

Operating Instructions

Adjustment and Repair
Information • Parts List

MODELS

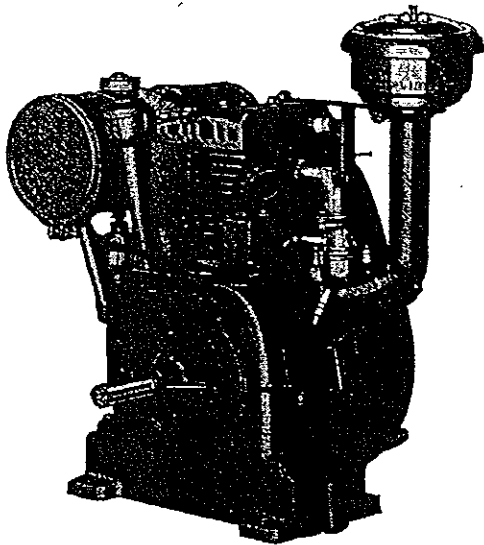
"K"—"KL"—"KLP"—"KM"—"KP"—"KR"

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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INDEX

	Page
Starting the Motor.....	3
Servicing Reference Chart.....	4
Instructions for Adjustment and Repair.....	4
Repair Parts	11
Guarantee	11
Parts List, Models "K," "KL," "KLP," "KM," "KP," "KR".....	12-18
Illustrated Parts	19-20
Nation-Wide Service Organization.....	23
Authorized Central Service Distributors.....	23

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

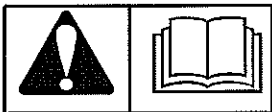
In the USA and Canada,
our 24 hour hotline is:

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



Starting and Operating Instructions

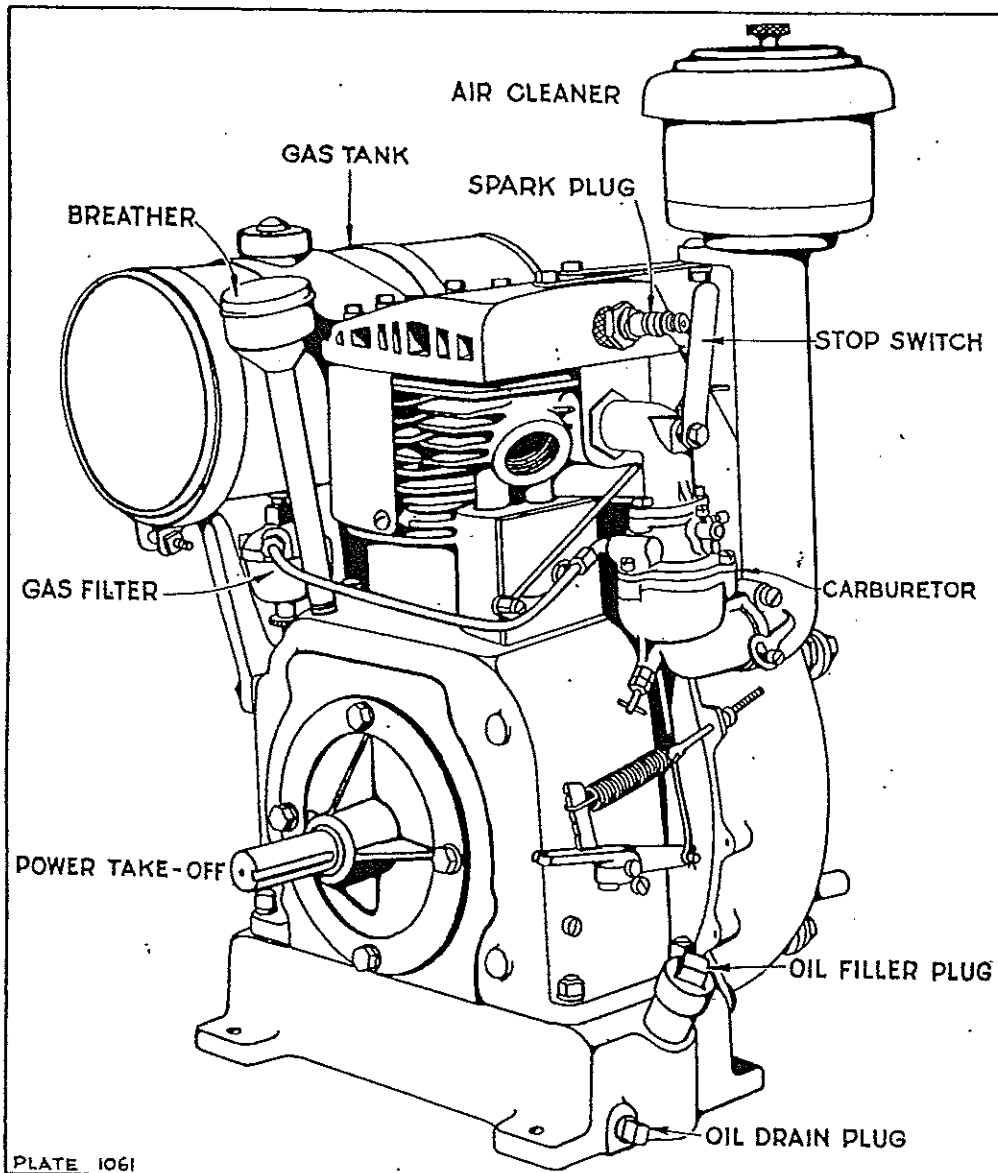
	Paragraph
Before Starting the Motor.....	1
How to Start.....	2
Failure of Motor to Start.....	3

	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. and above. For temperatures below 32° F. use Mobiloil "Arctic Special" or other high grade oil not heavier than S. A. E. No. 10 W. A HEAVIER OIL MUST NOT BE USED. 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 five pints. Fill air cleaner with light engine oil to the indicated oil level. See paragraph 62. Fill the gas tank with a good clean third grade 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.
- 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 and pull carburetor choke lever toward you to choke carburetor. After motor starts, gradually open the choke valve until motor runs smoothly with the choke valve wide open. (A warm motor does not require as much choking as a cold motor.)
- B. **ROPE STARTER TYPE.** Pull carburetor choke lever toward you or to the right. 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.

Plate No. 1



Servicing Reference Chart

MOTOR FAILS TO START

	Paragraph
Out of Gasoline.....	1-16
Out of Oil.....	1-13-59-60
Dirt or Gum in Fuel System.....	16 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.....	1-16
Out of Oil.....	1-13-59-60
Dirt or Gum in Fuel System.....	16 to 19
Motor Overheated.....	13-59-60-61-62-64
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.....	25 to 28
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

	Paragraph
Operating Requirements.....	8
How a 4-Cycle Motor Operates.....	10
Keep the Motor Clean.....	11
Use the Right Kind of Oil.....	12
Add Oil Regularly.....	13
Change Oil Frequently.....	14
Use Clean Gasoline.....	16
Avoid Gummy Gasoline.....	17
To Clean the Fuel Lines.....	19
Correct Use of the Choke.....	20
To Prime the Motor.....	21
To Adjust the Carburetor.....	22
To Remove and Replace Carburetor.....	25
To Clean Carburetor.....	26
Governor—Correct Motor Speed.....	27
Resetting Governor Lever.....	29
The Ignition System.....	31
To Check for Spark.....	32
Spark Plug Adjustment.....	33
Ignition Cable.....	34
To Remove and Replace Flywheel.....	35

	Paragraph
To Reassemble Flywheel.....	36
To Remove and Replace Magneto Assembly.....	37
Magneto Timing.....	38
To Adjust and Clean Contact Points.....	39
To Replace Condenser.....	41
To Replace Armature.....	43
Cylinder Head.....	47
Compression.....	48
Valve Adjustment.....	49
Piston.....	54
Piston Rings.....	56
Piston Pin.....	57
Connecting Rod.....	58
Oil Pump.....	59
Oil Leaks.....	60
Carbon.....	61
Air Cleaner.....	62
Muffler.....	63
Overload.....	64
Hand Crank and Lever Starters.....	65
Parts.....	66

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**, above.

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. Some motors have a hinged stop switch mounted on the cylinder head. Turn the end of it over so that it rests on the spark plug terminal. Both of these methods will ground the spark.

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

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

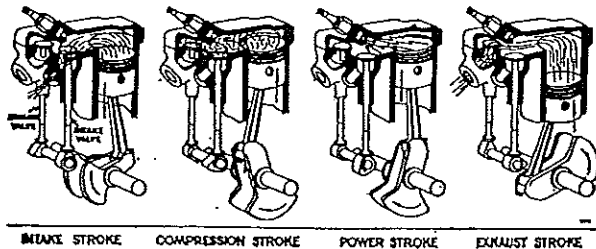
7. If you should experience any difficulty, follow the instructions referred to in the **Servicing Reference Chart** on page 4. If you cannot easily remedy it, consult your dealer, or a nearby Briggs & Stratton Authorized Central Service Distributor. See page 23.

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.

12. **USE THE RIGHT KIND OF OIL.** Correct lubrication is important. We recommend the use of Mobiloil Arctic or other high grade oil with similar characteristics having a low carbon residue and a body not heavier than S.A.E. No. 20 for operating motor in temperature of 32° F. and 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 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 five 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.

16. **USE CLEAN GASOLINE.** A good clean third grade of 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. You can check your gasoline by evaporating a half pint in an open dish. If a quantity of gum remains, try another kind that is clean and fresh.

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

19. **TO CLEAN THE FUEL LINES.** Disconnect the gasoline line at the carburetor and also at the gas 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 part-way down and then all the way down, or open. Use motor choke the same as you use an automobile choke.

21. **TO PRIME THE MOTOR.** The motor may fail to start for the reason that either the carburetor is incorrectly adjusted or dirty, or the fuel line 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 46, also compression, paragraphs 47 to 56.

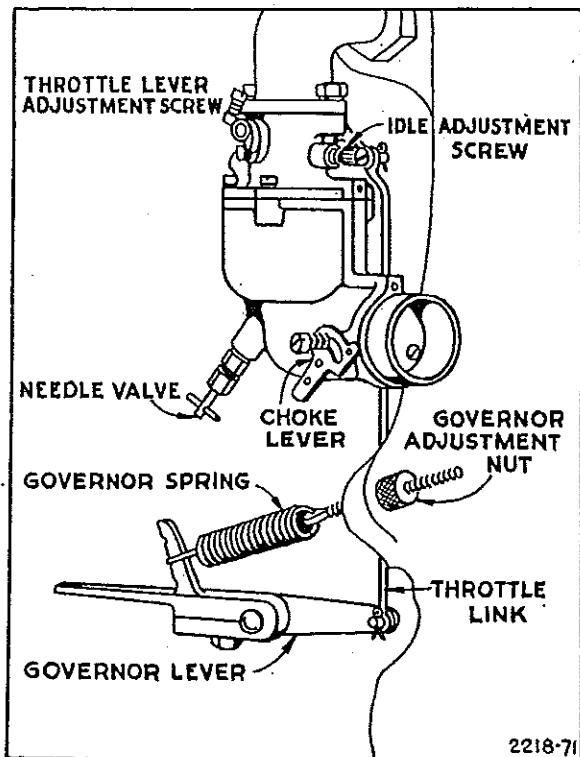
22. TO ADJUST THE CARBURETOR. The carburetor on this motor is of the gravity type. The gasoline supply is regulated by a needle valve. The throttle is automatically controlled by the governor, see paragraphs 27 to 30.

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

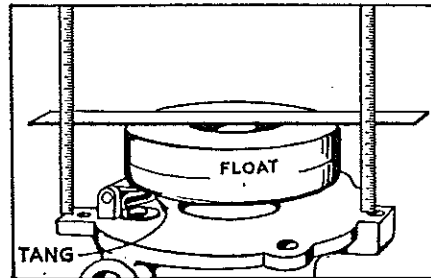
Carburetor and Governor Hook-Up
Plate No. 3



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.

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 anti-clockwise to reduce motor speed. Recommended motor speed is 2300 to 2700 R.P.M.

29. RESETTNG GOVERNOR LEVER. If the governor lever has been loosened or removed from the governor shaft, it is easily reset. With the carburetor attached to motor and hooked up to governor lever with throttle link, loosen set screw holding governor lever on the shaft. Push the 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.

Manual and Remote Carburetor Controls

Plate No. 4

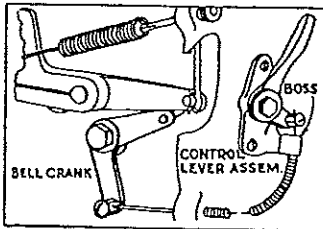


Plate No. 6

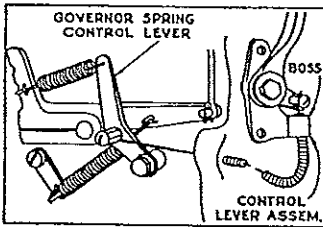


Plate No. 5

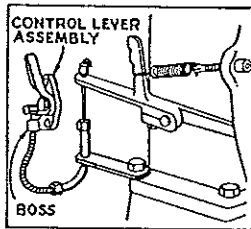
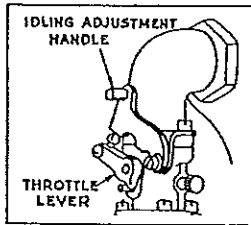
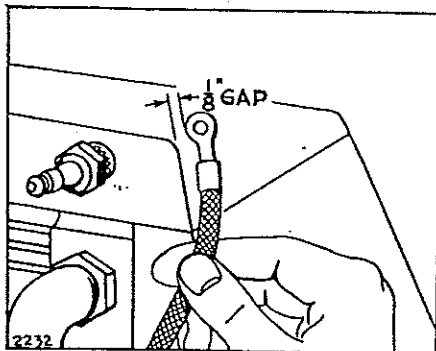


Plate No. 7

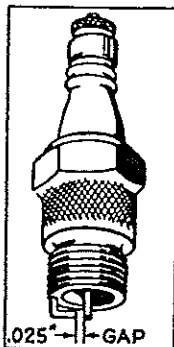


32. TO CHECK FOR SPARK. To prove that a satisfactory spark is being delivered by the magneto, remove the ignition cable from the plug. Hold ignition cable terminal about 1/8" from any metal part of the cylinder head (keep hand on insulated part of the cable to avoid a shock). Turn motor with starter, 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. 5 Commercial or its exact equivalent. When reassembling spark plug to cylinder head put a little graphite grease on threads. Do not get grease on points.

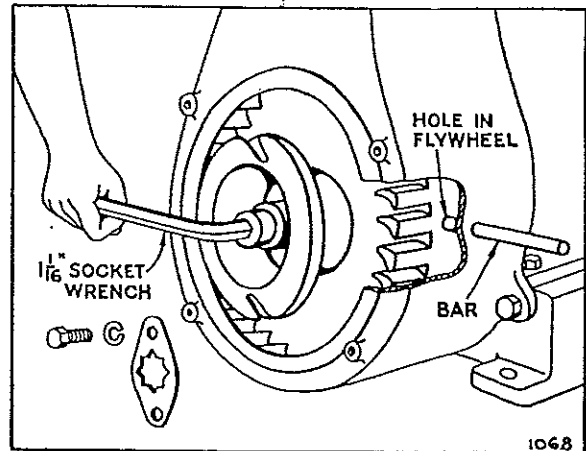
34. IGNITION CABLE. Insulation must not be broken, or soaked with oil or water, or grounded in any way where it touches the motor, or it will interfere with good ignition. Spark plug cable should be soldered to the secondary terminal (small brass plate coming out of the coil). Avoid touching coil with 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.

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 3/8" 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 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**



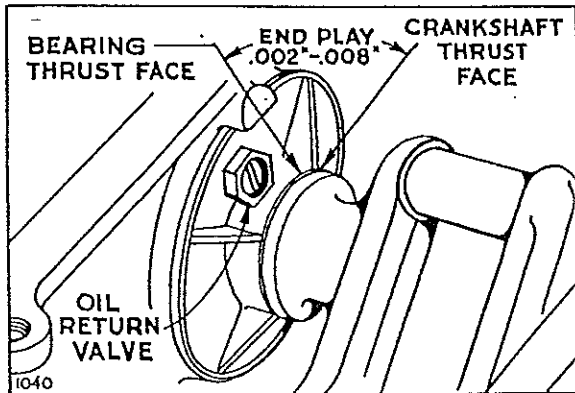
36. TO REASSEMBLE THE FLYWHEEL reverse the operations in preceding paragraphs, put a very thin coat of cup grease on the crankshaft taper and see that flywheel key is in place.

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 mount-

ing 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 parts 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.

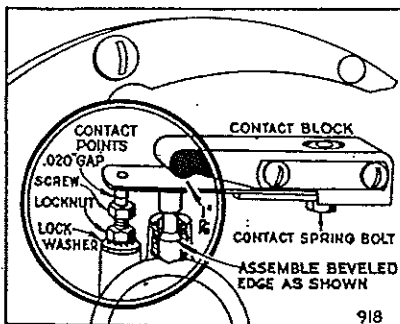
Correct End Play
Plate No. 11



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 file contact points—use fine sandpaper or fine grit hone to clean points.

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 $\frac{1}{8}$ " 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



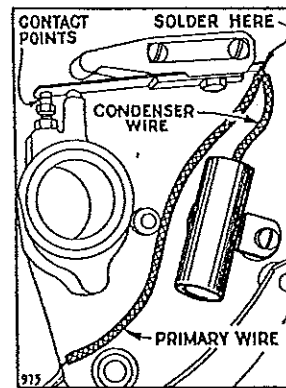
41. **TO REPLACE CONDENSER.** A leaky or weak condenser may cause the motor to start hard, to sputter, or misfire under

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 hydrolene as possible so that you can insulate high tension terminal when you assemble new armature. Do not use battery compound or tar as it will melt and run over the entire

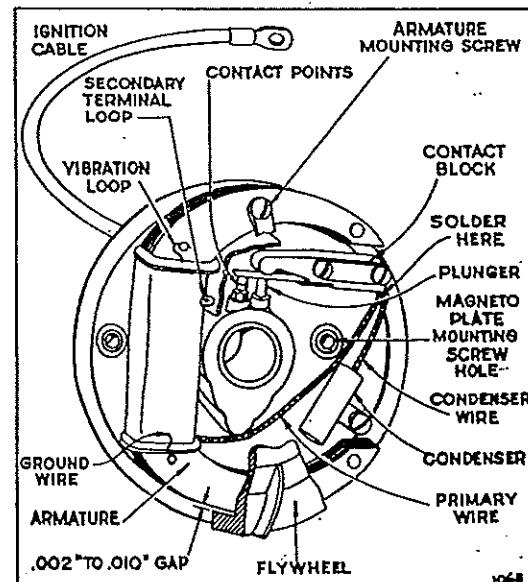
Condenser Installation
Plate No. 13



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

Complete Magneto Assembly
Plate No. 14



hydrolene. 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.

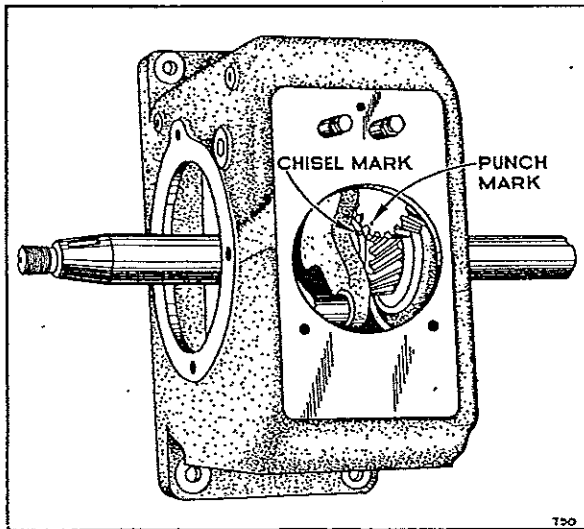
45. Air gap of .002" to .010" must be maintained between armature shoes and flywheel poles. Gap must only be sufficient to prevent rubbing but not over .010" or poor ignition will result.

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 No. 25, and valve cover plate on cylinder back of carburetor. The correct clearance on the exhaust is .014", and on the intake valve .006" 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 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 the factory at \$1.25 net.

52. To reseat 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.

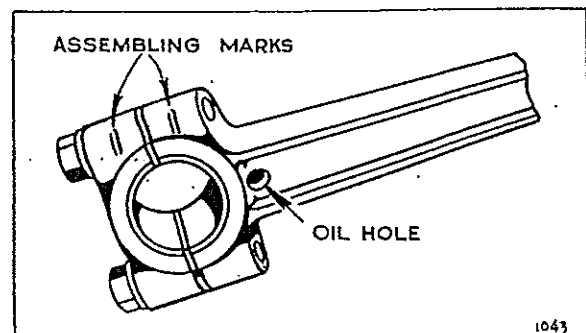
54. **PISTON.** The piston in this motor is made of a special aluminum alloy which is very light in weight. The standard clearance between the piston skirt and cylinder wall is .0055" to .007". This clearance is to compensate for the considerable expansion of aluminum when hot. The top and second lands 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 re-boring of cylinder be done by an Authorized Central Service Distributor or the factory.

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

Connecting Rod — Plate No. 16

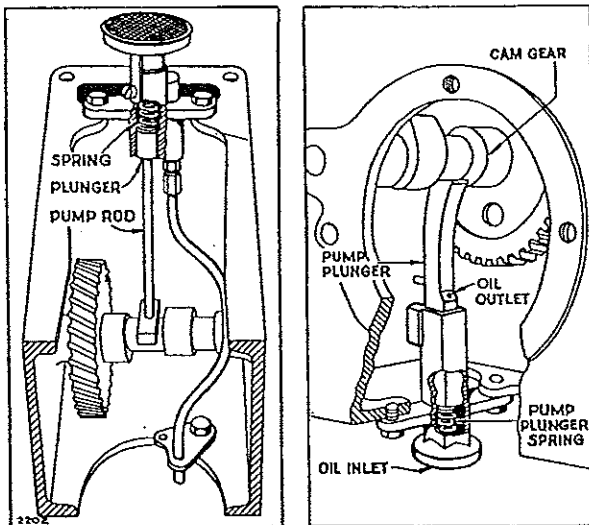


58. CONNECTING ROD. The connecting rod is also made of a special aluminum alloy which combines strength with light weight. When assembling connecting rod to crankshaft, the oil hole in the lower bearing must be toward the magneto side. See plate No. 16. The assembly marks on cap and rod must be on the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

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 $\frac{1}{2}$ " deep. Work plunger up and down. A stream of oil will be forced out of the hole in the oil tube or out of the 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 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.

Oil Pump — Plate No. 17



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 ring 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. Clean the air cleaner occasionally

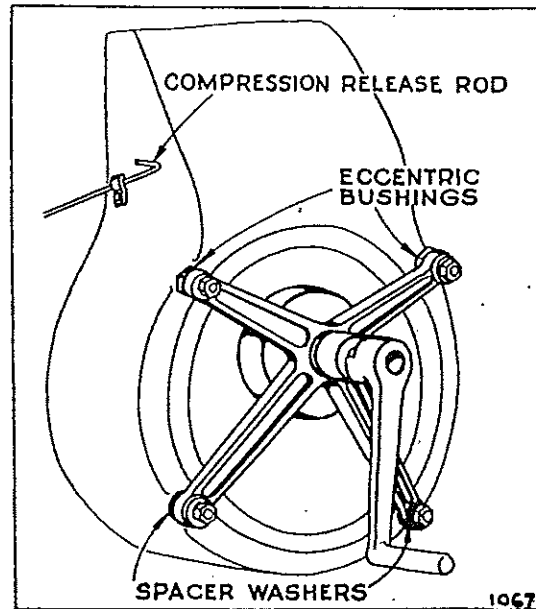
by removing it and washing in kerosene. Test it to see if it is clogged by blowing through it or noting if motor performs better with it off. If clogged it should be replaced. Keep the oil level up to the beading. See instructions on air cleaner label. Some motors are equipped with a felt filter type air cleaner. The felt should be removed regularly and accumulated dust and dirt brushed out and felt washed 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 gear toward motor until teeth mesh with pinion. Hold in this position. Turn two eccentric bushings (See Plate 18) until starter gear can be moved back and forth approximately $\frac{1}{8}$ ", at its outer circumference, without moving pinion or crankshaft. 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, listed on page 23.

Repair Parts

	Paragraph
Always Give Type, Model and Serial Number	68
How to Make Out Parts Orders	70
Prices	74

	Page
How to Find Correct Part Number	12
Parts List	12-18
Parts Illustrations	19-20

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 12 to 18, and parts illustrations on pages 19 and 20.

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.

THE GUARANTEE—For Ninety Days from purchase date, Briggs & Stratton Corporation will replace for the original purchaser, **FREE OF CHARGE**, any part or parts found, upon examination at our factory at Milwaukee, Wisconsin, or at any Authorized Central Service Distributor's place of business, to be defective under normal use and service, on account of defects in material or workmanship.

All transportation charges on part or parts submitted for replacement under the guarantee must be borne by purchaser.

WHAT THIS GUARANTEE DOES NOT INCLUDE—This guarantee does not cover the free replacement of parts inoperative because of wear occasioned by use. It does not cover the labor cost of replacing parts, neither is it effective if the motor has been the subject of misuse, negligence, or accident, nor if it has been repaired or altered outside of our Milwaukee Factory or any Authorized Central Service Distributor in any way which, in our judgment, affects its condition or operation.

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 model 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 type numbers shown.
5. If your Motor Type Number does not appear after any part number listed under "Note," order the Master Part Number.
6. When ordering parts—or writing for service information—always specify the MODEL LETTER—TYPE NUMBER—and SERIAL NUMBER of your motor.

Parts List

MODELS "K"—"KL"—"KLP"—"KM"—"KP"—"KR"

MASTER PART NUMBER	NAME	SHIPPING WEIGHT	MASTER PART NUMBER	NAME	SHIPPING WEIGHT
		Lbs. Oz.			Lbs. Oz.
19002	Valve and Seat—Fuel Inlet.....	2	23027	Venturi—Carburetor	1
19004	Nozzle—Carburetor	1	23050	Sleeve—Bearing	2
19015	Cone—Roller Bearing	6	23051	Locknut—Bearing Sleeve	2
21152	Lever—Throttle	2	23108	Bushing—Throttle Shaft	1
22001	Lever—Throttle Control	2	23114	Pin—Float Hinge	1
22246	Shim—Connecting Rod	1	23117	Retainer—Needle Valve	1
	Note: Used on earlier model engines. Order No. 22246 Shim only if your present rod requires same.		23118	Nut—Needle Valve Packing.....	1
22368	Washer—Control Lever	1	23123	Screw—Choke Lever	1
22372	Clamp—Control Wire Casing.....	1	23125	Pin—Throttle Lever	1
	Note: No. 62786 Clamp—Control Wire Casing Used on type Nos. 20437, 302084.		23132	Plunger—Oil Pump	6
22547	Screen—Fuel Filter—Rectangular Hole.....	1	23136	Stud—Cylinder Mounting	1
	Note: For Screen with round hole order No. 62876		23168	Screw—Control Lever	1
	No. 62477 Screen—Fuel Filter.....	1	23228	Valve—Carburetor Idle	1
	Used on earlier model engines equipped with Tillotson Fuel Filter.		23402	Locknut—Contact Screw	1
22622	Strap—Air Cleaner Pipe.....	1	23571	Swivel—Control Lever	1
22623	Clamp—Air Cleaner Pipe.....	2	23580	Bushing—Control Lever	1
22714	Link—Throttle	1	23581	Clamp—Ignition Cable	1
	Note: No. 67416 Link—Throttle.....	1		Note: No. 22304 Clamp—Ignition Cable.....	1
	Used on engines equipped with Kingston or Schebler Carburetors.			Used on type Nos. 20386, 20425, 25388, 60341, 302069, 302086, 302094, 302108, 302124.	
22723	Shim—.003" thick	1		No. 64539 Clamp—Ignition Cable.....	1
	Note: No. 62309 Shim—.003" thick.....	1		Used on type Nos. 25313, 95281, 302058, 302107.	
	Used between bearing and gear on earlier model engines.		23631	Valve—Exhaust	6
22724	Shim—.010" thick	1	23699	Nut—Fuel Shut-off Lever.....	1
	Note: No. 22010 Shim—.015" thick.....	1		Used with 3/8" dia. Shut-off Lever.	
	Used between bearing and gear on earlier model engines.			Note: No. 23346 Nut—Fuel Shut-off Lever.....	1
22725	Washer—Control Lever	1		Used with 1/8" dia. Shut-off Lever.	
22781	Retainer—Oil Tube	2	23736	Stud—Air Cleaner Pipe.....	2
22832	Strap—Air Cleaner Pipe.....	2	23779	Pin—Throttle Link	1
22834	Washer—Spacer	1	23791	Connector—Oil Tube	1
22947	Lock—Connecting Rod Screw (one piece)....	1	26050	Wire—Control—76 1/4" long	8
	Note: { No. 22073 Lock—Connecting Rod Screw (2 required)	1		Note: No. 26248 Wire—Control (Stainless Steel) —79" long	8
	{ No. 90366 Lockwasher—5/16x1/2x1 1/8" (2 required)	1		Used on type No. 302114.	
	Used on earlier type aluminum connecting rods.			For all other types if longer wire is needed, specify length in inches; if shorter wire is needed, order No. 26050 and cut to required length.	
	No. 90366 Lockwasher—5/16x1/2x1 1/8".....	1	26068	Spring—Throttle Adjustment	1
	Used on steel connecting rods.		26069	Spring—Idle Valve Adjustment.....	1
			26155	Spring—Choke Lever	1
			26157	Spring—Idle and Throttle Valve Adjustment...	1
			26308	Tappet—Valve	3
			26413	Spring—Oil Pump	1

MASTER PART NUMBER	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
27034	Gasket—Carburetor Body		1
27090	Gasket—Spark Plug		1
27145	Packing—Fuel Shut-off Lever..... Used with 3/8" dia. Shut-off Lever. Note: No. 27019 Packing—Fuel Shut-off Lever Used with 1/8" dia. Shut-off Lever.		1
29000	Flywheel—Magneto	15	
	Note: No. 69808 Flywheel—Magneto..... Used on type Nos. 95281, 302085, 302086, 302107.	28	
29003	Carburetor Assembly (Replaced by No. 89914). Note: No. 29038 Carburetor Assembly Used on type No. 80222. Replaced by No. 89914. No. 29483 Carburetor Assembly Used on Rope Starter Engines equipped with Kingston Carburetors. Replaced by No. 89914.		
29020	Puller—Flywheel		1
29036	Clutch Assembly—Pulley		7
	Note: No. 29110 Clutch Assembly—Pulley.... Used on type No. 60331. No. 29559 Clutch Assembly—Pulley.... Used on type Nos. 60699, 302132.		7
29037	Bushing—Crankcase Cover		4
	Note: No. 69739 Bearing—Ball..... No. 69740 Seal—Oil..... Used on type Nos. 95099, 95109, 95110, 95281, 95295, 302085, 302086, 302088, 302089, 302107, 302119, 302120, 302135.	1	3
29089	Starter Assembly—Crank	10	
	Note: No. 29261 Starter Assembly—Crank.... Used on type Nos. 60411, 302090, No. 29551 Starter Assembly—Crank.... Used on type No. 60562. No. 29622 Starter Assembly—Crank.... Used on type No. 60752. No. 99036 Starter Assembly—Crank.... Used on type Nos. 20926, 60405. No. 99240 Starter Assembly—Crank.... Used on type Nos. 25398, 25399, 302067, 302068, 302112. No. 99631 Starter Assembly—Crank.... Used on type Nos. 20084, 60824, 60831, 95099.	10	10
29092	Stud—Clutch Spring		1
29097	Housing—Blower	14	
	Note: No. 21393 Housing—Blower..... Used on type Nos. 302066, 302131. No. 29484 Housing—Blower..... Used on type Nos. 60306, 302087, 302101, 302114. No. 29900 Housing—Blower..... Used on type No. 60548. No. 99070 Housing—Blower..... Used on type No. 20437.	14	14
29131	Shield—Spark Plug		6
29154	Pulley with Bushing—Clutch..... Note: No. 29587 Pulley with Bushing—Clutch Used on type No. 60331. No. 29578 Pulley with Bushing—Clutch Used on type Nos. 60699, 302132.	4	4
29222	Cup—Oil (Starter Shaft).....		1
29230	Nozzle—Carburetor		1
	Note: No. 69909 Nozzle and Tube Assembly.. Used on early model engines equipped with nozzle and flange in one piece.		1
29267	Housing—Blower	14	
	Note: No. 21394 Housing—Blower..... Used on type Nos. 302065, 302115, 302122, 302123. No. 29001 Housing Blower..... Used on type Nos. 20010, 20427, 20795, 25315, 60418, 60419, 60422, 60447, 60587, 60612, 60715, 60861, 60920, 60951. No. 61450 Housing—Blower..... Used on type Nos. 302073, 302106.	14	14

MASTER PART NUMBER	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
	For Blower Housing for all other types see Master Part No. 29097.		
29380	Shaft Assembly—Throttle		2
	Note: No. 69910 Shaft Assembly—Throttle.... Used on early model engines without throttle shaft bushings in upper body.		2
29403	Plate—Pulley Clutch	3	
29429	Lever Assembly—Governor		4
	Note: No. 69872 Lever Assembly—Governor.. Used on type Nos. 60411, 60548, 60562, 60752, 302090, 302114.		4
29440	Tube—Control Casing		2
	Note: No. 29207 Tube—Control Casing..... Used on type No. 302130. No. 29251 Tube—Control Casing..... Used on type No. 60405. No. 29398 Tube—Control Casing..... Used on type Nos. 60552, 302096.		2
29447	Cleaner Assembly—Air	3	
29571	Body Assembly—Lower Carburetor.....	1	8
	Note: No. 29526 Body Assembly—Lower Car- buretor	1	8
	Used on Rope Starter Engines equipped with Kingston Carburetors with friction choke. Replaced by No. 89914 Carburetor. No. 69907 Body Assembly—Lower Car- buretor	1	8
	Used on early model engines equipped with high speed nozzle and flange in one piece. Replaced by No. 89914 Carburetor.		
29574	Body Assembly—Upper Carburetor.....		10
	Note: No. 29231 Body Assembly—Upper Car- buretor	1	
	Order this carburetor body when replac- ing upper body in early model engines not equipped with throttle shaft bush- ings.		
29604	Pulley—Drive 3" Dia.—V-Belt.....	1	
	Note: No. 64939 Pulley—Drive, 3 3/4" Dia., V-Belt	1	
	Used on type No. 60222.		
29656	Armature Assembly	3	
29679	Cover—Air Cleaner		8
29680	Filter—Air Cleaner	1	
29681	Bowl—Air Cleaner		8
29681	Bowl—Air Cleaner		2
29681	Condenser		2
29897	Shaft Assembly—Drive	3	
29918	Bearing—Ball		4
29929	Carburetor Assembly (Replaced by No. 89914).		
29932	Pump Assembly—Oil	1	
	Note: No. 99009 Pump Assembly—Oil..... Used on type Nos. 60411, 60562, 60752, 302090.	1	
29933	Body—Oil Pump	7	
	Note: No. 29338 Body—Oil Pump..... Used on type Nos. 60411, 60562, 60752, 302090.	7	
29934	Plunger—Oil Pump		6
29997	Shaft Assembly—Throttle		6
29998	Shaft Assembly—Choke		2
29999	Float—Carburetor		2
39246	Rivet—Tubular—1/8x1/2"		1
46133	Spring—Spark Plug Shield.....		1
46277	Rivet—Tubular—1/8x3/8"		1
53029	Connector—Fuel Filter		1
61029	Pulley—Drive 3 1/2" Dia.—Flat Belt.....	3	
61237	Ring—Piston, Oil—Std.		1
61256	Ring—Piston, Oil—.010" O.S.....		1
61257	Ring—Piston, Oil—.020" O.S.....		1
61258	Ring—Piston, Oil—.030" O.S.....		1
61265	Ring—Pulley Clutch	1	
61331	Elbow—Air Cleaner		6
61361	Lever—Throttle		1
61371	Elbow—Air Cleaner		8

Before ordering parts, read instructions top page 12

MASTER PART NUMBER		NAME	SHIPPING WEIGHT		MASTER PART NUMBER		NAME	SHIPPING WEIGHT	
			Lbs.	Oz.				Lbs.	Oz.
61380		Bracket—Fuel Tank	2	8	63199		Pin—Starter Shaft		1
		Note: No. 61486 Bracket—Fuel Tank.	2	8	63217		Nut—Oil Tube Connector		1
		Used on type Nos. 20957, 302091.			63238		Screw—Contact Point		1
61405		Head—Cylinder	3	8	63269		Washer—Pulley Clutch		1
61447		Elbow—Intake	1		63294		Pin—Clutch Lining		1
		Note: No. 21059 Elbow—Intake.	1		63334		Rod—Governor Spring		1
		Used on type Nos. 302065, 306066			63335		Plunger—Governor		1
		302115, 302122, 302123, 302131.			63336		Spacer—Cylinder Head (Long)		1
		No. 61470 Elbow—Intake	1		63337		Spacer—Cylinder Head (Short)		1
		Used on type No. 60396.			63341		Bushing—Governor Crank		2
61454		Gear—Cam	3		63343		Shaft—Governor Gear		1
61975		Pipe—Air Cleaner (Replaced by No. 290175).			63355		Bushing—Bell Crank		1
		Note: No. 61666 Pipe—Air Cleaner.	2				Note: No. 63067 Bushing—Bell Crank		1
		Used on engines with Kingston or					Used on type No. 60449.		
		Schebler Carburetors.					No. 63474 Bushing—Bell Crank		1
							Used on type No. 60372.		
62041		Shell—Air Cleaner	6		63374		Bushing—Control Lever		1
62042		Washer—Air Cleaner	1		63377		Connector—Fuel Pipe		1
62100		Stop—Contact Spring	1		63382		Cup—Roller Bearing		8
62167		Lock—Flywheel Nut	2		63383		Cup—Roller Bearing		6
62177		Strap—Blower Housing Mounting	1		63403		Valve—Needle		1
62178		Plate—Contact Block	1		63404		Valve—Carburetor Idle		1
62196		Switch—Stop	1		63405		Nut—Needle Valve Packing		1
		Note: No. 62996 Switch—Stop.	1		63406		Pin—Throttle Lever		1
		Used on type Nos. 302065, 302066,			63408		Cup—Idle Valve Spring		1
		302115, 302122, 302123, 302131.			63409		Valve—Fuel Inlet		1
62199		Washer—Bell Crank	1		63410		Seat—Fuel Inlet Valve		1
		Note: No. 68143 Spacer—Bell Crank	1		63411		Pin—Float Hinge		1
		Used on type No. 60449.			63426		Locknut—Control Wire Casing		1
62222		Cup—Valve Spring	1		63456		Stud—Starter Bracket		1
62235		Ring—Oil Retainer	1				Note: No. 91592 Screw—Cap, Hex. Hd.—		1
62244		Bowl—Carburetor	6				3/8-24x1/2"		
62246		Valve—Choke	1				Used to mount casing clip on type No.		
62252		Washer—Valve Tappet	1				60502.		
62254		Cup—Starter Spring	2		63457		Pinion—Starter		4
62309		Shim—.003"	1		63458		Bushing—Starter Bracket Mounting		1
62319		Clip—Control Wire Casing	1		63460		Spacer—Starter Bracket		1
62342		Cover—Pulley Clutch	6		63488		Venturi—Carburetor		1
62363		Lock—Starter Pinion	2		63508		Pin—Piston—.005" O.S.		3
62412		Plate—Control Lever Mounting	3		63520		Nut—Governor Spring Adjusting		1
62413		Clip—Control Wire Casing	1		63523		Bushing—Pulley Clutch		1
62428		Valve—Throttle	1				Note: No. 63713 Bushing—Pulley Clutch		1
62465		Bowl—Air Cleaner	6				Used on type Nos. 60699, 302132.		
62466		Clamp—Air Cleaner	1		63524		Screw—Clutch Adjusting		1
62741		Valve—Choke	1		63585		Flange—Needle Valve		1
62742		Bowl—Carburetor	4		63605		Bushing—Starter Shaft		2
62743		Valve—Throttle	1		63609		Rod—Compression Release		2
62763		Washer—Choke Lever	1		63654		Key—Pulley Clutch		1
62872		Valve—Choke (Off Center)	1		63657		Collar—Control Wire		1
		Note: No. 62932 Valve—Choke (Center)	1		63676		Bushing—Throttle Shaft		1
62886		Washer—Bearing Retainer	1		63733		Stud—Air Cleaner		2
62899		Washer—Choke Lever	1		63864		Spacer—Bearing		1
62924		Shield—Cylinder	8		63865		Pin—Bearing Retainer		1
		Note: No. 62185 Shield—Cylinder	8		63882		Valve—Carburetor Idle		1
		Used on engines with 5-digit type			63884		Pin—Throttle Lever		1
		numbers.			63885		Nut—Needle Valve Packing		1
62926		Plate—Back	2		63887		Pin—Float Hinge		1
		Note: No. 62201 Plate—Back	2		63888		Screw—Plug		1
		Used on engines with 5-digit type			63889		Screw—Choke Lever		1
		numbers.			63889		Cup—Roller Bearing		6
62928		Valve—Throttle	1		64589		Tank—Fuel		4
62932		Valve—Choke	1				Note: No. 29579 Tank—Fuel (Two Gallon)		4
62938		Strap—Air Cleaner Mounting	1				Used on type Nos. 20795, 25255, 25258,		
		Note: No. 62449 Strap—Air Cleaner	1				25284, 60306, 60704, 60999, 302079,		
		Used on engines equipped with Kingston					302094, 302101, 302102, 302136, 302140.		
		Carburetors,					No. 69912 Tank—Combination Fuel		4
		No. 62767 Strap—Air Cleaner	1				Used on type Nos. 25313, 60365, 60477,		
		Used on engines equipped with Schebler					60612, 60715, 60773, 60805, 60806, 60816,		
		Carburetors.					60850, 95204, 302070, 302133.		
62939		Strap—Air Cleaner Mounting	1				No. 69943 Tank—Fuel (One Gallon—		
		Note: No. 62450 Strap—Air Cleaner	1				Center Filler and Outlet)		4
		Used on engines equipped with Kingston					Used on type Nos. 20427, 25394, 302073.		
		Carburetors,							
		No. 62768 Strap—Air Cleaner	1		64999		Cover—Crankcase (Cast Iron)		5
		Used on engines equipped with Schebler					Note: For Crankcase Cover, for Double Thrust		
		Carburetors.					or Marine Application see No. 291214		
62999		Bracket—Throttle Control	6				Cover Assembly.		

(See next page)

Before ordering parts, read instructions top page 12

MASTER PART NUMBER	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
	No. 29473 Cover—Crankcase (Cast Iron)	5	
	Used on type Nos. 60570, 60571, 302112.		
	No. 99936 Cover—Crankcase (Cast Iron)	5	
	Used on type No. 302135.		
	Includes: No. 69740 Seal—Oil.....		3
	No. 99944 Cover—Crankcase (Cast Iron)	5	
	Used on type No. 95099.		
	Includes: No. 69740 Seal—Oil.....		3
	No. 99953 Cover—Crankcase (Cast Iron)	5	
	Used on type Nos. 20041, 95109, 95110, 95281, 95295, 302085, 302086, 302088, 302089, 302107, 302119, 302120.		
	Includes: No. 69740 Seal—Oil.....		3
65078	Block Contact—Spring	1	
65084	Washer—Valve Cover	1	
65098	Lining—Pulley Clutch	4	
65126	Spring—Throttle	1	
65198	Cover—Magneto Point	1	
65237	Gasket—Valve Cover	1	
65247	Gasket—Engine Base	1	
65414	Plunger—Magneto Point	1	
65434	Gasket—Oil Filler Cap.....	1	
65616	Casing—Control Wire—72" long.....	8	
	Note: No. 26244 Casing—Control Wire (Stainless Steel)—72" long.....		8
	Used on type No. 302114.		
	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.		
65647	Gasket—Carburetor Mounting	1	
65725	Insulator—Armature Lead	1	
65776	Lock—Piston Pin	1	
65884	Gasket—Inlet Valve Seat.....	1	
65894	Gasket—Carburetor Bowl	1	
65904	Gasket—Needle Valve Packing.....	1	
65906	Spring—Intake and Exhaust Valve.....	2	
65914	Gasket—Carburetor Nozzle	1	
65924	Gasket—Carburetor Bowl	1	
65932	Plug—Cam Shaft	1	
65934	Gasket—Carburetor Bowl	1	
65942	Cover—Valve	6	
65976	Spring—Throttle Control Lever.....	1	
66203	Shaft—Cam	5	
66403	Key—Flywheel	1	
66457	Gasket—Magneto Plate—.015" thick.....	1	
66477	Gasket—Cylinder Mounting	1	
66527	Gasket—Magneto Plate—.005" thick.....	1	
66537	Gasket—Magneto Plate—.009" thick.....	1	
66637	Gasket—Gear Case Cover.....	1	
66647	Packing—Needle Valve	1	
66657	Gasket—Carburetor Bowl	1	
66667	Gasket—Carburetor Nozzle	1	
66677	Gasket—Carburetor Body	1	
66687	Gasket—Inlet Valve Seat.....	1	
66717	Gasket—Crankcase Cover	1	
66727	Gasket—Gear Case	1	
66739	Rod—Oil Pump	4	
67197	Gasket—Carburetor Nozzle	1	
67216	Spring—Pulley Clutch	1	
67247	Gasket—Air Cleaner Mounting.....	1	
67316	Spring—Governor	1	
	Note: No. 26086 Spring—Governor.....		1
	Used on type Nos. 20437, 302084.		
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	
67976	Crankshaft	10	
	Note: No. 26007 Crankshaft.....		10
	Used on type Nos. 20084, 20087, 60255, 60331, 60436, 60680, 302093, 302095, 302100, 302137, 302141.		
	No. 26010 Crankshaft.....		10
	Used on type Nos. 60699, 302132.		

MASTER PART NUMBER	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
	No. 26059 Crankshaft.....	10	
	Used on type Nos. 20820, 25315, 60633, 60636, 60824, 60831, 95279, 302111.		
	No. 26145 Crankshaft.....	10	
	Used on type Nos. 302065, 302066, 302115, 302122, 302123, 302131.		
	No. 26151 Crankshaft.....	10	
	Used on type Nos. 95281, 302085, 302086.		
	No. 26202 Crankshaft.....	10	
	Used on type No. 302107.		
	No. 26278 Crankshaft.....	10	
	Used on type Nos. 95295, 302118, 302135.		
	No. 26284 Crankshaft.....	10	
	Used on type Nos. 95109, 95110, 302088, 302089, 302119, 302120.		
	No. 26285 Crankshaft.....	10	
	Used on type No. 95099.		
	No. 26320 Crankshaft.....	10	
	Used on type Nos. 20017, 20390, 20401, 20407, 20427, 20482, 20996, 25255, 25258, 25313, 25394, 25398, 25399, 60347, 60386, 60407, 60673, 60793, 60919, 60945, 60946, 60951, 60967, 95115, 95277, 302059, 302060, 302061, 302062, 302067, 302068, 302073, 302079, 302082, 302099, 302139.		
	No. 68516 Crankshaft.....	10	
	Used on type No. 20041.		
68023	Pin—Piston—Standard		3
68141	Ring—Piston, Compression—Standard		1
68156	Spring—Crankstarter		1
68182	Clip—Throttle Spring		1
68217	Packing—Needle Valve		1
68247	Gasket—Gear Case Cover.....		1
68283	Collar—Valve Spring		1
68293	Retainer—Valve Spring Collar.....		1
68331	Ring—Piston, Compression—.010" O.S.....		1
68341	Ring—Piston, Compression—.020" O.S.....		1
68346	Spring—Choke Lever		1
	Note: No. 90877 Screw—Machine, Rd. Hd.—8-32x5/8" Brass		1
	No. 22358 Washer.....		1
	No. 67626 Spring—Choke Lever.....		1
	Used on Kingston Carburetors with friction choke.		
68351	Ring—Piston, Compression—.030" O.S.....		1
68477	Gasket—Fuel Filter Bowl.....		1
	Note: No. 67267 Gasket—Fuel Filter Bowl....		1
	Used on earlier model engines equipped with Tillotson Fuel Filters.		
68487	Bowl—Fuel Filter		2
	Note: No. 67257 Bowl—Fuel Filter.....		2
	Used on earlier model engines equipped with Tillotson Fuel Filters.		
68559	Lever—Throttle		1
68563	Valve—Intake		6
68652	Wrench—Spark Plug		5
68667	Gasket—Fuel Inlet Seat and Nozzle.....		1
68677	Packing—Needle Valve		1
68712	Ring—Oil Retainer		1
68876	Clip—Magneto Point Cover.....		1
69134	Muffler	3	8
69298	Strap—Fuel Tank		6
69314	Breather Assembly.....		8
69446	Stud and Wing Nut.....		1
69447	Filter—Air Cleaner		8
69628	Piston Assembly—Standard		1
69642	Rod Assembly—Connecting		1
69660	Piston Assembly—.010" O.S.....		1
69661	Piston Assembly—.020" O.S.....		1
69662	Piston Assembly—.030" O.S.....		1
69689	Cap—Oil Filler		4
69691	Clutch Assembly—Pulley		7
69696	Pulley with Bearing—Clutch.....		4
69698	Plate and Ring Assembly—Clutch.....		4
69737	Gasket—Cylinder Head		1
69739	Bearing—Ball		1

Before ordering parts, read instructions top page 12

MASTER PART NUMBER	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
69754	Spring and Point—Contact.....		1
69780	Block Assembly—Contact		2
69798	Crank—Bell		2
	Note: No. 29161 Crank—Bell.....		2
	Used on type No. 60372.		
	No. 69264 Crank—Bell.....		2
	Used on type No. 60449.		
69801	Plate—Pulley Clutch	3	
69836	Valve—Fuel Shut-off		1
69839	Gear Assembly—Governor	1	
69851	Cleaner Assembly—Air	1	
69854	Cable—Ignition		2
	Note: No. 69980 Cable—Ignition.....		2
	Used on type Nos. 20386, 20425, 25313,		
	25388, 60341, 95281, 302089, 302085,		
	302086, 302094, 302107, 302108, 302124.		
69856	Lever—Governor Control		1
69858	Seal—Oil		4
69859	Cover Assembly—Gear Case.....	4	
69866	Cone—Roller Bearing		6
69867	Cone—Roller Bearing		6
69876	Plate—Magneto		2
69905	Screen—Carburetor Filter		1
69906	Floot—Carburetor		2
69908	Shaft Assembly—Choke		1
	Note: No. 29527 Shaft Assembly—Choke....		1
	Used on Rope Starter engines equipped		
	with Kingston Carburetors.		
69911	Bushing—Magneto Plate		4
	Includes: No. 62235 Ring—Oil Retainer.		
69926	Crank—Governor		2
	Note: No. 29963 Crank—Governor		
	Used on engines equipped with No.		
	29932 or No. 99009 oil pump assembly.		
69932	Rope—Starter		6
69942	Case Assembly—Gear	26	
69947	Cleaner Assembly—Air		2
69948	Body—Air Cleaner		1
69949	Shaft and Gear—Starter.....		3
	Note: No. 29624 Shaft and Gear—Starter....		3
	Used on type No. 60752.		
69950	Release Assembly—Compression.....		8
	Note: No. 29532 Release Assembly—Compres-		
	sion		8
	Used on type Nos. 60548, 302114.		
69951	Cover Assembly—Valve		6
69952	Shaft Assembly—Compression Release.....		1
	Note: No. 29533 Shaft Assembly—Compression		
	Release		1
	Used on type Nos. 60548, 302114.		
69953	Bracket—Starter Crank		3
69961	Cap—Fuel Tank		2
70162	Washer—Throttle Control		1
89080	Pipe—Fuel—12½" long		4
	Note: No. 29025 Pipe—Fuel—18" long.....		4
	Used on type No. 60222.		
	No. 69844 Pipe—Fuel—14½" long....		4
	Used on engines without fuel filler.		
	The following fuel pipes and connections		
	used with No. 69912 Combination Fuel		
	Tank on type Nos. 60365, 60477, 60612,		
	60715, 60773, 60805, 60806, 60816, 60850,		
	95204, 302070, 302133:		
	No. 29201 Pipe—Fuel—17" long.....		4
	No. 63416 Nut—Check.....		1
	No. 65604 Plug—Check Valve.....		1
	No. 69836 Valve—Shut-off (2).....		1
	No. 69914 Pipe—Fuel (2).....		4
	No. 69915 Tee (2).....		1
	No. 99008 Pipe—Fuel—3¾" long....		4
89307	Valve—Oil Return		1
89531	Shaft Assembly—Choke (Off Center).....		1
	Note: No. 99347 Shaft Assembly—Choke (Cen-		
	ter Choke)		1
89914	Carburetor Assembly	2	8
89915	Body Assembly—Lower Carburetor.....	1	
90004	Screw—Machine, Rd. Hd.—4-36x¼".....		1

MASTER PART NUMBER	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
90010	Screw—Machine, Rd. Hd.—10-32x $\frac{3}{8}$ ".....		1
90028	Screw—Machine, Rd. Hd.—4-36x $\frac{1}{8}$ ".....		1
90029	Screw—Machine, Rd. Hd.—4-36x¼".....		1
90100	Screw—Machine, Rd. Hd.—6-32x $\frac{3}{8}$ ".....		1
90202	Screw—Machine, Fill. Hd.—10-32x½".....		1
90217	Screw—Machine, Fill. Hd.—10-32x½" (Brass).....		1
90230	Nut—Hex.—10-32		1
90313	Nut—Hex.—8-32		1
90355	Nut—Hex.—10-32		1
90366	Lockwasher— $\frac{3}{8}$ x $\frac{1}{2}$ x $\frac{1}{8}$ ".....		1
90367	Lockwasher—No. 8x $\frac{3}{4}$ x $\frac{3}{8}$ ".....		1
90369	Lockwasher—No. 4x $\frac{3}{4}$ x $\frac{3}{8}$ ".....		1
90576	Nut—Hex.—8-32		1
90597	Screw—Machine, Rd. Hd.—10-32x½".....		1
	Note: {No. 91494 Screw—Machine, Fill. Hd.—		
	10-32x¾"		1
	{No. 92290 Lockwasher—No. 10x $\frac{1}{8}$ x $\frac{3}{4}$ "		
	(2)		1
	Used to mount casing clamp on type		
	Nos. 20437, 60548, 302084, 302114.		
90693	Lockwasher—½"x $\frac{1}{2}$ x $\frac{1}{8}$ ".....		1
90689	Screw—Cap—Hex. Hd.—¾-24x1¾".....		1
90700	Screw—Cap, Hex. Hd.—¼-20x¾".....		1
90746	Screw—Machine, Fill. Hd.—10-32x¾".....		1
90832	Lockwasher—¼x $\frac{3}{4}$ x $\frac{3}{8}$ ".....		1
90847	Nut—Hex.—¼-28		1
90887	Screw—Cap, Hex. Hd.—¾-16x1¼".....		1
	Note: {No. 23136 Stud.....		1
	{No. 92292 Nut—Hex.—¾-24.....		1
	Used on engines with Aluminum Bases.		
90890	Screw—Valve Tappet		1
90891	Screw—Cap, Hex. Hd.—¼-20x½".....		1
	Note: No. 91499 Screw—Cap, Hex. Hd.—		
	¼-20x¾"		1
	Used to plug stop switch screw hole on		
	type No. 302094.		
90916	Screw—Machine, Rd. Hd.—¼-20x½".....		1
90950	Screw—Cap, Hex. Hd.— $\frac{5}{8}$ -24x¾".....		1
91028	Screw—Cap, Hex. Hd.—¾-24x¾".....		1
	Note: No. 23290 Screw—Crankcase Cover....		1
	Assembled in upper right hand screw		
	hole on type No. 302135.		
	No. 90686 Screw—Cap, Hex. Hd.—		
	¾-24x1"		1
	Used to mount cast iron starter pulley.		
91059	Lockwasher—No. 12x $\frac{1}{4}$ x $\frac{1}{8}$ ".....		1
91062	Screw—Cap, Hex. Hd.—¼-20x1¼".....		1
	Note: No. 90700 Screw—Cap, Hex. Hd.—		
	¼-20x¾"		1
	Used to mount bell crank on type No.		
	60449.		
	No. 90802 Screw—Cap, Hex. Hd.—		
	¼-20x1½"		1
	Used to mount governor control lever on		
	type Nos. 60548, 60752, 302114.		
	No. 90891 Screw—Cap, Hex. Hd.—		
	¼-20x½"		1
	Used to mount bell crank on type No.		
	60372.		
91084	Plug—Pipe—¾"—Sq. Hd.		2
	Note: No. 91116 Plug—Pipe—¾" Ctsk. Hd....		2
	Used on type Nos. 60552, 302096.		
	No. 91488 Plug—Pipe—½" Sq. Hd....		2
	Used on type Nos. 302065, 302066,		
	302115, 302122, 302123, 302131.		
91122	Lockwasher—Shakeproof No. 1206.....		1
91137	Screw—Machine, Fill. Hd.—8-32x $\frac{1}{8}$ ".....		1
91162	Screw—Cylinder Head and Connecting Rod..		1
91195	Screw—Machine, Rd. Hd.—¼-20x¾".....		1
91208	Nut—Hex.— $\frac{5}{8}$ -24		1
91229	Screw—Cap, Hex. Hd.—½-20x1¼".....		1
91237	Lockwasher—¼x $\frac{3}{4}$ x $\frac{3}{8}$ ".....		1
91253	Screw—Machine, Fill. Hd.—6-32x $\frac{3}{8}$ ".....		1
91255	Screw—Machine, Fill. Hd.—¼-20x½".....		1
91256	Screw—Machine, Fill. Hd.—¼-20x1".....		1
91270	Screw—Machine, Rd. Hd.—¼-20x1".....		1

Before ordering parts, read instructions top page 12

MASTER PART NUMBER	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
91310	Locknut—Exhaust—Elbow	1	
91324	Washer— $\frac{1}{4}$ " Standard	1	
91359	Screw—Machine, Fill. Hd.— $10-32 \times \frac{3}{4}$ "	1	
91366	Screw—Machine, Rd. Hd.— $10-32 \times \frac{7}{8}$ "	1	
91379	Screw—Machine, Rd. Hd.— $6-32 \times \frac{1}{2}$ "	1	
91385	Screw—Magneto Mounting	1	
91386	Screw—Cylinder Head and Valve Cover	1	
91387	Screw—Cylinder Head	1	
91388	Lockwasher— $\frac{1}{4} \times \frac{5}{16} \times \frac{3}{16}$ "	1	
91396	Locknut—Intake Elbow	1	
91398	Screw—Cap, Hex. Hd.— $\frac{1}{4}-28 \times \frac{1}{2}$ "	1	
	Note: No. 92412 Screw—Cap, Hex. Hd.— $\frac{1}{4}-20 \times \frac{3}{4}$ "	1	
	Used to mount Cast Iron Governor Levers,		
91400	Nut—Flywheel	1	
91415	Elbow—Exhaust	2	
	Note: No. 91296 Elbow—Exhaust	2	
	Used on type Nos. 60349, 60905, 302078, 302084, 302092, 302096.		
91416	Nipple—Exhaust	1	
91442	Screw—Valve Cover	1	
91443	Screw—Machine, Rd. Hd.— $4-36 \times \frac{1}{4}$ "	1	
91444	Screw—Machine, Oval Hd.— $6-32 \times \frac{1}{4}$ "	1	
91458	Screw—Parker Kalon—No. $7 \times 2 \frac{1}{2}$ "	1	
91466	Lockwasher— $\frac{3}{8} \times \frac{5}{16} \times \frac{1}{16}$ "	1	
91468	Screw—Cap, Hex. Hd.— $\frac{1}{4}-20 \times \frac{3}{8}$ "	1	
91478	Key—Pulley Clutch	1	
91540	Key— $\frac{1}{4}$ Square x $1 \frac{1}{2}$ " long	1	
	Note: No. 60955 Key— $\frac{1}{4}$ Square x $2 \frac{3}{8}$ " long	1	
	Used on type Nos. 60773, 60905, 302078.		
91560	Rd. Hd. Bolt and Nut—Stove— $1 \frac{1}{2} \times 1 \frac{3}{4}$ "	2	
	No. 90013 Screw—Machine, Rd. Hd.— $10-32 \times 1 \frac{1}{8}$ "	1	
	Note: No. 90290 Nut—Hex.— $10-32$	1	
	No. 67072 Washer (2)	1	
	No. 92290 Lockwasher—No. $10 \times \frac{1}{16} \times \frac{3}{16}$ "	1	
	Used on type Nos. 60552, 302096.		
91604	Screw—Machine, Rd. Hd.— $6-32 \times \frac{1}{8}$ "	1	
91635	Connector—Fuel Filter	1	
91648	Screw—Cap, Hex. Hd.— $\frac{1}{8}-24 \times \frac{1}{2}$ "	1	
91674	Nut—Wing	1	
91777	Screw—Machine, Fill. Hd.— $8-32 \times \frac{3}{4}$ "	1	
91778	Screw—Machine, Fr. Hd.— $4-36 \times \frac{5}{16}$ "	1	
91787	Screw—Cap, Hex. Hd.— $\frac{1}{4}-28 \times 2$ "	1	
	Note: No. 91256 Screw—Machine, Fill. Hd.— $\frac{1}{4}-20 \times 1$ "	1	
	Used on air cleaner pipes with tapped hole in mounting lug.		
91865	Lockwasher— $\frac{5}{16} \times \frac{1}{16} \times \frac{1}{16}$ "	1	
91920	Screw—Machine, Fill. Hd.— $8-32 \times \frac{3}{8}$ "	1	
91921	Screw—Machine, Fill. Hd.— $12-24 \times \frac{5}{16}$ "	1	
91984	Pin—Cotter— $\frac{1}{8} \times \frac{1}{2}$ " long	1	
92129	Nut—Hex.— $\frac{1}{4}-28$	1	
92260	Screw—Set, Sq. Hd.— $\frac{1}{8}-18 \times \frac{3}{8}$ "	1	
92268	Lockwasher— $\frac{3}{8} \times \frac{1}{2} \times \frac{3}{16}$ "	1	
92272	Screw—Cap, Hex. Hd.— $\frac{5}{16}-18 \times \frac{3}{4}$ "	1	
92279	Screw—Cap, Hex. Hd.— $\frac{5}{16}-24 \times 1 \frac{1}{2}$ "	1	
92285	Pin—Cotter No. $18 \times \frac{1}{4}$ " long	1	
92287	Screw—Machine, Rd. Hd.— $10-32 \times \frac{1}{4}$ "	1	
	Note: No. 91253 Screw—Machine, Fill. Hd.— $6-32 \times \frac{1}{8}$ "	1	
	Used on type No. 60449.		
92288	Pin—Cotter— $\frac{1}{8} \times \frac{1}{2}$ " long	1	
92290	Lockwasher—No. $10 \times \frac{1}{16} \times \frac{3}{16}$ "	1	
	Note: No. 67072 Washer	1	
	{No. 92290 Lockwasher—No. $10 \times \frac{1}{16} \times \frac{3}{16}$ "	1	
	Used to mount control lever on type Nos. 60552, 302096.		
92292	Nut—Hex.— $\frac{3}{8}-24$	1	
92305	Washer—Control Lever and Governor Gear	1	

MASTER PART NUMBER	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
92306	Screw—Cap, Hex. Hd.— $\frac{1}{4}-28 \times \frac{3}{8}$ "	1	
	Note: No. 92278 Nut—Hex.— $\frac{1}{4}-20$	1	
	No. 90832 Lockwasher— $\frac{1}{4} \times \frac{3}{16} \times \frac{3}{16}$ "	1	
	No. 91498 Screw—Cap, Hex. Hd.— $\frac{1}{4}-20 \times 1 \frac{1}{4}$ "	1	
	Used on type Nos. 20996, 60222, 60267, 60372, 302098, 302139.		
92308	Screw—Machine, Fill. Hd.— $10-32 \times \frac{1}{4}$ "	1	
92322	Screw—Set (Clutch Pulley)	1	
92412	Screw—Cap, Hex. Hd.— $\frac{1}{4}-20 \times \frac{3}{4}$ "	1	
92413	Pin—Cotter— $\frac{1}{8} \times \frac{3}{8}$ " long	1	
92424	Screw—Machine, Fill. Hd.— $\frac{1}{4}-20 \times 1 \frac{1}{2}$ "	1	
92425	Nut—Sq.— $\frac{1}{4}-20$	1	
92469	Nipple—Oil Filler	2	
	Note: No. 91371 Nipple—Oil Filler— 2 " long	2	
92507	Lockwasher—Shakeproof No. 1214	1	
99024	Crank—Starter	2	
	Note: No. 29519 Crank—Starter	2	
	Used on type Nos. 60411, 302090.		
	No. 61519 Crank—Starter	2	
	Used on type No. 60752.		
	No. 61560 Crank Starter	2	
	Used on type No. 60562.		
	No. 99027 Crank—Starter	2	
	Used on type Nos. 20926, 60405.		
99142	Valve Assembly—Needle	1	
99188	Replaced by No. 89914.		
99225	Seal—Oil	4	
99230	Arrester—Flame	1	
99333	Floater—Carburetor	2	
99341	Body—Upper Carburetor	1	
99342	Body Assembly—Upper Carburetor	1	
99345	Nozzle—Carburetor	2	
99346	Valve—Needle	2	
99360	Pump Assembly—Oil	1	
	Note: No. 29096 Pump Assembly—Oil	1	
	Used on type Nos. 60448, 60449.		
	No. 69547 Pump Assembly—Oil	1	
	Used on type Nos. 20427, 25394, 60312, 60347, 302073.		
99361	Screen—Oil Pump	3	
99362	Tube—Oil Pump	2	
99386	Cylinder	13	
99393	Guide—Air	6	
	Note: No. 29555 Guide—Air	6	
	Used on engines with 5-digit type numbers.		
99458	Idling Device	3	
	Note: No. 69968 Idling Device	3	
	Used with Kingston Carburetor on type Nos. 60824, 60831.		
	No. 99031 Idling Device	3	
	Used with Schebler Carburetor on type Nos. 20084, 60824, 60831.		
99502	Control Assembly—Throttle	6	
99524	Shaft Assembly—Throttle	1	
99592	Valve—Needle	1	
99595	Control Assembly—Throttle	12	
99599	Wire—Control	2	
99600	Casing—Control Wire	4	
99665	Yoke Assembly—Fuel Filter	2	
	Note: No. 89743 Yoke Assembly—Fuel Filter	2	
	Used on earlier model engines equipped with Tillotson Fuel Filter.		
99780	Valve and Seat—Fuel Inlet	1	
99909	Cover Assembly—Fuel Filter	3	
99910	Filter Assembly—Fuel	10	
290059	Lever—Fuel Shut-off— $\frac{3}{8}$ " dia., "T" shaped	1	
	Note: No. 23347 Lever—Fuel Shut-off— $\frac{1}{8}$ " dia., "L" shaped	1	
	No. 29536 Lever—Fuel Shut-off	4	
	Used on earlier model engines equipped with Tillotson Filter.		
290175	Pipe Assembly—Air Cleaner	3	

Before ordering parts, read instructions top page 12

MASTER PART NUMBER	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
290568	Lever Assembly—Control (Stamped Steel)....		4
	Note: No. 29035 Lever Assembly—Control....	1	
	Used on type Nos. 20996, 60222, 60267, 60372, 302098, 302139.		
	No. 89583 Lever Assembly—Control....	1	
	Used on type Nos. 60332, 60405, 60695, 302072.		
	Includes: { No. 92282 Screw—Machine, Rd. Hd.—10-24x½"	1	
	{ No. 92289 Screw—Machine, Rd. Hd.—10-24x¾" (2).....	1	
290571	Drive Shaft and Gear Case Cover Assembly..	7	
290573	Case Assembly—Gear	6	
290574	Cover Assembly—Gear Case.....	4	
290584	Base—Control Lever (Stamped Steel).....	2	
	Note: No. 21441 Base—Control Lever.....	6	
	Used on type Nos. 60332, 60405, 60695, 302072.		
	No. 65631 Base—Control Lever.....	6	
	Used on type Nos. 20996, 60222, 60267, 60372, 302098, 302139.		
290597	Pulley Assembly—Rope Starter (Stamped Steel)	2	
290642	Lever—Control (Stamped Steel).....	2	
290654	Screw and Nut Assembly—Contact Block.....	1	
290692	Crankcase (Cast Iron).....	21	
	Note: No. 290676 Crankcase (Cast Iron).....	21	
	Used on type No. 95099.		
	No. 290680 Crankcase (Cast Iron).....	21	
	Used on type Nos. 20017, 20390, 20401, 20407, 20482, 25255, 25258, 25313, 25398, 60386, 60407, 60673, 60793, 60919, 60945, 60951, 95115, 302059, 302060, 302061, 302062, 302067, 302079, 302099, 302139.		
	No. 290681 Crankcase (Cast Iron).....	21	
	Used on type Nos. 20427, 25394, 25399, 60347, 60946, 302068, 302073.		
	No. 290686 Crankcase (Cast Iron).....	21	
	Used on type Nos. 60967, 302082, 302125.		
	No. 290689 Crankcase (Cast Iron).....	21	
	Used on type Nos. 20996, 95277.		

MASTER PART NUMBER	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
290758	Magneto Assembly	6	
	Note: No. 290754 Magneto Assembly.....	6	
	Used on type Nos. 20814, 25284, 60258, 60306, 60436, 60477, 60605, 60633, 60636, 60680, 60704, 60789, 60790, 60850, 95106, 302053, 302054, 302080, 302083, 302101, 302102, 302127, 302137, 302138, 302141.		
	Includes: No. 66165 Wire—Ground.....		2
	No. 290755 Magneto Assembly (with shielded cable)	6	
	Used on type Nos. 20386, 25313, 95281, 302085, 302086, 302094, 302107.		
	Includes: No. 66165 Wire—Ground.....		2
	No. 290757 Magneto Assembly (with shielded cable)	6	
	Used on type Nos. 20425, 25388, 60341, 302069, 302108, 302124.		
290861	Screen Assembly—Blower Housing.....		6
290863	Screen Assembly—Blower Housing.....		6
	Note: No. 290862 Screen Assembly—Blower Housing		6
	Used on type Nos. 60306, 60548, 302087, 302101, 302114.		
290918	Lever Assembly—Control		4
290984	Plug—Spark (with gasket).....		8
	Note: No. 99496 Plug—Spark (with gasket)...		8
	Used on type Nos. 302065, 302066, 302115, 302122, 302123, 302131.		
291055	Base Assembly—Engine	14	
	Note: No. 61543 Base—Engine.....	14	
	Used on type Nos. 20427, 25394, 60312, 60347, 302073.		
	No. 61654 Base—Engine.....	14	
	Used on type No. 20437.		
	No. 61931 Base—Engine.....	14	
	Used on type Nos. 302065, 302066, 302115, 302122, 302123, 302131.		
	No. 290645 Base—Engine.....	14	
	Used on type Nos. 302097, 302126.		
	No. 291026 Base—Engine.....	14	
	Used on type Nos. 60411, 60448, 60449, 60562, 60752, 302090.		
291214	Cover—Crankcase		5

Before ordering parts, read instructions top page 12

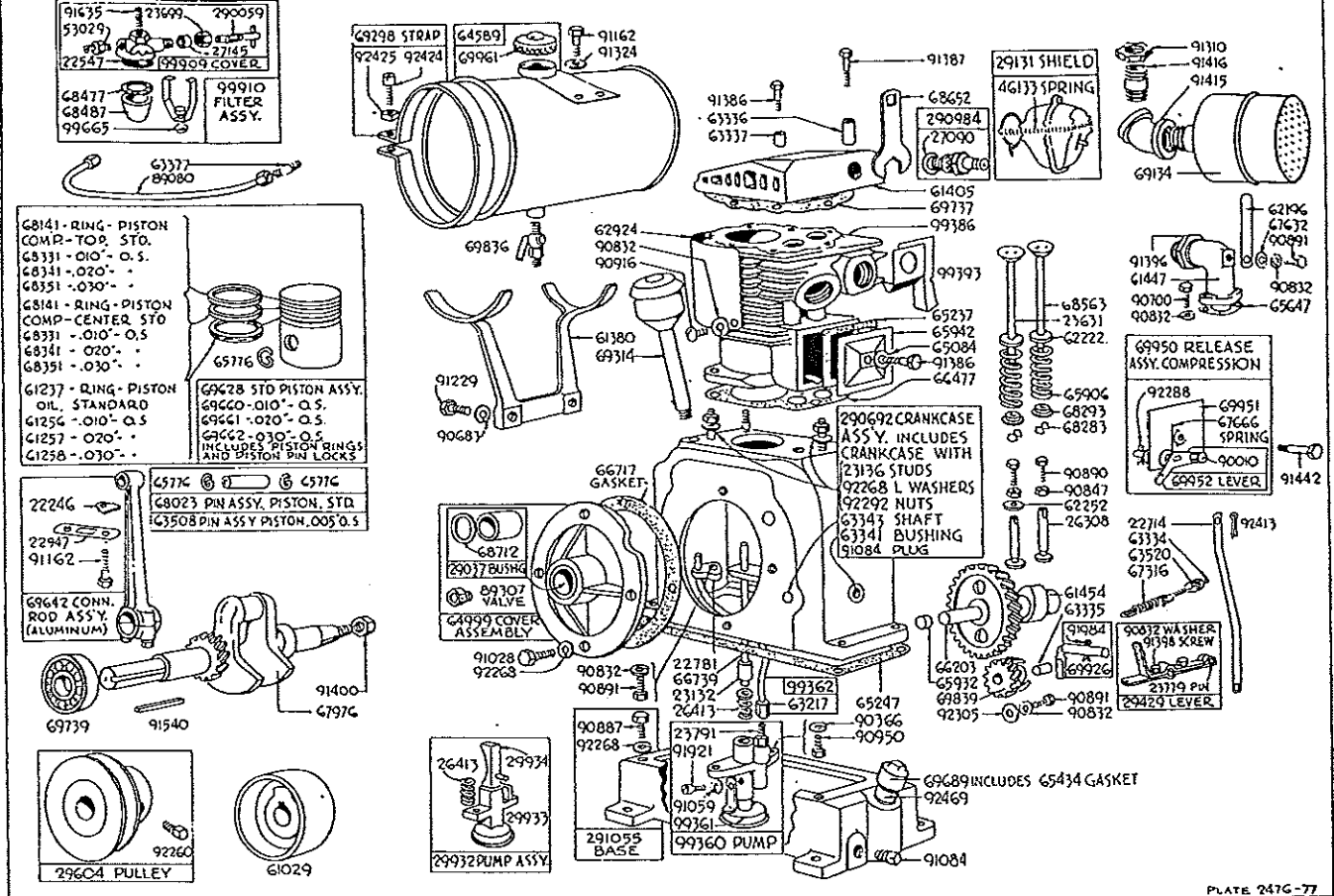
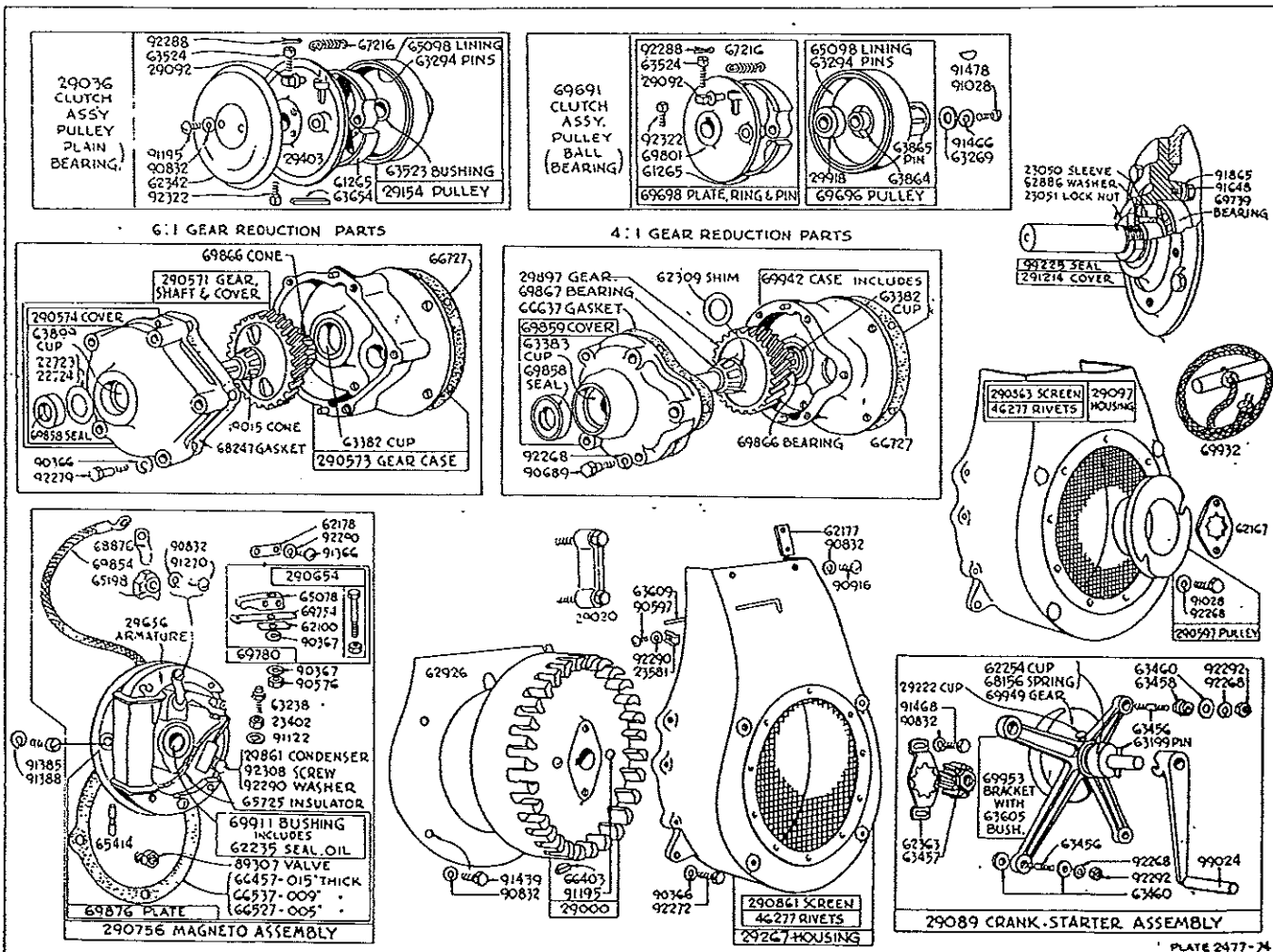
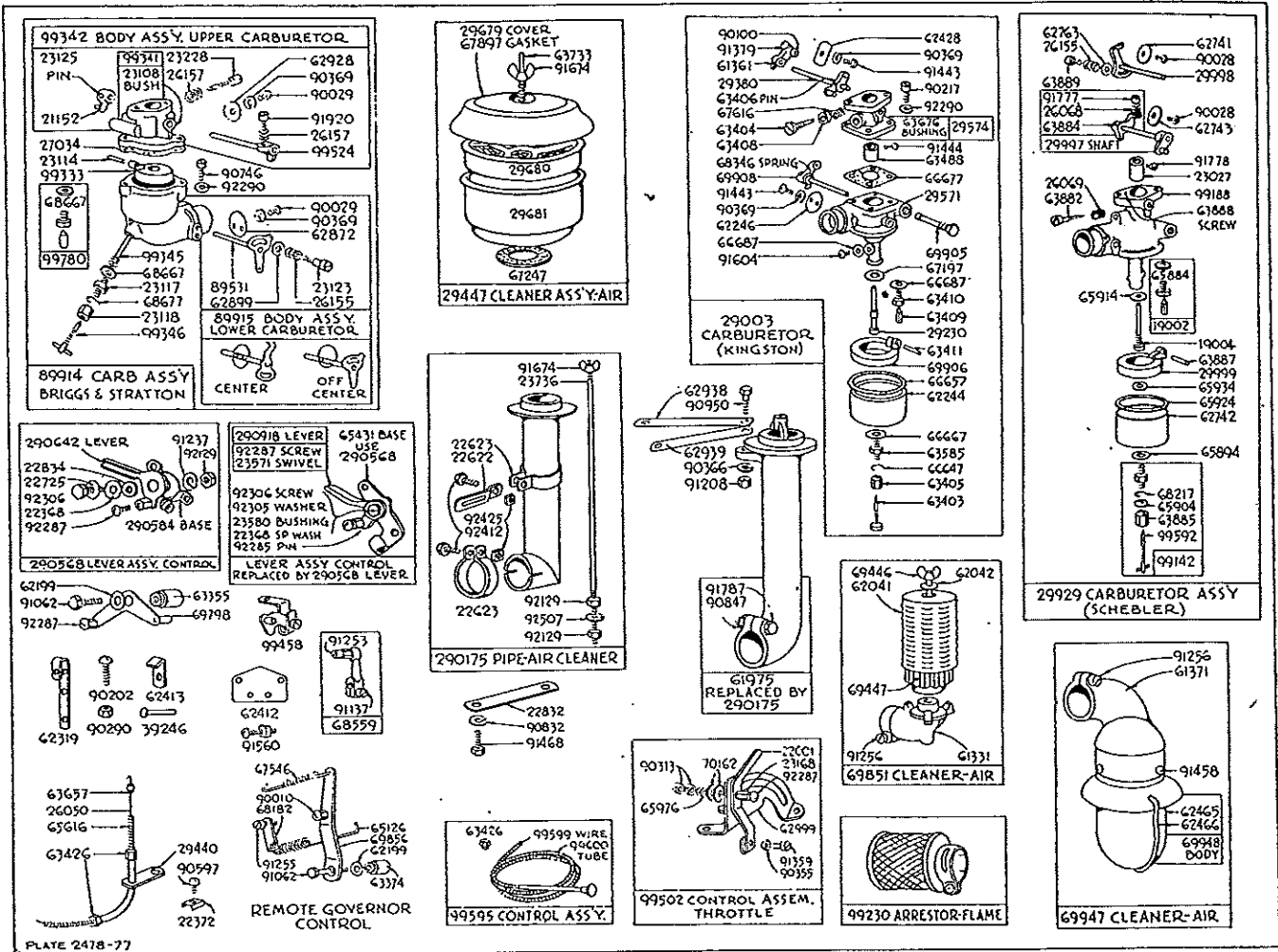


Plate No. 20

PLATE 2476-77



ASSEMBLIES INCLUDE ALL PARTS SHOWN IN BRACKETS



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 guarantee 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.	315 N. Central Ave.
California	Los Angeles 15	Electric Equipment Company	1611 S. Hope St.
California	San Francisco 9	Frank Edwards Co., Automotive Service Div.	1414 Van Ness Ave.
Colorado	Denver 1	Spitzer Electrical Company	43 W. 9th Ave.
Florida	Jacksonville 1	Spencer Electric, Inc.	40 W. Beaver St.
Florida	Miami 32	Electrical Equipment Co.	42-58 N. W. 4th St.
Florida	Tampa 1	Spencer Auto Electric, Inc.	607-11 E. Cass 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 4	Guling Auto Electric Co.	450 N. Capitol Ave.
Iowa	Des Moines 9	Magneto Carburetor & Electric Co., Inc.	1309 Grand Ave.
Kansas	Wichita 2	The E. S. Cowie Electric Co.	230 S. Topeka Ave.
Kentucky	Lexington 34	Kentucky Ignition Co., Incorporated	Rose and Vine Sts.
Louisiana	New Orleans 1	A. C. Suhren Co.	1319 St. Charles Ave.
Louisiana	Shreveport 80	Chain Battery & Automotive Supply, Inc.	Marshall at Colton St.
Massachusetts	Boston 15	Wm. H. Flaherty Co.	48-52 Cummington St.
Michigan	Detroit 1	Auto Electric & Service Corporation	90 Selden Ave.
Minnesota	Minneapolis 2	Reinhard Brothers Co., Inc.	11 S. Ninth St.
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	Lee Pasley	20 N. 33rd St.
Nebraska	Lincoln	Carl A. Anderson, Inc.	1637 P Street
Nebraska	Omaha 2	Carl A. Anderson, Inc.	16th and Jones St.
New Mexico	Albuquerque	Spitzer Electrical Co.	509 N. 2nd St.
New York	Buffalo 14	The Battery & Starter Co., Inc.	2505 Main St.
New York	New York 23	The Durham Co., Inc.	17 W. 60th St.
New York	Syracuse 4	The Durham Co., Inc.	943 W. Genesee St.
North Carolina	Charlotte 1	Carolina Rim & Wheel Co.	312 N. Graham St.
North Dakota	Fargo	Reinhard Brothers Inc.	301 N. Pacific Ave.
North Dakota	Minot	Reinhard Brothers Inc.	18-20 3rd St., N. E.
Ohio	Cincinnati 2	Gardner, Inc.	213 E. 8th St.
Ohio	Cleveland 15	Electric Power Maintenance Co.	2536-40 Prospect Ave.
Ohio	Toledo 2	The Electric Power Maintenance Co.	26-30 Seventeenth St.
Oklahoma	Oklahoma City 2	American Electric Ignition Co.	124 N. W. 8th St.
Oregon	Portland 9	Tracey & Co., Inc.	N. W. 10th and Gilsan
Pennsylvania	Philadelphia 30	Auto Equipment & Service Co., Inc.	1522-24 Fairmount Ave.
Pennsylvania	Pittsburgh 24	Pitt Auto Electric Company	5135 Baum Blvd.
South Dakota	Aberdeen	Reinhard Brothers Co., Inc.	317 S. Lincoln St.
Tennessee	Knoxville 7	R. T. Clapp Company	401-7 N. Broadway
Tennessee	Memphis 4	Automotive Electric Service Co.	982 Linden Ave.
Texas	Amarillo	The E. S. Cowie Electric Co.	700 Van Buren St.
Texas	Dallas 1	Beard & Stone Electric Company, Inc.	2101 Bryan 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 13	Frank Edwards Co., Motor Equipment Div.	605-609 So. State St.
Virginia	Richmond	Richmond Battery & Ign. Corp.	1319 W. Broad St.
Washington	Seattle 14	Sunset Electric Co.	300 Westlake North
Washington	Spokane	Sunset Electric Co.	First and Adams
Wisconsin	Milwaukee 2	Wisconsin Magneto Co.	918 N. Broadway

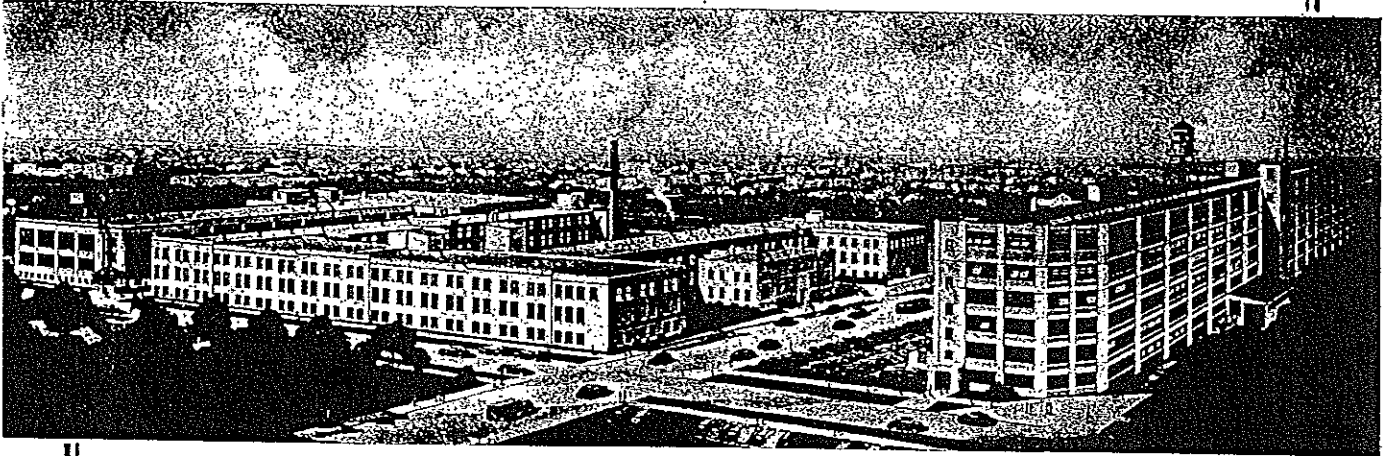
DOMINION OF CANADA

Manitoba	Winnipeg	Beattie Auto Electric Limited	176 Fort St.
Ontario	Toronto 5	Auto Electric Service Company, Limited	1009-27 Bay St.

Only Authorized Service Organizations
Display this Sign —



Your Assurance of Efficient
Briggs & Stratton Service



WHERE BRIGGS AND STRATTON MOTORS
ARE MADE

THESE large and modern factory buildings, located in Milwaukee, Wisconsin, are complete with all modern equipment and machinery for precision construction, economical production, rigid inspection and thorough testing of Briggs & Stratton 4-cycle gasoline motors.

Briggs & Stratton Corp. produces more small 4-cycle air-cooled gasoline motors than any other manufacturer in the world.

BRIGGS & STRATTON CORP., MILWAUKEE 1, WIS.