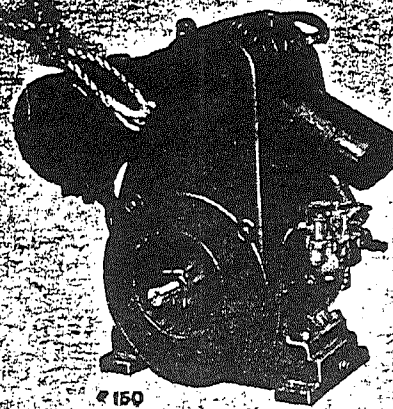


#### WHERE BRIGGS & STRATTON MOTORS ARE MADE

YOUR Model "R" Gasoline Motor is one of many thousands which are manufactured annually in this modern Briggs & Stratton factory at Milwaukee, Wisconsin. More small gasoline motors are produced here than in any other single plant in the world. The building is complete with all modern facilities for precision construction, economical production, rigid inspection and thorough testing. Briggs & Stratton gasoline motors, made here, are shipped to all parts of the world because of their established reputation for reliable service under widely varying conditions.

FORM 58157-61-5



# 150

## OPERATING MANUAL *and* PARTS LIST *for* BRIGGS & STRATTON GASOLINE MOTOR

MODEL R

# 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](http://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



 <b>WARNING</b>



<b>Failure to select the correct engine could result in fire or explosion.</b>



- 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] 



 <b>WARNING</b>	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] 



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



 <b>WARNING</b>	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] 







 <b>WARNING</b>	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] 

 <b>WARNING</b>	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] 

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

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

# ENGINE OPERATION

	 <b>WARNING</b>
<b>When adding fuel:</b>	
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.	
	 <b>WARNING</b>
<b>When starting engine:</b>	
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.	
	 <b>WARNING</b>
<b>When operating equipment:</b>	
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.	

# INDEX

	Paragraph Number	Page Number	Illustration Page Number
Air Cleaner	17, 18		
Carbon	61, 65	20, 21	
Carburetor	26, 27, 52 to 59 Incl.	7, 8, 18, 20	7, 18
Adjusting	54 to 57 Incl.	18, 19	7, 18
Choke	26, 27	7, 8	5, 7
Hook up	53	18	17
Cleaning	58, 59	19, 20	5, 9, 18
Cooling	16, 39	4, 13	
Compression	33, 60 to 62 Incl.	10, 20	
Connecting Rod	68	22	
Cranking	23 to 25 Incl.	6, 7	
Cylinder	65, 67, 68	21, 22	
Gasoline Line (Cleaning)	31	9	
Gasoline Tank	22	6	5
Guarantee	6 to 18 Incl.	2 to 4	2
Governor	49 to 51 Incl.	17	17
Hand Throttle Control	51A	17	17
Ignition System	25, 26, 40 to 48 Incl.	6, 7, 14 to 17	9, 14, 16
Contact Points	45	15	16
Tire Wheel	40, 42	14, 15	14
Tire Wheel Key	40, 42	14, 15	14
Spark Plug Cable	47	16	
Spark Plug	28	8	8, 9
Spark Plug	29, 43	8, 9, 15	8, 9
Substitution System	19 to 21, 38, 39	6, 13	
Milk Oil Reservoir	13, 14, 15 to 21 Incl.	3, 4, 6	5
Oil to use	19	6	
When to add & change oil	13 to 16 Incl.	3, 4	
How to order		23, 24	
Illustrations		25 to 30	25 to 30
Price List		30 to 38	
Parts	62, 63, 67, 68	20, 21, 22	
Timing Motor	30	9	
Registration Cards	8 to 8 Incl.	2, 3	2
Service Stations		39, 40	
Speed Adjustment	49	17	
Starting Motor	24	7	
Stopping Motor	23, 44	6, 15	5
Timing	64	21	21
Trouble Chart		10, 11	
Valves	61	20	

## This Gasoline Motor Is Your Faithful Friend

*Treat it as a Friend*

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

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

3. This operating manual gives you the following information:

	Pages
About the Guarantee	2 to 4
Starting the motor for the first time	6, 7
What to do when the motor will not start	7 to 10
Trouble Remedy Chart	10, 11
How your motor works	12, 13
Its construction and maintenance	14 to 22
How to order parts	23, 24
Parts illustrations	25 to 30
Parts and price lists	30 to 38
Central Service Stations	39, 40
Index	Inside Front Cover
Motor specifications	Inside Back Cover

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

5. Be sure to read instructions on page 24 on how to order parts for best service.

1

*Model and motor number must be given when writing or ordering parts*

## Have You Sent in the Registration Card Which Brings Your Guarantee Certificate?

6. You are entitled to a ninety day guarantee on your Model "R" Motor, so be sure that you get the Guarantee Certificate. It will only be sent to you after the Registration Card has been filled out.

**REGISTRATION CARD**  
To Receive Your MOTOR GUARANTEE CERTIFICATE

Model No. \_\_\_\_\_ T. No. \_\_\_\_\_ A. No. \_\_\_\_\_  
Date \_\_\_\_\_  
Your Name \_\_\_\_\_  
Mail Address \_\_\_\_\_  
Town \_\_\_\_\_ State \_\_\_\_\_  
Dealer Purchased From \_\_\_\_\_  
Machine No. \_\_\_\_\_  
Motor Mounted on \_\_\_\_\_

**GUARANTEE CERTIFICATE**

THE ORIGINAL \_\_\_\_\_ of this Briggs & Stratton Motor

Model \_\_\_\_\_ T. No. \_\_\_\_\_ A. No. \_\_\_\_\_  
Date \_\_\_\_\_  
The following guarantee \_\_\_\_\_  
Briggs & Stratton Corporation will replace for the original found, upon examination at our factory at normal use and service, on account of defects in material or workmanship, all transportation charges on parts or parts submitted for replacement by purchaser.

\_\_\_\_\_ has been the subject of misuse, negligence or accident, or has been repaired or altered outside of our Milwaukee factory, or authorized service stations in any way which, in our judgment, affects its condition or operation.

BRIGGS & STRATTON CORPORATION  
J. Briggs, President

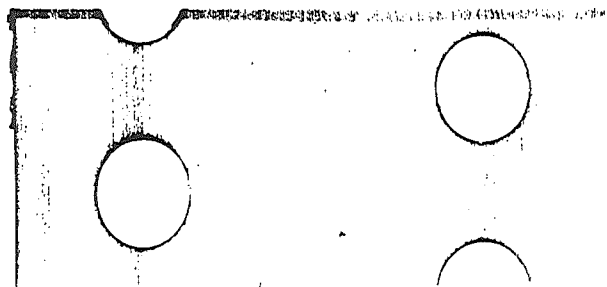
Registration Card and  
Guarantee Certificate

and mailed in to the factory. The dealer from whom you bought your motor should do this for you, but if he did not do so you should fill out the card and mail it at once.

7. By mailing in this card you not only make sure of getting your Guarantee Certificate but you also have your name and motor registered at the Briggs & Stratton factory and with the author-

2

Model and motor number must be given when writing or ordering parts



ized central service station in your territory so that, should you write regarding service or parts, your requirements will be taken care of promptly.

8. If you did not get a Registration Card, ask your dealer for one or write to the Briggs & Stratton Factory.

### What the Guarantee Includes

9. For 90 days from the date of purchase, 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 authorized Briggs and Stratton Service Station, to be defective under normal use and service, on account of defect in material or workmanship. All transportation charges on parts submitted for replacement under this guarantee must be paid by purchaser.

### What the Guarantee DOES NOT Include

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

### Keep Your Motor Clean

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

12. 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.

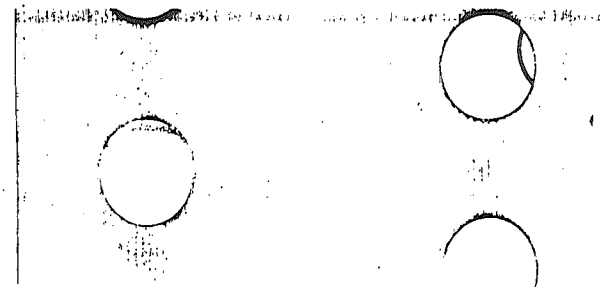
## Failure to Follow these Instructions Voids Your Guarantee

### Put oil in every day

13. A motor which is run without oil will be ruined within a few minutes. To avoid the possibility of such an occurrence, and the

3

Model and motor number must be given when writing or ordering parts



resulting expense this would cause, always fill the oil reservoir to the level of the filler plug opening every five hours motor runs.

**Change oil at least once for each twenty five hours motor runs**

14. After each twenty five hours of operation, the old oil must be completely drained from the crankcase by removing either one of the oil drain plugs at the base of the motor. One of these can be seen in the motor illustration of Fig. 1 on page 5. Drain out the oil when the motor is hot, as the oil drains out more quickly and thoroughly. Then replace the plug and refill with fresh oil. We do not recommend flushing out with kerosene.

15. In the normal running of any motor small particles of metal from the cylinder walls, pistons and bearings will gradually work into the oil. Dust particles from the air also get into the oil. Sludge forms a gummy mass which clogs up the oil passages. If oil is not changed regularly, these foreign particles cause increased friction and a grinding action which shortens the life of the motor.

16. Fresh oil also assists in cooling, for in an air-cooled motor old oil gradually becomes thick and loses its cooling as well as its lubricating qualities.

**Air Cleaner**

17. Operating a Briggs & Stratton motor in a dusty or dirty atmosphere without using an air cleaner voids your guarantee, because no motor can stand up under the grinding action that takes place when dirt and sand particles are drawn in through the carburetor.

18. It is necessary to clean the air cleaner occasionally. This can be done by tapping the filter with a wooden stick to shake off the excess dust, or to clean it more thoroughly, the dust may be brushed off with a whiskbroom. Should the felt become oily or greasy it may be washed in high test gasoline and then dried before replacing.

NOTE—On some "R" motors an air cleaner filled with moss and covered with wire screen was used. This type of cleaner should be cleaned every day by removing and washing in kerosene, then dipping it in oil to make it efficient in catching dust.

4

*Model and motor number must be given when writing or ordering parts*

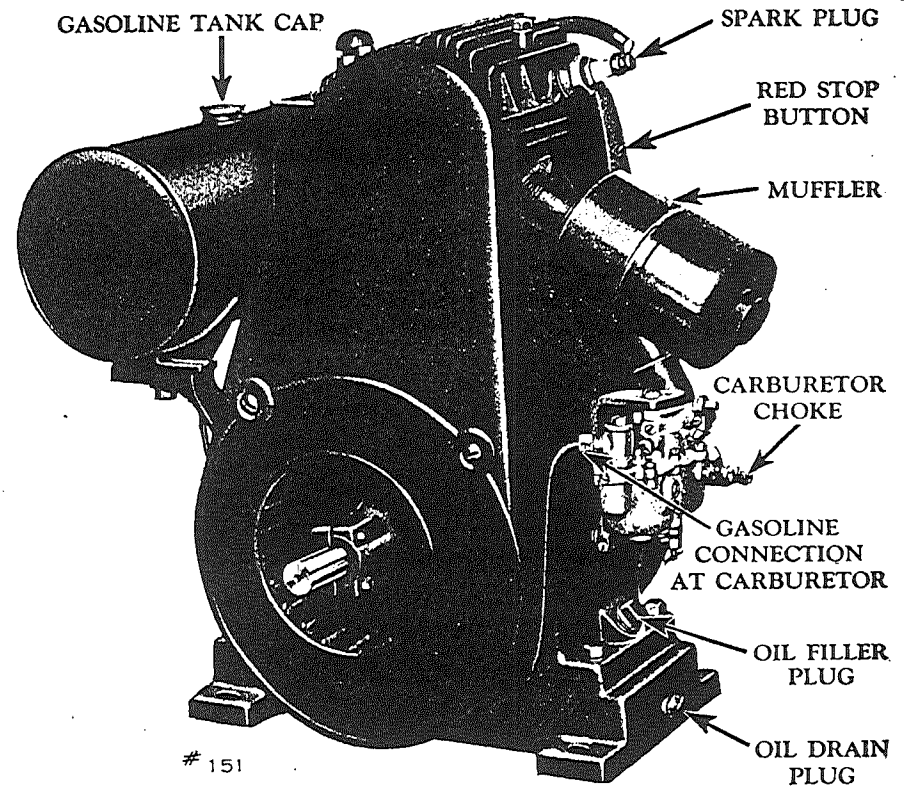
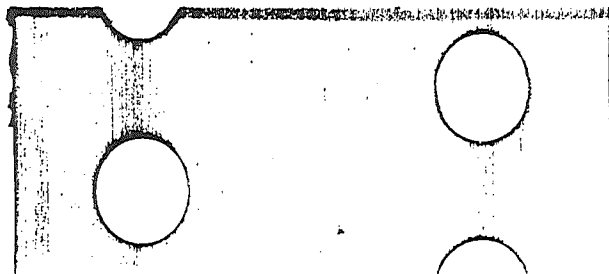
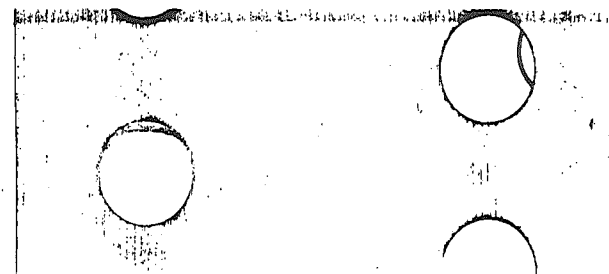


Fig. 1.

Model "R" Motor

5



## Starting the Motor for the First Time

### *Use the right kind of oil*

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

### *Do not mix oil with the gasoline*

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

### *Fill the oil reservoir*

21. The oil filler plug is shown in the motor illustration of Fig. 1 on page 5. Remove either plug and pour in oil until it rises to the level of the filler plug opening. The capacity of the oil reservoir is three pints.

### *Fill the Gasoline Tank*

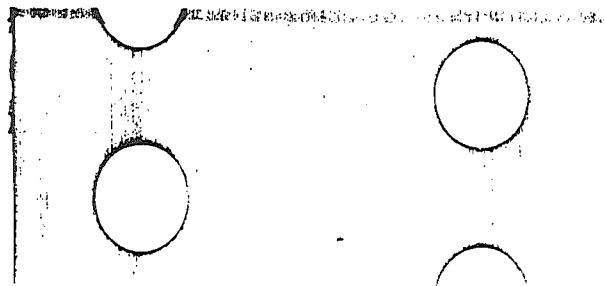
22. The gasoline tank is filled by removing the large gasoline tank cap which is shown in Fig. 1 on page 5. The capacity is five and a half quarts. High test gasoline is recommended and insures easy starting, particularly in cold weather. Be sure that the small vent hole in the gasoline tank cap is not clogged up, for air must enter the tank to allow the gasoline to flow to the carburetor.

### *Spark*

23. A spark will be supplied to the spark plug as soon as you crank the motor, the source of ignition being a magneto built into the flywheel. You do not need to turn on any switch in order to turn on the ignition. When stopping, however, you press on the red stop button until the motor stops turning.

6

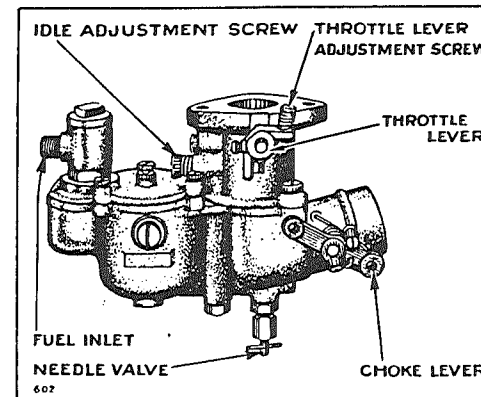
*Model and motor number must be given when writing or ordering parts*



### *Cranking*

24. Hold the choke lever (See Fig. 1 or Fig. 2) in the closed position. (The spring automatically holds the choke open.) This choke lever acts the same as the choke on your automobile. Spin the motor with rope or crank starter (crank starter turns left hand or counter clockwise) and immediately after motor fires, gradually open choke until the motor runs with choke wide open. If motor is

cold it may slow down or sputter. In this case close the choke again, or nearly close it, for a few seconds. If the motor stops you have probably choked it too much or not enough. You will soon learn to judge the correct operation of the choke lever so that the motor can be quickly started and kept running without difficulty.



*Fig. 2.  
Carburetor*

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

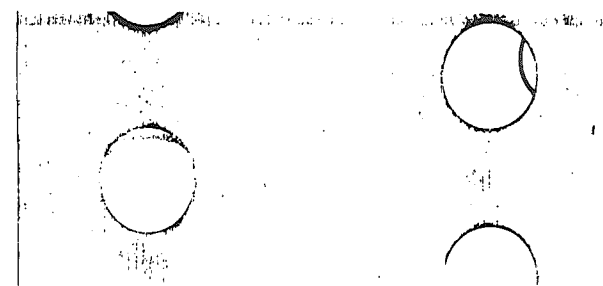
## What To Do When Motor Will Not Start

### *The correct use of the choke*

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

7

*Model and motor number must be given when writing or ordering parts*



27. The correct carburetor setting is one which gives a good operating mixture when the motor is hot. Because gasoline does not vaporize so well when cold, it is necessary to operate the choke in order to cut down the amount of air and give a mixture which is approximately correct for starting. Until you become perfectly familiar with your motor, however, you may make the mistake of not choking the motor enough or you may choke it too much so as to get a lot of raw gasoline in the motor. If you have operated the choke while cranking the motor three or four times, try cranking two or three times with the choke lever released. Then, if the trouble was due to choking too much you will find that the motor will start as the excess gasoline is driven out through the exhaust pipe.

### Checking the Spark

28. To be sure that you have a spark at the spark plug, you can remove the wire from the plug and hold it within  $\frac{1}{8}$ " of any metal part of the motor (See Fig. 3). Keep the hand back on the insulated part of the wire so that you will not get a shock. Then crank the motor and see if a spark will jump this  $\frac{1}{8}$ " gap. If it does, you will know that the spark is amply strong to jump the small gap at the spark plug when under compression in the motor. This test is

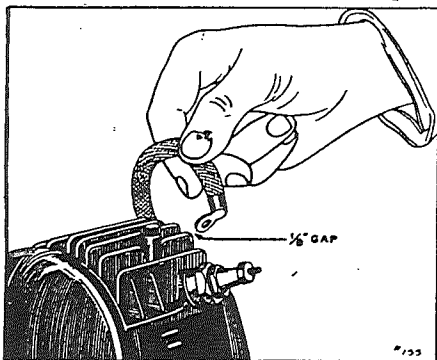


Fig. 3.  
Checking Spark

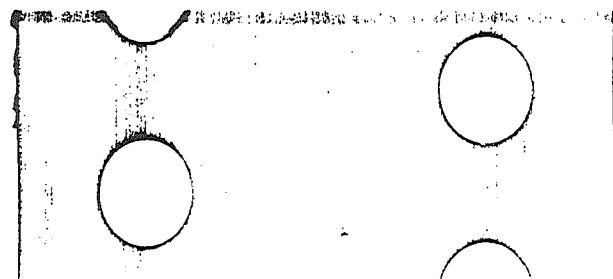
evidence that your entire ignition system is working satisfactorily. If there is no spark, check the various items on the trouble chart, pages 11 and 12, or see your local dealer or nearest Briggs & Stratton service station.

### Checking Spark Plug

29. It sometimes happens that a spark plug porcelain is

8

Model and motor number must be given when writing or ordering parts



cracked or broken so that the spark jumps through from the center electrode to the shell of the spark plug and does not jump at the gap inside of the cylinder (see Figure 4). This, of course, prevents the motor from firing. The simplest way to check a spark plug is to try a new one and you will find it advisable to have a spare plug on hand for testing. If the motor starts with the new plug, then you know that the old one is at fault and should be discarded. The gap at the spark plug should be somewhat less than  $\frac{1}{32}$ " (to be exact, .020").

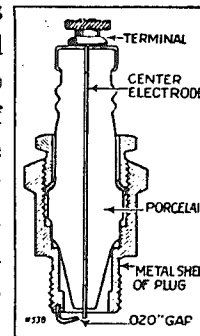


Fig. 4.  
Spark Plug

### Priming the Motor

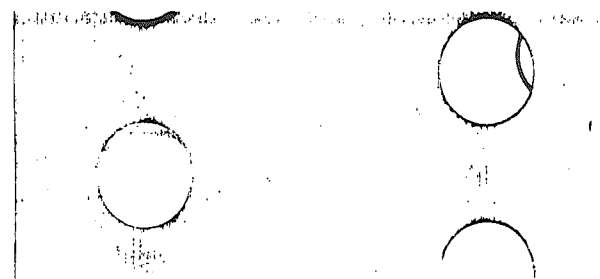
30. On the suction stroke, the motor draws gasoline up through the carburetor, mixes it with air, and feeds a combustible mixture to the cylinder. However, if the magneto produces a good spark and a good spark plug is in the cylinder (set with a gap of .020") and still you cannot start the motor, it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

### Cleaning the Gasoline Line

31. If the motor will run after the cylinder has been primed with gasoline but will not run otherwise, it is possible that the gas feed line to the carburetor is stopped up. Shut off the gasoline by closing the valve at the tank. Then disconnect the gasoline connection at the carburetor (see Fig. 1). Now turn on the gasoline valve at the tank and see if gasoline runs in a good full stream from the open

9

Model and motor number must be given when writing or ordering parts





end of the gasoline line. If it does you know there is no obstruction in this line. If it merely drips out slowly, you know that the line needs cleaning. Disconnect the copper gasoline line at the tank end and blow through it with compressed air if this is available; otherwise, run a flexible wire through the line and then blow through it.

### Adjusting Carburetor

32. The carburetor is properly adjusted at the factory but if you think the adjustment has been tampered with you can adjust it over again in accordance with the instructions given on page 19.

### Testing Compression

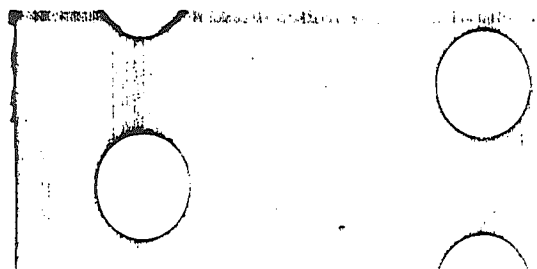
33. The other essential in having a motor run is to have good compression. You can test this by turning the motor over by hand to make sure there is one point in its rotation where it turns harder than it does at other points. This is due to the upward motion of the piston compressing the fuel mixture. If the flywheel is released, it should rock back and should do this two or three times before the compression all leaks away. If there is no compression, refer to trouble chart on pages 11 and 12.

## Trouble Remedy Chart

<b>A--Fuel</b>	<b>Motor will not start</b>	<b>See Paragraph Number</b>
1. Gasoline tank supply.....		22
2. Improper use of choke.....		26-27
3. Gasoline does not reach carburetor.....		22-30-31
4. Improper carburetor adjustment.....		54 to 57
5. Carburetor jet clogged.....		58-59
6. Water in the gasoline.....		12
7. Water frozen in carburetor or gasoline pipe.....		31-58-59
	(Extremely cold weather only)	
<b>B--Spark</b>		
1. Plug not functioning properly.....		28-29-43
2. Ignition cable grounded, oil soaked or wet.....		47
3. Magneto not delivering proper spark.....		28-36-41-42-48
a. Contact points are not properly adjusted.....		45

10

Model and motor number must be given when writing or ordering parts



## Trouble Remedy Chart

See Paragraph Number

b. Contact points oily or dirty.....	45
c. Magneto plate and coil soaked with water or oil.....	45
d. Stop button bent, stuck, wet or dirty.....	44
e. Safety Woodruff key sheared off.....	36-41-42

### C--Lack of Power

1. Poor compression .....	33-60-61
2. Poor spark .....	28-29-41 to 48
3. Improper carburetor adjustment .....	54 to 57
4. Exhaust pipe or muffler clogged.....	69
5. Improper valve clearance .....	61
6. Air cleaner clogged .....	17-18
7. Machine being operated is overloaded .....	70
8. Machine being operated needs oiling.....	70

### D--Overheats

1. Oil supply low .....	13-19 to 21
2. Oil needs changing—is too thick to cool engine properly.....	14 to 16
3. Carbon in cylinder head.....	65
4. Poor spark .....	28-29-41 to 48
5. Machine being driven is overloaded.....	70
6. Machine being driven needs oiling .....	70

### E--Stops

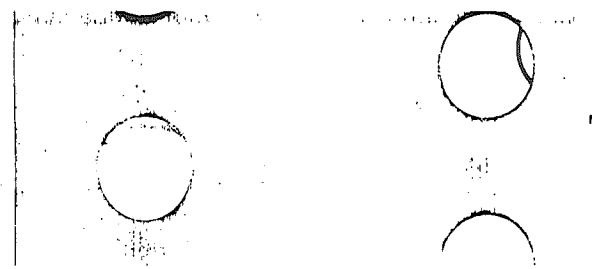
1. Gas supply shut off .....	22
2. Intermittent spark failure .....	28-29-41 to 48
3. Overheated .....	
4. Flywheel sheared—loose flywheel .....	36-41-42

### F--Knocks

1. Carbon in cylinder head .....	65
2. Loose connecting rod .....	4-66
3. Worn main bearings .....	4
4. Loose flywheel .....	36-41-42
5. Lack of oil .....	13
6. Defect in connection with machine being driven .....	70

11

Model and motor number must be given when writing or ordering parts



# How Your Model "R" Motor Works

## The 4-Cycle Principle

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

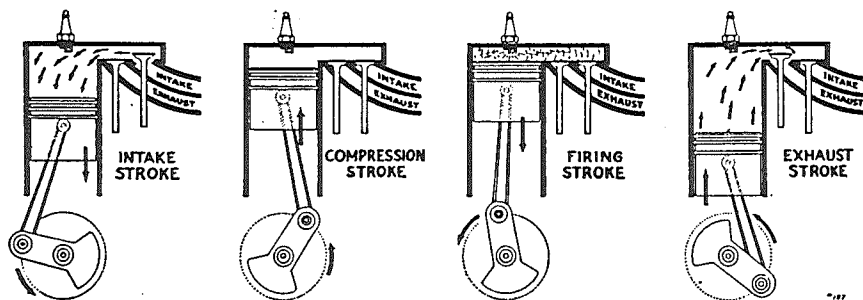
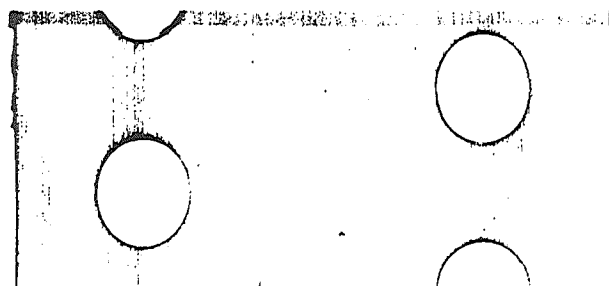


Fig. 5.  
4-Cycle Principle

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

35. In our 4-cycle motor the events are illustrated in Fig. 5. On the intake stroke (illustration at the left), we have the piston going down, producing a vacuum in the cylinder, thereby drawing fuel up through the carburetor so that the space above the piston becomes filled with combustible gas. During this stroke the intake valve is open. In the next illustration we find the piston coming up on the compression stroke with both valves closed. At the top of the compression stroke a spark occurs at the spark plug, firing the gas. This produces an explosion above the piston which forces it down on the firing stroke. Both valves are closed on the firing

Model and motor number must be given when writing or ordering parts



stroke. On the next upstroke of the piston, with the exhaust valve open, the burned gas is driven out.

## The Ignition

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

## The Carburetor

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

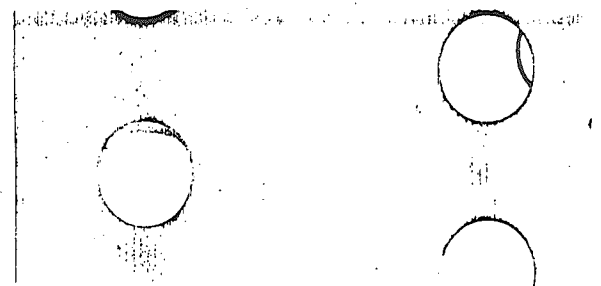
## The Lubrication

38. The lubrication of your Model "R" Motor is taken care of by a pump which is operated from an eccentric on the camshaft. This pump keeps a trough, into which the connecting rod dips, constantly full of oil. The dipping of the connecting rod then throws oil to all moving parts of the motor. Oil, which is splashed to the main bearings, is in no danger of leaking out of the motor. Return ducts are provided in which check valves are used. The suction in the crankcase draws oil back into the oil reservoir but pressure in the crankcase cannot reverse the action and force oil out again. Consequently, the motor stays clean and the oil supply is efficiently used.

## The Cooling

39. The cylinder is cooled by air as are the cylinders of modern airplane motors. The rotation of the flywheels blows air all around the cylinder which is covered with thin metal fins to help carry heat away from the cylinder walls. As previously mentioned, the cooling is also greatly facilitated by the oil in the motor reservoir. In cooling the motor, however, the light portions of oil are gradual-

Model and motor number must be given when writing or ordering parts



ly driven off and the oil which remains becomes too heavy to lubricate or cool the motor effectively. This is another reason for frequently changing the oil in the reservoir. See paragraphs 19, 20 and 21.

## Construction and Maintenance

### Ignition System

#### 40. Removing the Flywheel and Magneto.

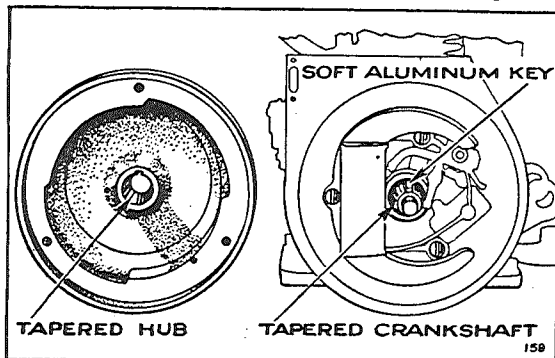


Fig. 6.

Magneto Flywheel and Crankshaft Taper

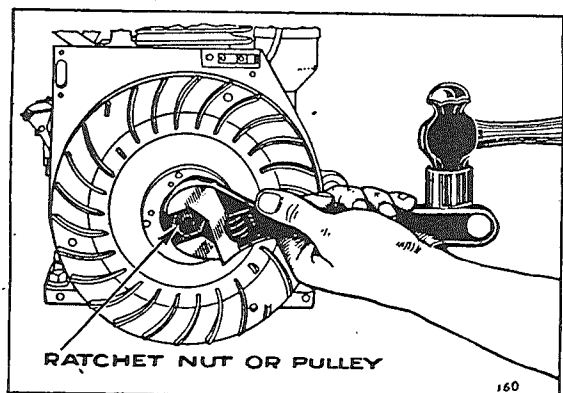


Fig. 7.

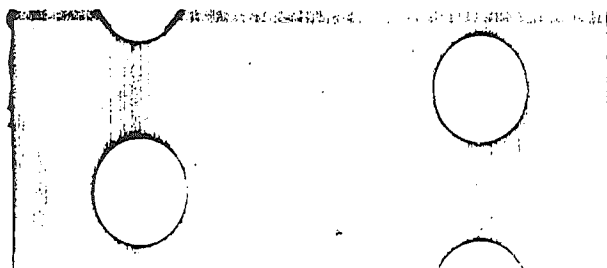
Tightening Flywheel

To inspect the magneto or check up on the contact point setting, it is necessary to remove the flywheel. This is done by unscrewing the nut which holds it in place. A right-hand thread is used, so the nut should be turned to the left. It can be started by tapping the wrench handle with a hammer. Then place a block of wood against the end of the crankshaft and strike it to loosen the flywheel. The magneto is removed by taking out three screws.

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

14

Model and motor number must be given when writing or ordering parts



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

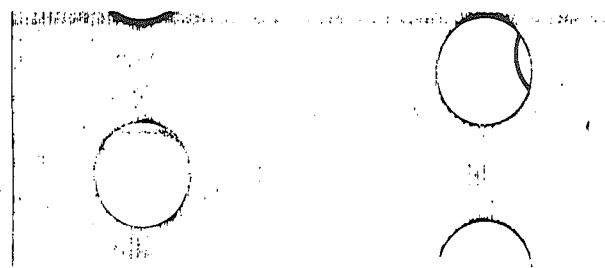
43. Spark Plug A sectional view of the spark plug is shown in Fig. 4. The purpose of the porcelain is to prevent the spark from jumping anywhere except at the gap in the cylinder. If the porcelain is cracked or broken, however, the spark may jump through to the shell of the spark plug. This will prevent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

44. Stop Button. See that the stop button is not bent or held down by the blower case so that it makes contact continuously. To check this it may be necessary to remove the blower case. See that the button is not shorted with dirt, water or oil. Also check the small wire which runs down to the magneto to see that it is not grounded.

45. Contact Points. While the magneto plate is still on the motor, you can turn the crankshaft by hand and see if the contact points

15

Model and motor number must be given when writing or ordering parts



open and close properly. They should have a gap of .020". Adjustment is made by loosening the contact bracket screw and moving the bracket to its desired position. The contact points surface

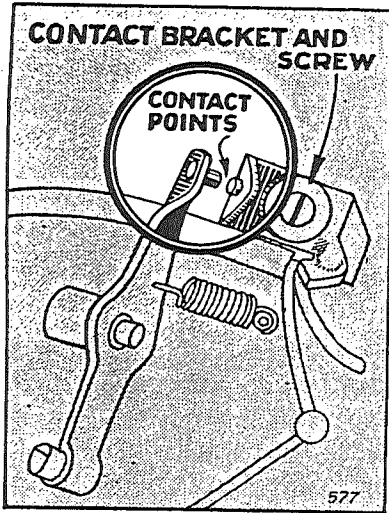


Fig. 8.  
Contact Points

coil. Dry off the magneto with another clean rag before putting it in service again.

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

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

16

Model and motor number must be given when writing or ordering parts.

should be clean and the faces of the points square so that when they come together they make good electrical contact. If points become badly burned or pitted it may be necessary to replace them with new ones. When checking up the contact points be sure that all parts of the magneto are clean and free from grease, water and dirt. Small metal particles, in particular, will cause trouble and prevent the magneto from firing. The various parts can be washed off with gasoline on a clean rag. Avoid getting gasoline on the

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

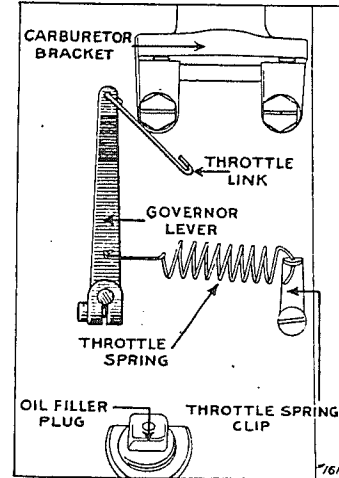


Fig. 9.

**Carburetor Hookup**

Hold shaft in this position and place lever on shaft so that lever points up and to left at an angle of about 45°. Partially tighten clamp screw, move lever to right until exactly vertical and finish tightening screw.

**Hand Throttle Control**

51A. Model "R" motors which are equipped with hand throttle controls are hooked up as illustrated in Figure 10. The control casing tube assembly is fastened down with one of the crankcase mounting screws. The control casing with the control wire inside is inserted

17

Model and motor number must be given when writing or ordering parts

**Governor**

49. **Speed Adjustment.** Normal motor speed 1800 to 2200 R. P. M. To change motor speed, change tension of throttle spring by moving throttle spring clip. More tension on throttle spring increases speed, less tension reduces speed. (See Fig. 9).

50. **Governor Lever.** If governor lever has been loosened on it's shaft it is reset as follows:- (See Fig. 9.)

51. Loosen clamp screw and remove governor lever from its shaft. With pliers or fingers turn shaft to the right as far as it will go until you feel it strike a stop inside of crankcase.

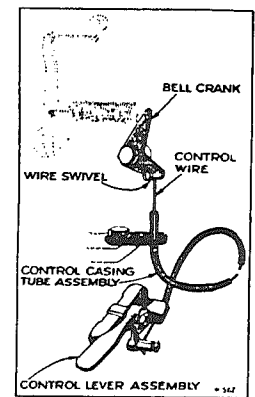
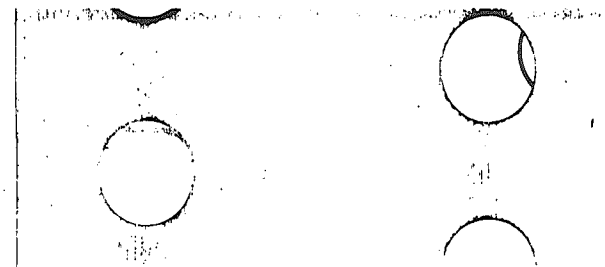
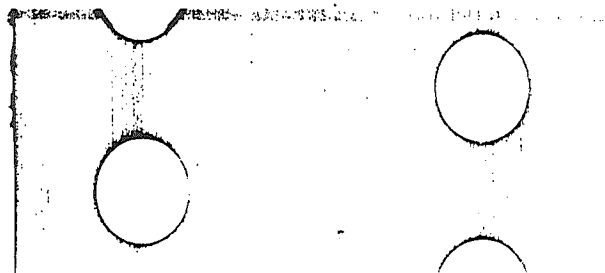


Fig. 10.  
Hand Control Hookup



into the tube, with the wire coming through the top. The end of the wire is fastened to the wire swivel on the bell crank. The bell crank is held on the crankcase with the spacer bushing and cap screw. The coiled end of the throttle spring is hooked to the other end of the bell crank, and the long end of the spring is hooked thru the cotter on the governor lever. Pulling on the control wire increases motor speed.

### Carburetor

52. The carburetor used on your Model "R" Motor is shown in Fig. 11. As received from the factory it is properly adjusted. However, if it has been tampered with, it can be adjusted over again as follows:

53. **Hook-up.** First make sure that the throttle link has one end hooked through the hole in the top of the governor lever from the outside toward the crankcase and the other end hooked into the hole in the bottom of arm on back of throttle shaft of carburetor (see Figure 9).

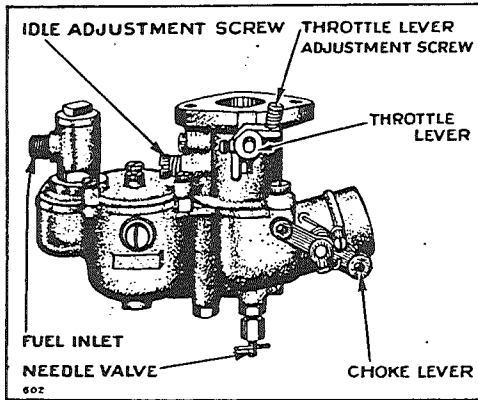


Fig. 11.  
Carburetor

54. **High Speed Adjustment (See Figure 11).** Close the needle valve adjusting screw (high-speed adjustment) located on the carburetor, by turning clockwise all the way in (never force the needle against its seat.) Then open the needle valve one and one-half turns.

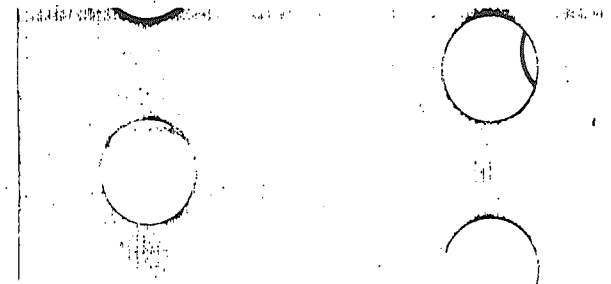
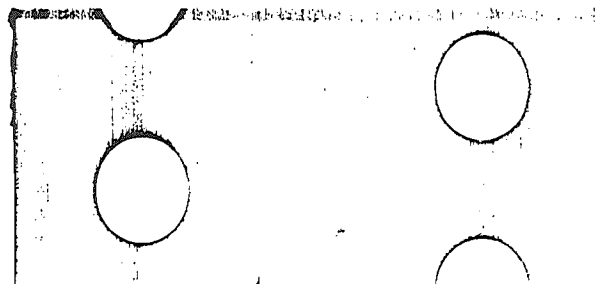
55. Now close the idle adjustment screw which is located opposite the fuel inlet, by turning clockwise all the way in. Then open it one-half turn. You are now ready to try the adjustments and make

the final adjustment of the carburetor. Before doing so, however, run the motor until it is thoroughly warmed up. Then turn the needle valve adjusting screw clockwise until the motor sputters or the speed begins to drop. Then open the needle valve again by turning it counter-clockwise until the motor operates smoothly.

56. **Idling Adjustment.** Set the throttle lever to desired idling speed by adjusting throttle lever adjustment screw. At this idling speed make idle adjustment by first turning the adjusting screw counter-clockwise and then turning it clockwise until the motor operates smoothly when idling. Any change in the throttle lever stop screw will require a new idling adjustment.

57. **Final Adjustment.** With motor again running at normal full speed recheck the operation of the highspeed adjustment. Also test adjustments by accelerating from idling to high speed. The best final adjustment is one in which you get smooth running and good power with the needle valve adjusting screw turned clockwise as far as possible. When the final carburetor setting has been determined, do not change it again. This final setting will take care of starting and running although during particularly cold weather you may have to operate the choke a little more than usual while the motor is warming up.

58. **Cleaning the Carburetor.** The carburetor will seldom require cleaning although it sometimes happens that a speck of dust or lint will get into one of the small openings and affect the carburetor's operation. Removing the fuel inlet screw and disconnecting the gasoline line from the carburetor permits removing the inlet connection. When you do this, you will find a cylindrical screen which can be taken off and washed in gasoline. If the carburetor continually floods or leaks, it is probable that there is dirt in the inlet valve. To check this, it is best to have the carburetor off. You can then turn the carburetor upside down and loosen the inlet valve seat. Inverting the carburetor while taking out the seat is advisable so that the inlet valve itself will not fall into the float chamber. When the valve and seat have been taken out they can be inspected



or washed in gasoline to make sure there is nothing to interfere with the proper seating of this valve.

59. **Cleaning the Nozzles.** With the carburetor off, you can remove the needle valve adjusting screw by unscrewing the nut in which it is mounted. This nut is called a stuffing box gland. You can also take out the plug screw. Looking into these two openings you will now see two very small holes or jets. These should be cleaned by blowing out with compressed air. The nozzles in which these holes are drilled can also be unscrewed and washed in gasoline or the holes can be cleaned by running a fine SOFT wire from a shipping tag through them. The use of the wire, however, is not recommended as it may damage the nozzle or affect the size of the opening which is very carefully calibrated.

### Compression

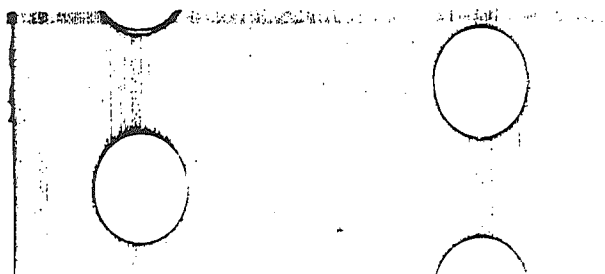
60. Compression in the motor is obtained by having valves which seat properly, gaskets which are tight, a spark plug which does not leak, and piston and piston rings which are properly fitted.

61. **Valves.** The valves are properly fitted when the motor comes from the factory. The exhaust valve marked "EX" is of special material, designed to withstand high temperatures. Its seat is a steel ring pressed into the cylinder block. This construction is better practice than merely facing a seat in the cylinder block itself. It is included in the construction details of your Model "R" Motor, however, because of the increased satisfaction it gives. After long periods of use, the valves should be ground in, just as you would grind valves in an automobile motor. In working on the valves it is best to remove the muffler and exhaust pipe, also the carburetor and intake pipe shown in Fig. 1. Removal of the valve cover plate then gives access to the valve adjustments. The clearance on the intake and exhaust valves to be .006". These adjustments are made with the motor cold.

62. **Piston.** The piston in the Model "R" Motor is made of a special aluminum alloy which is very light in weight. This material per-

20

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mits your motor to develop maximum power at high speed, with minimum vibration. The standard clearance between the piston and cylinder wall is .0055" to .007". The piston rings, when fitted into the cylinder, should have from .007" to .012" gap.

63. **Piston Pin.** The piston pin is a push fit in one side of the piston and a force fit in the other. To remove this pin without special equipment, it is advisable to heat the piston in boiling water. 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. You should of course drive the pin out while the piston is still hot. The piston should also be heated up in order to enable you to easily replace the pin. The heating facilitates the work because of the rapid expansion of aluminum when heated. This also accounts for the clearance of .0055" to .007" which is used in fitting the piston to the cylinder.

### Timing

64. The timing of the valves is taken care of by the meshing of the camshaft gear with the one on the crankshaft. These gears are properly meshed when the two punch marks on the gears come together as shown in Fig. 12.

### Cylinder Head

65. The cylinder head is held on with six cap screws. The longest screws go at the part of the cylinder head where the fins are the highest. Tubular spacers are also used with the screws. When the cylinder head has

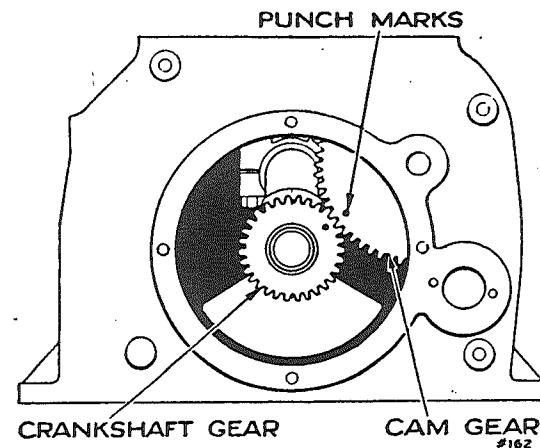
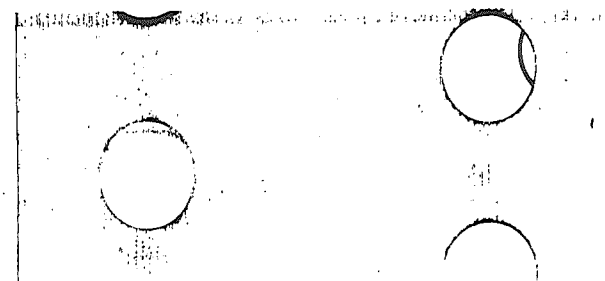


Fig. 12.  
Timing

21

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been removed for the purpose of cleaning carbon or grinding valves, care should be used in replacing it. Use a new gasket if possible. Otherwise, clean the old one and coat both sides with cup grease. We do not recommend the use of shellac on cylinder head gasket. In tightening the six cap screws, tighten them a little at a time so that the cylinder head is pulled down evenly rather than all at one side first.

### Connecting Rod

66. The connecting rod is also made of special aluminum alloy which combines strength with light weight. The lower bearing is of conventional type used with splash lubrication, and should it become loose, can be refitted. When assembling connecting rod to crankshaft, the oil hole as shown in Figure 13 must be toward the magneto. When replacing the cap the assembling marks must be on the same side as shown in figure 13.

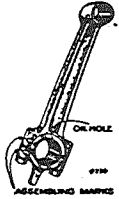


Fig. 13.  
Connecting Rod

### Worn or Scored Piston, Rings or Cylinder

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

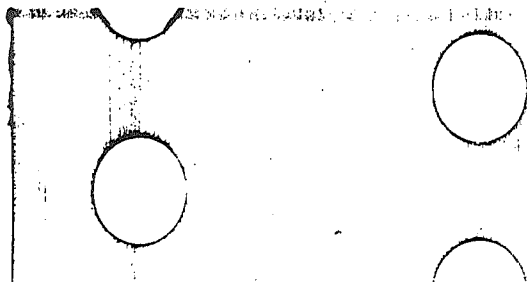
68. When diameter of cylinder at center is .005" or more, larger than diameter of cylinder at the ends (top and bottom), cylinders should be reground to necessary standard oversize, which is .010", .020", or .030" as required and fitted with the corresponding standard oversize piston and rings. An authorized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

### Exhaust Pipe and Muffler

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

22

Model and motor number must be given when writing or ordering parts



take a garden hose and run water into the open end of the exhaust pipe. If full streams of water come out of the small holes at the end of the muffler, you will know that it is not clogged up. If the water runs through very slowly, however, the muffler is probably clogged and should be replaced with a new one.

### Effect of Load on Motor Operation

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

### Important

Follow these instructions when ordering parts or when writing for information.

#### A. Before ordering parts

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

#### B. Give model letters and number of motor

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

#### C. Give name and catalog number of parts wanted

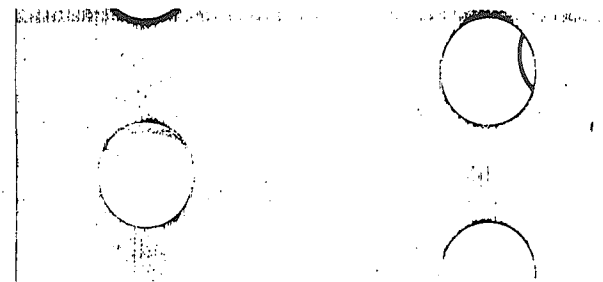
You will find part numbers and description in section following parts illustrations. (Do not use numbers cast on parts.)

#### D. Send remittance with order to cover parts plus postage

Prices of parts are given in the pages which follow. Add what you think will be sufficient for postage and send postal or express money order for this amount. Do not send currency in a letter. It

23

Model and motor number must be given when writing or ordering parts



is not safe. By following these suggestions carefully you will avoid delay and added expense usually connected with C. O. D. shipments.

E. Be sure your name and address are given plainly and correctly  
Print name and address. Do not abbreviate name of town or state.

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

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

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

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

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

I. When returning Motor or Parts to factory or Service Station.

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

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

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

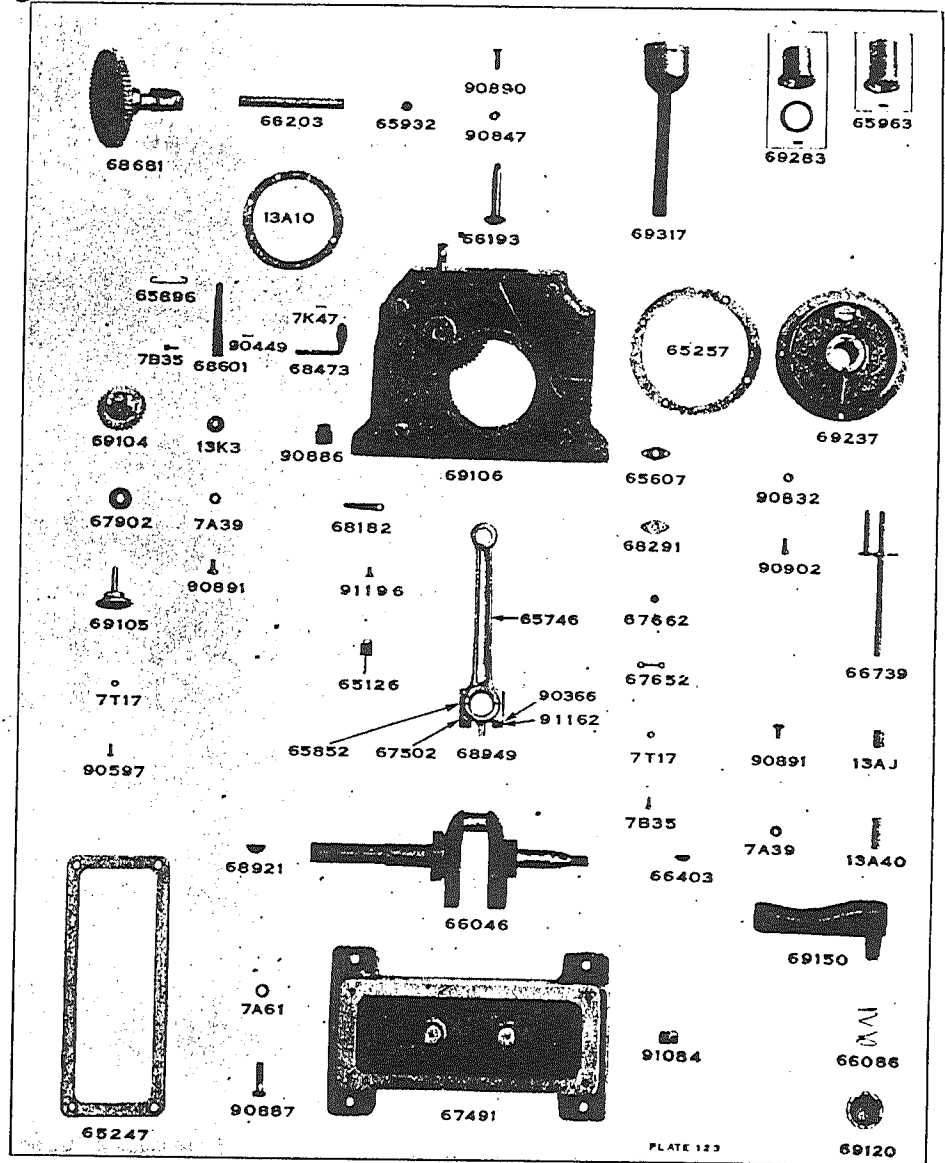
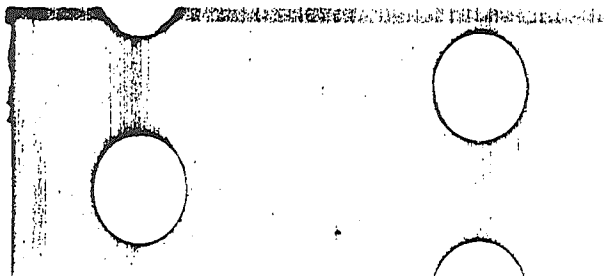
*All return shipments must be prepaid, or they will not be accepted.*

### PRICES

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

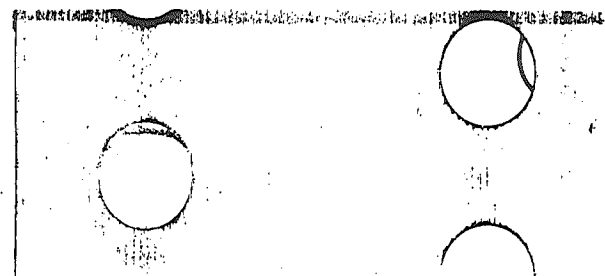
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25

*Model and motor number must be given when writing or ordering parts*





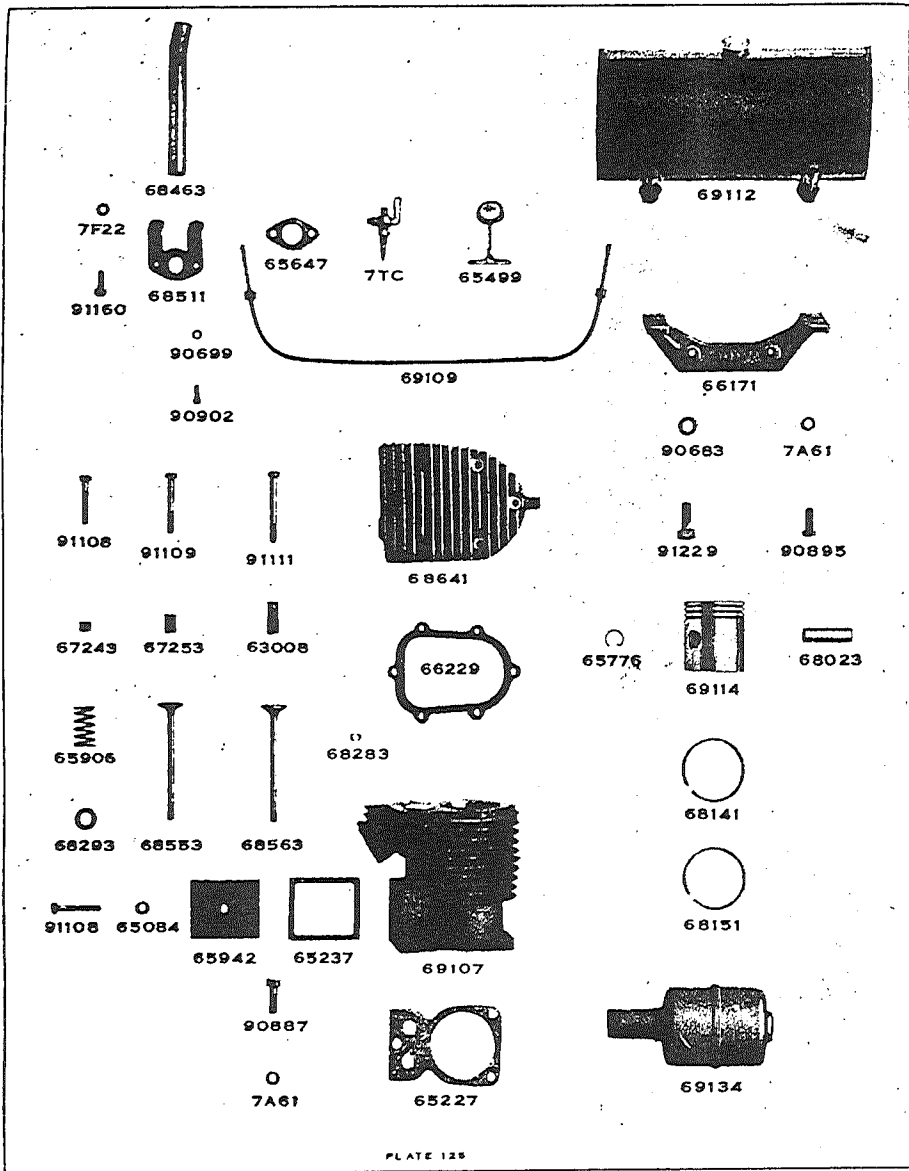


PLATE 125

26

Model and motor number must be given when writing or ordering parts

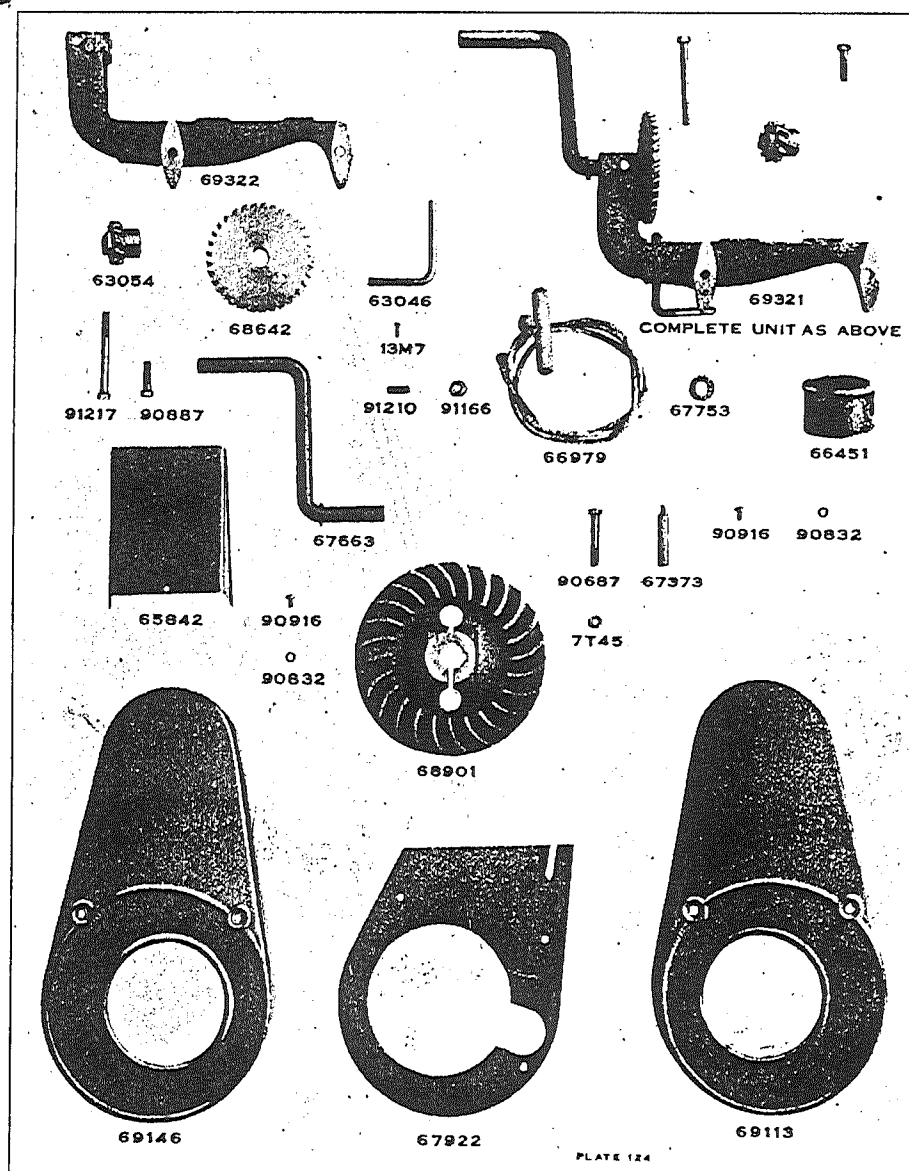
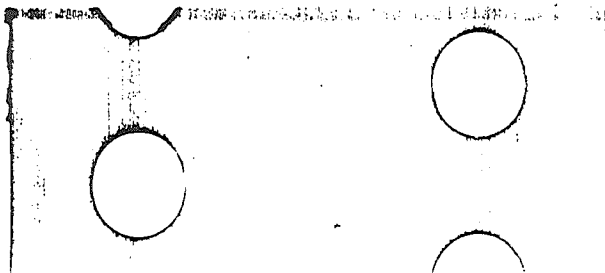
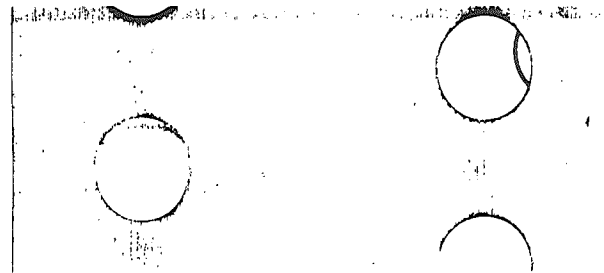


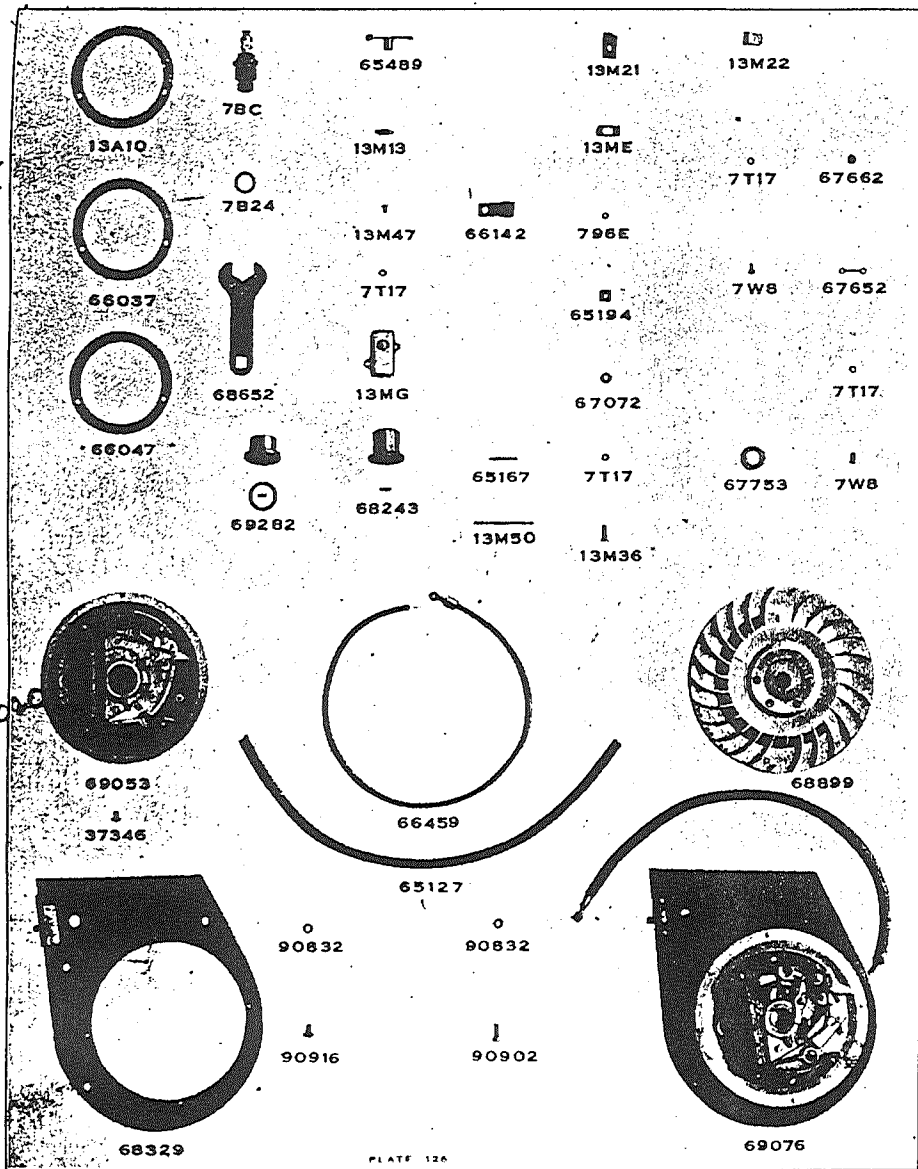
PLATE 124

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65025-wick



28

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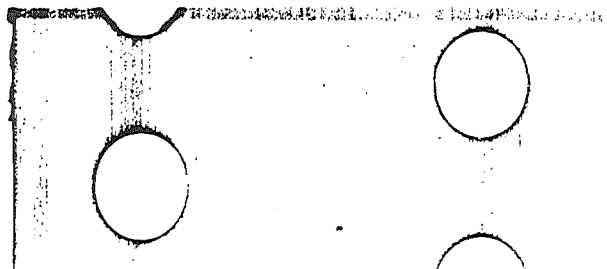
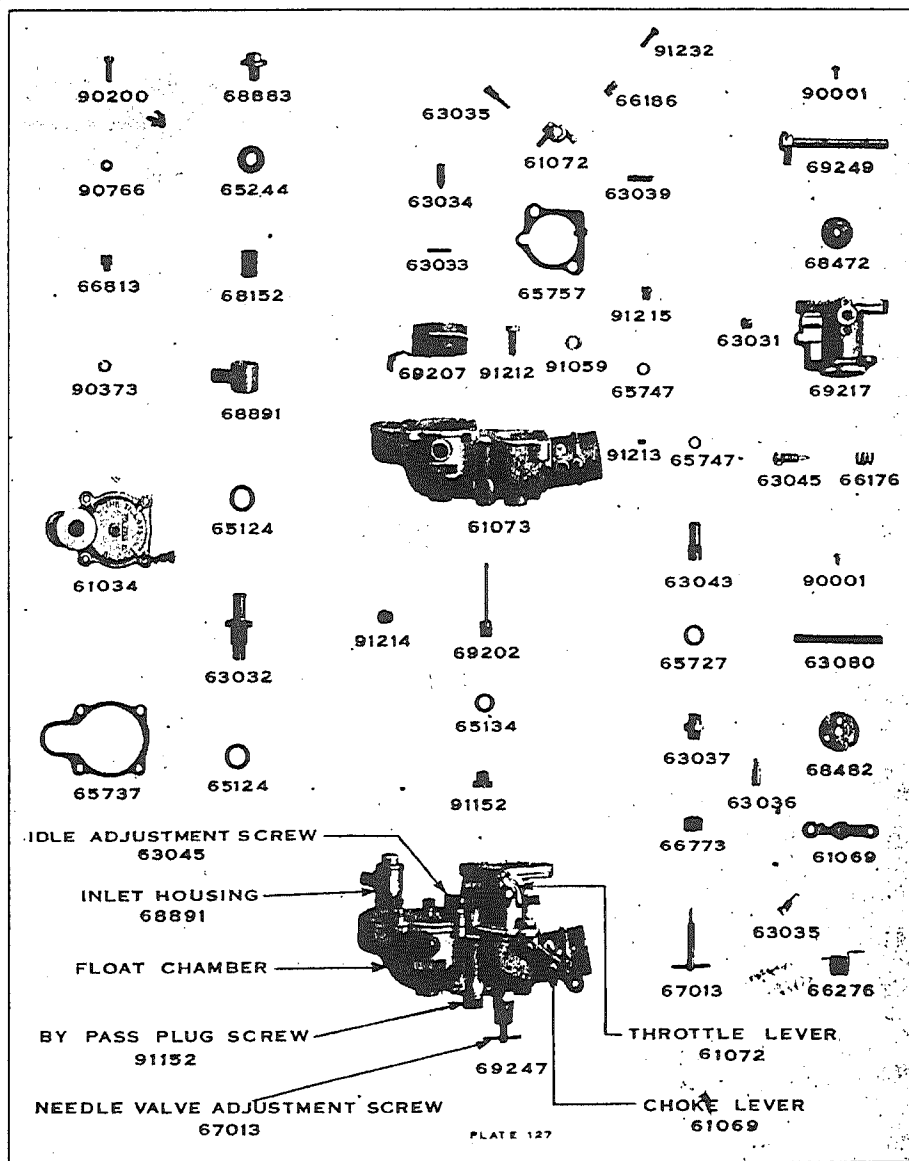
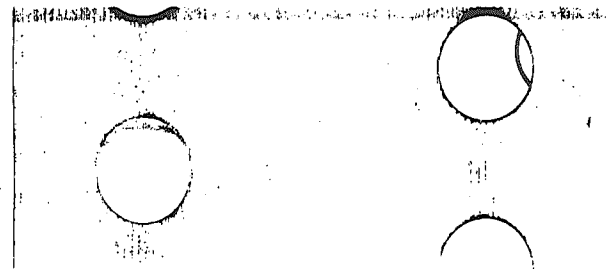


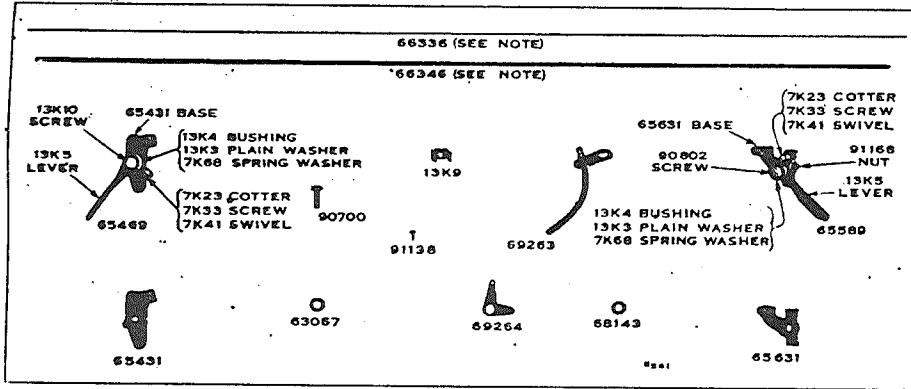
PLATE NO. 127 PARTS OF CARBURETOR



29

Model and motor number must be given when writing or ordering parts





**PARTS AND PRICE LIST**

Part No.	Name	Where Used	Price Each
7A39	Lock Washer	1—Governor gear retainer	\$.01
7A61	Lock Washer	2—Oil trough to base 4—Crankcase to base 3—Cylinder to crankcase 2—Gas tank to bracket	.01
*7BC	Spark Plug		.75
Note—No. 69162 Spark Plug .75; Used in conjunction with spark plug shield. No. 69161 \$1.50 and armored cable.			
7B24	Gasket	Spark plug	.05
7B35	Screw	2—Oil sucker valve 1—Governor lever	.01
Note—No. 13M36 screw replaces 7B35 for oil sucker valve only.			
7F22	Lock washer	2—Carburetor bracket to crankcase	.01
7K23	Cotter pin	Carburetor control assembly	.01
7K33	Machine screw	Carburetor control assembly	.05
7K41	Swivel	Carburetor control assembly	.20
7K47	Cotter pin	Governor crank	.01
7K68	Spring washer	Carburetor control assembly	.10
7TC	Gasoline shutoff valve complete with screen		.95
7T17	Lock washer	2—Condenser—Magneto 1—Contact point—Magneto 1—Cable clamp—Magneto 2—Governor flange—Crankcase 2—Oil sucker—Magneto 2—Oil sucker—Crankcase	.01
7T45	Nut	2—Governor flywheel	.05

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

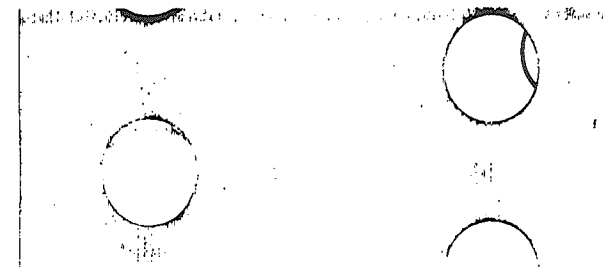
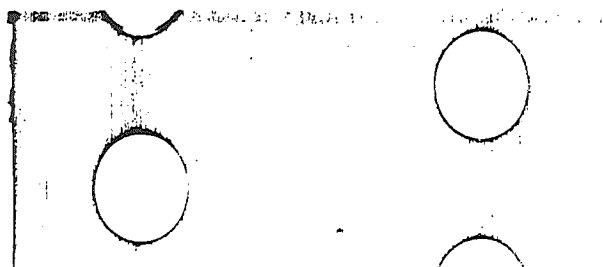
Model and motor number must be given when writing or ordering parts

**PARTS AND PRICE LIST**

Part No.	Name	Where Used	Price Each
*7W8	Machine screw	1—Cable clamp—Magneto	.05
Note—Magneto plates with detachable oil valve body. Use screw No. 13M36 in place of 7W8.			
13AJ	Plunger	Oil pump—Crankcase	.20
13A10	Gasket .015" thick	Magneto plate	.05
13A40	Spring	Oil pump plunger	.10
13K3	Washer	1—Retainer governor gear 1—Carburetor control assembly	.05
13K4	Bushing	Carburetor control assembly	.10
13K5	Lever	Carburetor control assembly	.50
13K9	Casing clamp	Carburetor control assembly	.05
13K10	Cap screw	Carburetor control assembly	.05
13ME	Contact bracket	Magneto	.50
13MG	Condenser	Magneto	1.50
13M7	Rivet	Starting crank lock	.05
13M13	Spring	Breaker arm—Magneto	.05
13M21	Shim (bakelite)	Contact bracket—Magneto	.05
13M22	Clamp	Ignition cable—Magneto	.05
13M36	Machine screw	Contact bracket—Magneto	.05
13M47	Machine screw	Condenser—Magneto	.05
13M50	Insulator (3" long)	Armature lead	.05
796E	Washer (Fibre)	Contact bracket—Magneto	.05
37346	Rivet	Magneto to air guide	.05 Doz.
61034	Float bowl cover	Carburetor	.25
61069	Choke lever	Carburetor	.40
61072	Throttle lever	Carburetor	.30
61073	Carburetor body		4.00
63008	Spacer (1½" long)	3—Cylinder head	.10
63031	Plug screw	Carburetor	.05
63032	Inlet valve seat	Carburetor	.40
63033	Float lever pin	Carburetor	.05
63034	Inlet valve	Carburetor	.25
63035	Screw	Carb. choke and throttle lever lock	.05
63036	Choke lever stop	Carburetor	.10
63037	Stuffing box gland	Carburetor	.25
63039	Throttle lever stop	Carburetor	.10
63043	Nozzle	Carburetor	.35
63045	Idle adjustment screw	Carburetor	.25
63046	Starting crank lock	Hand crank	.50
63054	Helical starter pinion gear	Hand crank	2.50
63067	Bell crank bushing		.05
63080	Choke lever shaft	Carburetor	.20
65084	Washer (Fibre)	Valve cover plate	.05
65124	Gasket	Inlet valve seat—Carburetor	.05
*65126	Spring	Throttle	.15
Note—No. 66706 Throttle spring. Used in conjunction with hand throttle control			

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

Model and motor number must be given when writing or ordering parts



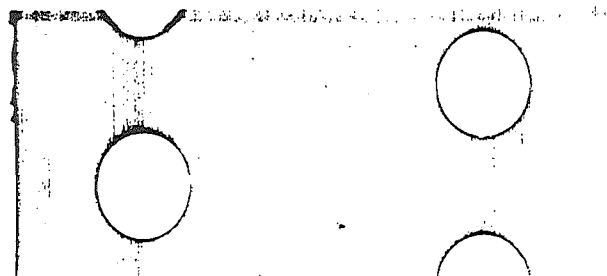
## PARTS AND PRICE LIST

Part No.	Name	Where Used	Price Each
*65127	Ignition cable sleeve	Magneto	.15
	Note—Used in conjunction with cable No. 66459.		
65134	Gasket	Plug to by pass—Carburetor	.05
65167	Insulator (½" long)	Armature lead—Magneto	.05
65194	Washer (Bakelite)	Contact bracket—Magneto	.05
65227	Gasket	Cylinder	.15
65237	Gasket	Valve cover plate	.10
65244	Gasket	Inlet connection—Carburetor	.05
65247	Gasket	Base	.45
65257	Gasket	Crankcase—Governor side	.30
65431	Base	Carburetor control assembly	.45
65469	Carburetor control assembly	Standard	1.50
65489	Breaker Arm	Magneto	.75
65499	Gas tank cap with gasket		.60
65589	Carburetor control assembly		1.50
65631	Base	Carburetor control assembly	.45
65607	Oil sucker valve housing gasket	Oil sucker—Crankcase	.05
65647	Gasket	Carburetor to bracket	.10
65727	Gasket	Gland to nozzle	.05
65737	Gasket	Float bowl cover	.10
65747	Gasket	Carburetor nozzle	.05
65757	Gasket	Carburetor body	.05
65776	Piston pin lock	See 69114 assembly	.05
65842	Cylinder shield		.30
65852	Shim	Connecting rod	.05
65896	Throttle link	Throttle to governor lever	.10
65906	Spring	Exhaust or intake valve	.15
65932	Cam shaft plug	Cam shaft	.05
65942	Valve cover plate		.25
*65963	Bearing	Governor crankcase cover	1.75
	Note—Used previous to serial No. 590, See No. 69283.		
66037	.005" Gasket	Magneto	.05
66046	Crankshaft		12.50
66047	.009" Gasket	Magneto plate	.05
66086	Spring	Oil screen housing	.10
66142	Clamp	Ignition cable	.05
*66171	Gas tank bracket with holes for ½" diameter mounting bolts		1.15
	Note—Specify bracket No. 69470. \$1.20. For some of the earlier motors which are provided with ⅜" diameter mounting bolts.		
66176	Spring	Idle adjustment—Carburetor	.05
66186	Spring	Throttle adjusting screw—Carb.	.10
66193	Cam follower	Crankcase	1.50
66203	Cam shaft	Crankcase	.50
66229	Gasket	Cylinder head	.75
66276	Spring	Choke lever—Carburetor	.05

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

32

*Model and motor number must be given when writing or ordering parts*



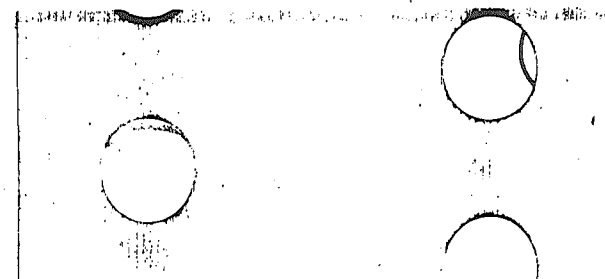
## PARTS AND PRICE LIST

Part No.	Name	Where Used	Price Each
*66336	Control wire 49¼" long		.25
	Note—For other lengths specify required length in inches.		
*66346	Control wire casing 45½" long		.40
	Note—For other lengths specify required length in inches.		
66403	Woodruff key	Crank shaft—Magneto	.05
*66451	Starter pulley		1.25
	Note—No. 61029 belt pulley 3½" diameter, 2¾" face \$4.50, This pulley takes machine key No. 63055, ....15; 1 No. 91223 set screw, .05.		
*66459	Ignition cable	Magneto	.75
	Note—Used previous to serial No. 2400.		
	Note—Since Serial No. 2400 Specify ignition cable No. 69394		
66739	Oil pump rod assembly	Crankcase	.40
*66773	Nut	Carburetor stuffing box gland	.15
	Note—No. 65387 Stuffing box packing		
66813	Screw	Cover vent—Carburetor	.20
66979	Starter rope		.50
67013	Needle valve adjusting screw	Carburetor	.40
67072	Washer	Contact bracket—Magneto	.10
67243	Spacer (7/16" long)	1—Cylinder head	.10
67253	Spacer (⅜" long)	2—Cylinder head	.10
67373	Blower case spacer	4—Blower case to crankcase	.20
67491	Base		7.00
67502	Washer	2—Connecting rod	.05
67652	Oil sucker valve guide	1—Oil sucker—Magneto	.05
		1—Oil sucker—Crankcase	
67662	Oil sucker	1—Oil sucker—Magneto	.05
		1—Oil sucker—Crankcase	
67663	Starter crank		1.00
67681	Standard piston	See No. 69114 for assembly	4.50
67753	Washer	Magneto flywheel	.05
67902	Thrust washer	Governor gear	.10
67922	Blower back plate	Governor side	.50
68023	Piston pin		.50
68141	Standard compression ring	See No. 69114 for assembly	.35
68143	Spacer	Bell crank to crankcase	.10
68151	Standard oil ring	See No. 69114 for assembly	.50
68152	Inlet screen	Carburetor	.10
68182	Throttle spring clip		.05
*68243	Bushing	Magneto	1.25
	Note—Replaced by No. 65793. Used previous to serial No. 590		
68283	Valve spring retainer collar		.10
	(2-halves)		
68291	Oil sucker valve housing	1—Oil sucker—Magneto plate	.10
		1—Oil sucker—Crankcase	
68293	Spring retainer	2—Valves	.10
68329	Air guide with stop switch	Magneto	.75

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

33

*Model and motor number must be given when writing or ordering parts*



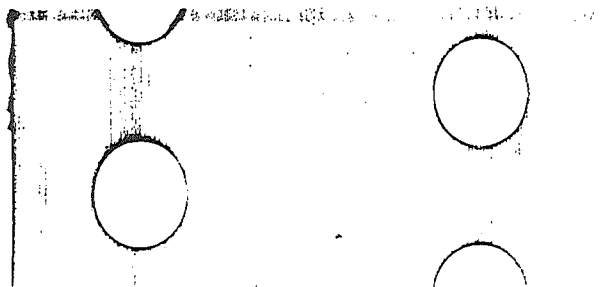
## PARTS AND PRICE LIST

Part No.	Name	Where Used	Price Each
68463	Intake pipe		1.25
68472	Throttle shutter	Carburetor	.15
68473	Governor crank	Crank case	1.10
68482	Choke shutter	Carburetor	.15
68511	Carburetor bracket		.75
68553	Exhaust valve	Cylinder	2.00
68563	Intake valve	Cylinder	1.00
*68601	Governor lever		.50
	Note—No. 61174 Governor lever used in conjunction with No. 65469 control assembly		.50
68641	Cylinder head		3.25
68642	Crank gear	Hand crank	3.00
68652	Spark plug wrench		.20
68681	Cam gear	Crankcase	6.00
68883	Screw	Inlet connection—Carburetor	.10
68891	Inlet housing	Carburetor	.25
*68899	Flywheel	Magneto	
	Note—Replaced by No. 66679 Flywheel		9.20
68901	Flywheel	Governor side	6.75
68921	Woodruff key	Crankshaft—Governor side	.05
68949	Connecting rod assembly complete consisting of—		7.50
	2—No. 65852 Shims	2—No. 91162 Cap screws	
	2—No. 90366 Lock washers	2—No. 67502 Washers	
69053	Armature and magneto plate assembly including the following—		8.25
	1—No. 69282 Bearing	1—Oil sucker complete	
	4—No. 37346 Rivets	3—Gaskets. 005-.009 and .015 thick	
69076	Magneto assembly with air guide—Complete as illustrated		12.00
69104	Governor gear and thrust cup assembly		2.00
69105	Governor shaft and flange assembly		.40
*69106	Crankcase assembly complete including the following—		30.00
	1—No. 69222 Crankcase	2—No. 66193 Cam followers	
	1—No. 66203 Camshaft	2—No. 90890 Valve tappet screws	
	1—No. 68681 Camshaft plug	2—No. 90847 Tappet lock nuts	
	Note—No. 69126 Special crankcase assembly. Used only on some motors in conjunction with air compressor		33.00
	No. 69369 Special crankcase assembly. Used in conjunction with gas tank No. 68039—See No. 69112		33.00
	No. 69433 Special crankcase assembly. Like No. 69106 less holes for gas tank bracket.		30.00
*69107	Cylinder assembly complete including the following—		25.00
	2—No. 65906 Valve springs		
	2—No. 68283 Valve spring collars		
	2—No. 68293 Valve spring collar retainers		
	1—No. 68553 Exhaust valve		
	1—No. 68563 Intake valve		
	1—No. 69151 Cylinder		
	Note—No. 69110 Cylinder with 2 valves ground in place.		24.50

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

34

*Model and motor number must be given when writing or ordering parts*



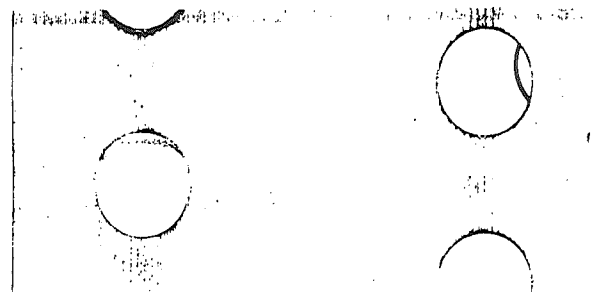
## PARTS AND PRICE LIST

Part No.	Name	Where Used	Price Each
*69109	Gasoline pipe assembly (23 5/8" long)		.75
	Note—No. 66959 Gas pipe, 1 1/8" long		.30
	No. 67789 Gas pipe, 2 3/8" long		.35
	No. 68049 Gas pipe, 36" long		.80
	No. 69223 Gas pipe, 25 1/4" long		.75
*69112	Gasoline tank complete with filler cap		6.50
	Note—No. 68039 Gas tank assembly like No. 69112 except that brackets are not central with tank		6.50
	No. 69080 Gas tank assembly duplicate of No. 69112, but painted red		6.50
	No. 66929 Combination kerosene and gasoline tank. Used only on some installations.		7.00
69113	Blower case assembly	Governor side	3.25
*69114	Standard piston assembly complete including the following—		5.75
	2—No. 65776 Piston pin lock rings		
	1—No. 68151 Oil ring		
	2—No. 68141 Compression rings		
	1—No. 67681 Piston		
	Note—No. 69154 Piston assembly .010" oversize includes		7.25
	1—No. 61006 Piston .010" oversize		5.25
	1—No. 68361 Oil ring .010" oversize		1.00
	2—No. 68331 Compression rings .010" oversize		.50
	2—No. 65776 Piston pin lock rings		.05
	Note—No. 69155 Piston assembly .020" oversize includes		7.25
	1—No. 61007 Piston .020" oversize		5.25
	1—No. 68371 Oil ring .020" oversize		1.00
	2—No. 68341 Compression rings .020" oversize		.50
	2—No. 65776 Piston pin lock rings		.05
	Note—No. 69156 Piston assembly .030" oversize includes		7.25
	1—No. 61008 Piston .030" oversize		5.25
	1—No. 68381 Oil ring .030" oversize		1.00
	2—No. 68351 Compression rings .030" oversize		.50
	2—No. 65776 Piston pin lock rings		.05
69120	Oil screen housing assembly		.50
*69134	Muffler		3.00
	Note—No. 69431 Special muffler used only on motors equipped with shielded spark plug and armored cable.		3.50
69146	Blower case assembly	Magneto side	3.75
69150	Oil trough assembly		1.25
69151	Cylinder with valve seats only		21.50
69202	By pass tube	Carburetor	.60
69207	Float—Carburetor		1.00
69217	Upper half of carburetor body with throttle shaft bushing		1.90
69222	Crankcase with governor crank bushing		18.25
69237	Crankcase cover assembly complete including the following—		5.35
	1—No. 69283 bearing	1—Oil sucker complete	

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

35

*Model and motor number must be given when writing or ordering parts*



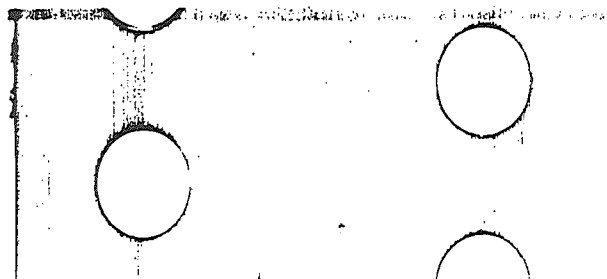
## PARTS AND PRICE LIST

Part No.	Name	Where Used	Price Each
*69247	Carburetor assembly complete.....		12.50
	Note—No. 69405 Carburetor assembly is a duplicate of No. 69247 except for addition of special clip on cover—Used only on some "R" motors with countershaft .....		
69249	Throttle shaft—Carburetor .....		.60
*69263	Tube assembly with tube at right angles to bracket .....		.50
	Note—No. 69338 Tube assembly with tube at 15° angle with bracket .....		
69264	Bell Crank assembly .....		.20
*69282	Magneto plate bearing complete with Retainer pin and Oil retainer ring .....		1.25
	Note—Used after serial No. 590.		
*69283	Governor cover bearing complete with Oil retainer ring and Retainer pin .....		1.75
	Note—Used after serial No. 590.		
69317	Breather tube assembly .....		.85
*69321	Hand crank assembly (Helical gear type) complete including the following— .....		15.00
	1—No. 13M7 Rivet		
	1—No. 63046 Starting crank lock		
	1—No. 63054 Helical starter pinion gear		
	1—No. 67663 Starter crank		
	1—No. 68642 Crank gear (Helical)		
	1—No. 69322 Hand crank bracket		
	1—No. 90887 Cap screw		
	1—No. 91217 Cap screw		
	1—No. 91166 Check nut		
	1—No. 91210 Set screw		
	Note—For complete crank starter assembly similar to No. 69321 but with detachable crank, specify No. 69522 .....		
	Note—No. 69210 Crank starter assembly same as above No. 69321 but less the pinion No. 63054 and the two bolts.....		
	No. 69532 Crank and bracket assembly like No. 69210 but with spur gear No. 67312 on crank .....		
69322	Hand crank bracket including No. 69273 oil cup.....		8.00
90001	Screw .....	Carburetor throttle and choke shutter	.05
90200	Screw .....	Carburetor float bowl cover .....	.05
90366	Lock washer .....	2—Connecting rod .....	.05
90373	Lock washer .....	Carburetor vent .....	.05
*90449	Cotter pin .....	Hooking on throttle spring to lever	
	Note—Replaced by 7K26.....		
90597	Machine screw .....	Governor flange .....	.05
90683	Lock washer .....	Gas tank bracket .....	.01
90687	Cap screw .....	Governor flywheel .....	.10
90699	Lock washer .....	Carburetor to bracket .....	.05
90700	Cap screw .....	Bell crank to crankcase .....	.05
90766	Lock washer .....	Carburetor float bowl cover .....	.05

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

36

*Model and motor number must be given when writing or ordering parts*



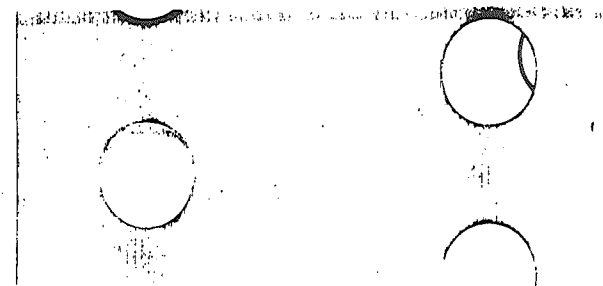
## PARTS AND PRICE LIST

Part No.	Name	Where Used	Price Each
*90832	Lock washer .....	3—Magneto plate to crankcase ....	.01
		4—Governor cover plate	
		1—Blower back plate—Governor side	
		1—Back plate—Magneto side	
		1—Cylinder shield	
		4—Blower case spacer	
	Note—No. 90832 Lockwasher replaced by No. 91281 for Magneto plate only .....		
90847	Valve tappet lock nut .....		.05
90886	Oil filler plug .....	Crankcase .....	.10
90887	Cap screw .....	4—Crankcase .....	.05
		3—Cylinder	
		1—Gas tank to crank bracket	
90890	Cap screw .....	Valve tappet .....	.05
90891	Cap screw .....	1—To hold governor gear in place	.05
		2—Oil trough to base	
90895	Cap screw .....	Gas tank to bracket .....	.05
90902	Machine screw .....	3—Magneto plate .....	.05
		2—Carburetor	
		4—Governor crankcase cover	
90916	Machine screw .....	1—Blower back plate—Governor side	.05
		1—Blower back plate—Magneto side	
		1—Cylinder shield	
		4—Blower case spacer	
91059	Lockwasher .....	Carburetor upper body .....	.01
91084	Oil drain plug .....	Base .....	.10
91108	Cap screw (2" long) .....	1—Cylinder head .....	.10
		1—Valve cover	
91109	Cap screw (2½" long) .....	2—Cylinder head .....	.10
91111	Cap screw (3" long) .....	3—Cylinder head .....	.10
91138	Swivel screw .....	Bell crank assembly .....	.05
91152	Plug screw .....	Carburetor by pass .....	.20
91160	Cap screw .....	Carburetor bracket .....	.05
91162	Cap screw .....	Connecting rod .....	.05
91166	Check nut .....	Hand crank .....	.05
91196	Machine screw .....	Throttle spring clip .....	.05
91210	Set screw .....	Hand crank .....	.05
91212	Screw .....	Upper half carburetor body .....	.05
91213	Cap screw .....	Carburetor plug .....	.05
91214	Pipe plug (Replaced by 63165) .....	Carburetor bowl .....	.05
91215	Screw .....	Carburetor plug .....	.05
91217	Cap screw .....	Gas tank .....	.10
91229	Cap screw .....	Gas tank bracket .....	.10
91232	Screw .....	Carburetor throttle adjustment ....	.05

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

37

*Model and motor number must be given when writing or ordering parts*



# PARTS AND PRICE LIST

Part No.	Name	Where Used	Price Each
Note—Some "R" Motors which are equipped with countershaft, chain and crank, take the following special parts (These parts are not illustrated.)			
7A61	Lockwasher $\frac{3}{8}$ "		.01
13A11	Flywheel Nut		.05
63002	Sprocket, 12 Tooth		6.50
63004	Bushing — Bronze		2.25
63011	Straight Key (35 Tooth Sprocket)		.10
63012	Straight Key (12 Tooth Sprocket)		.10
63152	Countershaft 18" long		15.50
67422	Crank pin housing		2.00
67941	Crank		3.00
67951	35 Tooth Sprocket		8.50
67983	Crank Pin		.05
67993	Set Collar		2.50
68981	Bearing and Countershaft Bracket		27.50
69008	Roller Chain		5.00
69009	Spring Lock Connecting Link for Chain		.20
69444	Grease Cup—Alemite—Push Type		.75
*69556	Crankcase with governor crank bearing		21.25
Note—This is a duplicate of No. 69222 except that this is tapped to take countershaft.			
*69557	Crankcase assembly complete		33.00
Note—This is a duplicate of No. 69106 except that this is tapped to take countershaft.			
90832	Lockwasher $\frac{1}{4}$ "		.01
90895	Cap Screw 1" long		.05
91195	Cap Screw to retain bushings		.05
91202	Set Screw $\frac{1}{8}$ "-14x $\frac{5}{8}$ " long (Allen Headless)		.05
91311	Set Screw $\frac{1}{8}$ "-14x $\frac{3}{8}$ " long (Allen Headless)		.20
91312	Set Screw $\frac{1}{8}$ "-14x $\frac{1}{2}$ " long (Allen Headless)		.25

## AIR CLEANER PARTS

Some "R" motors were equipped with No. 69399 moss filled type air cleaner complete with elbow No. 61149—This is superseded by a felt filter type air cleaner No. 69425 (not illustrated) 5.75

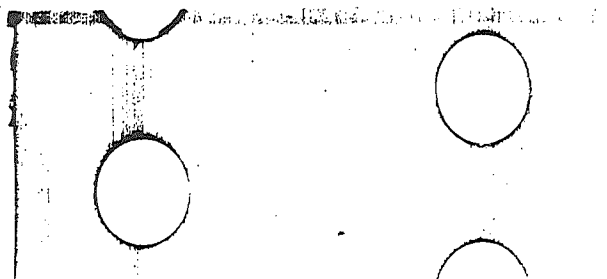
This unit is consisted of the following parts (not illustrated.)

1—No. 61159	Elbow	1.75
1—No. 62041	Shell	1.00
1—No. 62042	Washer	.05
1—No. 69446	Wing nut and stem	.50
1—No. 69447	Air filter	2.50
1—No. 91256	Fill Hd. Screw	.05
Note—Special air cleaner No. 69484 complete		8.00

This is similar to No. 69425 but with about 6" long elbow No. 61181 \$4.00, and long wing nut stem No. 69492... .65, This air cleaner used only on some "R" motors which take special jackshaft.

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

Model and motor number must be given when writing or ordering parts



# New Service Information

## Prompt Service

The Briggs & Stratton Corporation has established in the principal cities of the United States and Canada, Authorized Service Stations to give efficient and prompt service on repairs and parts for all Briggs & Stratton gasoline motors.

### Authorized Service Station Facilities

Every Authorized Service Station carries a complete stock of repair parts, is equipped with special factory tools and has factory-trained mechanics to give expert repair service.

### To Assure the Right Kind of Service

To insure the same quality of service being rendered by each service station as at the factory, all approved methods of making repairs as developed by Briggs & Stratton factory are immediately supplied to each Authorized Service Station by traveling service men of the Briggs & Stratton Service Department.

### Free Replacement of Defective Material and Workmanship

NOTE: The guarantee does not cover free replacement of parts or workmanship because of failure due to wear, misuse, negligence or accident, nor adjustment or maintenance necessarily resulting from operation.

All Authorized Service Stations (see list on page 40) have the authority of the Briggs & Stratton Corp. to make free replacement of DEFECTIVE MATERIAL OR WORKMANSHIP ONLY providing the guarantee on the motor is still in effect, and when proper data as listed below is submitted at time of service.

## Important

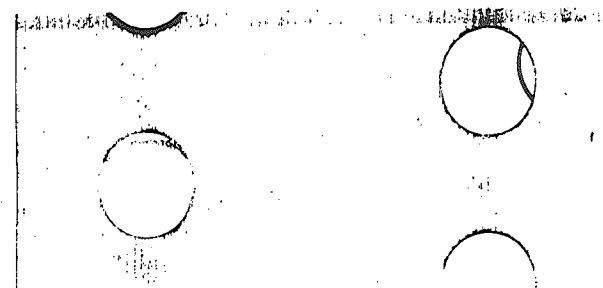
When sending motor or parts for service, at the same time always send, by mail, the following information:

- Model letter and motor number. (Take from brass plate on motor)
- Date purchased.
- Dealer purchased from, giving his name, town and state.
- Approximate number of hours motor has run.
- Name of machine motor is used on.

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

The above information is necessary to insure prompt and proper service

Model and motor number must be given when writing or ordering parts



# Authorized Central Service Stations

(Also see page 39)

STATE	CITY	NAME	LOCATION
California	Los Angeles	Electric Equipment Co., Inc.	1240 So. Hope St.
California	San Francisco	Automotive Service, Inc.	950 Van Ness Ave.
Colorado	Denver	Spitzer Electrical Co.	809 Broadway
Florida	Miami	Electrical Equipment Co.	42 N. W. 4th St.
Illinois	Chicago	Motor Car Service Co.	3300 Indiana Ave.
Indiana	Indianapolis	H. T. Electric Co.	612 N. Capitol Ave.
Iowa	Des Moines	Motor Car Service Co.	1214 Grand Ave.
Kansas	Wichita	The E. S. Cowie Electric Co.	230 So. Topeka Ave.
Maryland	Baltimore	Parks & Hull, Inc.	1031 Cathedral St.
Massachusetts	Boston	Wm. H. Flaherty Co.	48-52 Cummington St.
Michigan	Detroit	Auto Electric & Service Co.	90 Selden Ave.
Minnesota	Minneapolis	Reinhard Bros. Co., Inc.	11 So. Ninth St.
Missouri	Kansas City	The E. S. Cowie Electric Co.	1819 Wyandotte St.
Missouri	St. Louis	S. G. Hoffman Magneto Co., Inc.	3134 Washington Blvd.
Nebraska	Omaha	Carl A. Anderson, Inc.	1514 Jones St.
New York	Buffalo	The Battery & Starter Co., Inc.	885 Main St.
New York	New York	P. J. Durham Co., Inc.	244 W. 49th St.
North Dakota	Minot	Reinhard Bros. Co., Inc.	24 First St., S. E.
Ohio	Toledo	The Electric Power Maintenance Co.	26-30 Seventeenth St.
Oklahoma	Oklahoma City	J. C. Hamilton Co.	121 West Third St.
Pennsylvania	Philadelphia	Auto Equipment & Service Co., Inc.	1522 Fairmount Ave.
Pennsylvania	Pittsburg	Penn Storage Battery Co.	5534 Penn Ave.
South Dakota	Aberdeen	Reinhard Bros. Co., Inc.	317 So. Lincoln St.
Texas	Amarillo	The E. S. Cowie Electric Co.	213 W. 8th Ave.
Texas	Dallas	Beard & Stone Electric Co., Inc.	701 N. Pearl St.
Texas	Houston	Beard & Stone Electric Co., Inc.	San Jacinto St. & Polk Ave.
Washington	Seattle	Sunset Electric Co.	1530 11th Ave.

## CANADIAN CENTRAL SERVICE STATIONS

Manitoba	Winnipeg	Beattie Auto Electric, Ltd.	176 Fort St.
Ontario	Toronto	Auto Electric Service Co., Ltd.	15 Breadalbane St.

### Important

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- Date purchased.
- Dealer purchased from, giving his name, town and state.
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*The above information is necessary to insure prompt and proper service*

## ◆ SPECIFICATIONS ◆ Model "R" Motor

- BEARINGS**—Bronze backed, babbitt lined.
- BORE**—2½ inches.
- CAMS and GEAR**—One piece construction. Cams accurately ground; to operate quietly.
- CARBURETOR**—Tillotson.
- CONNECTING ROD**—Drop forged Lynite. Large split bearing on crankshaft.
- CRANKSHAFT**—Drop forged 1045 S. A. E. material and counter balanced to reduce vibration. Bearings large and accurately ground.
- CYLINDER and CYLINDER HEAD**—L Head, removable. Equipped with large fins for efficient cooling.
- GASOLINE CAPACITY**—5½ quarts.
- GOVERNOR**—Mechanical type, holds speed automatically at any set point between 1600 and 2200 r. p. m.
- IGNITION**—High tension magneto, built in flywheel. Moisture and dust proof. Standard 18 M. M. metric spark plug.
- LUBRICATION**—Splash type. Pump driven from cam shaft maintains oil level in splash trough.
- OIL CAPACITY**—3 pints.
- PISTON**—Light weight Lynite, with 2 compression rings and 1 oil ring.
- POWER**—3 h. p. at normal speed 1800 r. p. m. Develops over 3 h. p., 2200 r. p. m.
- SPEED RANGE**—1600 r. p. m. to 2200 r. p. m.
- STROKE**—3¼ inches.
- VALVES**—Special alloy exhaust valve. Stems enclosed and lubricated by oil spray from crankcase.
- WEIGHT**—106 pounds.

**Briggs & Stratton Corporation**  
Milwaukee, Wis., U. S. A.