—Used only on motors using Tillotson Carburetor and Gas Tank No. 69177	1.25
69176	Magneto assembly (See Note under 67409)	12.00
*69177	Gas Tank	4.00
	Note: This is used on those motors having a Tillotson Carburetor.	
69186	Nozzle and Adjusting Screw assembly—Carburetor No. 67219	.55
	Includes—	
	1—No. 67013 Screw	
	1—No. 63115 Nozzle	
	These parts not furnished separately.	
69227	Body assembly— includes .....No. 67219 Carburetor	3.25
	1—No. 69372 Throttle Shaft	
	1—No. 66801 Body	
	1—No. EA58 Throttle Shutter	
*69282	Bearing .....Magneto Cover Plate	1.25
	Note: This bearing has oil retainer ring and is used after serial No. 99650.	
*69353	Air Cleaner Tube and Elbow Assembly— includes	2.00
	1—No. 61099 Brass Elbow	1.50
	1—No. 63127 Air Cleaner Tube	.50
	1—No. 90454 Cotter Pin	.01
	Note: This is used only on those motors which have a Tillotson Carburetor and a No. 61112 Gas Tank Bracket.	
*69354	Gasoline Pipe Elbow	.25
	Note: This is used on those motors which have a Tillotson Carburetor and a No. 61112 Gas Tank Bracket.	
69362	**Control Casing Tube assembly (See 67239)**	.75
69803	Cylinder Head less valves	3.00
69928	Chain Repair Link Assembly	.35
69992	Oil Return Valve	.35
70248	Rubber Bushing—Used on Air Guide when extension ground wire is used — on some installations only	.05
90200	Screw .....Float Bowl Cover for Carburetor No. 67219	.05
90354	Lockwasher .....No. 69022 type Starter	.01
90373	Lockwasher .....No. 67219 Carburetor Cover Vent Screw	.05
90680	Set Screw.....Rocker Arm	.05
90686	Cap Screw (See Note under 67489)	.05
*90699	Lockwasher .....No. 68182 Throttle Spring Clip	.01
	Note: Use 7T17 Lockwasher with EA30 Throttle Spring Clip.	

***Before ordering read the NOTE immediately below this part number.**

MODEL AND MOTOR NUMBER MUST BE GIVEN WHEN WRITING OR ORDERING PARTS

PARTS AND PRICE LIST, Continued

Part No.	Name	Where Used	Price Each
*90700	Screw Note: This is used on those motors having a Tillotson Carburetor, and used in conjunction with No. 68143 Spacer when mounting Control Casing Tube No. 67239 to base.		.05
90766	Lockwasher	Cover for Carburetor No. 67219	.01
90790	Screw (Thick head)	Cylinder Head	.05
90793	Bolt and Nut (See Note Under 90916)		.05
90802	Hex. Hd. Cap Screw	1—Carburetor Control Assembly No. 65589	.05
90835	Stove Bolt with Nut	1—Clamp Assem. 66159	.05
90849	Cotter Pin	Starter Unit	.01
*90878	Gasoline Drain Plug, ¼" pipe	Base Note—No. EA97 Drain Plug, ⅛" pipe—Used on motors previous to serial No. 10000.	.10
90895	Cap Screw (See Note under 67489)		.05
90902	Screw	Magneto Cover to Crankcase	.05
*90916	Screw	2—Blower Case Clamp —side 1—Blower Case Bracket —upper 1—For Control Tube to Bracket No. 61024 4—Gas Tank Strap No. 68192 1—For Throttle Clip to Base No. 61025	.05

Note: No. 90793 Bolt and Nut—Used in conjunction with Upper Blower Case Bracket No. 65542 which has a plain hole. On some motors only.

Part No.	Name	Where Used	Price Each
90917	Screw (Thin head)	Cylinder Head	.05
90977	Set Screw	Starter Shaft to Base.	.05
91083	Pipe Plug (See 66521)	Base	.10
91157	Nut $\frac{5}{16}$" 18 S. A. E. Left Hand Thread.	No. 68133 Pulley Stud	.05
91165	Rivet	Starter Unit	.01
91166	Hex. Nut	1—Starter Assembly No. 67699	.05
91168	Hex. Nut	1—Carburetor Control Assembly No. 65589	.05
91176	Cap Screw	No. 69022 Type Starter Unit	.05
91193	Nut	No. 69022 Type Starter Unit	.05
*91196	Screw	No. 68182 Throttle Spring Clip Note: For EA-30 Throttle Spring Clip use Screw No. 7W8.	.05
91205	Muffler Elbow Note: This is used on some motors which have a Tillotson Carburetor and No. 61024 Gas Tank Bracket.		.35
91213	Screw—Headless	Carburetor No. 67219.	.05
91281	Lockwasher	Mag. Crankcase Cover	.01
*91299	Muffler Nipple, 2½" lg.—Threaded both ends Note: This is used on some motors which have a Tillotson Carburetor and No. 61024 Gas Tank Bracket. Note: No. 67733 Muffler Tube 2⅜" lg. with ¾" pipe threaded on one end only. This is used in conjunction with flexible exhaust tube on some motors only		.20 .15

*Before ordering read the NOTE immediately below this part number.

MODEL AND MOTOR NUMBER MUST BE GIVEN WHEN WRITING OR ORDERING PARTS

Nation-Wide Service Organization

68. 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.

69. 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.

70. 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. See page 2.

71. 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 Distributor's decision, their terms should be accepted and either through them or direct, have all materials and supporting facts submitted to the factory for review.

72. 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.

73. 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
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.	950 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 and Cotton Sts.
Massachusetts	Boston	Wm. H. Flaherty Co.	48-52 Cummington St.
Michigan	Detroit	Auto Electric & Service Corp.	90 Seldon 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	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 Power 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.	401-07 N. Broadway
Tennessee	Memphis	Automotive Electric Service Co.	1095 Union Ave.
Texas	Amarillo	The E. S. Cowie Electric Co.	7th and VanBuren 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	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.

Important

When sending motor or parts for service, at the same time always send, by mail, the following information:

Model letter and motor number. (Take from brass plate on motor.)

Date purchased.

Dealer purchased from, giving his name, town and state.

Approximate number of hours motor has run.

Name of machine motor is used on.

Also give complete report of trouble experienced and any special servicing instructions.

(See Page 22.)

THE ABOVE INFORMATION IS NECESSARY TO INSURE PROMPT AND PROPER SERVICE

SPECIFICATIONS

Model "FH" Motor

Bearing—Bronze backed, babbitt lined.

Bore—2¼".

Cam and Gear—One piece construction. Cam accurately ground to operate quietly.

Carburetor—Special design, insuring quick starting and uniform running.

Cooling—By strong air current from specially designed flywheel operating in blower case, with extra large cooling fins on cylinder and cylinder head, insuring cool motor at all times.

Connecting Rod—Drop Forged Steel. Large split bearing on crankshaft.

Crankshaft—Drop forged 1045 S. A. E. material counterbalanced to reduce vibration.

Cylinder Head—I head, removable. Equipped with large fins for efficient cooling.

Gasoline Capacity—1 quart.

Governor—Mechanical type—hold speed automatically.

Ignition—High tension magneto built in flywheel. Moisture and dust-proof. Standard 18 M. M. Metric spark plug.

Lubrication—Splash type. All parts positively oiled by oil pump driven from cam shaft which maintains constant oil level in splash trough, insuring positive lubrication as long as motor has oil.

Oil Capacity—1 Pint.

Piston—Best grade of gray iron with two compression rings and one oil control ring.

Power—½ H. P. at normal speed.

Speed—1750 R. P. M.

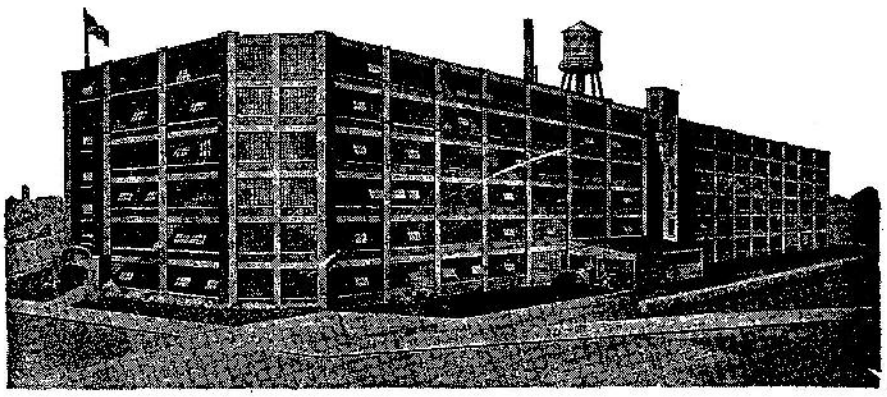
Starting—Foot starter equipped with positive chain and sprocket drive.

Stroke—2¼"

Valves—Overhead. Intake operated automatically. Exhaust operated mechanically from cam.

Briggs & Stratton Corporation

Milwaukee, Wis., U. S. A.



EAST PLANT

Where Briggs & Stratton Motors Are Made

Your Model "FH" Gasoline Motor is one of many thousands which are manufactured annually 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 because of their established reputation for reliable service under widely varying conditions.

Printed in U. S. A.

Form 66237-17-2½