

Operating Instructions

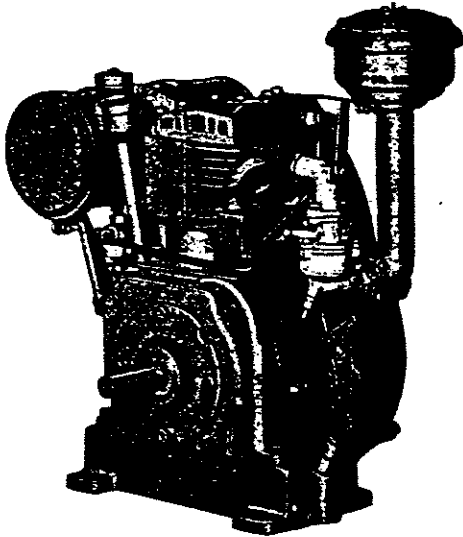
Adjustment and Repair
Information • Parts List

MODELS

"Z"—"ZH"—"ZHL"—"ZHLP"—"ZHP"
"ZHR"—"ZL"—"ZLP"—"ZM"—"ZP"—"ZR"

IMPORTANT
ALWAYS USE
GOOD, CLEAN OIL
S. A. E. No. 20
For Temperatures Below 32° F.
Use S. A. E. No. 10W
ADD OIL FREQUENTLY
CHANGE OIL REGULARLY

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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 this Motor. This book tells you how.

Each 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 THE "STARTING AND OPERATING INSTRUCTIONS" ON PAGE 3



IMPORTANT SAFETY INFORMATION AND INSTRUCTIONS FOR ENGINE SELECTION ENGINE INSTALLATION ENGINE OPERATION

In the USA and Canada,
our 24 hour hotline is:

18002333723

Briggs & Stratton Corporation
Milwaukee, Wisconsin 53201

www.briggsandstratton.com

Keep these instructions for future reference.





Before installing and operating this engine read and observe all warnings, cautions and instructions on both sides of this sheet, on the engine, and in the operating & maintenance instructions.


NOTE: This sheet of instructions and safety information is not meant to cover all possible conditions and situations that may occur. Read entire Operating & Maintenance Instructions for this engine AND the instructions for the equipment this engine powers. Failure to follow instructions and safety information could result in serious injury or death.

The safety alert symbol () is used to identify safety information about hazards that can result in personal injury.

A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to indicate the likelihood and the potential severity of injury. In addition, a hazard symbol may be used to represent the type of hazard.

 **DANGER** indicates a hazard which, if not avoided, will result in death or serious injury.

 **WARNING** indicates a hazard which, if not avoided, could result in death or serious injury.

 **CAUTION** indicates a hazard which, if not avoided, might result in minor or moderate injury.

CAUTION, when used **without** the alert symbol, indicates a situation that **could result in damage to the engine.**

HAZARD SYMBOLS AND MEANINGS



Fire



Explosion



Moving Parts



Toxic Fumes



Hot Surface



Shock



Kickback

(OVER)

FORM MS-6445-01/03

ENGINE SELECTION



 WARNING



Failure to select the correct engine could result in fire or explosion.



- Some engines are unique and designed for specific applications or types of equipment. If this engine will be used to build new equipment, contact Briggs & Stratton to ensure that the engine is appropriate for the intended use.
Note: For all Go-karts use only a model 136200 series engine, which offers improved safety and performance.
- Replacement engines should be the same model as the original engine, or be the Briggs & Stratton designated replacement engine. Refer to the Operation & Maintenance Instructions for engine identification information.
Note: For all Go-karts use only a model 136200 series engine, which offers improved safety and performance.
- Do not use Briggs & Stratton engines on 3-wheel All-Terrain Vehicles (ATVs), motor bikes, air craft products, or vehicles intended for use in competitive events. Briggs & Stratton does not approve of or authorize such uses.

ENGINE INSTALLATION



- [1] Do not attempt to install this engine if you do not have the appropriate tools and knowledge of small engine installation procedures. Use only Briggs & Stratton parts. Contact your Authorized Service Dealer for assistance.
- [2] Do not modify the engine in any way without Briggs & Stratton factory approval. Any such modification is at the owner's sole risk.
- [3] If the exhaust system on the old engine was supplied by the equipment manufacturer, you must transfer the exhaust system and related components (original muffler and related pipes, brackets, clamps, and shields) to the new engine. All components must be in good condition.
- [4]



 WARNING	Install muffler (and muffler deflector if used) so outlet points away from operator, fuel tank, and equipment, and so muffler heat will not damage or deform engine and components.
	
- [5]



 WARNING	Ensure all fuel lines and fittings are properly assembled and do not leak. Replacement parts must be the same model as the original.
	
- [6]



 WARNING	Ensure all wiring, including safety switches and engine shut-off components are completely installed and functioning properly.
	
- [7] Set engine speed to equipment manufacturer's specification. Refer to equipment manufacturer's manual. Do not tamper with governor springs, or other parts that will increase engine speed above specification.

- [8]







 WARNING	All engine parts, including fuel cap, spark plug, muffler, air cleaner, and covers and guards for drive components (gears, belts, shafts, couplings, etc.) must be in place before attempting to start engine.
	
- [9]

 WARNING	If engine is installed on walk behind lawn mower, all mower components, including cutting blade, must be correctly installed before attempting to start engine.
	
- [10]

 WARNING	When working on the engine or equipment, remove spark plug wire from spark plug. For electric start, remove negative wire from battery.
	
- [11]

 WARNING	Do not check for spark with spark plug removed. Use Briggs & Stratton spark tester #19368.
	

ENGINE OPERATION

	 WARNING
	When adding fuel:
<p>Turn engine off and let engine cool at least 2 minutes before removing gas cap.</p> <p>Fill fuel tank outdoors or in well-ventilated area. Fill tank to about 1 inch below lowest portion of neck to allow for fuel expansion.</p> <p>Keep gasoline away from sparks, open flames, pilot lights, heat, and other ignition sources.</p>	
	 WARNING
	When starting engine:
<p>Remove all external equipment/engine loads.</p> <p>Wait until spilled fuel is evaporated. Start engine outdoors.</p> <p>Pull cord slowly until resistance is felt, then pull rapidly.</p> <p>If engine floods, set choke to OPEN/RUN, place throttle in FAST and crank until engine starts.</p>	
	 WARNING
	When operating equipment:
<p>Do not tip engine or equipment at angle which causes gasoline to spill.</p> <p>Run engine outdoors. Do not run in enclosed area, even if doors or windows are open.</p> <p>Do not choke carburetor to stop engine.</p>	

Starting and Operating Instructions

	Paragraph
Before Starting the Motor	1
How to Start	2
Failure of Motor to Start	3

	Paragraph
How to Stop	4
General Data	5

1. BEFORE STARTING THE MOTOR. Fill the crankcase with Mobiloil Arctic or any other high grade oil not heavier than S. A. E. No. 20 for operating motor in temperatures of 32° F. or above. For temperatures below 32° use Mobiloil "Arctic Special" or other high grade oil not heavier than S. A. E. No. 10W.

The oil filler plug is painted blue and is located on top of motor base. With the motor level remove filler plug and pour oil in opening until it rises to the level of the filler plug opening. Crankcase holds 4½ pints. Fill air cleaner with oil of the same viscosity as used in the crankcase to the indicated oil level. See paragraph 62. Fill the gas tank with a good clean regular gasoline. Tank holds five quarts. Do not mix oil and gasoline. See paragraphs 11 to 19.

2. HOW TO START. Open gasoline shut-off valve in gas filter or gasoline tank. Completely close carburetor choke valve by moving choke lever in a clockwise direction.

A. HAND CRANK STARTER TYPE. Pull out the compression release rod as far as it will come. Press the starter shaft in,

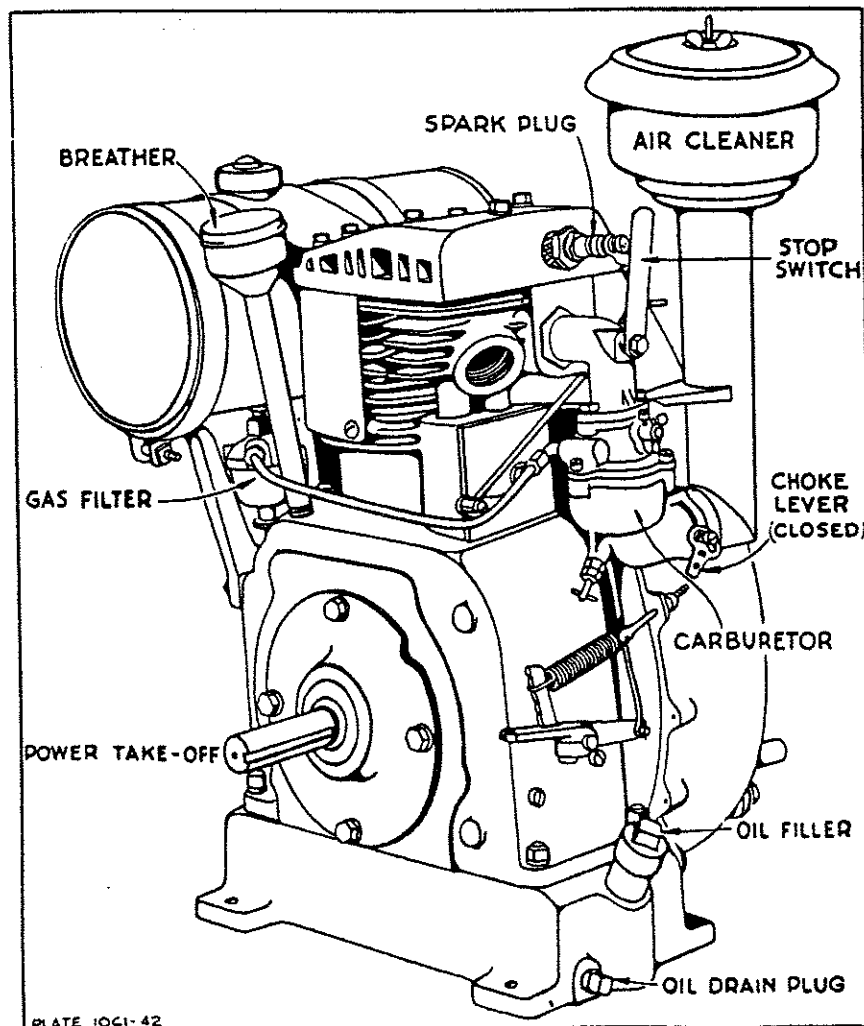
to mesh gear with pinion on crankshaft. Crank rapidly and as soon as enough momentum is gained let go of the compression release rod. After motor starts gradually open the choke valve by moving choke lever in a counter clockwise direction until motor runs smoothly with choke valve wide open. (A warm motor does not require as much choking as a cold motor.)

B. ROPE STARTER TYPE. Slip the knotted end of the starter rope into the notch of the starter pulley and wind the rope around it. Pull the rope with a quick steady pull to spin and start the motor. Operate choke as explained under 2 A.

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

4. HOW TO STOP. Press the stop switch mounted on the intake elbow against the end of the spark plug. Hold it until motor stops firing. This will ground the spark.

Plate No. 1



Servicing Reference Chart

MOTOR FAILS TO START

	Paragraph
Out of Gasoline.....	1-18
Out of Oil.....	1-13-59-60
Dirt or Gum in Fuel System.....	18 to 19
Incorrect Use of Choke.....	20
Carburetor Out of Adjustment.....	22 to 26
Spark Plug Dirty.....	32-33
Ignition Cable Grounded.....	34
Magneto.....	35 to 46
Poor Compression.....	47 to 56
Air Cleaner Clogged.....	62

MOTOR STOPS

Out of Gasoline.....	1-18
Out of Oil.....	1-13-59-60
Dirt or Gum in Fuel System.....	18 to 19
Motor Overheated.....	13-59-60-61-62-63-64
Air Cleaner Clogged.....	62
Motor Overloaded.....	64

MOTOR OVERHEATS

	Paragraph
Out of Oil.....	1-13-59-60
Oil Needs Changing.....	14-15
Oil Too Heavy.....	14-15
Carburetor Out of Adjustment.....	22 to 26
Poor Spark.....	31 to 46
Carbon.....	61
Muffler Clogged.....	63
Overloaded.....	64

MOTOR LACKS POWER

Lack of Oil.....	1-13-59-60
Add or Change Oil.....	13 to 15
Carburetor Out of Adjustment.....	22 to 26
Motor Not Up to Speed.....	22 to 30
Poor Spark.....	31 to 46
Poor Compression.....	47 to 56
Carbon.....	61
Air Cleaner Clogged.....	62
Muffler Clogged.....	63
Overloaded.....	64

Instructions for Adjustment and Repair

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

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

7. If you should experience any difficulty, follow the instructions referred to in the **Servicing Reference Chart** above. If you cannot easily remedy it, consult your dealer, or a nearby

Briggs & Stratton Authorized Central Service Distributor. See page 22.

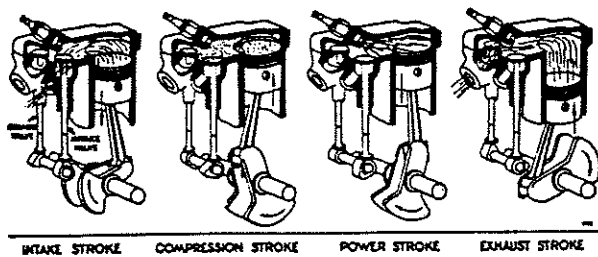
8. **OPERATING REQUIREMENTS.** A gasoline motor to operate properly must have all parts in correct adjustment to provide good ignition, carburetion, compression and cooling. And of equal importance, the oil and gasoline used must be clean and of recommended grades. The following instructions fully explain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

9. The reliability, economy and ease of starting which characterize this motor are due in part to the fact that it is of the 4-stroke

cycle design commonly called "4-cycle," the same design used in all automotive motors. As the name indicates, there are four strokes to one complete power cycle.

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

The 4-Stroke Cycle
Plate No. 2



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

12. USE THE RIGHT KIND OF OIL. Correct lubrication is important. We recommend the use of Mobiloil "Arctic" S. A. E. No. 20 for operating this motor in temperatures of 32° F. or above. For temperatures below 32° F. use Mobiloil "Arctic Special" or other high grade oil not heavier than S. A. E. No. 10W.

A heavier oil which might be satisfactory in a tractor or for lubricating farm machinery must NOT be used. Do not mix oil with the gasoline. This 4-cycle motor is provided with an independent efficient pump lubrication system which forces a stream of oil to all moving parts of the motor. There are no external parts which require separate oiling.

13. ADD OIL REGULARLY. A motor which is run without oil will be ruined within a few minutes. To avoid the possibility of such an occurrence and the resulting expense, always fill the oil reservoir at the blue plug to the top of the filler plug opening after each five hours of motor operation. Capacity of oil reservoir is 4½ pints.

14. CHANGE OIL FREQUENTLY. After every twenty-five hours of motor operation, the oil should be completely drained from the crankcase. Do not remove motor from its mounting base. Remove the yellow oil drain plug, located at either end of motor base, and let the oil flow into a pan or other receptacle you use. We do not recommend flushing out with kerosene. Replace the drain plug, refill with fresh oil and replace the blue filler plug.

15. In the normal running of any motor, small particles of metal from the cylinder walls, pistons and bearings will gradually work into the oil. Dust particles from the air also get into the oil.

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

18. USE CLEAN GASOLINE. A good grade of clean, fresh gasoline is recommended. Too high test gasoline may form vapor-lock in gas line when motor gets hot. This interrupts the flow of gasoline and causes motor to stop. Be sure that the small vent hole in the gasoline tank cap is not clogged up, for air must enter the tank to allow the gasoline to flow to the carburetor. Test by blowing through top of cap. See paragraph 18.

17. AVOID GUMMY GASOLINE. If you experience trouble with a gummy, sticky substance with a peculiar sharp obnoxious smell, change to another grade of gasoline. This gum comes from the gasoline and clogs carburetor, gas line, gasoline tank, etc.

18. YOU CAN AVOID MOST TROUBLE FROM GUM IF YOU WILL KEEP THE TANK FULL WHEN YOU ARE NOT USING THE MOTOR. If you use it only occasionally, drain tank completely and refill when motor is used again. The reason for this is that evaporation of stale gasoline causes most gum deposits.

19. TO CLEAN THE FUEL LINES. Disconnect the gasoline line at the carburetor and also at the gas filter. Blow through the gas line to clear it. To clean the gas filter, first close the shut-off valve and loosen thumb screw. Remove and clean glass bowl, gasket and screen. Open shut-off valve to see if gasoline flows freely from the tank. **IMPORTANT:** If you find a gummy varnish-like substance, alcohol or acetone will dissolve it. See paragraphs 17 and 18.

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

21. TO PRIME THE MOTOR. The motor may fail to start for the reason that either the carburetor is incorrectly adjusted or dirty, or the fuel line is dirty or clogged, or you are out of gasoline. To determine the cause, prime the motor by removing the spark plug and pour a half teaspoonful of gasoline into the spark plug opening. Replace the spark plug and crank the motor. If it fires for three or four revolutions and stops, the difficulty is definitely in the fuel system. See paragraphs 19, 22 to 26. If motor will not fire at all, check the ignition system, see paragraphs 31 to 48, also compression, paragraphs 47 to 56.

22. TO ADJUST THE CARBURETOR. The carburetor on this motor is of the gravity type. The gasoline supply is regulated by a needle valve. The throttle is automatically controlled by the governor, see paragraphs 27 to 30.

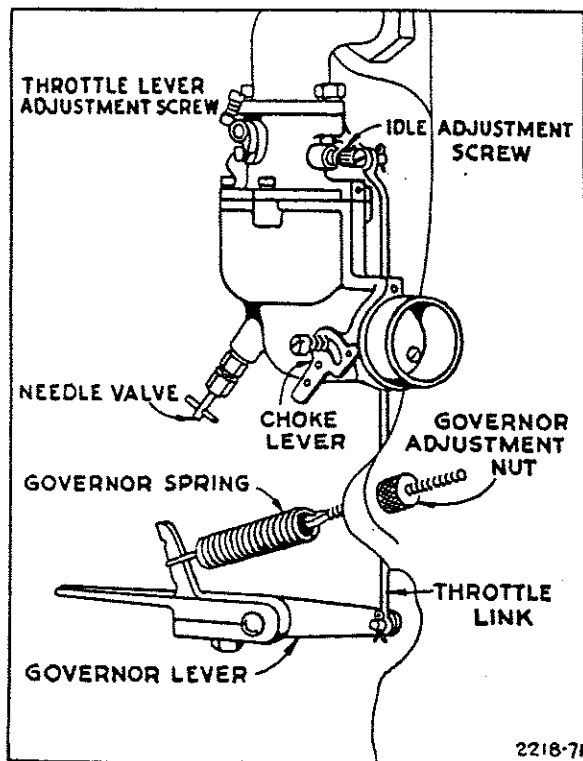
23. To adjust the carburetor, completely close needle valve by turning to right or clockwise as far as possible. Do not screw up too tight or use force when closing needle valve, or needle valve may be damaged. From closed position, open needle valve one to one and one-quarter turns. After the motor has been started and warmed up make final adjustment with the choke wide open

by turning the needle valve to the point at which motor operates most smoothly with full load. This setting will also take care of starting with use of the choke. When starting cold motor, if it is necessary to keep choke partially closed several minutes before motor runs smoothly, carburetor setting is too lean and needle valve should be opened a notch or two—turn to left. For governor adjustments see paragraphs 27 to 30. The idle adjustment screw setting is about a half to three-quarters of a turn open. Do not force screw against seat or you will damage both.

24. The throttle lever adjustment screw is set at the factory to permit an idling speed of about 1200 R.P.M. We do not recommend adjusting the throttle to bring the speed lower. If you want to idle the motor at a higher speed than 1200 R.P.M. turn the throttle lever adjusting screw to the right or in a clockwise direction.

25. **TO REMOVE AND REPLACE CARBURETOR.** Disconnect gasoline line from carburetor and gasoline shut-off valve. Remove two cap screws and lockwashers from the intake elbow. Then remove the cotter pin from the throttle shaft lever and slip the throttle link off. To replace, reverse the operations as performed above. Use a new cotter pin if necessary.

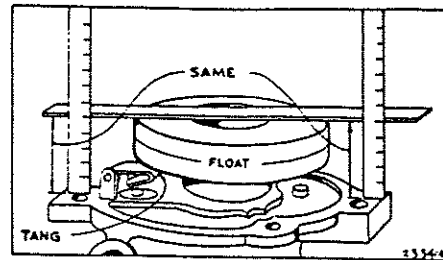
Carburetor and Governor Hook-Up
Plate No. 3



26. **TO CLEAN CARBURETOR.** Remove it from the motor as explained in the previous paragraph. Remove gas line connector elbow. To disassemble carburetor, FIRST remove needle valve, stuffing box nut, packing nut gland and nozzle. Then remove screws and lockwashers from the upper carburetor body. CAUTION: The upper and lower bodies are interlocked by the nozzle and failure to disassemble in above order will result in damaged parts. To check inlet valve and seat, pull out brass pin holding carburetor float. A worn or dirty inlet valve and seat or incorrect float level will cause carburetor to leak. In reassembling, float should be in a horizontal position when it closes inlet valve and seat. To check float, invert upper carburetor body and place a

scale or a flat, straight piece of steel across carburetor float and see that distance from top of float to carburetor body flange is equal at both sides of float. See plate No. 3A. The float hinge tang can be bent to attain proper position of float. If any parts are gummy, clean them in alcohol or acetone. Blow through all passages and openings. Do not use wire to clean out small holes. Replace worn or damaged parts.

Carburetor Float Position
Plate No. 3A



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

28. The governor was carefully adjusted at the factory to maintain normal speed under load. Do not re-adjust unless absolutely necessary. It can be changed by reducing or increasing the tension of the governor spring. Turn governor adjustment nut to the right or clockwise to increase motor speed. To left or anticlockwise to reduce motor speed. Recommended motor speed: 2200 to 3200 R.P.M.

29. **RESETTING GOVERNOR LEVER.** If the governor lever has been loosened or removed from the governor shaft, it is easily reset. With the carburetor attached to motor and hooked up to governor lever with throttle link, loosen screw holding governor lever on the shaft. Push the governor lever toward the left as far as it will go. Hold it in this position and turn the governor shaft to the right with pliers until it strikes a stop in the crankcase. Tighten screw that holds governor lever to shaft until the lever is snug. Push governor lever to the right as far as it will go and tighten screw securely.

30. Some motors are equipped with manual or remote carburetor controls as shown in plate Nos. 4, 5, 6, and 7. In plate Nos. 4 and 5 are shown remote idling devices. To idle motors with these devices, move control lever away from boss on control lever base. To operate motor at governed speed, return lever to boss on the control lever base. Device in plate No. 6 is a remote governor control. To increase motor speed, move control lever away from boss on the control lever base. This adds tension to the throttle spring, allowing carburetor throttle to open wider. To reduce motor speed, return the control lever toward boss on the control lever base. Some models have a hand idling device as shown in plate No. 7. This eliminates changing governor hook-up on motors not equipped with a remote control. To idle motor, lower the idling adjustment lever. Raise the lever to bring motor back to normal running speed.

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

32. **TO CHECK FOR SPARK.** To prove that a satisfactory spark is being delivered by the magneto, remove the ignition cable from

Manual and Remote Carburetor Controls

Plate No. 4

Plate No. 5

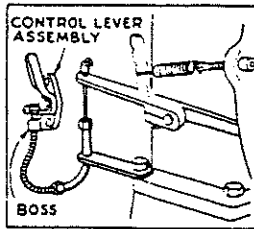
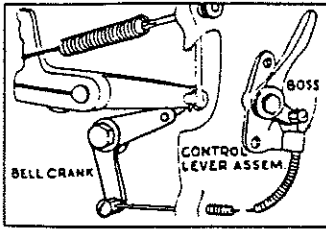
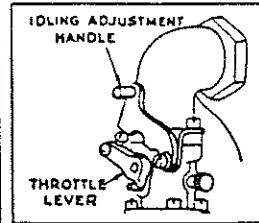
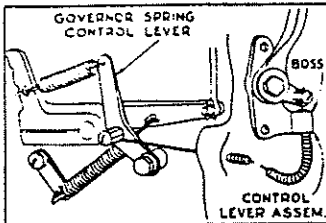


Plate No. 6

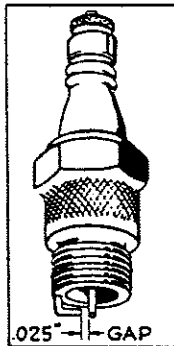
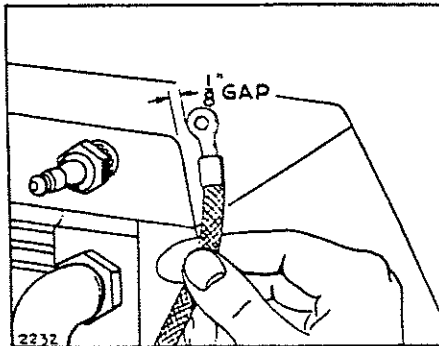
Plate No. 7



the plug. Hold ignition cable terminal about $\frac{1}{8}$ " from any metal part of the cylinder head (keep hand on insulated part of the cable to avoid a shock). Turn motor with starter, and if the spark jumps this gap the entire ignition system, with the exception of the spark plug, is O. K. See plate No. 8. (To check spark plug see paragraph 33.) If no spark, check cable, see paragraph 34, and refer to magneto adjustments paragraphs 35 to 46.

Checking Spark
Plate No. 8

Spark Plug
Plate No. 9



33. SPARK PLUG ADJUSTMENT. Spark plugs should be cleaned and points reset to .025" after each 100 hours of operation. See plate No. 9. Points burn away in service. The porcelain is to prevent the spark from jumping anywhere except at the gap, and if cracked or broken it will prevent the plug firing. Water on the outside of the spark plug may permit the high voltage current to leak over the surface of the porcelain. Dirt or carbon on it will do the same thing. The spark plug can be cleaned by washing off the carbon with gasoline or kitchen scouring powder. Points should be scraped or sand-papered. See plate No. 9. Always keep a new plug on hand. We recommend the use of Champion No. 8 Commercial (18mm) spark plug or its exact equivalent. For heavy continuous service, use Champion No. 5 Commercial or exact equivalent. When inserting plug place a little graphite grease on the threads.

34. IGNITION CABLE. Insulation must not be broken, or soaked with oil or water, or grounded in any way where it touches the motor, or it will interfere with good ignition. Spark plug cable should be fastened to the secondary terminal (small brass plate coming out of the coil). Avoid touching coil with hot soldering iron. See plate No. 14.

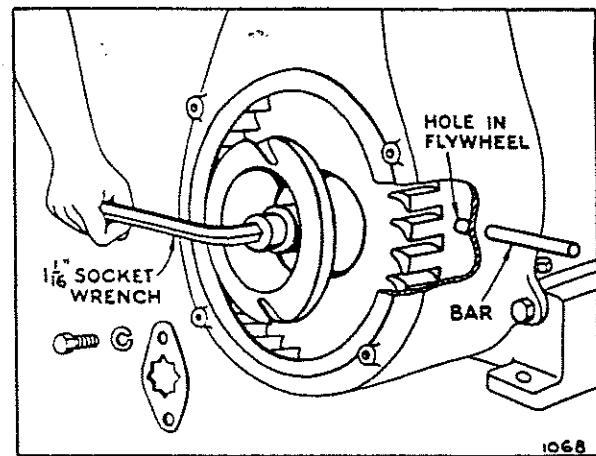
35. TO REMOVE AND REPLACE FLYWHEEL. The flywheel is securely mounted to the crankshaft by means of a taper fit, a

soft key, right hand threaded nut, and a nut lock on rope starter motors, or a pinion gear and lock on crank starter motors. See paragraph 38.

A. ROPE STARTER MOTORS. Remove the two cap screws that hold the nut lock and starter pulley in place. Place a rod or punch into the $\frac{1}{8}$ " hole which is in the blower housing at the gas tank side. Then turn the flywheel slowly until the rod or punch enters the corresponding hole in the flywheel. This will hold the flywheel rigid and prevent its turning as you loosen nut. Use a $1\frac{1}{8}$ " socket wrench with a "T" or "L" handle. To start nut, tap end of wrench handle with hammer. Remove nut and blower housing, loosen flywheel with the flywheel puller No. 29020 furnished with the motor.

B. CRANK STARTER MOTORS. Remove compression release rod, starter gear and bracket, starter pinion lock, and starter pinion. All other operations are the same as in paragraph 35-A.

Removing Flywheel
Plate No. 10



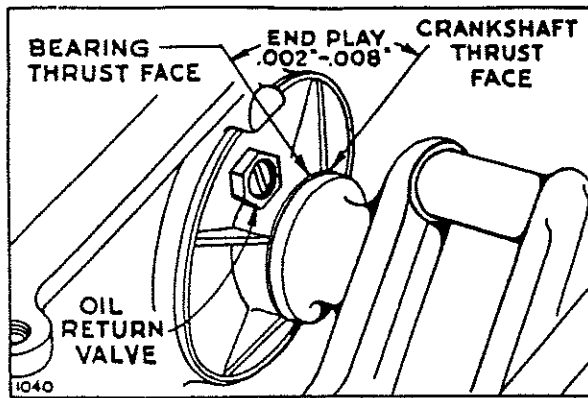
36. TO REASSEMBLE THE FLYWHEEL reverse the operations in preceding paragraphs, put a very thin coat of cup grease on the crankshaft taper and see that flywheel key is in place. Apply grease to starter gears.

37. TO REMOVE AND REPLACE MAGNETO ASSEMBLY. After removing flywheel as explained in paragraph 35, detach the ignition cable from the spark plug and remove the back plate, flywheel key, contact point dust cover and the four magneto mounting screws. Turn the crankshaft so that the contact plunger holds the contact points open and then remove magneto assembly. To replace, reverse the operations and use the old gasket between the plate and crankcase, or, if damaged, a new gasket. See part 66457, 66527, or 66537 for proper thickness to get correct end play of .002" to .008" between magneto bearing and crankshaft thrust faces, as shown in plate No. 11. Use lockwashers under mounting screws.

38. MAGNETO TIMING. The magneto assembly is always correctly timed with the motor when the flywheel is assembled to the tapered crankshaft with a key and securely held in place with right hand threaded nut. Do not attempt to change the timing by relocating any parts or filing crankshaft timing flat. Always use soft key part No. 66403. If steel key is used and flywheel becomes loose it will damage the keyway in the crankshaft.

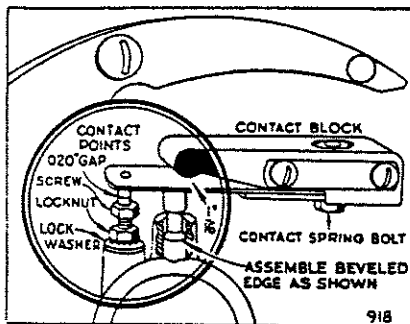
39. TO ADJUST AND CLEAN CONTACT POINTS. While magneto plate is on motor crankcase, turn crankshaft by hand to see if contact points open and close properly. Points must be clean and line up squarely to make good electrical contact. Do not use a steel file on contact points — use a carborundum contact point file.

Correct End Play
Plate No. 11



40. To line up contact points loosen contact spring bolt. Move contact spring assembly to line up with contact screw point. Tighten contact spring bolt. To adjust contact spring tension, turn crankshaft until points are in open position, then place $\frac{1}{16}$ " gauge between contact spring and round end of contact block, and tighten contact block screws. Turn contact screw to secure .020" gap and tighten locknut against lockwasher. See plate No. 12. If either or both points become badly pitted or burned, replace both points, part Nos. 63238 and 69754.

Magneto Contact Points
Plate No. 12



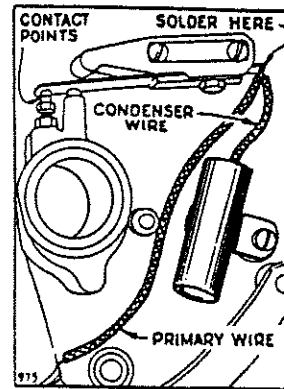
41. **TO REPLACE CONDENSER.** A leaky or weak condenser may cause the motor to start hard, to sputter, or misfire under load. If motor misfires after checking gasoline line, carburetor, spark plug, cable and contact points, install a new condenser. Slip the short insulator sleeve over the condenser wire. Solder the end of condenser wire and primary wire to contact spring. (See plate No. 13.)

42. If after new condenser has been installed the ignition system still does not deliver a satisfactory spark, we recommend sending the complete magneto unit including the flywheel to the nearest Briggs & Stratton Central Service Distributor listed on page 23 for proper adjustment.

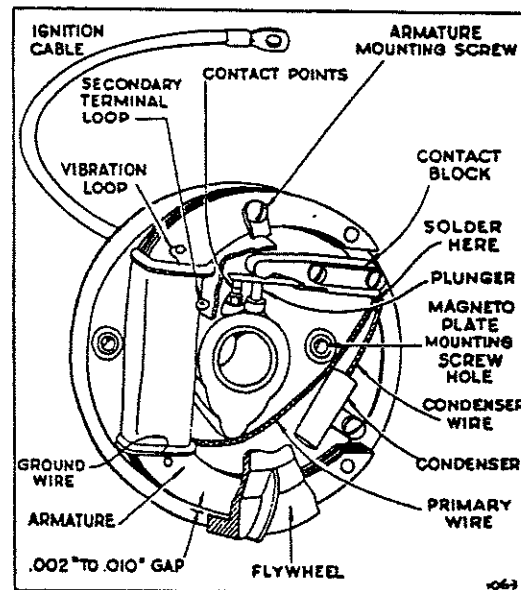
43. **TO REPLACE ARMATURE.** Remove armature lead wire from contact spring, and high tension ignition cable from secondary terminal loop in the armature. Both wires are soldered. Save as much of the hydroisene as possible so that you can insulate high tension terminal when you assemble new armature. Do not use battery compound or tar as it will melt and run over the entire magneto assembly. Unscrew two armature mounting screws and pry armature loose with screw driver.

44. To install armature, place dust cover clip under upper mounting screw, tighten lower mounting screw. Then solder ignition cable to the terminal and fill pocket, formed with flap, with hydroisene. Solder armature lead wire to contact spring. Replace dust cover and the clip holding cover in place, tighten upper armature mounting screw. See plate No. 14.

Condenser Installation
Plate No. 13



Complete Magneto Assembly
Plate No. 14



45. Air gap of .002" to .010" must be maintained between armature shoes and flywheel poles. Gap must only be sufficient to prevent rubbing but not over .010" or poor ignition will result.

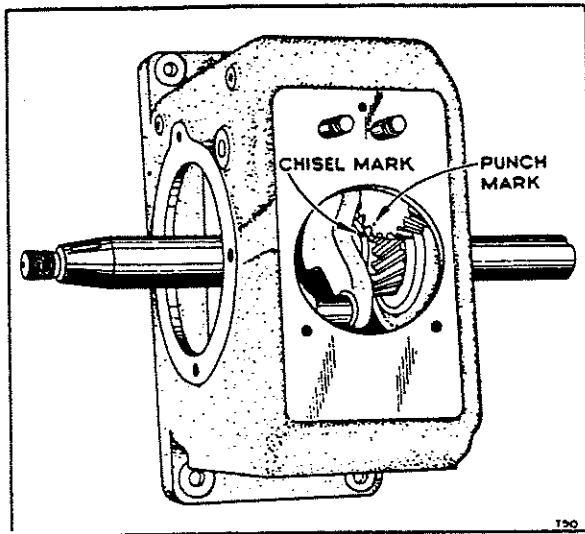
46. To check armature shoes for rub, chalk edges and mount flywheel in place. Remove spark plug to release compression. Turn flywheel several revolutions by hand. Remove flywheel and examine edges of armature shoes. High spots will have the chalk rubbed off. File high spots carefully with a fine file until flywheel no longer rubs, but do not remove too much metal.

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

48. **COMPRESSION.** Proper compression is obtained when valves seat properly, gaskets do not leak, and piston and rings are properly fitted. When tuning up a motor, it is always well to check compression. This is done by turning the motor over quickly by hand. If turned slowly sticky valves may not be detected. If

a point of resistance is offered every other revolution, compression should be satisfactory. If motor turns over without compression resistance for a full cycle, it is possible that a worn piston or piston rings, leaky valves or leaky gaskets are present. See that spark plug has a gasket under it and is drawn up tight. Also check cylinder head gasket and tighten cylinder head bolts.

Valve Timing — Plate No. 15



49. VALVE ADJUSTMENT. To check valve clearance, remove carburetor, paragraph 25, and valve cover plate on cylinder back of carburetor. The correct clearance on the exhaust valve is .014" to .016". The clearance of the intake valve on this motor is .007" to .009". These clearances to be adjusted when motor is cold. Tappet clearance is adjusted by loosening tappet locknut and turning tappet screw to desired position. Securely tighten the tappet locknut after adjusting valve clearance.

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

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

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

53. The timing of the valves is taken care of by the meshing of the cam shaft gear with the gear on the crankshaft. These gears are properly meshed when the mark on the cam shaft gear is in line with the mark on the crankshaft collar. See plate No. 15.

54. PISTON. The piston in this motor is made of a special aluminum alloy which is very light in weight. The top and second lands of the piston are smaller than the skirt to allow for greater expansion at the piston head. When piston is removed be sure to thoroughly clean carbon from head of piston and ring grooves. If piston is out of round or scored it should be replaced.

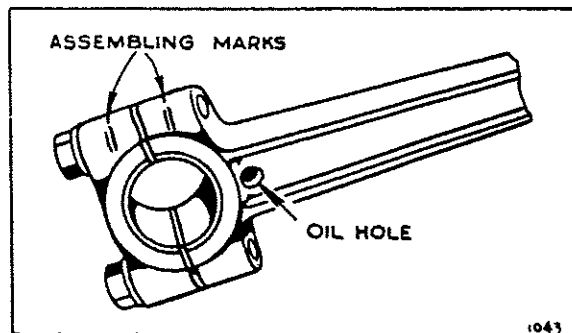
55. When fitting a new piston in the motor, assemble it with the free side pin hole with an "X" on boss, toward the magneto side. If an oversize piston is necessary, we recommend that reboring of cylinder be done by an Authorized Central Service Distributor or the factory. See page 23.

56. PISTON RINGS. The piston rings when fitted in the cylinder should have a gap of .007" to .015". The ring should be fitted in the cylinder below the piston ring travel. Before assembling new rings to piston be sure that piston ring grooves are thoroughly cleaned and rings move in grooves freely.

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

58. CONNECTING ROD. The connecting rod is also made of a special aluminum alloy which combines strength with light weight. When assembling connecting rod to crankshaft, the oil hole in the lower bearing must be toward the magneto side: See plate No. 16. The assembly marks on cap and rod must be on the same side.

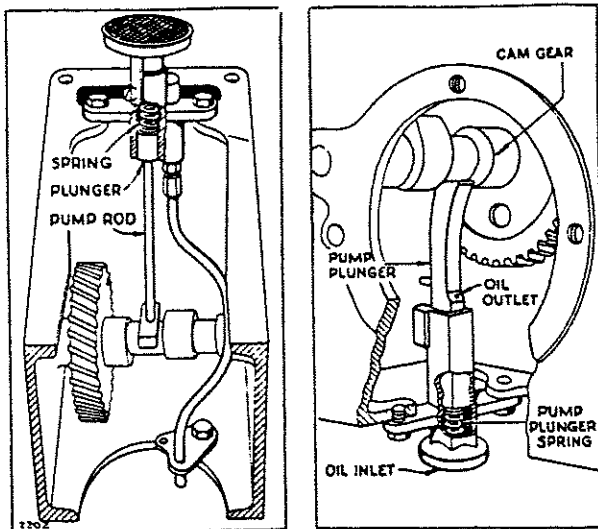
Connecting Rod — Plate No. 16



59. OIL PUMP. The oil pump is assembled to the crankcase with two bolts and lockwashers and is operated from an eccentric on the cam gear. An inoperative pump will result in insufficient lubrication which may score cylinder and piston assembly. To check oil pump, remove base and the two bolts that hold pump in place. Place the pump in a pan of oil about 1/2" deep. Work plunger up and down. A stream of oil will be forced out of the hole in the oil tube or pump plunger if the pump is in good operating condition. If clogged, remove plunger and plunger-spring and submerge the parts in gasoline or kerosene for three or four hours to loosen accumulated sludge or gum. If the pump is still inoperative, it should be replaced. In assembling, be sure that spring and plunger are in place as shown in plate No. 17.

60. OIL LEAKS. If oil leaks from either end of crankshaft bearings, remove base from motor. Oil return valves are screwed into crankcase and magneto back plate below the main bearings. Remove oil return valve and clean or flush with gasoline and blow out any dirt lodged under the small disc. Replace if necessary. See plate No. 11.

61. CARBON. Excessive carbon is caused by improper grade of oil — too much oil usually the result of piston rings not seating properly or sticking — carburetor set too rich — or long service.



An unusual amount of carbon is noticeable by motor knocking or loss of power. Occasionally remove carbon from valves, valve ports, piston head, piston rings and piston grooves, cylinder head and top of cylinder bore.

62. AIR CLEANER. The air cleaner is to protect the motor from dust and dirt. No motor can stand up under the grinding action that takes place when dust and dirt particles are drawn into the motor through the carburetor. Air cleaners should be cleaned occasionally as follows:

OIL BATH TYPE. Wash the outside of the filter element with a rag or brush dipped in gasoline or kerosene. Do not submerge. Then clean bowl by submerging in gasoline or kerosene. Fill cleaner with oil up to the level marked on cleaner bowl. See Instructions on air cleaner label.

FELT TYPE. Remove the felt regularly and brush out accumulated dust and dirt. Then wash thoroughly with gasoline. Make sure felt is dry before replacing.

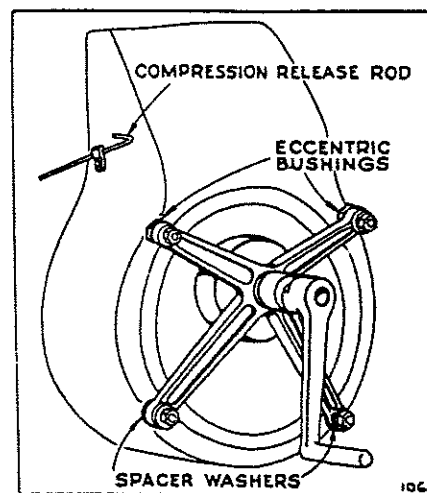
63. MUFFLER. After long periods of service it is possible that the muffler will become clogged to the point where it will affect the motor's power. To check the muffler unscrew it from the

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.

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

65. CRANK STARTER ASSEMBLY. The crank starter assembly shown in plate No. 18 is mounted on the blower housing on four studs and held in place by plain washers, lockwashers, and nuts. To mount starter assembly place two eccentric bushings on upper studs, and two plain washers on lower studs. Then place starter bracket gear and shaft assembly and four plain washers, lockwashers and nuts on studs. Press starter shaft toward motor and turn the two eccentric bushings until gears mesh with as little back lash as possible and without binding. Tighten nuts securely. Oil the crankgear shaft, through the oil cup, and grease the pinion gear teeth occasionally to reduce wear.

Plate No. 18



66. PARTS. All parts should be ordered from your dealer or the nearest Briggs & Stratton Service Distributor. See page 23.

Repair Parts

Paragraph
Always Give Type, Model and Serial Number 68
How to Make Out Parts Orders..... 70

Page
How to Find Correct Part Number..... 11
Parts List 11-17
Parts Illustrations 21 and 22

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

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

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

70. HOW TO MAKE OUT PARTS ORDERS. Print your name and address plainly and correctly. Do not abbreviate name of

town or state. Specify on the order how shipment to you is to be made. This will assist in giving prompt and efficient service.

71. Give part number and name of parts wanted. (Do not use number cast on parts.) You will find the part numbers, names and prices on pages 11 to 20, and parts illustrations on pages 21 and 22.

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

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

TO FIND THE CORRECT NUMBER OF THE PART YOU NEED

1. Make a note of your motor TYPE NUMBER (Not the Serial Number) that appears on the metal nameplate attached to motor blower housing.
2. Refer to pages illustrating parts and locate the Master Part Number by comparing your old part with the illustrations. Assemblies include all part numbers bracketed in illustrations. All parts shown in assembly brackets on which part numbers are given can be purchased separately.
3. After the Master Part Number has been identified, refer to the following Parts Lists where these Master Part Numbers are listed in numerical order.

The Master Part is used on all types of motors except those types listed under "Note."
4. If a "Note" appears below the Master Part Number this means that this part is made different from the Master Part for certain types and if your type is listed under "Note," order the part referred to.
5. If two or more parts are bracketed (—) under "Note," they are used to replace the master part on the type numbers shown.
6. If your Motor Type Number does not appear after any part number listed under "Note," order the Master Part Number.
7. When ordering parts — or writing for service information — always specify the MODEL LETTER — TYPE NUMBER — and SERIAL NUMBER of your motor.

Parts List

"Z" — "ZH" — "ZHL" — "ZHLF" — "ZHP" — "ZHR"
"ZL" — "ZLF" — "ZM" — "ZP" — "ZR"

MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.	MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.
19002	Valve and Seat—Fuel Inlet.....	2		Used to mount air cleaner pipe to carburetor on engines before Serial No. 51279.	
19003	Use 89914 Carburetor.				
19004	Nozzle—Carburetor	1	22834	Washer—Spacer	1
19015	Cone—Roller Bearing	6	22947	Lock—Connecting Rod Screw.....	1
21002	Ring—Piston, Compression, Top—.010" O.S.....	1		Note: No. 22073 Lock—Connecting Rod Screw..	1
21003	Ring—Piston, Compression, Center—.010" O.S.....	1		Used on aluminum connecting rods before Serial No. 237115.	
21005	Ring—Piston, Compression, Top—.020" O.S.....	1		No. 90366 Lockwasher— $\frac{1}{8}$ "x $\frac{1}{8}$ ".....	1
21006	Ring—Piston, Compression, Center—.020" O.S.....	1		Used on steel connecting rods.	
21008	Ring—Piston, Compression, Top—.030" O.S.....	1	23050	Sleeve—Bearing	2
21009	Ring—Piston, Compression, Center—.030" O.S.....	1	23051	Locknut—Bearing Sleeve	2
21152	Lever—Throttle	2	23108	Bushing—Throttle Shaft	1
22001	Lever—Throttle Control	2	23114	Pin—Flat Hinge	1
22134	Wrench—Starter Pinion	1	23117	Retainer—Needle Valve	1
22246	Shim—Connecting Rod	1	23118	Nut—Needle Valve Packing.....	1
	Note: Used on earlier model Aluminum Rods. Not required on later models.		23123	Screw—Choke Lever	1
22368	Washer—Control Lever	1	23125	Pin—Throttle Lever	1
22372	Clamp—Control Wire Casing.....	1	23132	Plunger—Oil Pump	6
	Note: No. 62786 Clamp—Control Wire Casing.. Used on type Nos. 20438, 60878, 304139, 304184, 304279, 304309.	1	23136	Stud—Cylinder Mounting	1
22547	Screen—Fuel Filter (Rectangular Hole).....	1	23168	Screw—Control Lever	1
	Note: For screen with round hole order: No. 62876 Screen—Fuel Filter.....	1	23228	Valve—Carburetor Idle	1
	No. 62477 Screen—Fuel Filter.....	1	23402	Locknut—Contact Point	1
	Used on earlier model engines equipped with Tillotson Fuel Filter.		23571	Swivel—Control Lever	1
22622	Strap—Air Cleaner Pipe.....	1	23580	Bushing—Control Lever	1
22623	Clamp—Air Cleaner Pipe.....	1	23581	Clamp—Ignition Cable	1
22659	Spacer—Tank Bracket	1		Note: No. 22304 Clamp—Ignition Cable..... Used on all engines with shielded ignition cable.	
22714	Link—Throttle	2	23590	Bushing—Connecting Rod	2
	Note: No. 67416 Link—Throttle..... Used on engines equipped with Kingston or Schebler Carburetors.	1	23631	Valve—Exhaust	6
22723	Shim—.003" Thick	1	23699	Nut—Fuel Shut-off Lever.....	4
	Note: No. 62309 Shim—.003" Thick..... Used on engines before Serial No. 188865.	1		Used with $\frac{1}{8}$ " Dia. Shut-off Lever. Note: No. 23346 Nut—Fuel Shut-off Lever..... Used with $\frac{1}{8}$ " Dia. Shut-off Lever.	4
22724	Shim—.010" Thick	1	23736	Stud—Air Cleaner Pipe—14 $\frac{1}{2}$ ".....	4
	Note: No. 22010 Shim—.015" Thick..... Used on engines before Serial No. 188865.	1		No. 23550 Stud—12 $\frac{3}{4}$ " Long	4
22725	Washer—Control Lever	1		No. 23636 Stud—13 $\frac{3}{4}$ " Long.....	4
22781	Retainer—Oil Tube	1	23779	Pin—Throttle Link	1
22832	Strap—Air Cleaner Pipe.....	2	23791	Connector—Oil Tube	1
	Used on engines after Serial No. 51279. (No. 22623 Clamp—Air Cleaner Pipe....	4	26068	Spring—Throttle Adjustment	1
	Note: No. 92425 Nut—Sq.— $\frac{1}{4}$ -20.....	1	26069	Spring—Idle Valve Adjustment.....	1
	No. 92467 Screw—Cap. Hex. Hd.— $\frac{1}{4}$ -20x1 $\frac{1}{8}$ "	1	26155	Spring—Choke Lever	1
			26157	Spring—Throttle and Idle Valve.....	1
			26278	Crankshaft	10
				Note: No. 26011 Crankshaft..... Used on type Nos. 20478, 60700, 60914.	10
				(See next page)	

MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.	MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.			
No. 26063	Crankshaft.....	10	29089	Starter Assembly—Crank	10			
	Used on type Nos. 20094, 20958, 25316, 60550, 60640, 60641, 60709, 60882, 304123, 304155, 304168, 304178, 304207, 304255.			Note: No. 99240 Starter Assembly—Crank.....	10			
No. 26083	Crankshaft.....	10		Used on type Nos. 304327, 304334.				
	Used on type Nos. 60968, 60969.			No. 99368 Starter Assembly—Crank.....	10			
No. 26124	Crankshaft.....	10		Used on type Nos. 304108, 304170, 304217, 304277.				
	Used on type Nos. 20980, 20989, 304083, 304089, 304214.		29092	Stud—Clutch Spring	1			
No. 26145	Crankshaft.....	10	29097	Housing—Blower	14			
	Used on type Nos. 304057, 304058, 304140, 304219, 304224, 304247, 304301, 304308.			Note: No. 21393 Housing—Blower.....	14			
No. 26151	Crankshaft.....	10		Used on type Nos. 304057, 304247, 304302.				
	Used on type Nos. 304082, 304289.			No. 29001 Housing—Blower.....	14			
No. 26202	Crankshaft.....	10		Used on type Nos. 20428, 60092, 60118, 60122, 60490.				
	Used on type Nos. 304147, 304186, 304215, 304216, 304251, 304252, 304272, 304273, 304274, 304303, 304324.			No. 29484 Housing—Blower.....	14			
No. 26273	Crankshaft.....	10		Used on type Nos. 60078, 60292, 60470, 60655, 60868, 304097, 304132, 304189, 304204, 304235, 304236, 304297.				
	Used on type No. 304259.			No. 61480 Housing—Blower.....	14			
No. 26284	Crankshaft.....	10		Used on type Nos. 304086, 304117, 304248, 304270.				
	Used on type Nos. 20956, 95113, 304077, 304078, 304088, 304098, 304100, 304163, 304164, 304165, 304172, 304190, 304339.			No. 99070 Housing—Blower.....	14			
No. 26285	Crankshaft.....	10		Used on type No. 20438.				
	Used on type Nos. 95100, 95101, 304090, 304091, 304295.			No. 99514 Housing—Blower.....	14			
No. 26320	Crankshaft.....	10	29103	Pin Assembly—Piston—.005" O.S.....	3			
	Used on type Nos. 20031, 20396, 20400, 20428, 20837, 60130, 60132, 60143, 60145, 60152, 60153, 60226, 60249, 60380, 60398, 60441, 60490, 60531, 60665, 60669, 60685, 60692, 60747, 60794, 60898, 60932, 304067, 304068, 304069, 304070, 304079, 304080, 304085, 304086, 304101, 340102, 304103, 304104, 304107, 304108, 304110, 304113, 304117, 304118, 304122, 304125, 304154, 304158, 304159, 304167, 304175, 304191, 304217, 304229, 304248, 304261, 304262, 304267, 304270, 304275, 304277, 304284, 304292, 304315, 304318, 304331, 304337.		29131	Shield—Spark Plug	6			
No. 26376	Crankshaft.....	10	29154	Pulley with Bushing—Drive Clutch.....	4			
	Used on type Nos. 20034, 20085, 60235, 60514, 60650, 60697, 60716, 60767, 60870, 60876, 95073, 95075, 95078, 304094, 304150, 304202, 304206, 304221, 304249, 304271, 304276, 304314, 304319, 304320, 304330.			Note: No. 29567 Pulley with Bushing—Drive Clutch	4			
No. 26384	Crankshaft.....	10		Used on type Nos. 60716, 95073 .				
	Used on type Nos. 304286, 304288, 304300, 304302.			No. 29578 Pulley with Bushing—Drive Clutch	4			
No. 67966	Crankshaft.....	10		Used on type Nos. 20478, 60700, 60914.				
	Used on type No. 60193.		29222	Cup—Oil (Starter Snait).....	1			
No. 68516	Crankshaft.....	10	29230	Nozzle—Carburetor	1			
	Used on type Nos. 20043, 20044, 20405, 60453.			Note: No. 69909 Nozzle and Tube Assembly—Carburetor	1			
No. 68916	Crankshaft.....	10		Used on early model engines in which the carburetor needle valve flange is an integral part of high speed nozzle and tube assembly.				
	Used on type No. 60621.		29267	Housing—Blower	14			
No. 99644	Crankshaft.....	10		Note: No. 21394 Housing—Blower.....	14			
	Used on type Nos. 60897, 304096.			Used on type Nos. 304058, 304140, 304219, 304224, 304286, 304288, 304300, 304301, 304308.				
26308	Tappet—Valve	3		No. 29001 Housing—Blower.....	14			
26413	Spring—Oil Pump	2		Used on type No. 95092.				
27034	Gasket—Carburetor Body	1		No. 61450 Housing—Blower.....	14			
27090	Gasket—Spark Plug	1		Used on type Nos. 304149, 304201.				
27145	Packing—Fuel Shut-off Lever.....	1		No. 89405 Housing—Blower.....	14			
	Used with 3/8" Dia. Shut-off Lever.			Used on type No. 304279.				
	Note: No. 27019 Packing—Fuel Shut-off Lever... Used with 1/8" Dia. Shut-off Lever.	1		No. 99077 Housing—Blower.....	14			
29020	Puller—Flywheel	1	29372	Switch—Stop	3			
29036	Clutch Assembly—Pulley	7		Note: No. 62304 Switch—Stop Used on type No. 304244.				
	Note: No. 29110 Clutch Assembly—Pulley.....	7	29380	Shaft—Throttle	2			
	Used on type Nos. 60716, 95073.			Note: No. 29218 Shaft—Throttle.....	2			
	No. 29559 Clutch Assembly—Pulley.....	7		Used on type Nos. 20000, 20008, 20011, 20014, 20059, 20094, 20389, 20405, 20465, 20809, 20817, 20956, 30989, 25279, 25280, 60182, 60239, 60286, 60355, 60366, 60410, 60453, 60514, 60532, 60638, 60644, 60718, 60767, 60769, 60792, 60825, 60930, 60934, 95101, 95143.			No. 69910 Shaft—Throttle.....	2
	Used on type Nos. 20478, 60700, 60914.			Used on early model engines without throttle shaft bushings in upper body.				
	No. 29683 Clutch Assembly—Pulley.....	4	29403	Plate—Pulley Clutch	3			
	Used on type No. 60767.		29429	Lever Assembly—Governor	4			
				(Replaces Cast Iron Lever.)				
				Note: No. 69872 Lever Assembly—Governor... Used on type Nos. 60130, 60132, 60143, 60145, 60747, 60986, 304108, 304217, 304277, 304297.				

(See next page)

Before ordering parts, read instructions top page 11.

MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.	MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.
	No. 99296 Lever Assembly—Governor....	4	46277	Rivet—Tubular— $\frac{1}{8} \times \frac{1}{8}$ "	1
	Used on type Nos. 60438, 304261, 304292.		53029	Connector—Fuel Filter	1
	No. 99448 Lever Assembly—Governor....	4	61265	Ring—Pulley Clutch	1
	Used on type Nos. 95266, 304183.		61292	Ring—Piston, Oil—Standard	1
29440	Tube—Control Casing	2	61312	Elbow—Intake	10
	Note: No. 29207 Tube—Control Casing.....	2		Note: No. 21058 Elbow—Intake.....	10
	Used on type Nos. 20372, 304115, 304173, 304174, 304180, 304240.			Used on type Nos. 304057, 304058, 304140.	
	No. 29251 Tube—Control Casing.....	2		No. 21199 Elbow—Intake.....	10
	Used on type No. 60868.			Used on type Nos. 304219, 304224, 304244, 304247, 304272, 304286, 304288, 304300, 304301, 304302.	
	No. 29398 Tube—Control Casing.....	2		No. 61404 Elbow—Intake.....	10
	Used on type No. 60625.			Used with Kingston Carburetor on type Nos. 20000, 20008, 20011, 20014, 20059, 20094, 20389, 20405, 20465, 20809, 20817, 20956, 20989, 25279, 25280, 60182, 60239, 60286, 60355, 60366, 60410, 60453, 60514, 60532, 60638, 60644, 60718, 60767, 60769, 60792, 60825, 60930, 60934, 95101, 95143.	
	No. 68772 Clamp.....	1		No. 61600 Elbow—Intake.....	10
	Used on type Nos. 60932, 304159.			Used on type No. 60797.	
29447	Cleaner Assembly—Air	3		No. 61976 Elbow—Intake.....	10
29543	Wire—Carburetor Choke	2		Used on type Nos. 25293, 25294, 95266, 304001, 304061, 304062, 306065, 304066, 304073, 304074, 304075, 304076, 304081, 304083, 304084, 304087, 304088, 304091, 304093, 304096, 304098, 304101, 304102, 304103, 304104, 304105, 304109, 304111, 304112, 304113, 304114, 304115, 304116, 304119, 304120, 304120, 304141, 304144, 304145, 304156, 304158, 304164, 304171, 304172, 304174, 304175, 304178, 304180, 304182, 304183, 304184, 304185, 304189, 304190, 304191, 304192, 304193, 304194, 304195, 304196, 304197, 304198, 304199, 304200, 304201, 304202, 304203, 304204, 304205, 304206, 304207, 304208, 304209, 304210, 304211, 304212, 304213, 304214, 304215, 304216, 304217, 304218, 304220, 304221, 304222, 304223, 304225, 304226, 304227, 304228, 304229, 304234, 304235, 304236, 304237, 304238, 304239, 304240, 304241, 304242, 304246, 304248, 304250, 304251, 304252, 304253, 304254, 304255, 304256, 304257, 304258, 304259, 304260, 304261, 304262, 304263, 304264, 304265, 304266, 304267, 304268, 304269, 304270, 304271, 304273, 304274, 304275, 304276, 304277, 304279, 304280, 304281, 304282, 304283, 304284, 304285, 304287, 304289, 304290, 304291, 304292, 304293, 304294, 304295, 304297, 304298, 304299, 304303, 304304, 304305, 304306, 304307, 304308, 304309, 304310, 304311, 304312, 304313, 304314, 304315, 304316, 304317, 304318, 304319, 304320, 304321, 304322, 304324, 304325, 304326, 304327, 304329, 304330, 304331, 304332, 304333, 304334, 304337.	
	Note: No. 66756 Casing—Choke Wire		61331	Elbow—Air Cleaner	6
	No. 69695 Wire—Choke		61335	Ring—Piston, Oil—.010" O.S.	1
	Used on type No. 304260.		61336	Ring—Piston, Oil—.020" O.S.	1
29571	Body Assembly—Lower Carburetor.....	1 8	61337	Ring—Piston, Oil—.030 O.S.	1
	Note: No. 29526 Body—Lower Carburetor (Replaced by No. 89914 Carburetor.)		61361	Lever—Throttle	8
	Used on Rope Starter engines equipped with Kingston Carburetor, not listed below. For Friction Choke.		61371	Elbow—Air Cleaner	8
	No. 29573 Body Assembly—Lower Carburetor	1 8	61380	Bracket—Fuel Tank	2 8
	Used on type numbers as listed following: Part No. 29506 under Master Part No. 69729. For Friction Choke.			Note: No. 21054 Bracket—Fuel Tank.....	2 8
	No. 69907 Body Assembly—Lower Carburetor			Used on type Nos. 20980, 20989, 304083, 304089, 304214.	
	Replaced by No. 89914 Carburetor. Used with early model engines equipped with high speed nozzle and flange in one piece. For Spring Return Choke.			No. 61486 Bracket—Fuel Tank.....	2 8
29574	Body—Upper Carburetor	10		Used on type No. 304156.	
	Note: No. 29231 Body Assembly—Upper Carburetor	1		No. 61496 Bracket—Fuel Tank.	
	Order this carburetor body when replacing upper body on early model engines not equipped with throttle shaft bushings.			Replaced by No. 290417 Bracket—Fuel Tank (Stamped Steel).....	1 10
	No. 64669 Body—Upper Carburetor.....	10		Includes: No. 22659 Spacer—Tank Bracket	1
	Used on type numbers as listed following: Part No. 29506 under Master Part No. 69729.			Used on type Nos. 60315, 60383, 60825, 304106, 304241, 304326, 304342.	
29604	Pulley—Drive, 3" Dia. Vee Belt.....	1		No. 61979 Bracket—Fuel Tank.....	2 8
29656	Armature	3		Used on type Nos. 95266, 304182, 304183.	
29679	Cover—Air Cleaner	8			
29680	Filter—Air Cleaner	1			
29681	Bowl—Air Cleaner	8			
29681	Bowl—Air Cleaner	2			
29861	Condenser	3			
29897	Shaft Assembly—Drive	3			
	Note: No. 89472 Shaft Assembly—Drive.....	3			
	Used on type Nos. 304122, 304284.				
29918	Bearing—Ball	4			
29930	Carburetor (Schebler)				
	Note: Replaced by No. 89914.				
	No. 99030 Carburetor				
	Used on type No. 60187.				
	Replaced by No. 89914.				
	No. 99688 Carburetor				
	Used on type No. 304146.				
	Replaced by No. 290067 Carburetor.....	2 8			
29932	Pump Assembly—Oil	1			
	Note: No. 99009 Pump Assembly—Oil.....	1			
	Used on type Nos. 60747, 60986.				
29933	Body—Oil Pump	7			
	Note: No. 29338 Body—Oil Pump.....	7			
	Used on type Nos. 60747, 60986.				
29934	Plunger—Oil Pump	6			
29997	Shaft Assembly—Throttle	6			
29998	Shaft Assembly—Choke	2			
	Note: No. 63946 Shaft—Choke.....	2			
	Used on type No. 60187.				
29999	Fleet—Carburetor	2			
39246	Rivet—Tubular— $\frac{1}{8} \times \frac{1}{2}$ "	1			
46133	Spring—Spark Plug Shield.....	1			

Before ordering parts, read instructions top page 11.

MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.
61405	Head—Cylinder	3 8
61454	Gear—Cam	3
61963	Ring—Piston, Compression, Center—Standard...	1
61964	Ring—Piston, Compression, Top—Standard.....	1
61975	Replaced by No. 290175.	
62041	Shell—Air Cleaner	6
62042	Washer—Air Cleaner	1
62100	Stop—Contact Spring	1
62167	Lock—Flywheel Nut	2
62177	Strap—Blower Housing Mounting.....	1
62178	Plate—Contact Block	1
62196	Switch—Stop	1
	Note: No. 62304 Switch—Stop.....	
	Used on type No. 304244.	
	No. 62996 Switch—Stop.....	1
	Used on type Nos. 304057, 304058, 304140,	
	304219, 304224, 304247, 304286, 304288,	
	304300, 304301, 304302, 304308.	
62199	Washer—Bell Crank	1
62222	Cup—Valve Spring	1
62235	Ring—Oil Retainer	6
62244	Bowl—Carburetor	1
62246	Valve—Choke	1
62252	Washer—Valve Tappet	2
62254	Cup—Starter Spring	1
62309	Shim—.003" Thick	1
62319	Clamp—Control Wire Casing.....	6
62342	Cover—Pulley Clutch	2
62363	Lock—Starter Pinion	1
62400	Clamp—Control Wire Casing.....	3
62412	Plate—Control Lever Mounting.....	1
62413	Clip—Control Wire Casing.....	1
62428	Valve—Throttle	1
	Note: No. 62380 Valve—Throttle.....	
	Used on type Nos. 20000, 20008, 20011,	
	20014, 20059, 20094, 20389, 20405, 20465,	
	20809, 20817, 20956, 20989, 25279, 25280,	
	60182, 60239, 60286, 60355, 60366, 60410,	
	60453, 60514, 60532, 60638, 60644, 60718,	
	60767, 60769, 60792, 60825, 60930, 60934,	
	95101, 95143.	
62465	Bowl—Air Cleaner	6
62466	Clamp—Air Cleaner Bowl.....	1
62741	Valve—Choke	4
62742	Bowl—Carburetor	1
62743	Valve—Throttle	1
62763	Washer—Choke Lever	1
62872	Valve—Choke (Off Center).....	1
	Note: Carburetors with choke shaft in center of	
	choke valve use:	
	No. 62932 Valve—Choke.....	1
62886	Washer—Ball Bearing Retainer.....	1
62899	Washer—Choke Lever	8
62924	Shield—Cylinder	8
	Note: No. 62185 Shield—Cylinder.....	
	Used on engines with 5-digit type num-	
	bers.	
62926	Plate—Back	2
	Note: No. 62201 Plate—Back.....	
	Used on engines with 5-digit type num-	
	bers.	
62928	Valve—Throttle	1
	Note: No. 62940 Valve—Throttle.....	
	Used on type numbers as listed following:	
	Part No. 89920 under Master Part No.	
	89914.	
62938	Strap—Air Cleaner Mounting.....	1
	Note: No. 22015 Bracket—Service Air Cleaner..	
	Supplied with Nos. 89914 and 89920 Car-	
	buretors upon request.	
	No. 62449 Strap—Air Cleaner.....	1
	Used on engines equipped with Kingston	
	Carburetors.	
	No. 62767 Strap—Air Cleaner.....	1
	Used on engines equipped with Schebler	
	Carburetors.	

MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.
62939	Strap—Air Cleaner Mounting.....	1
	Note: No. 22015 Bracket—Service Air Cleaner...	
	Supplied with Nos. 89914 and 89920 Car-	
	buretors upon request.	
	No. 62450 Strap—Air Cleaner.....	1
	Used on engines equipped with Kingston	
	Carburetors.	
	No. 62768 Strap—Air Cleaner.....	1
	Used on engines equipped with Schebler	
	Carburetors.	
62999	Bracket—Throttle Control	6
63199	Pin—Starter Shaft	1
63217	Nut—Oil Tube Connector.....	1
63238	Screw—Contact Point	1
63269	Washer—Pulley Clutch	1
63294	Pin—Clutch Lining	1
63334	Rod—Governor Spring	4
63335	Plunger—Governor	1
63336	Spacer—Cylinder Head	1
63337	Spacer—Cylinder Head	2
63341	Bushing—Governor Crank	1
63343	Shaft—Governor Gear	1
63355	Bushing—Bell Crank	1
	Note: No. 63474 Bushing—Bell Crank.....	
	Used on type Nos. 60438, 60443, 60647,	
	60665.	
63374	Bushing—Control Lever	1
63377	Connector—Fuel Pipe	1
63382	Cup—Roller Bearing	6
63383	Cup—Roller Bearing	6
63403	Valve—Needle	1
63404	Valve—Carburetor Idle	1
63405	Nut—Needle Valve Packing.....	1
63406	Pin—Throttle Lever	1
63407	Venturi—Carburetor	1
	Note: No. 63574 Venturi—Carburetor.....	
	Used on type Nos. 20000, 20008, 20011,	
	20014, 20059, 20094, 20389, 20405, 20465,	
	20809, 20817, 20956, 20989, 25279, 25280,	
	60182, 60239, 60286, 60355, 60366, 60410,	
	60453, 60514, 60532, 60638, 60644, 60718,	
	60767, 60769, 60792, 60825, 60930, 60934,	
	95101, 95143.	
63408	Cup—Idle Valve Spring.....	1
63409	Valve—Fuel Inlet	1
63410	Seat—Fuel Inlet Valve.....	1
63411	Pin—Floot Hinge	1
63426	Locknut—Control Wire Casing.....	1
63456	Stud—Starter Bracket	4
63457	Pinion—Starter	1
63458	Bushing—Starter Bracket Mounting.....	1
63460	Spacer—Starter Bracket	1
63520	Nut—Governor Spring Adjusting.....	1
63523	Bushing—Pulley Clutch	1
	Note: No. 63713 Bushing—Pulley Clutch.....	
	Used on type Nos. 20478, 60700, 60914.	
63524	Screw—Clutch Adjusting	1
63585	Flange—Needle Valve	1
	Note: No. 69909 Nozzle and Tube Assembly....	
	Used on early model engines in which the	
	carburetor needle valve flange is an in-	
	tegral part of the high speed nozzle and	
	tube assembly.	
63605	Bushing—Starter Shaft	2
63609	Rod—Compression Release	2
63654	Key—Pulley Clutch	1
63657	Collar—Control Wire	1
63676	Bushing—Throttle Shaft	1
63733	Stud—Air Cleaner	2
63864	Spacer—Bearing	1
63865	Pin—Bearing Retainer	1
63882	Needle—Carburetor Idle	1
63884	Pin—Throttle Lever	1
63885	Nut—Needle Valve Packing.....	1
63887	Pin—Floot Hinge	1
63888	Screw—Plug	1
63889	Screw—Choke Lever	1

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MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.	MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.
63890	Venturi—Carburetor	2		No. 26259 Casing—Control Wire (Stainless Steel—26½" Long	8
63899	Cup—Roller Bearing	6		Used on type No. 304182.	
64589	Tank Assembly—Fuel	4		For all other types, if longer casing is needed specify length in inches; if shorter casing is needed order No. 65616 and cut to required length.	
	Note: No. 29119 Tank Assembly—Fuel (two gallon)	4	65647	Gasket—Carburetor Mounting	1
	Used with Malleable Iron Tank Bracket before Serial No. 152369 on type Nos. 60315, 60383, 60825, 304106, 304241, 304326, 304342.			Note: No. 66817 Gasket—Carburetor Mounting..	1
	No. 29375 Tank Assembly—Fuel.....	4		Used with Kingston Carburetor on type Nos. 20000, 20008, 20011, 20014, 20059, 20094, 20389, 20405, 20465, 20809, 20817, 20956, 20989, 25279, 25280, 60182, 60239, 60286, 60355, 60366, 60410, 60453, 60514, 60532, 60638, 60644, 60718, 60767, 60769, 60792, 60825, 60930, 60934, 95101, 95143.	
	(Five Quart—Copper)		65725	Insulator—Armature Lead	1
	Used on type No. 60533.		65776	Lock—Piston Pin	1
	No. 29579 Tank Assembly—Fuel.....	4	65884	Gasket—Inlet Valve Seat.....	1
	(Two Gallon)		65894	Gasket—Carburetor Bowl	1
	Used on type Nos. 20054, 20486, 20817, 25299, 25317, 60292, 60398, 60655, 60692, 60705, 60706, 60897, 60975, 95067, 95298, 304093, 304096, 304107, 304119, 304122, 304124, 304131, 304132, 304134, 304135, 304136, 304145, 304146, 304171, 304175, 304176, 304194, 304200, 304204, 304208, 304212, 304213, 304218, 304226, 304239, 304281, 304283, 304284, 304290, 304292, 304293, 304299, 304306, 304316, 304324, 304325, 304329, 304337, 304339.		65904	Washer—Needle Valve Packing.....	1
	No. 29889 Tank Assembly—Fuel.....	4	65906	Spring—Intake and Exhaust Valve.....	2
	(One Gallon—Filler on Blower end of tank)		65914	Gasket—Carburetor Nozzle	1
	Used on type Nos. 60932, 304159.		65924	Gasket—Carburetor Bowl	1
	No. 64479 Tank Assembly—Fuel.....	4	65932	Plug—Cam Shaft	1
	(Two Gallon—Red—Center filler and outlet)		65934	Gasket—Carburetor Bowl	1
	Used on type Nos. 60141, 60187, 60366, 60380, 60635, 304081, 304141, 304246, 304311, 304321.		65942	Cover—Valve	6
	No. 69912 Tank Assembly—Combination Fuel	4	65976	Spring—Throttle Control Mounting.....	1
	Used on type Nos. 20011, 20012, 20014, 20806, 25278, 25280, 25826, 60139, 60145, 60480, 60613, 60691, 60774, 60851, 60852, 60866, 60925, 95073, 304059, 304062, 304142, 304151, 304153, 304154, 304161, 304195, 304256, 304257, 304264, 304301, 304304, 304308, 304317.		66203	Shaft—Cam	5
	No. 69943 Tank Assembly—Fuel.....	4	66403	Key—Flywheel	1
	(One Gallon—Center filler and outlet)		66457	Gasket—Magneto Plate—.015" Thick.....	1
	Used on type Nos. 20428, 304086, 304270.		66477	Gasket—Cylinder Mounting	1
	No. 99324 Tank Assembly—Fuel.....	7	66527	Gasket—Magneto Plate—.005" Thick.....	1
	No. 68707 Pad—Tank (2).....	1	66537	Gasket—Magneto Plate—.009" Thick.....	1
	Used on type Nos. 92566, 304182, 304183.		66637	Gasket—Gear Case Cover.....	1
	No. 99419 Tank Assembly—Fuel.....	7	66647	Packing—Needle Valve	1
	(Two Gallon—Oval)		66657	Gasket—Carburetor Bowl	1
	Used on type Nos. 20980, 20989, 304083, 304089, 304214.		66667	Gasket—Carburetor Nozzle	1
	No. 23535 Spacer (2).....	2	66677	Gasket—Carburetor Body	1
	No. 91325 Washer (2).....	1	66687	Gasket—Inlet Valve Seat.....	1
	No. 91386 Screw (2).....	1	66717	Gasket—Crankcase Cover	1
	Used to mount No. 99419 Fuel Tank on Cylinder Head.			Note: No. 66487 Gasket—Crankcase Cover.....	1
	No. 290354 Tank Assembly—Fuel.....	4		Used on engines before Serial No. 276.	
	Used with Stamped Steel Tank Bracket after Serial No. 152369 on type No. 304326.		66727	Gasket—Gear Case	1
65078	Block—Contact Spring	1		Note: No. 66627 Gasket—Gear Case.....	1
65084	Washer—Valve Cover	1		Used on engines before Serial No. 276.	
65098	Lining—Pulley Clutch	4	66739	Rod—Oil Pump	4
65126	Spring—Throttle	1	67197	Gasket—Carburetor Nozzle	1
	Note: No. 67956 Spring—Throttle.....	1	67216	Spring—Pulley Clutch	1
	Used on type Nos. 60747, 304108, 304217, 304277.		67247	Gasket—Air Cleaner Mounting.....	1
65198	Cover—Magneto Point	1	67266	Wire—Control—79" Long	2
65237	Gasket—Valve Cover	1		Note: No. 26193 Wire—Control (Bronze) 76" Long	2
65247	Gasket—Engine Base	1		Used on type No. 304109.	
65414	Plunger—Magneto Point	1		No. 99818 Control Wire and Governor Spring Assembly	3
65434	Gasket—Oil Filler Cap	1		Used on type No. 304182.	
65616	Casing—Control Wire—72" Long	8		For all other types, if longer wire is needed specify length in inches; if shorter wire is needed, order No. 67266 and cut to required length.	
	Note: No. 26194 Casing—Control Wire (Brass)—72" Long	8	67316	Spring—Governor	1
	Used on type No. 304109.			Note: No. 26086 Spring—Governor.....	1
				Used on type Nos. 20438, 60878, 304139, 304184, 304279, 304309.	
				No. 26179 Spring—Governor.....	1
				Used on type Nos. 95266, 304183.	
				No. 99818 Control Wire and Governor Spring Assembly	3
				Used on type No. 304182.	
			67546	Spring—Governor Control	1
			67616	Spring—Idle Valve	1
			67632	Washer—Stop Switch	1
			67666	Spring—Compression Release	1
			67897	Gasket—Air Cleaner Cover.....	1
			68156	Spring—Crankstarter	1
			68182	Clip—Throttle Spring	1
			68217	Packing—Needle Valve	1

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MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.	MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.
68247	Gasket—Gear Case Cover.....	1	69798	Crank Assembly—Bell	2
68283	Collar—Valve Spring	1		Note: No. 29161 Crank Assembly—Bell.....	2
68293	Retainer—Valve Spring Collar.....	1		Used on type Nos. 60438, 60443, 60665.	
68346	Spring—Choke Lever	1	69801	Plate—Pulley Clutch	3
	Note: { No. 22358 Washer.....	1	69808	Flywheel Assembly	28
	{ No. 67626 Spring—Choke Lever.....	1	69836	Valve—Fuel Shut-off	1
	{ No. 90877 Screw—Machine, Rd. Hd.—	1	69839	Gear Assembly—Governor	1
	{ 8-32x $\frac{3}{4}$ " Brass	1	69851	Cleaner Assembly—Air	1
	Used on Rope Starter Engines equipped		69854	Cable—Ignition	2
	with Kingston Carburetors.			Note: No. 69980 Cable—Ignition.....	2
68477	Gasket—Fuel Filter Bowl.....	1		Used on type Nos. 304082, 304147, 304186,	
	Note: No. 67267 Gasket—Fuel Filter Bowl.....	1		304194, 304215, 304216, 304251, 304252,	
	Used on earlier model engines equipped			304253, 304272, 304283, 304289, 304290,	
	with Tillotson Fuel Filter.			304293, 304295, 304303, 304324.	
68487	Bowl—Fuel Filter	3	69856	Lever—Governor Control	1
	Note: No. 67257 Bowl—Fuel Filter.....	3	69858	Seal—Oil	4
	Used on earlier model engines equipped		69859	Cover Assembly—Gear Case.....	4
	with Tillotson Fuel Filter.		69866	Cone—Roller Bearing	6
68563	Valve—Intake	6	69867	Cone—Roller Bearing	6
68652	Wrench—Spark Plug and Filler Cap.....	5	69876	Plate—Magneto	2
68667	Gasket—Fuel Inlet Seat and Nozzle.....	1	69905	Screen—Carburetor	1
68677	Packing—Needle Valve	1	69908	Float—Carburetor	2
68876	Clip—Magneto Point Cover.....	1	69908	Shaft Assembly—Choke	1
69134	Muffler	3		Note: No. 29527 Shaft Assembly—Choke.....	1
	Note: No. 89350 Muffler.....	6		Used on Rope Starter Engines equipped	
	Used on type No. 304277.		69911	Bushing—Magneto Plate	4
	No. 89954 Muffler.....	6		Includes: No. 62235 Ring—Oil Retainer.	
	Used on type Nos. 304288, 304331.		69925	Pin Assembly—Piston—Standard	3
	No. 99334 Muffler.....	3	69926	Crank—Governor	2
	Used on type Nos. 95266, 304183.			Note: No. 29963 Crank—Governor.....	2
69298	Strap—Fuel Tank	6		Used on engines equipped with No. 29932	
	Note: No. 89813 Strap—Fuel Tank.....	6		oil pump assembly.	
	Used on type Nos. 60315, 60383, 60825,		69932	Rope—Starter	6
	304106, 304241, 304326, 304342.		69942	Assembly—Gear Case	6
	No. 62952 Strap—Fuel Tank.....	6		Note: No. 69860 Case Assembly—Gear.....	6
	Used on type Nos. 95266, 304192, 304183.			Used on type Nos. 60118, 60130, 60132,	
	No. 99499 Strap—Fuel Tank.....	6		before Serial No. 276.	
	Used on type Nos. 20980, 20989, 304083,		69947	Cleaner Assembly—Air	2
	304089, 304214.		69948	Body—Air Cleaner	1
69314	Breather Assembly	8	69949	Shaft and Gear—Starter.....	3
69446	Stud and Wing Nut.....	1		Note: No. 99370 Shaft and Gear—Starter.....	3
69447	Filter—Air Cleaner	8		Used on type Nos. 304108, 304170, 304217,	
69642	Rod Assembly—Connecting	1		304277.	
	Note: New style rods do not require shim. See		69950	Release Assembly—Compression	8
	No. 22246.			Note: No. 29532 Release Assembly—Compression	8
69689	Cap—Oil Filler	4		Used on type Nos. 60868, 304297.	
69691	Clutch Assembly—Pulley	7	69951	Cover Assembly—Valve	6
69696	Pulley with Bearing—Clutch.....	4	69952	Shaft Assembly—Compression Release.....	1
69698	Plate and Ring Assembly—Clutch.....	3		Note: No. 29533 Shaft Assembly—Compression	1
69729	Carburetor Assembly (Kingston)			Release	
	Note: Replaced by No. 89914.			Used on type Nos. 60868, 304297.	
	No. 29118 Carburetor		69953	Bracket—Starter Crank	3
	Replaced by No. 89914.		69961	Cap—Fuel Tank	2
	Used on Rope Starter engines equipped			Note: No. 29136 Cap—Fuel Tank.....	2
	with Kingston Carburetors not listed be-			Used on type Nos. 60315, 60383, 60825,	
	low. Friction Choke.			304106, 304241, 304326, 304342.	
	No. 29506 Carburetor		70162	Washer—Throttle Control	1
	For replacement use 89920 Carburetor.		89080	Pipe—Fuel 1 $\frac{1}{2}$ " long.....	4
	61976 intake Elbow and 65647 Gasket.			Note: For other lengths specify:	
	Used on type Nos. 20000, 20008, 20011,			No. 29464 Pipe—Fuel—11 $\frac{1}{2}$ " long.....	4
	20014, 20059, 20094, 20389, 20405, 20465,			No. 29476 Pipe—Fuel—13 $\frac{1}{2}$ " long.....	4
	20809, 20817, 20956, 20989, 25279, 25280.			No. 69844 Pipe—Fuel—14 $\frac{1}{2}$ " long.....	4
	60192, 60239, 60286, 60355, 60366, 60410,			No. 89227 Pipe—Fuel—12" long.....	4
	60453, 60514, 60532, 60638, 60644, 60718,			No. 99396 Pipe—Fuel—13" long.....	4
	60767, 60769, 60792, 60825, 60930, 60934,			The following fuel pipes and connections	
	95101, 95143. Friction Choke.			are used with No. 69912 Combination	
69737	Gasket—Cylinder Head	1		Tank:	
69739	Bearing—Ball	1		No. 29201 Pipe—Fuel—17" long.....	4
69740	Seal—Oil	3		No. 63416 Nut—Check.....	1
	Note: No. 99225 Seal—Oil.....	3		No. 85604 Plug—Check Valve.....	1
	Used on type Nos. 304057, 304058, 304140,			No. 69836 Valve—Shut-off (2).....	1
	304219, 304224, 304247, 304286, 304289,			No. 69914 Pipe—Fuel—1 $\frac{1}{8}$ " long (2).....	1
	304300, 304301, 304302.			No. 69915 Tee (2).....	1
69754	Spring and Point—Contact.....	1		No. 99008 Pipe—Fuel—3 $\frac{3}{8}$ " long.....	4
69780	Block Assembly—Contact.....	2			

Before ordering parts, read instructions top page 11.

MASTER PART NUMBER		NAME	SHIPPING WEIGHT Lbs. Oz.	MASTER PART NUMBER		NAME	SHIPPING WEIGHT Lbs. Oz.
89307		Valve—Oil Return	1	90578		Nut—Hex.—8-32	1
89531		Shaft and Lever—Choke (Off-Center).....	1	90597		Screw—Machine, Rd. Hd.—10-32x½".....	1
		Note: No. 99205 Shaft Assembly—Choke.....	2			Note: { No. 90081 Screw—Machine, Rd. Hd.—	1
		Used on type Nos. 304146, 304194.				10-32x½"	1
		No. 99347 Shaft and Lever—Choke (Center				No. 92290 Lockwasher—No. 10x1½x½" ..	1
		Choke)	1			For Cable Clamp on type No. 304342.	
		No. 23551 Shaft—Choke (Off Center).....	1			{ No. 92992 Screw—Machine, Button Hd.—	1
		No. 23173 Shaft—Choke (Center Choke) ..	1			10-24x½"	1
		Used on type Nos. 304081, 304246, 304311.				No. 92290 Lockwasher—No. 10x1½x½" ..	1
89914		Carburetor Assembly (Off-Center Choke).....	2	8		For Casing Clamp on type No. 304260.	
		Note: Earlier model engines were equipped with				No. 92293 Screw—Machine, Fill. Hd.—	1
		Carburetors having choke shaft mounted				10-32x¾"	1
		in center of choke valve:				For Casing Clamp on type No. 304297.	
		No. 89917 Carburetor Assembly (Off-Center	2	8		No. 90891 Screw—Cap, Hex. Hd.—¼-	1
		Choke)				20x½"	1
		Used on type No. 304194.				For Casing Clamp on type No. 60438.	
		No. 89920 Carburetor Assembly (Off-Center	2	8		{ No. 91494 Screw—Machine, Fill. Hd.—	1
		Choke)				10-32x¾"	1
		Used on type Nos. 25293, 25294, 95266,				No. 92290 Lockwasher—No. 10x1½x½" ..	1
		304001, 304061, 304062, 304065, 304066,				For Casing Clamp on type Nos. 20438,	
		304073, 304074, 304075, 304076, 304083,				60878, 304139, 304184, 304309.	
		304084, 304087, 304088, 304091, 304093,				90683 Lockwasher—½x1½x½"	1
		304096, 304098, 304101, 304102, 304103,				90689 Screw—Cap, Hex. Hd.—¾-24x1¾".....	1
		304104, 304105, 304109, 304111, 304112,				90700 Screw—Cap, Hex. Hd.—¼-20x¾".....	1
		304113, 304114, 304115, 304116, 304119,				90746 Screw—Machine, Fill. Hd.—10-32x¾".....	1
		304120, 304141, 304145, 304156, 304158,				90832 Lockwasher—¼x3½x½"	1
		304164, 304171, 304172, 304174, 304175,				90847 Nut—Hex.—¼-28	1
		304178, 304180, 304182, 304183, 304184,				90887 Screw—Cap, Hex. Hd.—¾-16x1¼".....	1
		304185, 304189, 304190, 304191, 304192,				Note: { No. 23136 Stud.....	1
		304193, 304195, 304196, 304197, 304198,				{ No. 92292 Nut—Hex.—¾-24.....	1
		304199, 304200, 304201, 304202, 304203,				Used on engines equipped with Aluminum	
		304204, 304205, 304206, 304207, 304208,				Bases.	
		304209, 304210, 304211, 304212, 304213,				90890 Screw—Valve Tappet	1
		304214, 304215, 304216, 304217, 304218,				90891 Screw—Cap, Hex. Hd.—¼-20x½".....	1
		304219, 304220, 304221, 304222, 304223,				Note: No. 91195 Screw—Machine, Rd. Hd.—	1
		304224, 304225, 304226, 304227, 304228,				¼-20x¾"	1
		304229, 304234, 304235, 304236, 304237,				Used to plug stop switch mounting hole in	
		304238, 304239, 304240, 304241, 304242,				intake elbow.	
		304244, 304247, 304248, 304250, 304251,				90916 Screw—Machine, Rd. Hd.—¼-20x½".....	1
		304252, 304253, 304254, 304255, 304256,				Note: No. 91339 Screw—Machine, Rd. Hd.—	1
		304257, 304258, 304259, 304261, 304262,				¼-20x½"	1
		304263, 304264, 304265, 304266, 304267,				Used on type No. 304342.	
		304268, 304269, 304270, 304271, 304272,				90950 Screw—Cap, Hex. Hd.—¾-24x¾".....	1
		304273, 304274, 304275, 304276, 304277,				91028 Screw—Cap, Hex. Hd.—¾-24x¾".....	1
		304279, 304280, 304281, 304282, 304283,				Note: No. 23290 Screw—Crankcase Cover.....	1
		304284, 304285, 304286, 304287, 304288,				Used on type Nos. 304222, 304280.	
		304289, 304290, 304291, 304292, 304293,				(Assembled to right hand screw hole on	
		304294, 304295, 304297, 304298, 304299,				horizontal center line.)	
		304300, 304301, 304302, 304303, 304304,				No. 90686 Screw—Cap, Hex. Hd.—¾-24x1"	1
		304305, 304306, 304307, 304308, 304309,				(Case Iron Starter Pulley Mounting)	
		304310, 304312, 304313, 304314, 304315,				Also used on type Nos. 60897, 304096, to	
		304316, 304317, 304318, 304319, 304320,				mount Crankcase Cover.	
		304321, 304322, 304324, 304325, 304326,				91059 Lockwasher—No. 12x1½x1½"	1
		304327, 304329, 304330, 304331, 304332,				91062 Screw—Cap, Hex. Hd.—¼-20x1¼".....	1
		304333, 304334, 304337.				Note: No. 90802 Screw—Cap, Hex. Hd.—¼-	1
		No. 89921 Carburetor Assembly (Off-Center	2	8		20x1½"	1
		Choke)				Used on type Nos. 304217, 304277.	
		Used on type Nos. 304081, 304246, 304311.				No. 90891 Screw—Cap, Hex. Hd.—¼-	1
89915		Body Assembly—Lower Carburetor (Off Center) ..	1			20x½"	1
		Note: No. 89550 Body Assembly—Lower Carbu-				Used on type Nos. 60438, 60443, 60665.	
		retor (Center Choke).....	1			91084 Plug—Pipe—¾" Sq. Hd.....	2
		Used on type No. 304171.				Note: No. 91116 Plug—Pipe—¾" Countersunk	2
90010		Screw—Machine, Rd. Hd.—10-32x1½".....	1			Hd.	2
90028		Screw—Machine, Rd. Hd.—4-36x1½".....	1			Used on type No. 60625.	
		Note: No. 91841 Screw—Machine, Fill. Hd.—				No. 91488 Plug—Pipe—¾" Sq. Hd.....	2
		6-32x¼"				Used on type Nos. 304057, 304058, 304140,	
		No. 90362 Lockwasher—No. 6x1½x1½".....	1			304219, 304224, 304247, 304286, 304288,	
		Used on type Nos. 304146, 304194.				304300, 304301, 304302, 304308.	
90029		Screw—Machine, Rd. Hd.—4-36x¼".....	1			91122 Lockwasher—Shakeproof No. 1206.....	1
90100		Screw—Machine, Rd. Hd.—6-32x1½".....	1			91162 Screw—Cylinder Head and Connecting Rod.....	1
90202		Screw—Machine, Fill. Hd.—10-32x½".....	1			Note: No. 90386 Screw—Connecting Rod.....	1
90217		Screw—Machine, Fill. Hd.—10-32x½".....	1			Used on Steel Connecting Rods.	
90290		Nut—Hex.—10-32	1			91195 Screw—Machine, Rd. Hd.—¼-20x¾".....	1
90313		Nut—Hex.—8-32	1			91203 Screw—Cylinder Head	1
90319		Hex.—10-32	1			91208 Nut—Hex.—¾-24	1
90368		Lockwasher—No. 7x1½x1½".....	1				
90367		Lockwasher—No. 8x1½x1½".....	1				
90369		Lockwasher—No. 4x1½x1½".....	1				

Before ordering parts, read instructions top page 11.

MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.
91229	Screw—Cap, Hex. Hd.— $\frac{1}{2}$ -20x $\frac{1}{4}$ "	1
	Note: No. 91247 Screw—Cap, Hex. Hd.— $\frac{1}{2}$ -20x2" Used on type Nos. 95266, 304182, 304183.	1
	No. 91319 Screw—Cap, Hex. Hd.— $\frac{1}{2}$ -20x1" Used with Steel Tank Bracket on type No. 304326.	1
91237	Lockwasher— $\frac{1}{4}$ x $\frac{1}{2}$ x $\frac{1}{4}$ "	1
91255	Screw—Machine, Fill. Hd.— $\frac{1}{4}$ -20x $\frac{1}{2}$ "	1
91256	Screw—Machine, Fill. Hd.— $\frac{1}{4}$ -20x1"	1
91270	Screw—Machine, Round Hd.— $\frac{1}{4}$ -20x1"	1
91310	Locknut—Exhaust Elbow	1
91324	Washer— $\frac{1}{4}$ " Standard	1
91359	Screw—Machine, Fill. Hd.—10-32x $\frac{3}{4}$ "	1
91366	Screw—Machine, Rd. Hd.—10-32x $\frac{7}{8}$ "	1
91379	Screw—Machine, Rd. Hd.—6-32x $\frac{1}{2}$ "	1
91385	Screw—Magneto Mounting	1
	Note: No. 92166 Screw—Magneto Mounting. Used on type No. 304342.	1
91386	Screw—Cylinder Head and Valve Cover	1
91387	Screw—Cylinder Head	1
91388	Lockwasher— $\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$ "	1
91396	Locknut—Intake Elbow	1
	Note: No. 63445 Locknut—Intake Elbow. Used on type Nos. 20000, 20008, 20011, 20014, 20059, 20094, 20389, 20405, 20465, 20809, 20817, 20956, 20989, 25279, 60182, 60239, 60286, 60355, 60366, 60410, 60453, 60514, 60532, 60638, 60644, 60718, 60767, 60769, 60792, 60825, 60930, 60934, 95101, 95143, and on type numbers as listed following Part No. 89920 under Master Part No. 89914.	1
91400	Nut—Flywheel	1
91415	Elbow—Pipe—1"—45°	2
	Note: No. 91296 Elbow—Pipe—1"—90°	2
91416	Nipple—Exhaust	1
91439	Screw—Cap, Hex. Hd.— $\frac{1}{4}$ -20x $\frac{3}{8}$ "	1
91442	Screw—Valve Cover	1
91443	Screw—Machine, Rd. Hd.—4-36x $\frac{1}{4}$ "	1
91444	Screw—Machine, Oval Hd.—6-32x $\frac{1}{8}$ "	1
91458	Screw—Parker Kalon—No. 7x2 $\frac{1}{2}$ "	1
91466	Lockwasher— $\frac{3}{8}$ x $\frac{1}{2}$ x $\frac{1}{8}$ "	1
91468	Screw—Cap, Hex. Hd.— $\frac{1}{4}$ -20x $\frac{3}{8}$ "	1
91478	Key—Pulley Clutch	1
91540	Key— $\frac{1}{4}$ " Square	1
	Note: No. 63055 Key— $\frac{1}{4}$ " Square. Used on type Nos. 20005, 60139, 60145, 60774, 304256, 304285, 304572.	1
91560	Rd. Hd. Bolt and Nut—Stove— $\frac{1}{2}$ x1 $\frac{3}{4}$ "	1
91604	Screw—Machine, Rd. Hd.—6-32x $\frac{1}{8}$ "	1
91635	Connector—Fuel Filter	1
91648	Screw—Cap, Hex. Hd.— $\frac{1}{4}$ -24x $\frac{1}{2}$ "	1
91674	Nut—Wing	1
91698	Screw—Machine, Rd. Hd.— $\frac{1}{4}$ -20x $\frac{3}{8}$ "	1
91777	Screw—Machine, Fill. Hd.—8-32x $\frac{3}{4}$ "	1
91778	Screw—Machine, Fr. Oval Hd.—4-36x $\frac{1}{8}$ "	1
91787	Cap, Hex. Hd.— $\frac{1}{4}$ -28-2"	1
	Note: No. 91256 Screw—Machine, Fill. Hd.— $\frac{1}{4}$ -20x1" Used on Air Cleaner Pipe with tapped hole in mounting lug.	1
91865	Lockwasher— $\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$ "	1
91920	Screw—Machine, Fill. Hd.—8-32x $\frac{3}{8}$ "	1
91921	Screw—Machine, Fill. Hd.—12-24x $\frac{1}{8}$ "	1
91984	Pin—Cotter— $\frac{1}{2}$ x $\frac{1}{2}$ "	1
92129	Nut—Hex.— $\frac{1}{4}$ -28	1
92130	Elbow—Exhaust	1
	Note: No. 291182 Elbow—Exhaust. Used on type No. 304182.	2
92179	Screw—Machine, Fill. Head.—10-32x $\frac{1}{4}$ "	1
92260	Screw—Set, Sq. Hd.— $\frac{1}{2}$ -18x $\frac{3}{8}$ "	1
	Note: No. 91363 Screw—Set, Sq. Hd.— $\frac{3}{8}$ -16x $\frac{3}{8}$ " Used on type Nos. 20438, 60139, 60145, 60774, 95266, 304139, 304182, 304183, 304184, 304256, 304309.	1
92268	Lockwasher— $\frac{3}{8}$ x $\frac{1}{2}$ x $\frac{1}{2}$ "	1

MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.
92272	Screw—Cap, Hex. Hd.— $\frac{1}{2}$ -18x $\frac{3}{8}$ "	1
92279	Screw—Cap, Hex. Hd.— $\frac{1}{4}$ -24x $\frac{1}{2}$ "	1
92285	Pin—Cotter—No. 18x $\frac{1}{4}$ "	1
92287	Screw—Machine, Rd. Hd.—10-32x $\frac{1}{4}$ "	1
92288	Pin—Cotter— $\frac{1}{2}$ x $\frac{1}{2}$ "	1
92290	Lockwasher—No. 10x $\frac{1}{2}$ x $\frac{1}{4}$ "	1
92292	Nut—Hex.— $\frac{3}{8}$ -24	1
92305	Washer—Control Lever and Governor Retainer	1
92306	Screw—Cap, Hex. Hd.— $\frac{1}{4}$ -28x $\frac{3}{8}$ "	1
	Note: (No. 91498 Screw—Cap, Hex. Hd.— $\frac{1}{4}$ -20x $\frac{1}{4}$ "	1
	No. 90832 Lockwasher— $\frac{1}{4}$ x $\frac{1}{2}$ x $\frac{1}{4}$ "	1
	No. 92278 Nut—Hex.— $\frac{1}{4}$ -20	1
	Used on type No. 60443.	
	No. 90802 Screw—Cap, Hex. Hd.— $\frac{1}{4}$ -20x $\frac{1}{2}$ "	1
	No. 92278 Nut—Hex.— $\frac{1}{4}$ -20	1
	Used on type Nos. 60152, 60441, 304125, 304169.	
92322	Screw—Set (Pulley Clutch)	1
92412	Screw—Cap, Hex. Hd.— $\frac{1}{4}$ -20x $\frac{3}{4}$ "	1
92413	Pin—Cotter— $\frac{1}{2}$ x $\frac{3}{8}$ "	1
92424	Screw—Machine, Fill. Hd.— $\frac{1}{4}$ -20x $\frac{1}{2}$ "	1
	Note: No. 91932 Screw and Nut. Used on type Nos. 95266, 304182, 304183.	2
92425	Nut—Sq.— $\frac{1}{4}$ -20	1
92469	Nipple—Oil Filler	2
92507	Lockwasher—Shakeproof No. 1214	1
92559	Screw—Cap, Hex. Hd.— $\frac{1}{4}$ -28x $\frac{1}{2}$ "	1
	Note: No. 92412 Screw—Cap, Hex. Hd.— $\frac{1}{4}$ -20x $\frac{3}{4}$ " (Used to mount Cast Iron Governor Levers.)	1
99024	Crank—Starter	2
	Note: No. 29519 Crank—Starter. Used on type No. 60747.	2
99142	Valve Assembly—Needle	1
99225	Seal—Oil	3
99230	Arrester—Flame	1
99333	Float—Carburetor	2
99341	Body—Upper Carburetor	1
	Note: No. 99375 Body—Upper Carburetor. Used on type numbers as listed following Part No. 89920 under Master Part No. 89914.	1
	No. 99775 Body—Upper Carburetor. Used on type No. 304171.	1
99342	Body Assembly—Upper Carburetor	1
	Note: No. 99376 Body Assembly—Upper Carburetor. Used on type numbers as listed following Part No. 89920, listed under Master Part No. 89914.	1
	No. 99777 Body Assembly—Upper Carburetor. Used on type No. 304171.	1
99345	Nozzle—Carburetor	2
99346	Valve—Needle	2
99358	Cylinder	13
	Note: No. 99397 Cylinder. Used on type numbers as listed following Part No. 63445, listed under Master Part No. 91396.	13
99360	Pump Assembly—Oil	1
	Note: No. 29021 Pump Assembly—Oil. Used on type Nos. 60141, 60187, 60366, 60380, 60635.	1
	No. 69547 Pump Assembly—Oil. Used on type Nos. 20428, 60490, 304086, 304270.	1
	Uses: (No. 69120 Housing—Oil Screen	2
	No. 62082 Retainer—Screen Housing	1
	No. 89068 Pump Assembly—Oil. Used on type Nos. 304246, 304311.	1
	Includes: No. 29005 Screen—Oil Pump	3
99361	Screen—Oil Pump	3
	Note: No. 29005 Screen—Oil Pump. Used on type Nos. 60141, 60187, 60366, 60380, 60635, 304246, 304311.	3

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MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.	MASTER PART NUMBER	NAME	SHIPPING WEIGHT Lbs. Oz.
99362	Tube—Oil Pump	2	99950	Piston Assembly—.030" O.S.....	1
99393	Guide—Air	6	290059	Lever—Fuel Shut-off— $\frac{3}{8}$ " Dia. "T" Shaped.....	2
	Note: No. 29555 Guide—Air.....	6		Note: No. 23347 Lever—Fuel Shut-off— $\frac{1}{4}$ " Dia.	
	Used on engines with 5-digit type numbers not listed below.			"L" Shaped	2
	No. 29577 Guide—Air.....	6		No. 29536 Lever—Fuel Shut-off.....	4
	Used on type Nos. 20000, 20008, 20011, 20014, 20059, 20094, 20389, 20405, 20465, 20809, 20817, 20956, 20989, 25279, 25280, 60182, 60239, 60286, 60355, 60366, 60410, 60453, 60514, 60532, 60638, 60644, 60718, 60767, 60769, 60792, 60825, 60930, 60934, 95101, 95143.		290175	Pipe Assembly—Air Cleaner.....	1 8
99458	Idling Device	3		Note: No. 21293 Pipe—Air Cleaner.....	2
	Note: No. 29212 Idling Device.....	3		Used on type No. 304260.	
	Used on type Nos. 20000, 20008, 20011, 20014, 20059, 20094, 20389, 20405, 20465, 20809, 20817, 20956, 20989, 25279, 25280, 60182, 60239, 60286, 60366, 60410, 60453, 60514, 60532, 60638, 60644, 60718, 60767, 60769, 60792, 60825, 60930, 60934, 95101, 95143.			No. 31668 Pipe—Air Cleaner.....	2
	No. 64789 Idling Device.....	3		Used on engines equipped with Kingston or Schebler Carburetors.	
	Used on type No. 60355.			No. 89912 Pipe—Air Cleaner	
	No. 69968 Idling Device.....	3		Used on engines after Serial No. 52179.	
	Used on type No. 60669.			Replaced by No. 290175.	
	No. 99031 Idling Device.....	3	290568	Lever Assembly—Control (Stamped Steel).....	4
	Used on type Nos. 25319, 25826, 60151, 60315, 60398, 60692, 60775, 60897, 304106.			Note: No. 29033 Lever Assembly—Control.....	1
99502	Control Assembly—Throttle	6		Used on type Nos. 60152, 60441, 60443, 304125, 304169.	
99524	Shaft Assembly—Throttle	1		No. 89583 Lever Assembly—Control.....	1
99592	Valve—Needle	1		Used on type Nos. 20470, 60661, 60868, 304063, 304198.	
99595	Control Assembly—Throttle	12		Includes: { No. 92282 Screw—Machine, Rd. Hd.—10-24x $\frac{1}{2}$ "	1
99599	Wire—Control	2		{ No. 92289 Screw—Machine, Rd. Hd.—10-24x $\frac{7}{8}$ " (2)	1
99600	Casing—Control Wire	4	290571	Drive Shaft and Gear Case Cover Assembly....	7
99665	Yoke Assembly—Fuel Filter.....	2		Note: No. 290637 Drive Shaft and Gear Case Cover Assembly	7
	Note: No. 89743 Yoke Assembly—Fuel Filter....	3		Used on type No. 304292.	
	Used on earlier model engines equipped with Tillotson Fuel Filter.			No. 290835 Drive Shaft and Gear Case Cover Assembly	7
99780	Valve and Seat—Fuel Inlet.....	1		Used on type No. 304277.	
99909	Cover Assembly—Fuel Filter.....	3	290573	Case Assembly—Gear	6
	Note: No. 61685 Cover—Fuel Filter.....	4	290574	Cover Assembly—Gear Case.....	4
	Used on earlier model engines equipped with Tillotson Fuel Filter.		290584	Base—Control Lever (Stamped Steel).....	2
99910	Filter Assembly—Fuel	10		Note: No. 21441 Base—Control Lever.....	6
99936	Cover—Crankcase (Cast Iron).....	5		Used on type Nos. 20470, 60661, 60868, 304063, 304198.	
	Used on engines after Serial No. 276 except those type numbers listed in the following note.			No. 65631 Base—Control Lever.....	6
	Note: For Double Thrust or Marine Application, see Crankcase Cover No. 291214.			Used on type Nos. 60152, 60441, 60443, 304125, 304169.	
	No. 99938 Cover—Crankcase (Cast Iron)..	2	290597	Pulley Assembly—Rope Starter (Stamped Steel)..	2
	Used on the following type numbers before Serial No. 276: 60078, 60092, 60122.		290642	Lever—Control (Stamped Steel).....	2
	No. 99940 Cover—Crankcase (Cast Iron)..	5	290654	Screw and Nut Assembly—Contact Block.....	1
	Used on type Nos. 60193, 60337, 60550, 60621.		290692	Crankcase (Cast Iron).....	21
	No. 99942 Cover—Crankcase (Cast Iron)..	5		Note: No. 69853 Crankcase Assembly.....	27
	Used on type No. 60968, 60969.			Used on type Nos. 60078, 60092, 60122, before Serial No. 276.	
	No. 99943 Cover—Crankcase (Cast Iron)..	5		No. 69862 Crankcase Assembly.....	27
	Used on type Nos. 20760, 304262.			Used on type Nos. 60118, 60130, 60132, before Serial No. 276.	
	No. 99944 Cover—Crankcase (Cast Iron)..	5		(See Part No. 290680 for part used after Serial No. 276.)	
	Used on type Nos. 95100, 95101, 304083, 304090, 304091, 304295.			No. 290675 Crankcase (Cast Iron).....	21
	No. 99953 Cover—Crankcase (Cast Iron)..	5		Used on type Nos. 304057, 304058, 304136, 304140, 304213, 304219, 304224, 304244, 304247, 304286, 304288, 304300, 304301, 304302, 304308.	
	Used on type Nos. 20043, 20044, 20054, 20405, 20486, 20978, 20980, 20989, 60453, 95075, 95113, 95127, 304077, 304078, 304082, 304083, 304088, 304089, 304098, 304100, 304109, 304135, 304136, 304147, 304163, 304164, 304165, 304171, 304172, 304186, 304190, 304212, 304213, 304214, 304215, 304216, 304244, 304251, 304252, 304263, 304272, 304273, 304274, 304289, 304303, 304339.			No. 290676 Crankcase (Cast Iron).....	21
99947	Piston Assembly—Standard	1		Used on type Nos. 60193, 60337, 60550, 60621, 95075, 95100, 95101, 304083, 304090, 304091, 304295.	
99948	Piston Assembly—.010" O.S.....	1		No. 290678 Crankcase (Cast Iron).....	21
99949	Piston Assembly—.020" O.S.....	1		Used on type Nos. 60168, 304234.	
				290680 Crankcase (Cast Iron).....	21
				Used on type Nos. 20031, 20396, 20400, 20837, 60130, 60132, 60143, 60145, 60152, 60153, 60226, 60249, 60380, 60441, 60531, 60665, 60669, 60692, 60747, 60898, 60932, 304067, 304068, 304069, 304070, 304085, 304101, 304102, 304103, 304104, 304108, 304118, 304125, 304154, 304158, 304159, 304167, 304175, 304191, 304217, 304229, 304267, 304275, 304277, 304315, 304331.	
				(See next page)	

Before ordering parts, read instructions top page 11.

**MASTER
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**SHIPPING
WEIGHT
Lbs. Oz.**

NAME

	No. 290681 Crankcase (Cast Iron).....	21
	Used on type Nos. 20428, 60398, 60490, 60794, 304080, 304086, 304122, 304261, 304270, 304284, 304292.	
	No. 290688 Crankcase (Cast Iron).....	21
	Used on type Nos. 304107, 304110, 304318.	
	No. 290689 Crankcase (Cast Iron).....	21
	Used on type Nos. 60685, 304079, 304113, 304117, 304248, 304267.	
	No. 290691 Crankcase (Cast Iron).....	21
	Used on type Nos. 60179, 60180, 304129, 304130, 304205, 304210, 304298, 304299, 304388.	
	Uses: No. 65417 Gasket.....	2
	To mount compressor on end of crankcase.	
290756	Magneto Assembly	6
	Note: No. 290754 Magneto Assembly.....	6
	Used on type Nos. 20054, 20760, 60358, 60429, 60619, 60640, 60641, 60655, 60698, 60705, 60706, 60800, 60801, 60851, 60852, 95072, 95087, 304053, 304054, 304131, 304132, 304134, 304135, 304146, 304151, 304160, 304192, 304197, 304200, 304204, 304212, 304260, 304262, 304263, 304273, 304274, 304287, 304304, 304317.	
	Includes No. 66165 Wire—Ground.....	2
	No. 290755 Magneto Assembly.....	6
	Used on type Nos. 304082, 304147, 304186, 304194, 304215, 304216, 304251, 304252, 304272, 304283, 304289, 304290, 304293, 304303, 304304, 304324.	
	Includes: No. 66185 Wire—Ground.....	2
	No. 290757 Magneto Assembly.....	6
	Used on type Nos. 304253, 304295.	

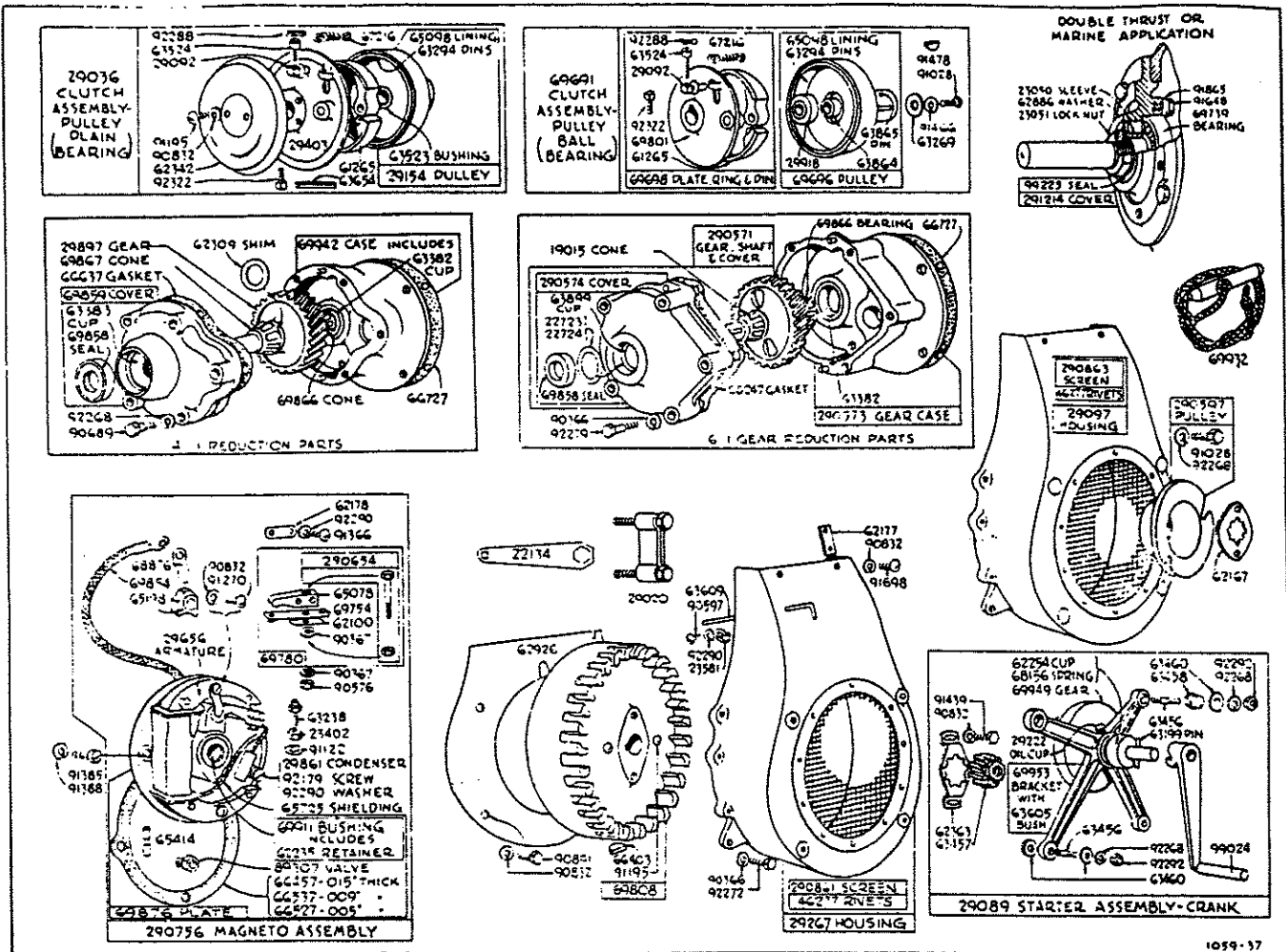
**MASTER
PART
NUMBER**

NAME

**SHIPPING
WEIGHT
Lbs. Oz.**

290861	Screen Assembly—Blower Housing.....	6
290863	Screen Assembly—Blower Housing.....	6
	Note: No. 290862 Screen Assembly — Blower Housing. Used on type Nos. 60078, 60292, 60470, 60655, 60868, 304097, 304132, 304189, 304204, 304235, 304236, 304297.	
290918	Lever Assembly—Control	4
290984	Plug—Spark (with gasket).....	8
	Note: No. 99496 Plug—Spark (with gasket).....	8
	Used on type Nos. 304057, 304058, 304140, 304219, 304224, 304247, 304286, 304288, 304300, 304301, 304302, 304308.	
291055	Base Assembly—Engine	14
	Note: No. 61543 Base—Engine.....	14
	Used on type Nos. 20428, 60490, 304086, 304270.	
	No. 61654 Base—Engine.....	14
	Used on type Nos. 20438, 304139, 304184, 304309.	
	No. 61931 Base—Engine.....	14
	Used on type Nos. 304057, 304058, 304140, 304219, 304224, 304247, 304286, 304288, 304300, 304301.	
	No. 290645 Base Assembly—Engine.....	14
	Used on type Nos. 304093, 304096, 304122, 304138, 304148, 304211, 304218, 304221, 304238, 304249, 304282, 304284, 304292, 304325, 304329.	
	No. 291026 Base Assembly—Engine.....	14
	Used on type Nos. 60747, 60986.	
291214	Cover—Crankcase	5

Before ordering parts, read instructions top page 11



ASSEMBLIES INCLUDE ALL PARTS SHOWN IN BRACKETS

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

Users will find that the prices paid for original repair parts are well worth the investment when the service delivered is compared with that afforded by substitute parts. Original Briggs & Stratton repair parts can be obtained through all Authorized Central Service Distributors listed on page 23.

NATION-WIDE SERVICE ORGANIZATION

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

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

All Authorized Service Organizations 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.

All gratis work done under the warranty is the responsibility of the Authorized Service Organization until all the material involved and supporting facts are submitted to and approved by the factory.

In a difference of opinion regarding a Service Organization'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.

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 Service Organization or at our factory. Mechanics unfamiliar with Briggs & Stratton products, or without proper tools, should not be permitted to make major repairs.

Parts and repair work are F. O. B. Factory or any Authorized Briggs & Stratton Central Service Distributor, or Motor Service Station. The Central Service Distributor nearest you (see list below) will be glad to give you the name of our Motor Service Station in your locality. Space does not permit listing here.

Authorized Central Service Distributors

STATE	CITY	NAME	LOCATION
Alabama	Birmingham 3	Birmingham Electric Battery Co.	Ave. B at 23rd St.
Arizona	Phoenix	Motor Supply Co.	402-414 N. Central Ave.
Arizona	Tucson	Motor Supply Co.	33 W. 3rd St.
California	Burlingame	Frank Edwards Co.	1541 Adrian Road
California	Los Angeles 15	Electric Equipment Co.	1611 S. Hope St.
Colorado	Denver 1	Spitzer Electric Company	43 W. 9th Ave.
Florida	Jacksonville 1	Spencer Electric, Inc.	40 W. Beaver St.
Florida	Miami 42	Electrical Equipment Co.	1415 N.W. 21st Terrace
Florida	Tampa 1	Spencer Auto Electric, Inc.	607-11 E. East St.
Georgia	Atlanta 3	Auto Electric & Magneto Co.	477 Spring St., N. W.
Illinois	Chicago 16	Mid-States Auto Electric Co.	1905 S. Michigan Ave.
Indiana	Indianapolis	Gulling Auto Electric Inc.	1201 Stadium Drive
Iowa	Des Moines 9	Magneto Carburetor & Electric Co., Inc.	1308 Grand Ave.
Kentucky	Louisville 2	Central Service Sales Div.	737 S. 3rd St.
Louisiana	New Orleans 1	A. C. Suhren Co.	4640 So. Carrollton Ave.
Louisiana	Shreveport	Chain Battery & Automotive Supply, Inc.	Spring at Fannie St.
Massachusetts	Boston 64	W. J. Connell Co.	210 Needham St.
Michigan	Detroit 38	Auto Electric & Service Corporation	15550 Woodrow Wilson Ave.
Minnesota	Minneapolis 16	Reinhard Brothers Co., Inc.	4301 Highway No. 7
Missouri	Kansas City 8	The E. S. Cowie Electric Co.	1819 Wyandotte St.
Missouri	St. Louis 3	Medart Auto Electric Co., Inc.	3134 Washington Blvd.
Montana	Billings	Original Equipment, Inc.	905 Second Ave. No.
Nebraska	Omaha 2	Carl A. Anderson, Inc.	16th and Jones St.
New Mexico	Albuquerque	Spitzer Electrical Co. of New Mexico	3rd and Mountain Rd.
New York	Buffalo 14	The Battery & Starter Co., Inc.	2505 Main St.
New York	New York 19	The Durham Co., Inc.	606 W. 49th St.
New York	Syracuse 4	F. A. Crossman, Inc.	943 W. Genesee St.
North Carolina	Charlotte 1	Automotive Electric Associates, Inc.	306-14 N. Graham St.
Ohio	Columbus	Gardner, Inc.	122 N. Grant Ave.
Oklahoma	Oklahoma City 2	American Electric Ignition Co.	124 N.W. 8th St.
Oregon	Portland 9	Tracey & Co., Inc.	N. W. 10th and Glisan
Pennsylvania	Philadelphia 30	Auto Equipment & Service Co., Inc.	12th and Glenwood
Pennsylvania	Pittsburgh 24	Pitt Auto Electric Company	5135 Baum Blvd.
Tennessee	Knoxville 7	R. T. Clapp Company	2016 Magnolia Ave., N.E.
Tennessee	Memphis 4	Automotive Electric Service Co.	982 Linden Ave.
Texas	Amarillo	Beard & Stone Electric Company, Inc.	700 E. 10th St.
Texas	Dallas 1	Beard & Stone Electric Company, Inc.	3909 Live Oak St.
Texas	El Paso	Motor Supply Co.	308 Chihuahua St.
Texas	Houston 1	Beard & Stone Electric Company, Inc.	Milam at Polk Ave.
Texas	San Antonio 6	S. X. Callahan	425 N. Flores St.
Utah	Salt Lake City 13	Frank Edwards Co.	551 So. State St.
Virginia	Richmond 21	Richmond Battery & Ignition Co.	2912 W. Leigh St.
Washington	Seattle 4	Charles Stewart, Inc.	1741 First Ave. South
Washington	Spokane	Sunset Electric Co.	N. 703 Division St.
Wisconsin	Milwaukee 2	Wisconsin Magneto Co.	918 N. Broadway
DOMINION OF CANADA			
British Columbia	Vancouver	Auto Electric Service (Pacific) Ltd.	1025 Howe St.
Manitoba	Winnipeg	Auto Electric Service (Western) Ltd.	170 Fort St.
Ontario	Toronto 5	Auto Electric Service Company, Limited	1009 Bay St.



See yellow pages of your Classified Telephone Directory for near-by engine service under heading "Engines—Gasoline" or "Gasoline Engines."

BRIGGS & STRATTON CORP., • MILWAUKEE 1, WIS., U. S. A.