

**OPERATING AND
MAINTENANCE MANUAL
WITH PARTS CATALOG**

PRICE 10¢ EACH

For Briggs & Stratton Engine

MODELS

"N"—"NP"—"NPR-1:39D"—"NPR-4D"—"NPR-6"

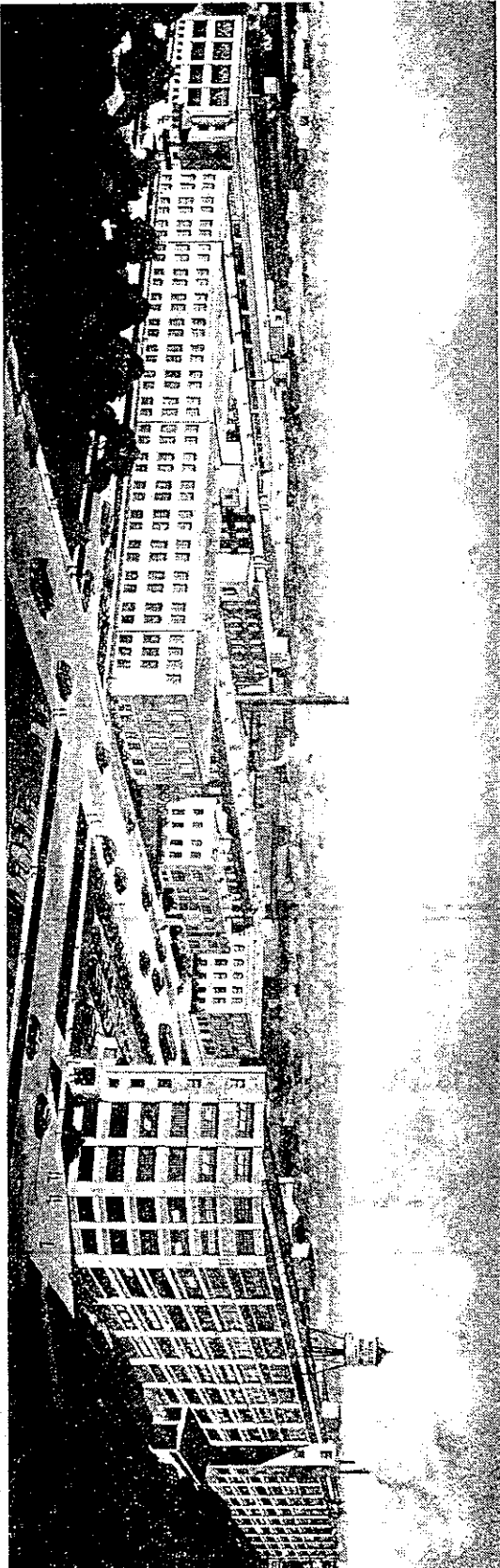
TYPE NUMBERS FROM 306100 TO 307305



MANUFACTURED BY

BRIGGS & STRATTON CORPORATION

MILWAUKEE 1, WISCONSIN, U. S. A.



WHERE BRIGGS AND STRATTON ENGINES 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 engines.

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

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.	

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INTRODUCTION

This book has been especially prepared to cover the Engine Models listed on the cover and is published for the information and guidance of all concerned.

THERE IS A RIGHT WAY TO OPERATE THIS ENGINE. THIS BOOK TELLS YOU HOW.

Guessing how to run it may cause failure to receive the maximum in performance and dependable service originally built into this engine. Each engine has been carefully tested and adjusted at the factory before packing for shipment, and if correctly operated will perform efficiently and economically.

This book is divided into four sections, namely:

1. **GENERAL**, contains information that you should know regarding the principal specifications and design of the engine.
2. **OPERATOR'S SECTION**, contains instructions necessary for starting and operating the engine in the field.
3. **MAINTENANCE SECTION**, consists of instructions pertaining to actual repairs such as are conducted in the repair shop.
4. **PARTS SECTION**, includes exploded views of the various engine assemblies, component parts . . . and parts list.

• • •

CAUTION!

1. **Exhaust gases contain carbon monoxide which is odorless and a deadly poison. Proper care must be taken to provide efficient ventilation.**
2. **Fill crankcase and air cleaner with proper oil before starting engine. See that oil level is maintained.**
3. **Do not fill the gasoline tank while the engine is running. Avoid spilling gasoline on a hot engine—this may cause an explosion and serious injury.**
4. **This engine is air cooled. The fan action of the vaned flywheel forces cooling air between the fins of the cylinder and cylinder head which keeps the engine at its power operating temperature.**

Lack of air due to clogging of blower screen, flywheel vanes or cylinder and cylinder head fins causes overheating which may result in serious damage such as warped or cracked cylinder head, ignition failure, burnt valves, sticking rings, scored piston, bearing failures, etc.

When the air entering the cooling system carries a considerable amount of foreign matter such as grass or heavy dirt, the cooling system can become restricted or clogged in a very short time and regular cleaning is required.

It is recommended that frequent inspection be made during use to determine how often cleaning is necessary. If this is done, the air cleaner serviced properly, and the engine operated on a good grade of gasoline and oil, you may expect trouble-free performance indefinitely. The life of your engine is in direct ratio to the care it receives.

GENERAL INFORMATION

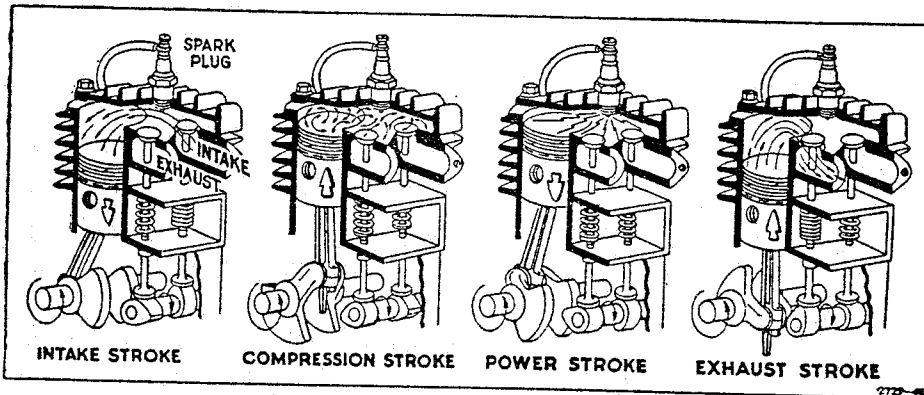
This engine is a single cylinder, L-Head air-cooled type; bore 2" and stroke 2". It is rated at:

1.58 H.P. at 2600 R.P.M.
1.87 H.P. at 3100 R.P.M.
2.00 H.P. at 3600 R.P.M.

The horsepower ratings listed above are established by standard I.C.E.I. procedures. For practical operation, the horsepower loading should not exceed 85 per cent of these ratings. Engine power will decrease 3 per cent for each 1,000 feet above sea level, and 1 per cent for each 10 degrees above 60 degrees F.

It is of the same basic 4-cycle design used in automobiles, aircraft, trucks, and tractors. As the name indicates, there are four strokes to one complete power cycle:

THE 4-STROKE CYCLE Plate No. 1



- a. **INTAKE STROKE:** The piston goes down, creating a vacuum in the cylinder which draws gas through open intake valve into the space above the piston.
- b. **COMPRESSION STROKE:** The piston comes up with both valves closed, highly compressing the gas into the space left between the top of the piston and cylinder head.
- c. **POWER STROKE:** At this point the magneto sends high tension current to the spark plug, firing or exploding the compressed gas and driving the piston down.
- d. **EXHAUST STROKE:** Exhaust valve opens and the upward stroke of the piston forces out all of the burnt gases, thus completing the power cycle.

Ignition is supplied by a high tension magneto built into the flywheel. The spark plug is 14mm.

Lubrication is supplied by a splash system which furnishes positive lubrication to all moving parts. Oil reservoir capacity is one pint.

The standard fuel tank holds two quarts. The carburetor is float feed type, adjustable.

The governor is adjustable and either pneumatic or mechanical type.

Two valves are employed: one Intake and one Exhaust.

The piston and connecting rod are made of aluminum alloy. Crankshaft is a drop forging, counterweighted to reduce vibration.

Air cleaner is an efficient oil bath type.

This engine has been 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.

OPERATOR'S SECTION STARTING AND OPERATING INSTRUCTIONS

1. PREPARATION FOR USE.

a. Before starting the engine, fill the crankcase with Mobiloil Arctic or other high grade oil not heavier than S. A. E. No. 20 for operating the engine in temperatures of 32° F. or above. For temperatures below 32°, use Mobiloil 10W or other high grade oil not heavier than S. A. E. No. 10W.

The oil filler cap is located at end of engine base. To open, tilt cap up on one side as shown in insert below until "catch" holds the cap open. Do not pull entire cap up as this may over-stretch the spring. In this position cap will stay open. With the engine standing level pour oil in opening until it rises to the top of filler cap opening. The crankcase holds one pint. Be sure

oil stays up to top level before replacing cap. To close, roll cap with thumb and it will snap into place. When closed be sure cap is flat as shown in plate below.

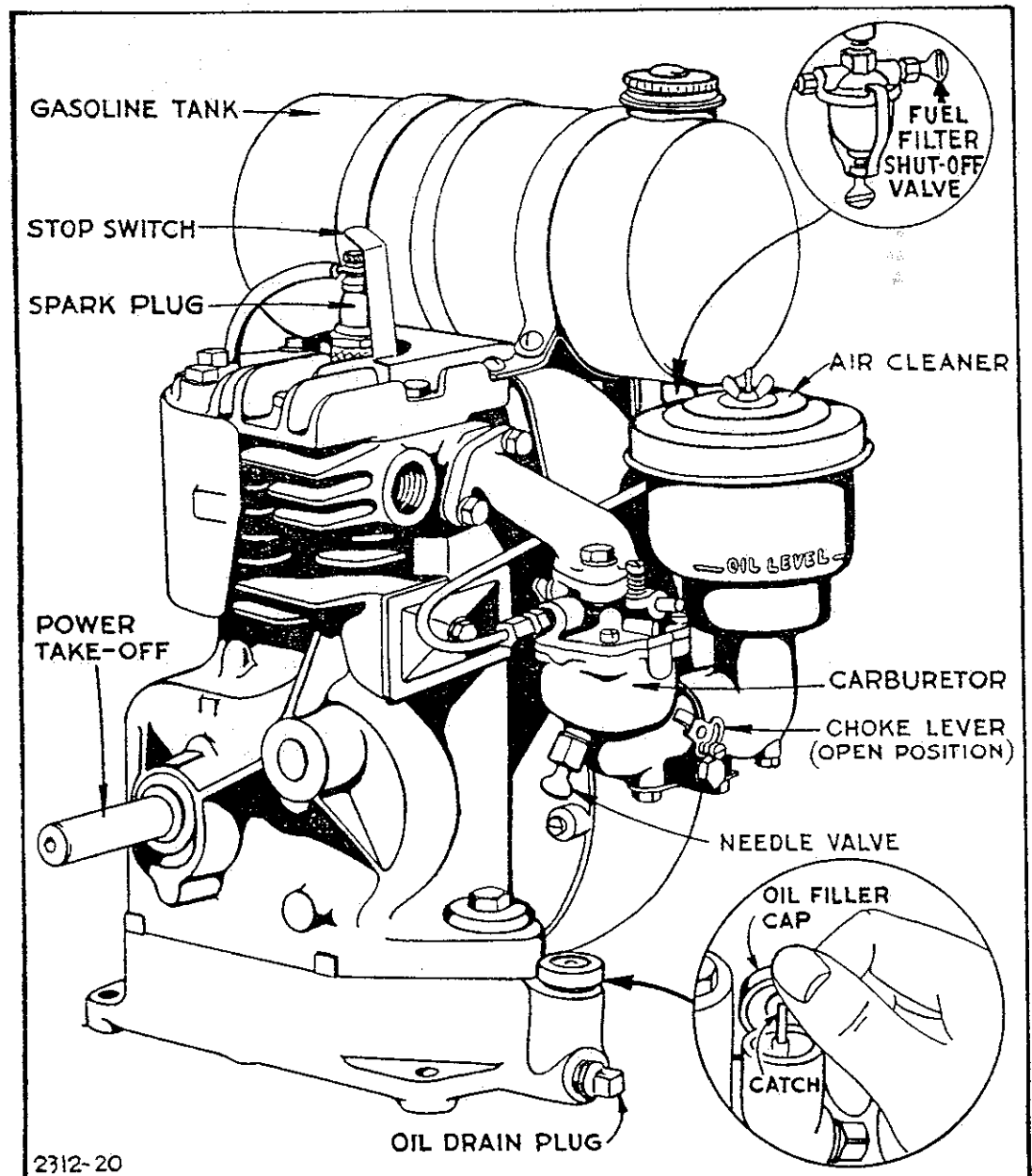
b. Fill air cleaner with same oil as used in the crankcase and fill to the indicated oil level. Clean out and refill every 25 hours. Change oil hourly under dusty operating conditions.

c. Fill the fuel tank with a good grade of regular, clean, fresh gasoline such as Mobilgas. The tank holds two quarts.

2. HOW TO START ROPE STARTER.

a. Open gasoline shut-off valve on fuel filter by turning to left or in a counter-clockwise direction.

Plate No. 2



b. Completely close carburetor choke by moving choke lever in a clockwise direction.

c. Wind the starter rope around the starter pulley with the knot in the pulley notch. Pull the rope with a quick steady pull to spin the magneto flywheel with choke fully closed to prime the engine. Then open choke about one-eighth and repeat operation.

d. After the engine warms up, gradually open choke valve in a counter-clockwise direction until engine runs smoothly with the choke wide open. Operate the choke the same as you do on an automobile. (A warm engine does not require as much choking as a cold one.)

FOOT OR HAND LEVER STARTER.

e. Step down on pedal or pull hand lever quickly with choke closed to prime the engine. Then operate choke as in paragraph d.

2. FAILURE OF THE ENGINE TO START.

Cold weather causes the oil in the crankcase to become thick and the gasoline less volatile. Should you experience trouble in starting after spinning the engine several times with the choke closed, be sure to check the spark plug — see that it is clean and the gap set to .025". If the engine fails to start after a reasonable number of trials, do not make any adjustments until you have studied the Engine Trouble Chart on following page.

4. HOW TO STOP.

a. Press the stop switch mounted on the cylinder head against the end of the spark plug. Hold until engine stops.

b. To stop engines fitted with ignition shielding — press red stop switch located on blower case.

c. Close the fuel shut-off valve so that gasoline will not spill out through carburetor when handling the engine.

5. **USE CLEAN GASOLINE.** A good grade of regular gasoline is recommended. Be

sure the vent hole in the top of the fuel tank is open, for air must enter the tank to allow the gasoline to flow to the carburetor.

6. **DO NOT MIX OIL WITH GASOLINE.** This engine is provided with an efficient splash lubrication system which supplies oil to all internal engine parts.

7. **CHANGE OIL AFTER FIRST 5 HOURS OF OPERATION.** After the first 5 hours of engine operation, drain and refill crankcase. Thereafter, change oil after each 25 hours of engine operation as explained in paragraph No. 9.

8. ADD OIL REGULARLY.

CRANKCASE: After each 5 hours of operation, fill to the top level of the oil filler cap.

6-TO-1 GEAR REDUCTION MODELS: Also check oil in gear case every 100 hours of operation and keep to level indicated. Add oil at filler plug located on top of gear case. Use the same kind of oil as used in crankcase.

9. **CHANGE OIL FREQUENTLY.** After each twenty-five hours of engine operation, the oil should be completely drained from the crankcase. Do not remove engine from its mounting base. Remove the oil drain plug located at end of engine base, and let the oil flow into a pan or other receptacle. Do not flush out with kerosene. Replace the drain plug, refill with fresh oil. Pour in slowly. The crankcase holds one pint. Close the oil filler cap.

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

STORAGE INSTRUCTIONS

Engines stored any length of time should be completely drained of fuel to prevent gum deposits forming on essential parts such as the carburetor, fuel filter, fuel lines, and tank.

Such deposits may affect the operation of the engine when again used. Therefore, it is important that the following instructions be adhered to before storing the engine:

- a. Remove filter bowl, open shut-off valve, and drain tank completely.
- b. Operate engine until it stops from exhaustion of fuel.
- c. Replace filter bowl.
- d. Leave shut-off valve open.
- e. Remove spark plug, pour one ounce of S. A. E. No. 20 oil into cylinder and crank slowly to spread oil. Replace spark plug.

MAINTENANCE SECTION

ENGINE TROUBLE CHART

ENGINE DIFFICULT TO START

1. No fuel in tank.
2. Fuel flow obstructed.
3. Loose or defective wiring.
4. Spark plug cracked.
5. Spark plug fouled.
6. Improper choking.
7. Improper fuel mixture.
8. Throttle valve stuck or out of adjustment.
9. Throttle rod loose.
10. Valve seats bad.
11. Valves sticking.
12. Timing improper.
13. Defective magneto.
 - a. Breaker points worn or pitted.
 - b. Breaker points out of adjustment.
 - c. High tension wire shorted.
14. Gum in carburetor.

ENGINE MISSING

1. Spark plug fouled.
2. Spark plug cracked.
3. Spark plug gap wrong.
4. Defective wiring.
5. Ignition breaker points sticking.
6. Valves warped, broken, or sticking.

ENGINE LOSING POWER

1. Carburetor choke valve partly closed.
2. Improper fuel mixture.
3. Piston rings sticking.
4. Improper timing.
5. Muffler clogged.
6. Governor or throttle loose.
7. Air cleaner requires cleaning.
8. Overload.
9. Cooling air stream obstructed.

ENGINE KNOCKS

1. Carbon in cylinder.
2. Loose main bearings.
3. Loose rod bearings.
4. Worn piston and cylinder.
5. Engine overheated.
6. Tight pistons.
7. Loose flywheel.
8. Lack of oil.

FAULTY CARBURETION

1. Carburetor improperly adjusted.
2. Inlet valve leaking.
3. Shut-off valve closed.
4. Sediment or water in fuel tank.
5. Gum in carburetor.

EXCESSIVE SMOKE FROM EXHAUST

1. Carburetor needle valve open too far.
2. Carburetor float sticking or leaking.
3. Worn piston or piston rings.

EXPLOSION IN CARBURETOR

1. Gas mixture too lean.
2. Intake valve sticking.
3. Intake tappets sticking.
4. Intake valve spring weak.
5. Intake valve warped or broken.
6. Intake tappets set too close.

POOR COMPRESSION

1. Valves not seating.
2. Valves sticking.
3. Piston rings worn or weak.
4. Piston rings broken.
5. Piston rings sticking.
6. Loose spark plug.
7. Cylinder head loose.
8. Scored cylinder.
9. Worn piston and cylinder.

SERVICING REFERENCE CHART

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IMPORTANT NOTICE

Unless you have a thorough knowledge of internal combustion engines and proper tools, we do not recommend that you attempt to make major engine repairs. This does not mean that you shouldn't make necessary adjustments and simple repairs, but in case of emergency we advise you to get in touch with our nearest service organization. See back cover.

DISASSEMBLING THE ENGINE

11. To facilitate the complete disassembly for major repairs, we suggest the following procedure. First drain the fuel and oil and then remove the parts as follows:
 1. Remove air cleaner wing nut and air cleaner.
 2. Loosen fuel pipe at fuel filter and carburetor.
 3. Take off muffler.
 4. Remove 2 screws holding carburetor to intake pipe to remove carburetor.
 5. Loosen governor spring and link.
 6. Take off intake pipe by removing 2 screws.
 7. Remove 4 screws holding blower housing and remove the housing.
 8. Remove spark plug. Use a spark plug wrench.
 9. Remove cylinder head by removing 6 screws which hold it to cylinder.
 10. Remove flywheel and starter pulley nut (1 nut).
 11. Take off flywheel and key.
 12. Remove magneto dust cover (2 screws).
 13. Remove 4 hexagon cap screws which hold magneto plate and remove the magneto assembly.
 14. Remove valve cover plate and gasket (1 nut), spray shield and breather parts.
 15. Compress valve springs with screw driver and remove pins with pliers to free valves (2).
 16. Remove cylinder from base by removing 2 screws, washers, and dowel pins.
 17. Straighten connecting rod bolt lock plate—loosen 2 cap screws—take off rod cap.
 18. Remove carbon at top of cylinder bore then push out piston and connecting rod assembly.
 19. Remove 2 pin locks to remove piston pin from piston.
 20. Remove rings from piston.
 21. Drive out cam shaft (power take-off side).
 22. Remove crankshaft.
 23. Remove cam gear and cam followers.
- Check each item as removed to determine its condition. On following pages you will find instructions covering these items including—repair procedure, allowable tolerances, etc., to determine if parts are suitable for further use or must be replaced with new ones.

THE FUEL SYSTEM

12. AVOID GUMMY GASOLINE. If you experience trouble with a gummy, sticky substance with a sharp obnoxious odor, change to fresh gasoline. This gum comes from the gasoline and clogs the carburetor, fuel line, fuel tank, etc.

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

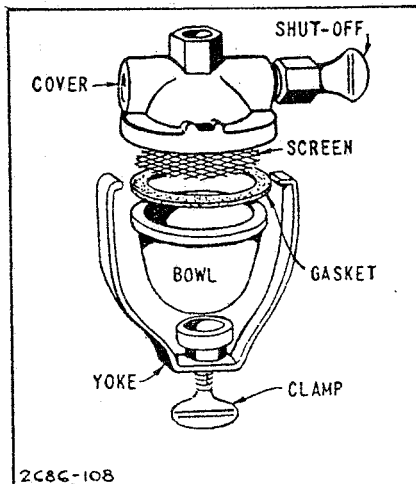
14. TO CLEAN THE FUEL PIPE.

- a. Close the shut-off valve on the fuel filter by turning lever to the right.
- b. Disconnect fuel pipe at filter and carburetor.
- c. Blow through fuel pipe to clear it.

15. TO CLEAN FUEL FILTER. (See Plate No. 3.)

- a. Loosen thumb screw below filter bowl.
- b. Remove and clean filter bowl and screen.
- c. Open shut-off valve to see if fuel flows freely from the tank. **IMPORTANT:** If you find a gummy, varnish-like substance use alcohol or acetone to dissolve it. (See Paragraphs 12 and 13.)

Fuel Filter — Plate No. 3



16. TO CLEAN FUEL TANK CAP. Be sure that the small vent hole in the fuel tank cap is not clogged up, for air must enter the tank to allow the gasoline to flow to the carburetor. Test by blowing through top of cap.

17. CORRECT USE OF CHOKE. The correct carburetor setting (see Paragraph 19) gives the engine the best mixture to run on when it is hot. When cold it is necessary

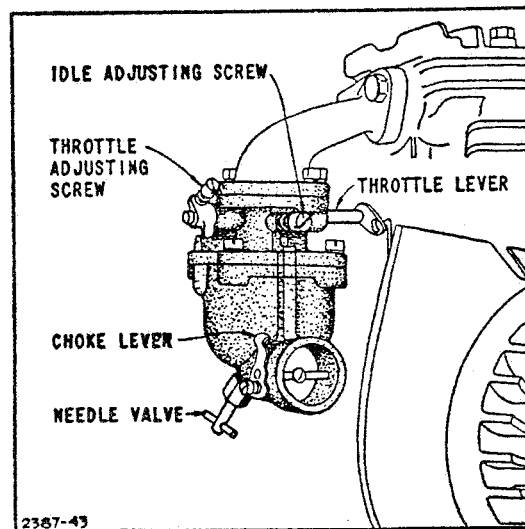
to choke the carburetor to get a rich mixture, because cold gasoline does not vaporize readily. A warm or hot engine requires very little choking. Until you become familiar with the engine, you may make the mistake of not choking the carburetor enough or you may choke it too much. If engine fails to start after three or four attempts with the choke open, try a few times with the choke part-way open and then all the way open.

18. THE CARBURETOR. The carburetor on this engine is of the float type. The gasoline is regulated by a needle valve. The throttle is automatically controlled by a governor. (See Paragraphs 25-26.)

19. TO ADJUST THE CARBURETOR.

- a. Completely close needle valve by turning to right, or in a clockwise direction, as far as possible. (See Plate No. 4.) Do not

Carburetor Hook-up — Plate No. 4



screw up too tight or use force when closing as needle valve may be damaged.

- b. From closed position, open needle valve one to one and one-quarter turns.
- c. After the engine has been started and warmed up make a final adjustment with the choke wide open by turning the needle valve to the point at which engine operates most smoothly with full load. This setting will also take care of starting with use of the choke.
- d. If it is necessary to keep choke partially closed several minutes before engine 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 25-26.
- e. 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.

f. The throttle lever adjustment screw is set at the factory to permit an idling speed of about 1600 R.P.M. If you want to idle the engine at a higher speed than 1600 R.P.M. turn the throttle lever adjusting screw to the right or in a clockwise direction.

20. TO REMOVE AND REPLACE CARBURETOR.

- a. Close shut-off valve on fuel filter.
- b. Disconnect fuel pipe at carburetor.
- c. Remove air cleaner and elbow.
- d. Remove two cap screws and lockwashers from the intake elbow.
- e. Remove throttle link and spring. The carburetor is then free from all connections. To **REPLACE** reverse the operations as performed above.

21. TO DISASSEMBLE CARBURETOR.

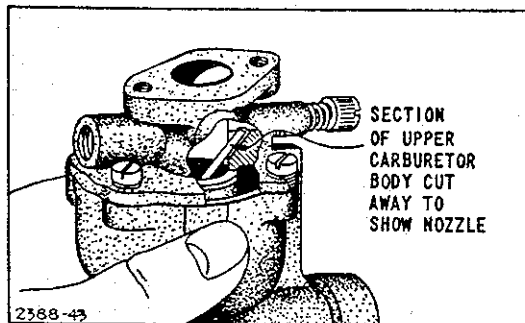
- a. Remove needle valve, stuffing box nut, gland, and nozzle.
- b. Remove screws and lockwashers from the carburetor body.

CAUTION: The upper and lower bodies are interlocked by the nozzle (see Plate No. 5) and failure to disassemble in above order will result in damaged parts.

22. TO CHECK CARBURETOR INLET VALVE AND SEAT. (See Plate No. 6.)

- a. Pull out the brass pin that holds the

Carburetor Nozzle — Plate No. 5



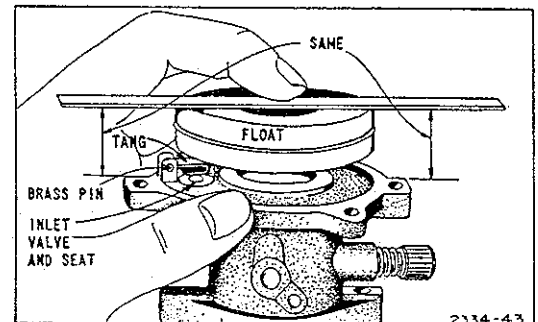
carburetor float. A worn or dirty inlet valve and seat, or incorrect float level will cause the carburetor to leak.

23. TO CLEAN CARBURETOR PARTS.

- a. Wash parts with alcohol, acetone, or lacquer thinner to remove gum and dirt.
- b. Blow through all passages and openings. Do **NOT** use wire to clean out holes.
- c. Replace worn or damaged parts.

NOTE: Gum in the carburetor may sometimes be removed by pouring a half cup of alcohol or lacquer thinner into the empty fuel tank and allowing it to run into the carburetor. After a few minutes, start the engine and run until alcohol or thinner is used up.

Carburetor Float Position —
Plate No. 6



24. TO REASSEMBLE. (See Plate No. 6.)

- a. The float should be in a horizontal position when it closes inlet valve and seat.
- b. Check the float by inverting upper carburetor body and place a scale or flat, straight piece of steel across carburetor float and see that the distance from the top of float to carburetor body flange is equal on both sides. The float hinge tang can be bent to attain proper position of float.
- c. Reassemble remaining parts in following order:
 1. Upper and lower carburetor bodies.
 2. Nozzle and needle valve parts.

THE GOVERNOR

25. CORRECT ENGINE SPEED. The speed of this engine is automatically maintained under varying loads by a built-in governor. It was carefully adjusted at the factory and should not be re-adjusted unless absolutely necessary. Recommended operating speed

is 2600 to 3600 R.P.M. As different types of equipment require various operating speeds for the greatest efficiency, it is suggested that you follow the recommendations of the manufacturer of the complete unit which the engine powers.

Air Vane Governor Hook-up — Plate No. 7

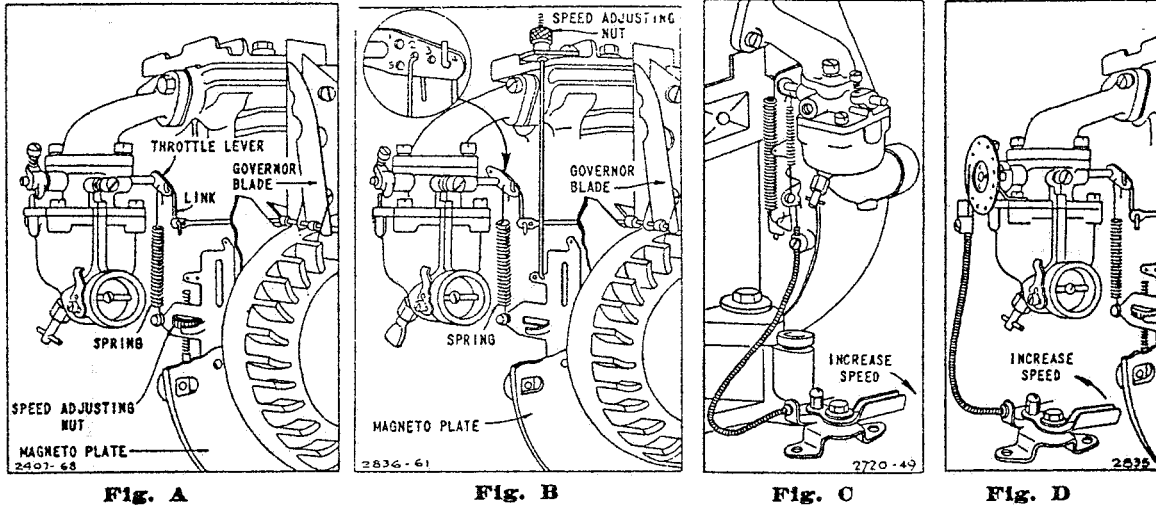


Fig. A

Fig. B

Fig. C

Fig. D

26. GOVERNOR SPEED ADJUSTMENT.

Two distinctly different types of governors are used on different types of engines:

1. Air vane governor, which operates by the air current blown by the flywheel. (See Plate No. 7.)
2. Mechanical governor, which is built into crankcase and is gear driven off cam gear. (See Plate No. 8.)

To adjust, proceed as follows:

a. Air Vane Type:

1. Fixed Speed Control. (See Plate No. 7, Fig. A.) A speed adjuster is located beneath carburetor on magneto plate. To increase engine speed turn speed adjusting thumb nut down. To decrease speed turn thumb nut up.
2. Fixed Speed Control (Thumb Screw Type). See Plate No. 7, Fig. B. Speed adjuster is located on the top of engine. To increase speed, turn nut counter-clockwise. To decrease speed, turn nut clockwise.

Note: Top loop of governor spring should be hooked in No. 2 hole in the carburetor throttle lever. For closer governing, move spring to the No. 1 hole. See insert in Plate No. 7, Fig. B.

3. Remote Governor Control. (See Plate No. 7, Fig. C.) Engine speed is controlled by movement of the control lever as shown.

Mechanical Governor Hook-up — Plate No. 8

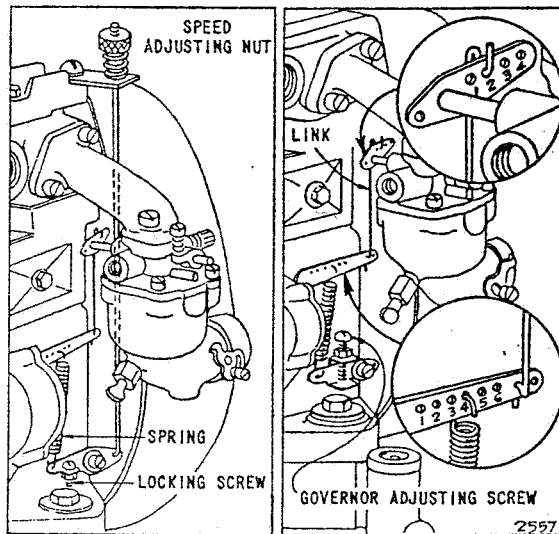


Fig. A

Fig. B

4. Remote Throttle Control. (See Plate No. 7, Fig. D.) Top speed of the engine is controlled by the governor. All other speeds from idle to top speed are controlled by a remote control lever at some distance from the engine.

Some models are equipped with a hand governor control. To increase engine speed push down on knob, to decrease speed pull up.

b. **Mechanical Type.** Two types of speed adjustment devices are used:

1. Speed adjustment nut located on end of control rod which extends above cylinder. (See Plate No. 8, Fig. A.) To increase speed, turn speed adjustment nut down. To reduce speed, turn speed adjustment nut up.
2. Speed adjustment screw located below carburetor. (See Plate No. 8, Fig. B.) To increase speed, loosen lock nut and turn governor adjusting screw down. To reduce speed, turn screw up. Tighten lock nut.

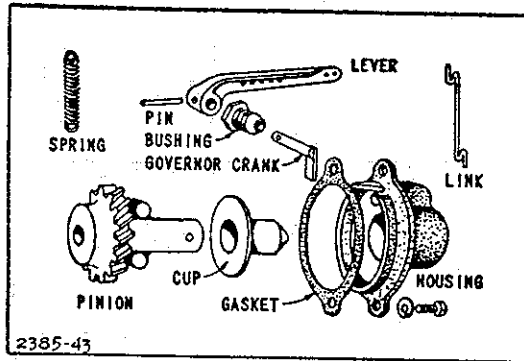
Note: Link should be hooked in No. 2 hole of carburetor throttle lever and spring loop should be in No. 4 hole of governor lever. For closer governing, move spring to No. 3, 2 or 1 holes in governor lever. See insert in Plate No. 8, Fig. B.

27. TO DISASSEMBLE MECHANICAL GOVERNOR. (See Plate No. 9.)

- a. Remove carburetor by disconnecting fuel line and removing two screws at top and one at bottom.
- b. Unhook throttle link.
- c. Unhook spring.
- d. Remove 2 screws which fasten housing to crankcase and lift off housing.
- e. Remove cup and gear.

Inspect and clean parts in gasoline. Replace worn parts with new ones.

Mechanical Governor Parts—Plate No. 9



28. **TO CHECK AIR VANE GOVERNOR BLADE CLEARANCE.** This type of governor has but few parts and seldom do they need replacement because of wear. It operates by air currents blown by the flywheel against an air vane. It is important, however, that this vane has proper clearance so it can operate freely. To check and adjust, proceed as follows:

- a. Remove blower case.
- b. Turn carburetor throttle lever so the vane is in wide open position. This will

enable you to see if the vane clears the armature core and screws. (See Plate No. 10, Fig. A.)

c. If it does not clear, bend vane bracket or file blade. (See Plate No. 10, Fig. B.)

Do not bend bracket too far or it may rub on flywheel.

Governor Air Vane Adjustment Plate No. 10

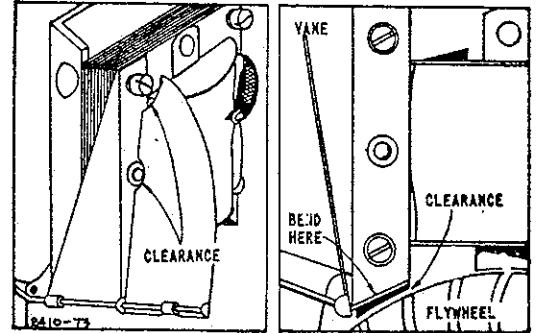


Fig. A

Fig. B

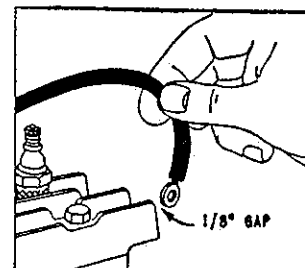
THE IGNITION SYSTEM

29. **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. The ignition current is sent into the engine cylinder through the ignition cable and spark plug. The magneto itself, as well as the cable and spark plug must all be in proper condition and adjustment to insure a good hot spark.

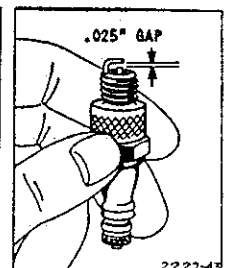
30. TO CHECK FOR SPARK.

- a. Remove the ignition cable from the plug. Remove plug. Hold the ignition cable terminal $\frac{1}{8}$ " from any metal part of cylinder head. (See Plate No. 11.)
- b. Turn engine and if spark jumps this gap the engine ignition system with the exception of the spark plug is O.K.

Checking Spark Plate No. 11



Spark Plug Plate No. 12



c. If no spark develops, check the cable (see Paragraph 32), and refer to magneto adjustments explained in Paragraphs 33 to 40.

31. SPARK PLUG ADJUSTMENT. The spark plug should be cleaned and the gap reset to .025" after each 100 hours of operation. (See Plate No. 12.) Always keep a fresh plug on hand. Use Champion No. J-8 (14mm) spark plug or its exact equivalent. When inserting plug place a little graphite grease on the threads.

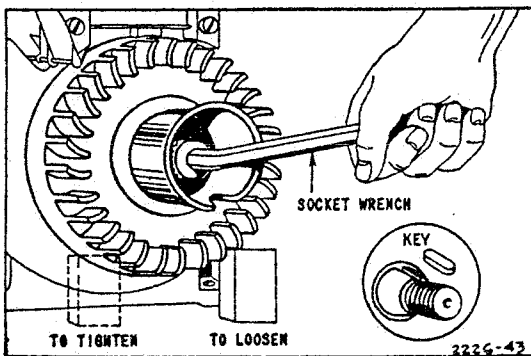
32. IGNITION CABLE. Insulation must not be broken or soaked with oil or water, or grounded in any way where it touches the engine as this will interfere with good ignition. To check the cable all the way to the magneto it is necessary to remove blower case. Be sure that the cable is securely fastened to the secondary terminal of the coil. (See Plate No. 16.) Do not solder the cable to the terminal or coil.

33. TO REMOVE FLYWHEEL. (See Plate No. 13.) The flywheel is securely mounted to the crankshaft by means of a taper fit, a soft key, left hand threaded nut and spring washer. To remove proceed as follows:

ROPE STARTER ENGINES

- a. Remove the blower housing.
- b. Bolt or clamp the engine to a work bench.
- c. Place a block of wood under flywheel fin to hold it solid as illustrated in Plate No. 13.

Removing Flywheel — Plate No. 13



d. Use a large wrench, 10" or longer. Turn nut to the RIGHT using a hammer to tap lightly until nut loosens. Be careful not to break fins as this will throw flywheel out of balance.

e. After the nut has been removed, loosen the flywheel by placing a wood block against the end of crankshaft and strike with a hammer. Pull off flywheel.

MAGNETO SIDE HAND AND FOOT STARTER ENGINES

- a. Remove starter assembly.

- b. Loosen set screw in clutch housing.
- c. Remove clutch from shaft.
- d. Take off blower housing and remove flywheel same as rope starter explained above.

34. TO REASSEMBLE FLYWHEEL.

- a. Thoroughly clean flywheel hole and tapered end of crankshaft.
- b. Turn crankshaft until keyway is up. Then place flywheel on crankshaft and align keyways.
- c. Insert key and push up securely into keyways.
- d. Assemble spring washer with the hollow or concave side next to the flywheel.
- e. Place a block of wood under the left side of flywheel to hold rigid and draw nut very tight by tapping end of wrench with a hammer.

35. TO REMOVE MAGNETO ASSEMBLY.

After the flywheel has been removed, as explained in above paragraph, proceed as follows:

- a. Remove magneto point dust cover. It is not necessary to remove the carburetor.
- b. Remove four magneto plate mounting screws.

36. TO REPLACE MAGNETO ASSEMBLY.

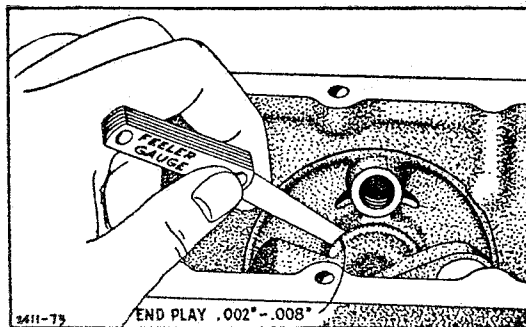
Use same gaskets between plate and crankcase or, if damaged, use one of the following new gaskets for proper end play:

- Part No. 67597 — .005"
- Part No. 67607 — .009"
- Part No. 67307 — .015"

The end play should be .002" to .008" between magneto bearing and crankshaft thrust faces as shown in Plate No. 14.

Use lockwashers under mounting screws.

Correct End Play — Plate No. 14



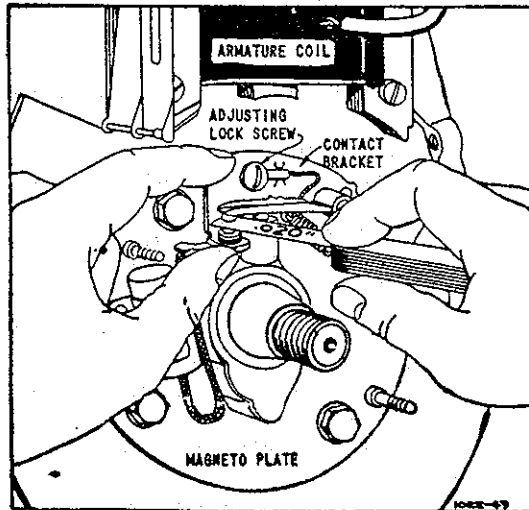
37. MAGNETO TIMING. The magneto assembly is always correctly timed with the engine when the flywheel is assembled to the tapered crankshaft with a key and securely held in place with left hand threaded nut. Do not attempt to change the timing by relocating any parts or filing crankshaft timing flat. Always use soft key Part No. 61760. If steel key is used

and flywheel becomes loose it will damage the keyway in the crankshaft.

38. TO ADJUST AND CLEAN CONTACT POINTS. (See Plate No. 15.)

a. Remove blower housing, flywheel, and magneto point dust cover.

Adjusting Contact Points — Plate No. 15

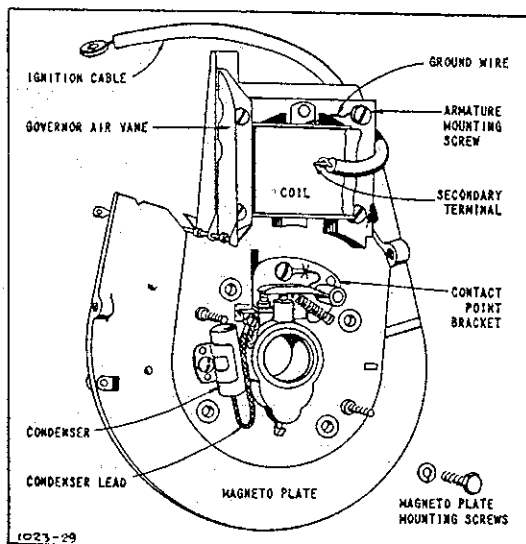


b. Turn crankshaft by hand to see if contact points open and close properly. Points must be clean and line up squarely to make good contact. Do not file points — use fine sandpaper or fine grit hone to clean points.

c. Adjust gap to .020" by loosening the adjusting lock screw and moving contact point bracket up or down. When proper gap is obtained tighten lock screw securely. If either or both points become badly pitted or burned, replace with complete new Contact Point Assembly, Part No. 29667.

39. TO REPLACE CONDENSER. A leaky or weak condenser may cause the engine

Complete Magneto Assembly — Plate No. 16



to start hard, to sputter and misfire under load. If engine misfires after checking the fuel line, carburetor, spark plug, and contact points, install a new condenser, Part No. 29861. Both the condenser lead and armature lead must be fastened to breaker assembly. (See Plate No. 16.) Be sure to push condenser lead down between condenser and hub of magneto plate to avoid rubbing against the flywheel.

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 flywheel to our nearest service organization.

40. TO REPLACE AND ADJUST ARMATURE.

a. Remove primary armature lead wire of coil from brass arm on contact bracket.

b. Remove high tension ignition cable from secondary terminal in coil.

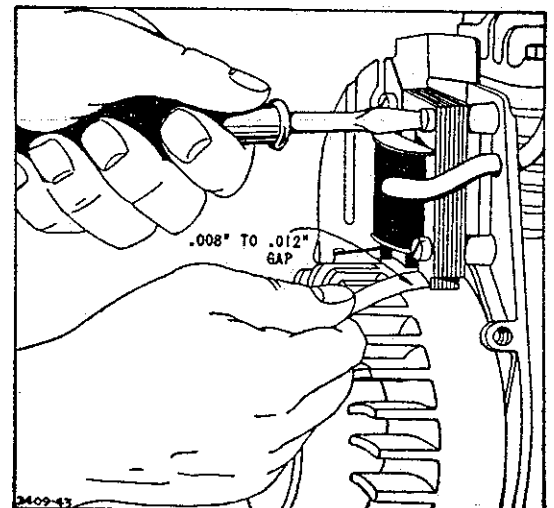
c. Unscrew four armature mounting screws.

d. Install new armature, Part No. 291617, and be sure that condenser lead wire and armature lead wire are fastened to breaker assembly. (See Plate No. 16.)

e. Replace mounting screws, inserting one with terminal of ground wire under screw.

f. An air gap of .008" to .012" must be maintained between armature core ends and flywheel. (See Plate No. 17.) Gap must only be sufficient to prevent rubbing, but

Setting Armature Air Gap — Plate No. 17



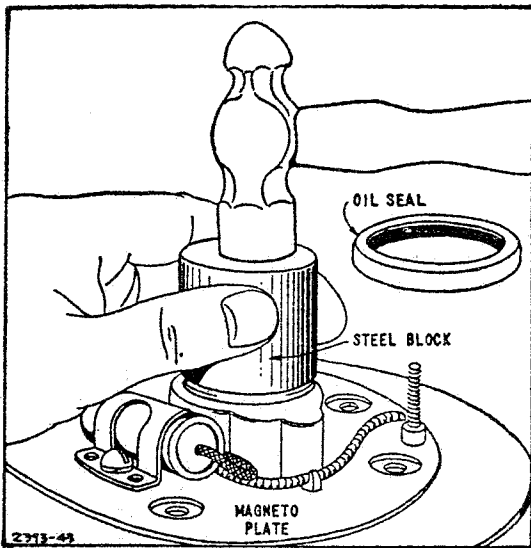
never over .012", or poor ignition will result.

To adjust gap to proper clearance, loosen the four armature mounting screws, slide armature assembly up and place feeler gauge between rim of flywheel and arma-

ture core ends. Lower the armature assembly until core ends rest on gauge and lock into place by tightening mounting screws securely.

41. BEARING OIL SEAL. A bearing oil seal is mounted in the magneto plate. Use a screw driver to remove but be careful not to damage the bearing surface. This seal is made of a composition and when worn should be replaced with a new one, Part No. 89660. To replace, place seal in the counterbore and force into position with a flat steel block as shown in Plate No. 18.

Replacing Oil Seal — Plate No. 18



VALVES

42. VALVE ADJUSTMENT. (See Plate No. 19.) To check valve clearances, remove valve cover plate, oil spray shield, and breather valve. The correct valve clearances are as follows when the engine is cold:

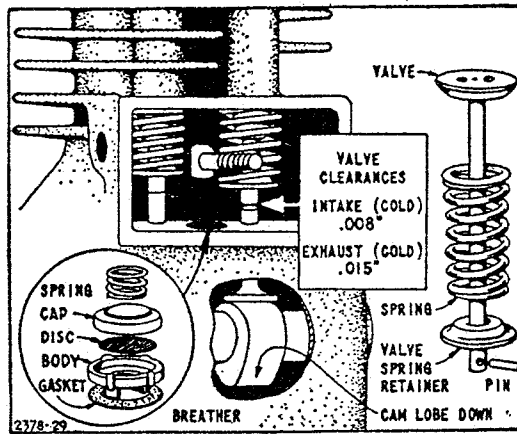
- Exhaust Valve — .015"
- Intake Valve — .008"

Tappet clearance is adjusted by grinding required amount from the end of valve stem. End of stem must be square with the stem proper.

43. TO REMOVE VALVES.

- a. Drain oil from crankcase of the engine if not disassembled.
- b. Remove cylinder head. (See Par. 46-47.)
- c. Compress valve spring with a screw driver and pull out valve retainer pins with long nosed pliers. Remove valves. Pry the springs out with a screw driver.

Valve Adjustment — Plate No. 19

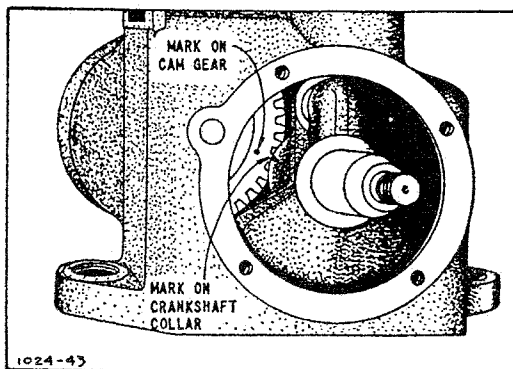


44. VALVE SEATING. Unless valves are properly seated they will cause improper operation due to lack of compression, waste of oil and gasoline. Therefore reseating valves should be done with the utmost care. They should not be seated by merely lapping with a grinding compound because this is liable to create grooves which wear deeper with use and cause further trouble. The valve and seats should be refaced 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.

a. If the inspection shows that the valve stem is badly worn or the seat is too badly pitted, we recommend sending the engine to our nearest service organization.

45. VALVE TIMING. The timing of the valves is taken care of by the meshing of the cam gear with the gear on the crankshaft. These gears are properly meshed when the mark on the cam gear is in line with the mark on the crankshaft collar as shown in Plate No. 20.

Valve Timing — Plate No. 20



CYLINDER

46. CYLINDER HEAD. The cylinder head is held in place with six cap screws.

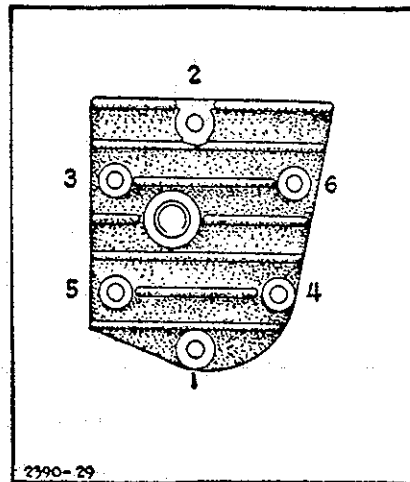
47. TO REMOVE AND CLEAN CYLINDER HEAD.

- Remove spark plug.
- Remove cylinder head.
- Accumulated dirt, grease, and oil should be scraped and blown out of the air passages. This is important to allow free circulation of air and prevent overheating.
- Clean carbon deposits with wire brush or scraper and thoroughly blow out. See that spark plug hole is clean and that the threads are not stripped.

48. TO REASSEMBLE CYLINDER HEAD.

- Use a new gasket, Part No. 291301. If not available, clean the old one and coat both sides with cup grease — shellac is not recommended.
- Replace cylinder head and turn each screw by hand as far as it will go.

Tightening Cylinder Head — Plate No. 21



c. Use a socket wrench with a handle not over 6" long and tighten all screws evenly with a $\frac{1}{4}$ turn in the rotation 1 to 6, as shown in plate 16. Do not tighten one screw down completely before the others as this may cause the cylinder head to warp or damage the gasket. Run engine two to five minutes.

d. Now tighten all screws snugly (which will usually be about $\frac{1}{4}$ turn) in the same rotation.

e. Use a small amount of graphite grease on threads of spark plug before replacing.

49. CHECKING THE CYLINDER.

- If cylinder is scored, out of round or oversize, we recommend sending the engine to our nearest service organization.

CRANKSHAFT

50. TO REMOVE CRANKSHAFT.

- Drain oil from crankcase.
- Remove blower housing.
- Remove flywheel nut (turn clockwise), washer, and key to remove flywheel as explained in Paragraph 33.
- Remove magneto plate. (See Paragraph 35.)
- Remove engine from base.
- Turn engine upside down.
- Disconnect connecting rod and push piston down in cylinder bore so it clears crankshaft. Do not push too far as top ring may become detached.
- Remove cam shaft. (See Paragraph 52.)
- Slide crankshaft out toward the magneto side of the engine.
- Remove cam gear.

51. TO CHECK FOR CORRECT END PLAY.

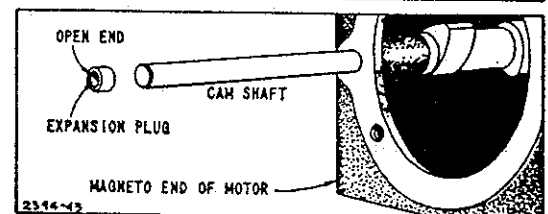
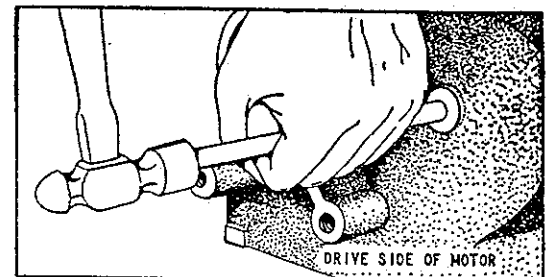
Use a new gasket when reassembling crankshaft and magneto plate. End play should not be less than .002" or more than .008". (See Paragraph 36.)

CAM SHAFT AND CAM GEAR

52. TO REMOVE CAM SHAFT AND CAM GEAR.

- If hand or foot starter, remove starter assembly.
- Remove blower housing.
- Remove flywheel and magneto plate.
- Use a blunt punch and force cam shaft out from the drive side of the engine as shown in Plate No. 22.

Removing Cam Shaft — Plate No. 22



- Remove crankshaft. (See Paragraph 50.)
- The cam gear will then be free for removal from crankcase after crankshaft has been removed.

Be sure not to get burrs on the end of the shaft. After the shaft has been removed, check shaft for wear. If badly worn replace with a new shaft, Part No. 63785.

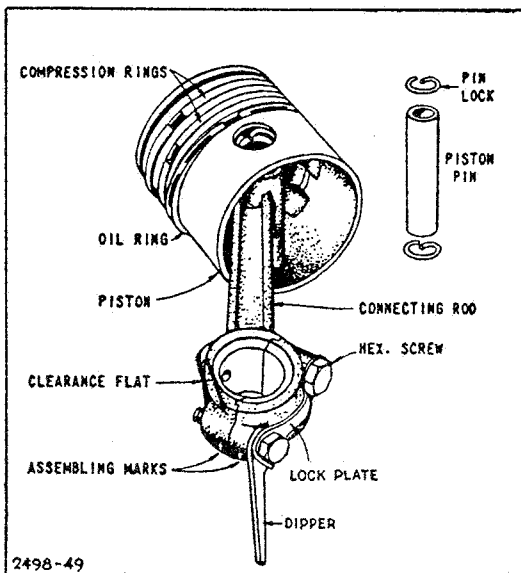
53. TO REPLACE.

- a. Insert cam shaft through hole on the magneto side of the engine far enough to permit sliding the cam gear into position. Be sure to line up timing marks as explained in Paragraph 45.
- b. Slide cam shaft through cam gear and press in flush with outside of crankcase on the opposite side.
- c. Install the expansion plug in the hole on the magneto side with its open end out. Seal with "Permatex" or other liquid gasket seal material to prevent oil leaks.

PISTON RINGS, PISTON PIN, AND CONNECTING ROD

54. PISTON. (See Plate No. 23.) The piston in this engine is made of a special alloy which is very light in weight. The lands of the piston are smaller than the skirt to allow for greater expansion at the piston head. This clearance is to compensate for the expansion of the aluminum when hot. When piston is removed be sure to clean carbon from head and ring grooves. If piston is out of round or scored it should be replaced with a new one. If an oversize piston is necessary, we recommend that the engine be sent to our nearest service organization.

Piston Assembly — Plate No. 23



55. PISTON RINGS. The piston rings when fitted in the cylinder should have a gap of .007" to .017". The rings should be checked 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.

56. PISTON PIN. The piston pin is a slip fit in the piston. To remove it from the piston, first remove the pin locks, then slip pin out of piston. If pin or hole is worn, replace with oversize pin No. 290981.

57. 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 cam gear clearance flat must be toward the magneto side. (See Plate No. 23.) The assembly marks on the cap and rod must be on the same side. It is equipped with locking plates. The connecting rod is equipped with a dipper and locking plate as shown. Bend up locking plate against hexagon head on cap screw.

CRANKCASE BREATHER VALVE

58. The breather valve used on this engine is mounted in the valve chamber (see Plate No. 20) and consists of the following parts:

- No. 26330 Retainer Spring.
- No. 22216 Cover.
- No. 65968 Valve Disk.
- No. 210028 Valve Body.
- No. 27323 Gasket.

If this becomes clogged it will cause oil leaks. Therefore, it is well that it be checked and cleaned whenever engine is taken apart for service.

59. TO REMOVE AND CLEAN.

- a. Remove valve plate cover.
- b. Remove oil spray shield.
- c. Remove retainer spring. (This holds breather valve in place.)
- d. Remove breather valve and wash the parts thoroughly with kerosene or gasoline, blow out, and dry.

Replace by reversing the above procedure.

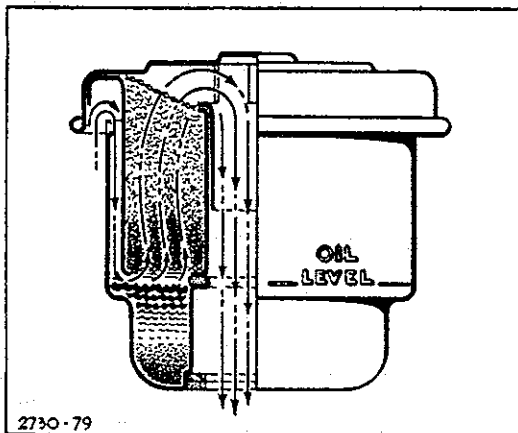
AIR CLEANER

60. TO REMOVE, CLEAN, AND REPLACE.

(See Plate No. 24.) The air cleaner is to protect the engine from dirt and grit. It is therefore important that it be cleaned and refilled every 25 hours the engine is in use (daily under dusty operating conditions) to prevent clogging. Clean as follows:

- a. Remove thumb nut and slide entire cleaner over rod.
- b. Remove cover and filter and pour out oil.
- c. Wash the filter element in gasoline. Shake to remove excess gasoline so that engine will not be flooded upon starting.

Air Cleaner Assembly — Fig. 24



- d. Clean bowl and cover by submerging in gasoline and wipe dry.
- e. Replace parts. Fill cleaner with oil of the same viscosity as used in the crankcase up to the level marked on cleaner bowl. See instructions on air cleaner label.

MUFFLER

61. TO CLEAN. After long periods of service it is possible that the muffler will become clogged to the point where it will affect the engine's power. To check the muffler unscrew it from the engine and run water into the open end of the muffler. If full streams of water come out of 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.

OVERLOAD

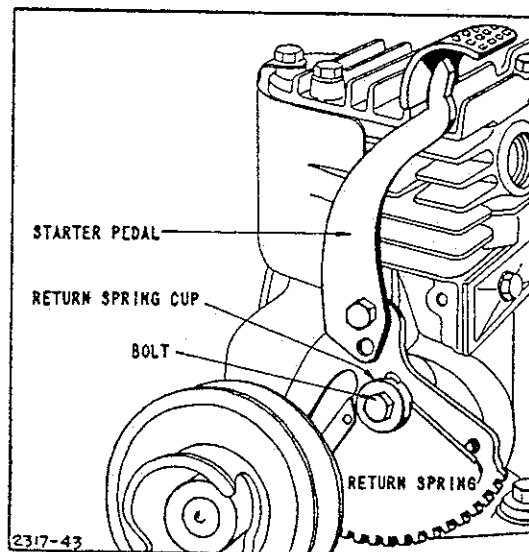
62. TO PREVENT. Always be sure that the machine the engine is operating is well lubricated and running freely. If it is not, it may cause the engine to be overloaded, resulting in it overheating, losing power, or stopping entirely.

63. STARTER PEDAL ADJUSTMENT.

Should the starter pedal return spring, on engines with the starter on the power take-off side, loosen or lose its tension, loosen the bolt which holds the return spring cup. (See Plate No. 25.) Turn the cup to the left until there is just enough tension to return the starter pedal back to the normal position after depressing it, and tighten the bolt. Too much tension may cause spring to break. Be sure the spring is in the proper position with the long end below the pedal adjusting bolt and the hooked end in the slot of the cup.

64. STARTER CLUTCH. If the starter clutch slips or fails to turn the engine, when stepping on the starter pedal, it is

Starter Pedal Adjustment — Plate No. 25



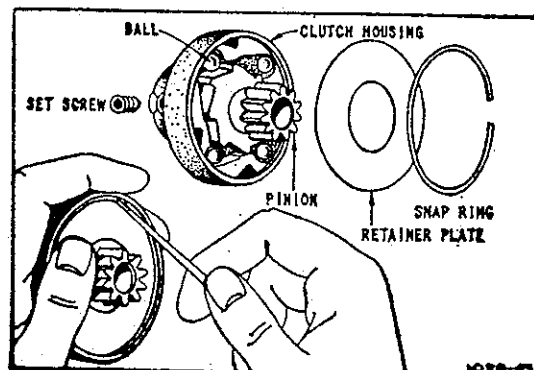
probably caused by one of the following reasons:

- Loose set screw.
- Worn clutch housing.
- Worn or broken pinion.

To correct this, proceed as follows:

- a. Tighten the set screw to be sure clutch is tight on the crankshaft. Use $\frac{1}{4}$ " Allen hexagon set screw wrench.
- b. If the clutch still slips, loosen set screw and remove clutch from the shaft.
- c. Pry out the snap spring with a sharp tool, holding the clutch in the position shown in Plate No. 26, as a precaution against the spring jumping out. Check the parts carefully for wear or damage and replace those necessary.
- d. To reassemble, replace the parts in the same order, and slip the spring back in place. Replace pulley clutch on shaft with the set screw hole lined up with recess in crankshaft extension. Securely tighten set screw.

Starter Clutch — Plate No. 26



PARTS SECTION INDEX

How to Find the Correct Number of Part You Need.....(See below)

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Piston, Connecting Rod, Flywheel and Gear Reduction.....	21
Throttle Control and Fuel System.....	22
Fuel Tank and Blower Housing Parts.....	23
Mechanical Governor and Magneto Parts.....	24
Starter Parts	25

• • •

05. HOW TO FIND THE CORRECT NUMBER OF THE PART YOU NEED

a. Make a note of your engine **TYPE NUMBER** (not the Serial Number) that appears on the metal nameplate attached to cylinder shield.

b. Refer to pages illustrating parts and locate the Master Part Number by comparing your old part with illustrations. Assemblies include all part numbers shown in frames in illustration. All parts shown in assembly frames on which part numbers are given can be purchased separately.

c. After the Master Part Number has been identified, refer to the following Parts List where these Master Part Numbers are listed in numerical order.

THE MASTER PART IS USED ON ALL TYPES OF ENGINES EXCEPT THOSE TYPES LISTED UNDER "NOTE."

d. If a "Note" appears below the Master Part Number, this means that this part is made different from the Master Part for certain types, and if your type is listed under "Note" order the part referred to.

e. If your Engine Type Number does not appear after any part number listed under "Note," order the Master Part Number.

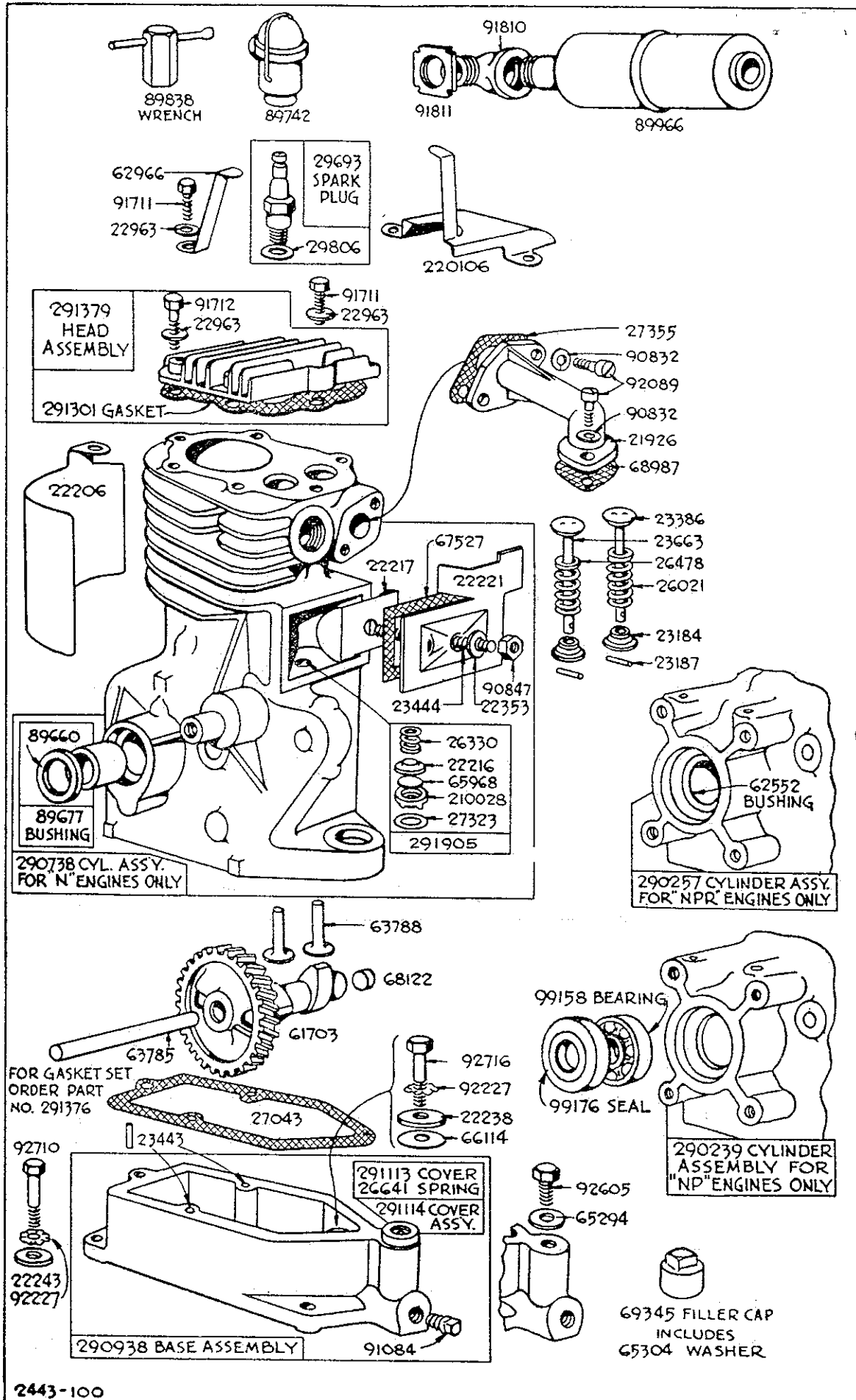
f. When ordering parts — or writing for service information — always specify the **MODEL LETTER — TYPE NUMBER — and SERIAL NUMBER** of your engine.

g. All parts should be ordered from the nearest member of our Nation-wide Service Organization. (See Page 49.) In ordering parts by mail, selling prices will be furnished on request or parts will be shipped at prevailing prices.

**Find It Fast
In The
Yellow Pages**



See yellow pages of your classified telephone directory for nearby engine service under heading "Engines — Gasoline" or "Gasoline Engines."

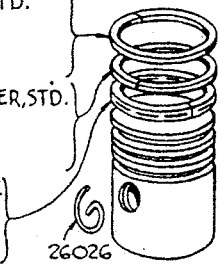


2443-100

CYLINDER AND BASE PARTS — PLATE No. 27

Assemblies include all parts shown in frames.

21283 RING, PISTON, COMP. TOP, STD.
 21376 -.010" - OVERSIZE
 21377 -.020" - "
 21378 -.030" - "
 61756 - RING-PISTON COMP. CENTER, STD.
 61768 -.010" - OVERSIZE
 61769 -.020" - "
 61770 -.030" - "
 61757 - RING, PISTON, OIL, STD.
 61771 -.010" - OVERSIZE
 61772 -.020" - "
 61773 -.030" - "



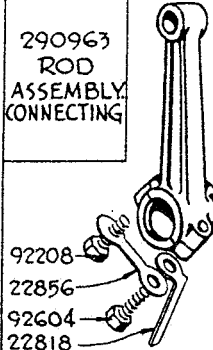
26026

290290 - RING SET - STD. PISTON
 290291 - RING SET -.010" - O.S. PISTON
 290596 - RING SET -.020" - O.S. PISTON
 290292 - RING SET -.030" - O.S. PISTON

89289 - PISTON ASS'Y. STD.
 89283 -.010" - O.S.
 89285 -.020" - O.S.
 89287 -.030" - O.S.

INCLUDES PISTON RINGS
 AND PISTON PIN LOCKS

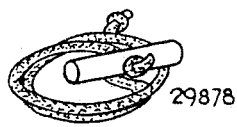
290963
 ROD
 ASSEMBLY
 CONNECTING



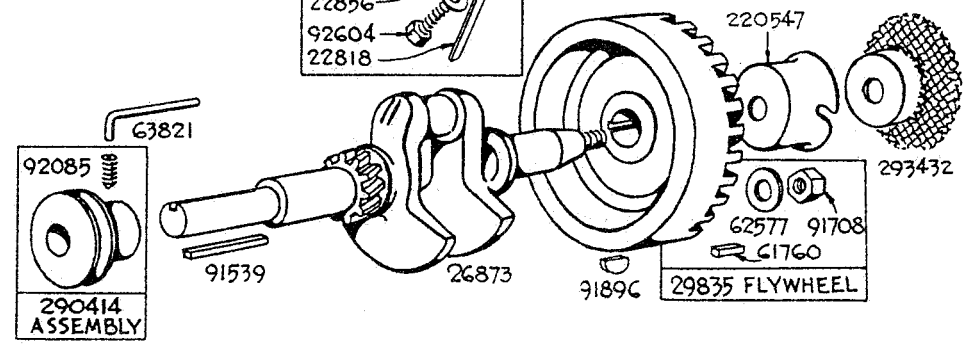
92208
 22856
 92604
 22818

26026

290980 PIN ASS'Y. PISTON, STD.
 290981 PIN ASS'Y. PISTON .005" O.S.



29878



63821

92085

290414 ASSEMBLY

91539

26873

9189C

220547

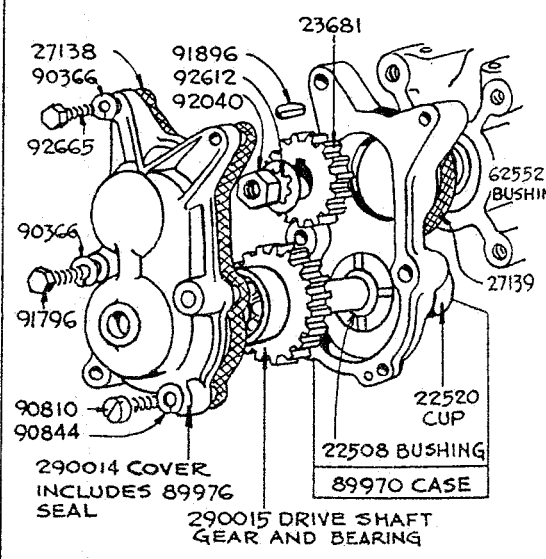
293432

62577 91708

61760

29835 FLYWHEEL

1.39 : 1 GEAR REDUCTION PARTS



27138
 90366
 92665
 90366
 91796
 90810
 90844
 290014 COVER
 INCLUDES 89976
 SEAL
 290015 DRIVE SHAFT
 GEAR AND BEARING

23681

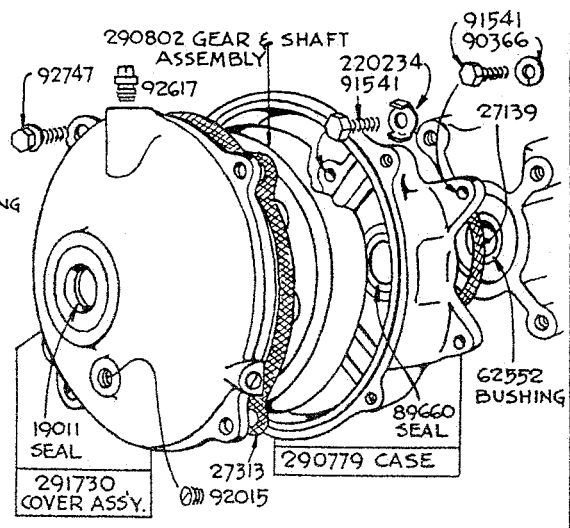
91896
 92612
 92040

62552 BUSHING

27139

22520 CUP
 22508 BUSHING
 89970 CASE

6:1 GEAR REDUCTION PARTS



290802 GEAR & SHAFT
 ASSEMBLY

91541
 90366

220234
 91541

27139

62552 BUSHING

89660 SEAL

290779 CASE

19011 SEAL

291730 COVER ASS'Y.

27313

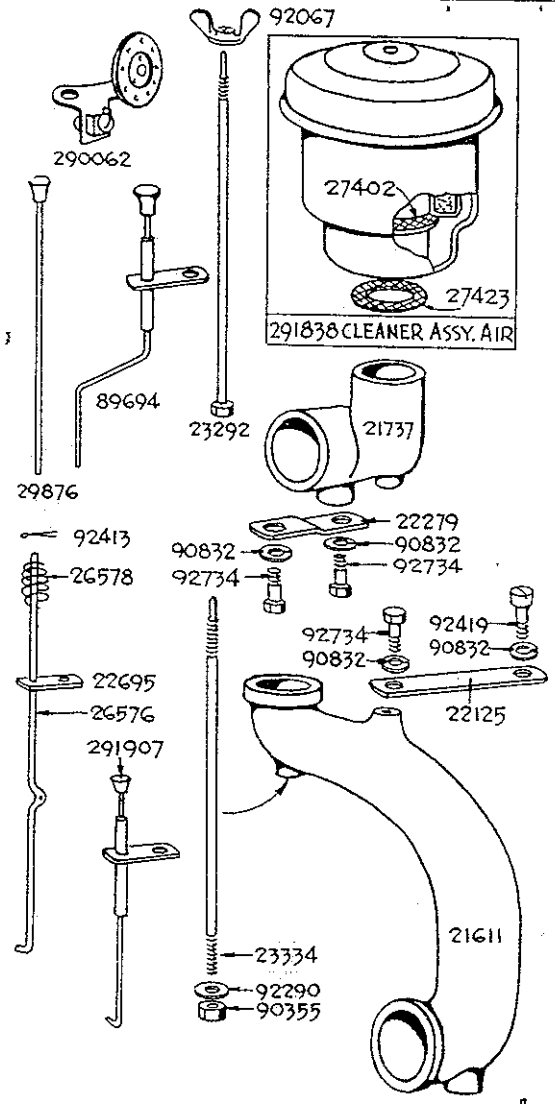
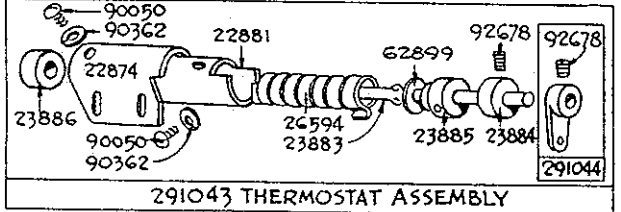
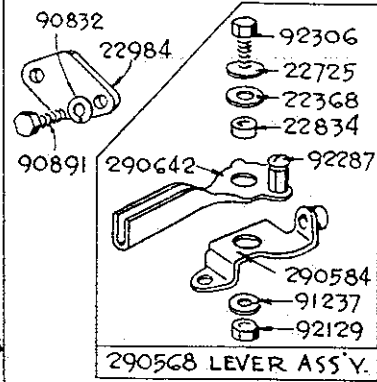
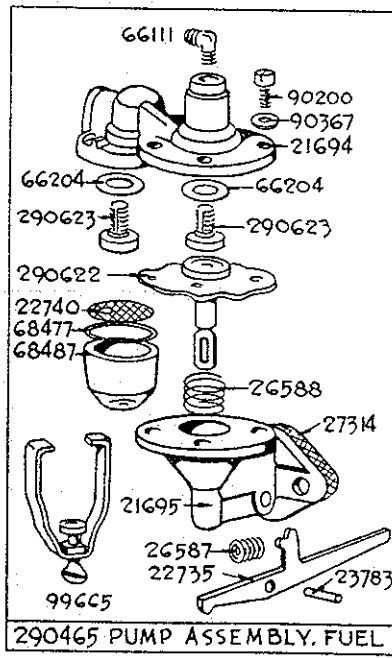
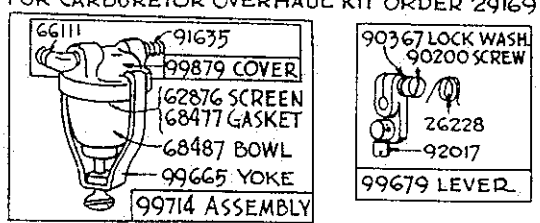
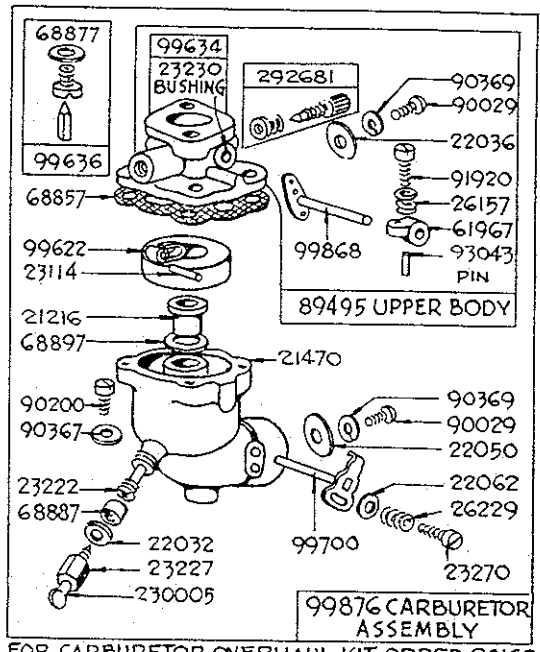
92015

92747

92617

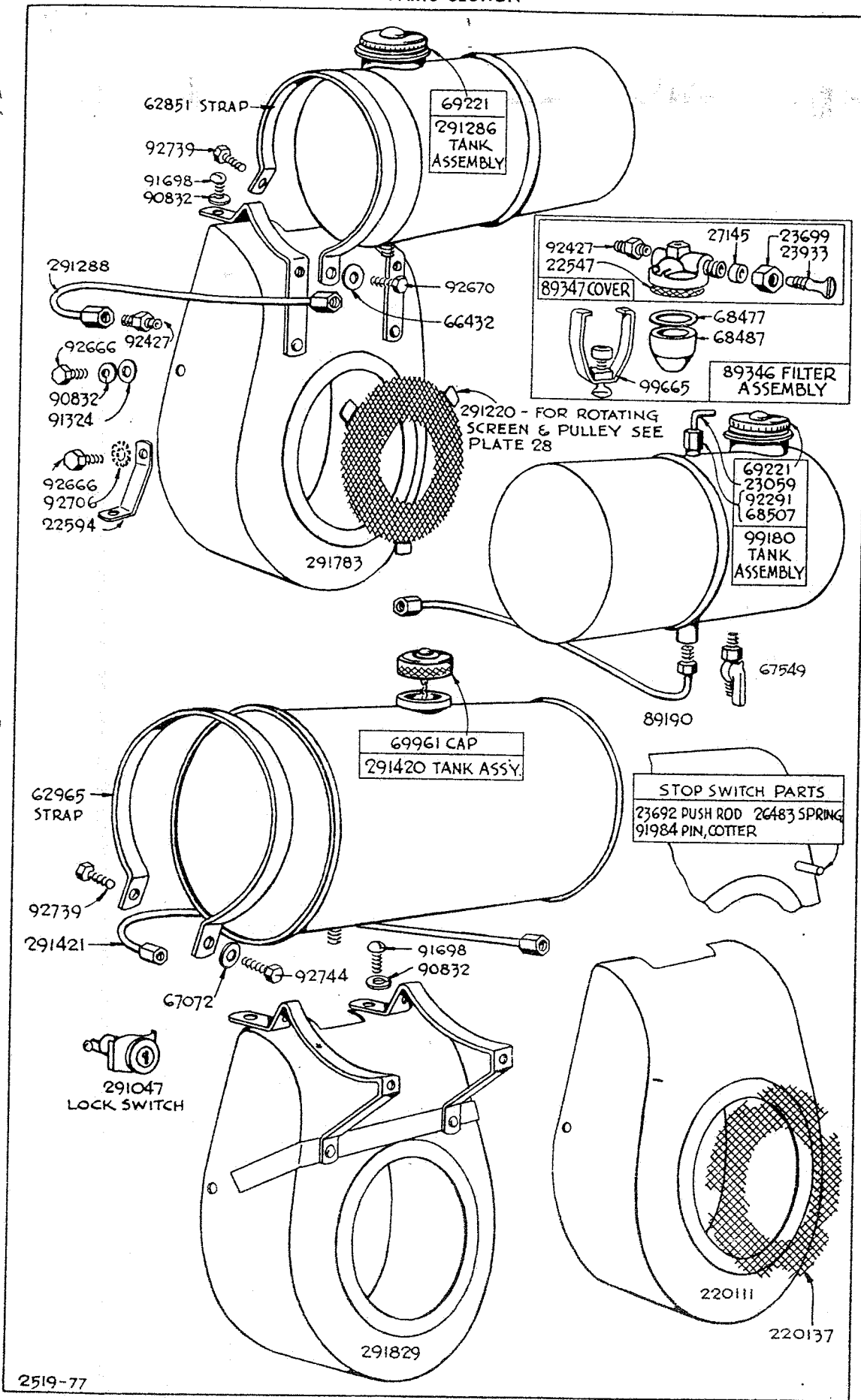
2517-77

PISTON, CONNECTING ROD, FLYWHEEL, AND GEAR REDUCTION PARTS
 - PLATE No. 28 Assemblies include all parts shown in frames.



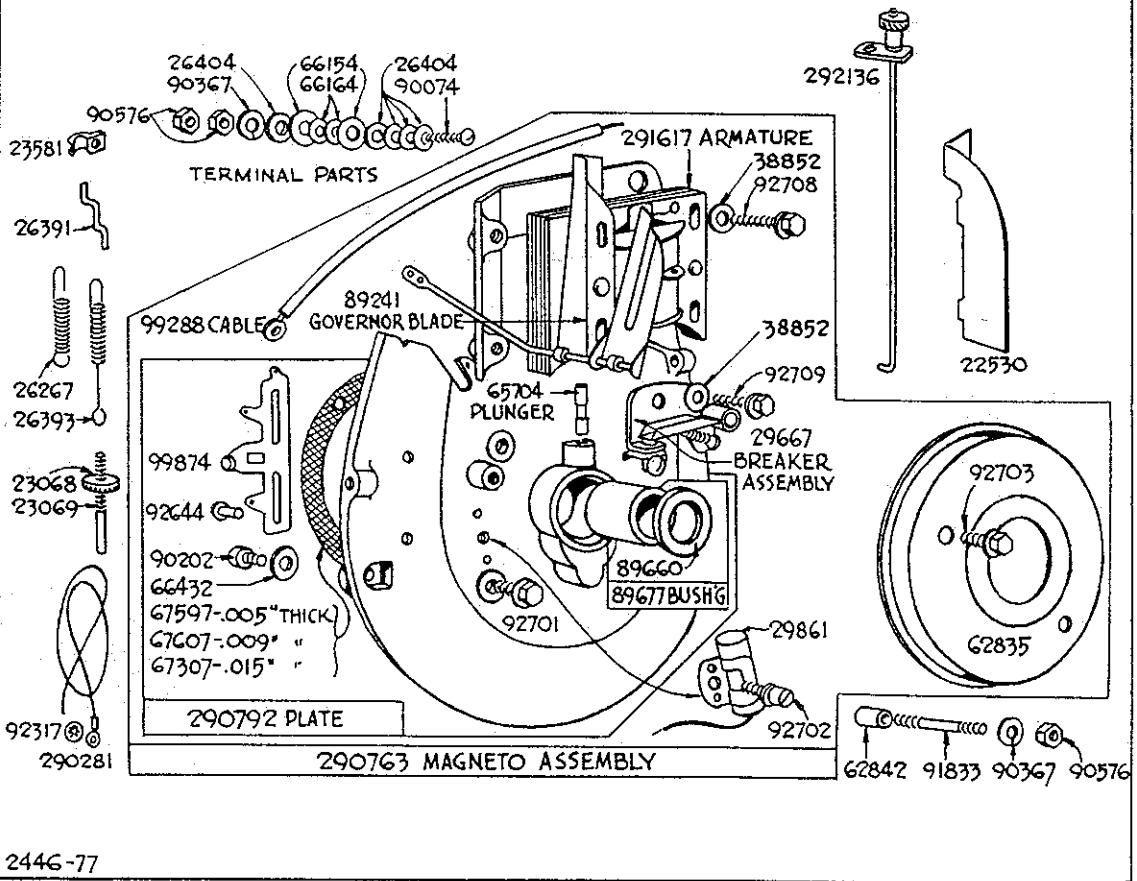
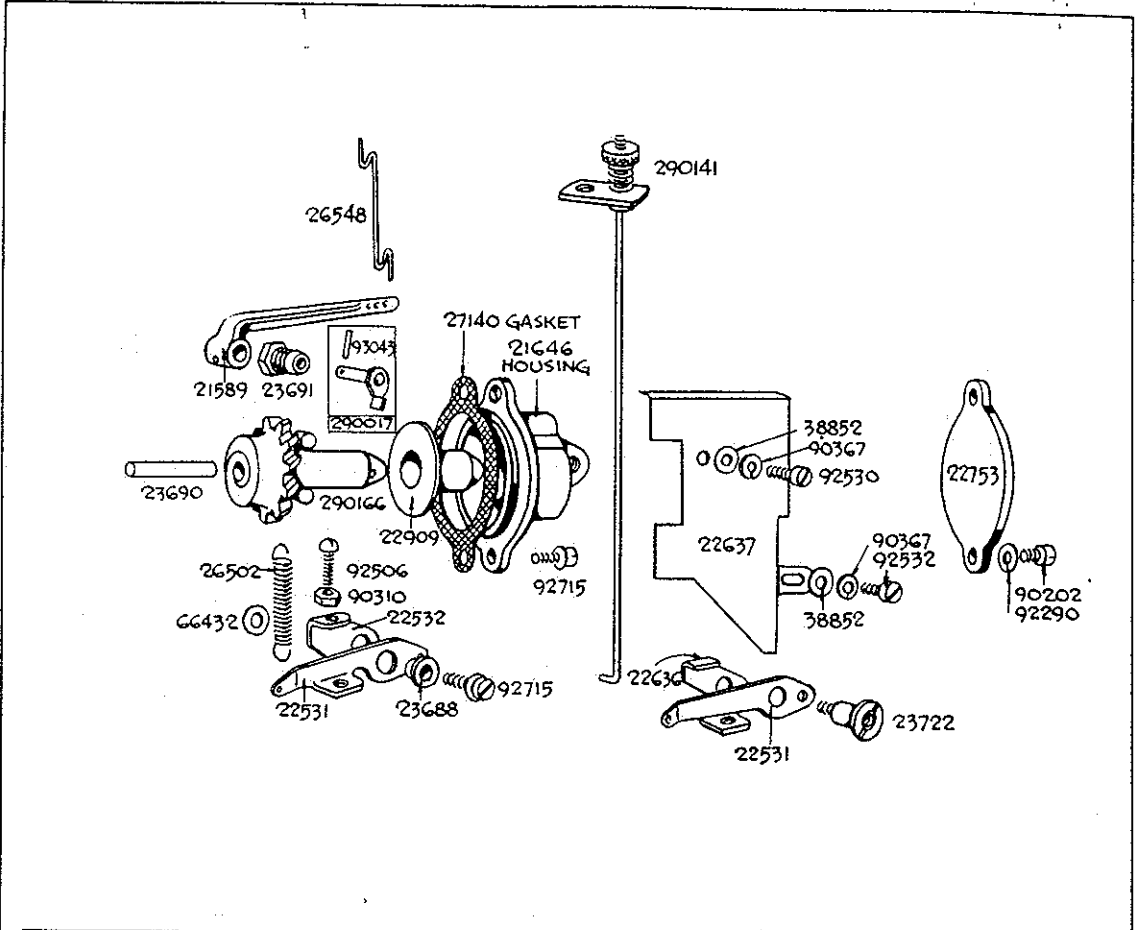
2531-77

THROTTLE CONTROL AND FUEL SYSTEM PARTS — PLATE No. 29
Assemblies include all parts shown in frames.



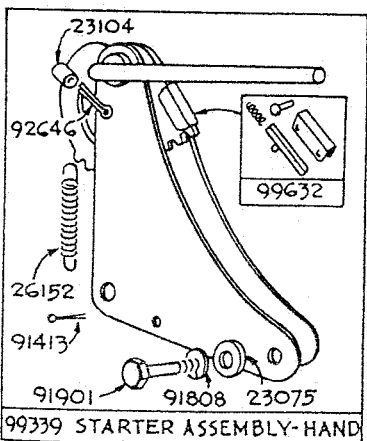
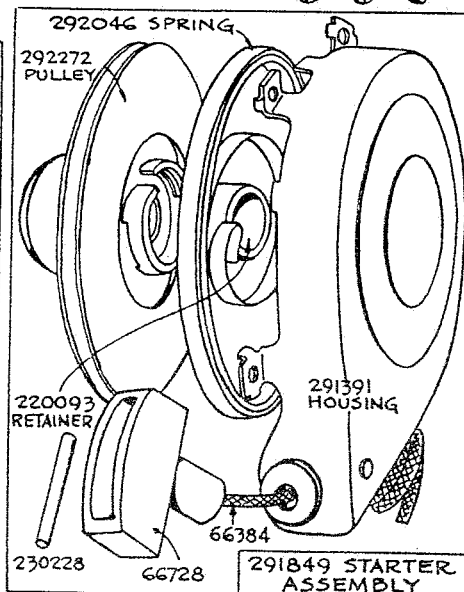
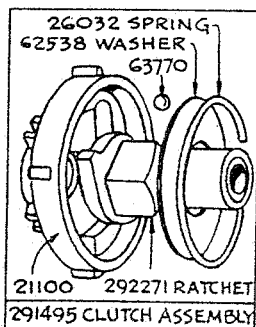
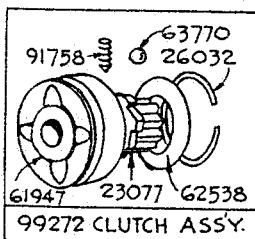
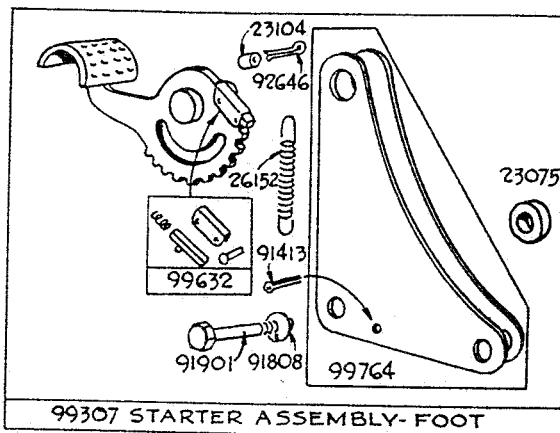
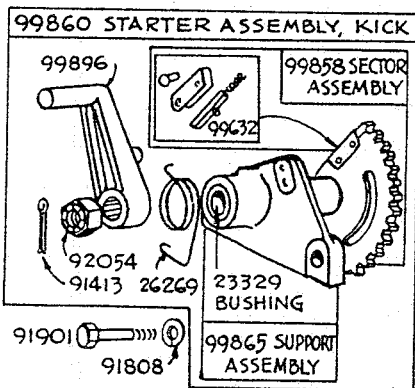
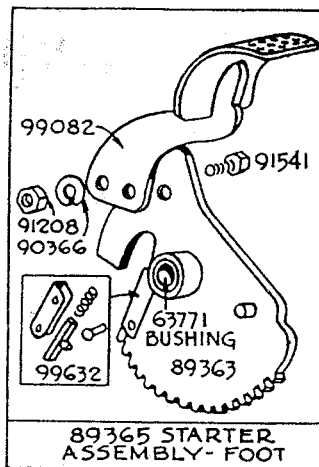
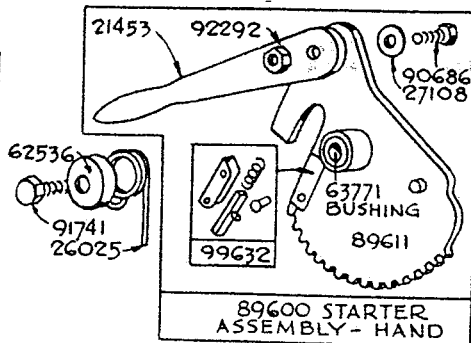
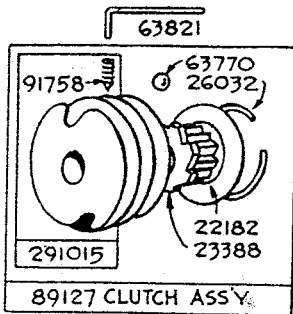
2519-77

FUEL TANK AND BLOWER HOUSING PARTS - PLATE No. 30
Assemblies include all parts shown in frames.



MECHANICAL GOVERNOR AND MAGNETO PARTS — PLATE No. 31
Assemblies include all parts shown in frames.

2446-77



2518-77

STARTER PARTS — PLATE No. 32
Assemblies include all parts shown in frames.

NUMERICAL PARTS LIST

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
19011	Seal—Oil		2
21100	Housing—Starter Clutch		14
21216	Venturi—Carburetor		1
21283	Ring—Piston, Compression, Top—Standard		1
21376	Ring—Piston, Compression, Top—.010" O.S.		1
21377	Ring—Piston, Compression, Top—.020" O.S.		1
21378	Ring—Piston, Compression, Top—.030" O.S.		1
21453	Lever—Hand Starter	1	
	<i>Note:</i> No. 21634 Lever—Hand Starter	1	
	Used on type Nos. 306304, 306324.		
21470	Body—Lower Carburetor		6
	<i>Note:</i> No. 99720 Body Assembly—Lower Carburetor.....		6
	Used on type Nos. 306126, 306197, 306255, 306275, 306305, 306312, 306314, 306315, 306317, 306325, 306326, 306327, 306339, 306529, 306548, 306594, 306702, 306703, 306704, 306705, 306707, 306708, 306714, 306715, 306717, 306718, 306722.		
	Includes: No. 90051 Screw—Machine, Rd. Head—6-32x $\frac{1}{2}$ ".....		1
	No. 90362 Washer—Lock—No. 6x $\frac{3}{4}$ x $\frac{1}{4}$ "		1
	No. 291063 Body Assembly—Lower Carburetor.....		6
	Used on type Nos. 306531, 306596, 306625, 306649, 306651, 306668.		
	Includes: No. 90051 Screw—Machine, Rd. Head—6-32x $\frac{1}{2}$ "		1
	No. 91122 Washer—Lock—Shakeproof No. 1206		1
21589	Lever—Governor		2
21611	Elbow—Air Cleaner		12
	<i>Note:</i> No. 210134 Elbow—Air Cleaner		4
	Used on type No. 306667.		
21646	Housing—Governor		6
21694	Head—Fuel Pump		6
21695	Body—Fuel Pump		6
21737	Elbow—Air Cleaner		6
	<i>Note:</i> No. 21624 Elbow—Air Cleaner.....		6
	Used on type Nos. 306707, 306717, 306722.		
	Uses: No. 91456 Screw—Cap, Hex. Head— $\frac{1}{4}$ -20x1"		1
21926	Elbow—Carburetor Intake		6
22032	Washer—Needle Valve Packing		1
22036	Valve—Throttle		1
22050	Valve—Choke		1
	<i>Note:</i> No. 22876 Valve—Choke		1
	Used on type Nos. 306531, 306596, 306625, 306668.		
22062	Washer—Choke Lever		1
22125	Brace—Air Cleaner Elbow		1
22182	Washer—Clutch Retainer		1
22206	Shield—Cylinder		6
22216	Cover—Breather		1
22217	Shield—Oil Spray		1
22221	Cover—Valve		6
22238	Washer—Cylinder Mounting		1
	<i>Note:</i> No. 22566 Washer—Cylinder Mounting.....		1
	Used on type Nos. 306276, 306335, 306336, 306337, 306339, 306652, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306677, 306678, 306690, 306696, 307079, 307302.		
22243	Washer—Cylinder Mounting		1
	<i>Note:</i> No. 22565 Washer—Cylinder Mounting.....		1
	Used on type Nos. 306276, 306335, 306336, 306337, 306339, 306652, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306677, 306678, 306690, 306696, 307079, 307302.		
22279	Brace—Air Cleaner Elbow		1
22353	Washer—Valve Cover		1
22368	Washer—Control Lever		1

* Included in Gasket Set — Part No. 291376.

† Included in Carburetor Overhaul Kit — Part No. 291691.

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
22508	Bushing—Gear Case		2
22520	Cup—Gear Case		1
22530	Guide—Magneto Air (Used only on engines with a Mechanical Governor)		3
22531	Lever—Governor Control		3
22532	Stop—Governor Lever		2
22547	Screen—Fuel Filter (with rectangular hole).....		1
	<i>Note:</i> For screen with round hole order No. 62876.		
22504	Brace—Carburetor		1
22636	Stop—Governor Lever		2
22637	Shield—Governor		4
22695	Strap—Governor Control Rod		1
22725	Washer—Control Lever		1
22735	Lever—Fuel Pump		1
22740	Screen—Fuel Pump Filter		1
22753	Cover—Governor Hole		2
22818	Dipper—Connecting Rod		3
22834	Washer—Spacer		1
22856	Lock—Connecting Rod Screw		1
22874	Bracket—Thermostat		3
22881	Tube—Thermostat		2
22909	Cup—Governor		2
	<i>Note:</i> No. 22533 Cup—Governor		
	Used on engines before Serial No. 535227.		
22963	Washer—Cylinder Head		1
	<i>Note:</i> No. 91324 Washer— $\frac{1}{4}$ " Standard		
	Used to mount cylinder shield and stop switch to head on engines before Serial No. 729202.		
	No. 220208 Washer—Cylinder Head		
	Used on type Nos. 306276, 306335, 306336, 306337, 306339, 306652, 306654, 306657, 306660, 306664, 306667, 306669, 306677, 306678, 306690, 306696, 307079, 307302.		
22984	Cover—Fuel Pump Hole		2
23059	Lever—Fuel Shut-Off		2
23068	Nut—Speed Adjusting		1
23069	Screw—Speed Adjusting		1
23075	Spacer—Starter Support		1
23077	Pinion—Starter		4
	<i>Note:</i> No. 63794 Pinion—Starter		
	Used on type Nos. 306702, 306703, 306704, 306705, 306707, 306708, 306709, 306713, 306714, 306715, 306717, 306718, 306719, 306722.		
23104	Spacer—Starter Support		1
+23114	Pin—Float Hinge		1
23184	Retainer—Valve Spring		1
	<i>Note:</i> No. 292259 Rotocap—Exhaust Valve.....		
	Used on type Nos. 306276, 306327, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306660, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306680, 306690, 306696, 307078, 307079, 307302.		
23187	Pin—Valve Spring Retainer		1
	<i>Note:</i> { No. 230126 Pin—Exhaust Valve Rotocap Retainer		
	{ No. 230127 Retainer—Exhaust Valve Rotocap		
	Used on type Nos. 306276, 306327, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306660, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306680, 306690, 306696, 307078, 307079, 307302.		
+23222	Nozzle—Carburetor		1
+23227	Nut—Needle Valve Packing		1
23230	Bushing—Throttle Shaft		1
23270	Screw—Choke Lever		1
23292	Bolt—Air Cleaner— $6\frac{1}{8}$ " long		2
	<i>Note:</i> No. 23987 Bolt—Air Cleaner— $6\frac{3}{4}$ " long.....		
	Used on type No. 306690.		
23329	Bushing—Starter Support		2

† Included in Carburetor Overhaul Kit — Part No. 291691.

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
23334	Stud—Air Cleaner—6" long		1
	<i>Note:</i> No. 23711 Stud—Air Cleaner—6½" long		1
	Used on type Nos. 306537, 306591, 306626, 306654, 306657, 306664, 306667, 306677, 307301, 307302.		
	No. 23737 Stud—Air Cleaner—7½" long		1
	Used on type Nos. 306707, 306717, 306722.		
23386	Valve—Intake		2
	<i>Note:</i> No. 23663 Valve		2
	Used as intake valve on type Nos. 306185, 306267, 306268, 306272, 306276, 306314, 306317, 306319, 306323, 306325, 306326, 306327, 306328, 306329, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306414, 306560, 306591, 306624, 306626, 306644, 306648, 306651, 306652, 306653, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306680, 306690, 306696, 307034, 307075, 307077, 307078, 307079, 307301, 307302.		
23388	Pinion—Starter		4
23443	Pin—Engine Base		1
23444	Stud—Valve Cover		1
	<i>Note:</i> No. 230121 Stud—Valve Cover		1
	Used on type Nos. 306276, 306335, 306336, 306337, 306339, 306652, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306677, 306678, 306690, 306696, 307079, 307302.		
23581	Clamp—Ignition Cable		1
23663	Valve—Exhaust		2
	<i>Note:</i> No. 26515 Valve—Exhaust		2
	Used on type Nos. 306185, 306267, 306268, 306272, 306276, 306314, 306317, 306319, 306323, 306325, 306326, 306327, 306328, 306329, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306414, 306560, 306591, 306624, 306626, 306644, 306648, 306651, 306652, 306653, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306680, 306690, 306696, 307034, 307075, 307077, 307078, 307079, 307301, 307302.		
23681	Pinion—Drive		6
23688	Bushing—Governor Control		1
23690	Shaft—Governor		1
23691	Bushing—Governor Crank		2
23692	Push Rod—Stop Switch		1
23699	Nut—Fuel Shut-off Lever		1
23722	Screw—Governor Control Lever		3
23783	Pin—Fuel Pump Lever		1
23883	Shaft—Thermostat		2
23884	Stop—Thermostat Shaft		1
23885	Support—Thermostat Shaft (Inner)		1
23886	Support—Thermostat Shaft (Outer)		1
23933	Lever—Fuel Shut-off		2
26021	Spring—Intake Valve		1
26025	Spring—Pedal Return		1
26026	Lock—Piston Pin		1
26032	Spring—Clutch Retainer		1
26099	Wire—Control, 54" long		2
	<i>Note:</i> If longer wire is needed, specify length by inches; if shorter wire is needed, order No. 26099 and cut to required length.		
	No. 26718 Wire—Control—84" long (Stainless Steel).....		4
	Used on type Nos. 306197, 306255.		
26152	Spring—Pedal and Lever Return		1
†26157	Spring—Idler Valve and Throttle Adjustment		1
26228	Spring—Choke Lever Return		1
26229	Spring—Choke Lever		1
26267	Spring—Control Wire Return		1
	<i>Note:</i> No. 26638 Spring—Control Wire Return		1
	Used on type Nos. 306704, 306708.		

† Included in Carburetor Overhaul Kit—Part No. 291691.

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
26269	Spring—Starter Pedal Return		2
26330	Spring—Breather Retainer		1
26391	Link—Throttle		1
26393	Spring—Governor		1
26404	Washer—Stop Switch		1
26478	Spring—Exhaust Valve		1
	<i>Note:</i> No. 26326 Spring—Exhaust Valve		1
	Used on type Nos. 306276, 306327, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306660, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306680, 306696, 307078, 307079, 307302.		
26483	Spring—Stop Switch Push Rod		1
26502	Spring—Governor		2
26548	Link—Governor		2
	<i>Note:</i> No. 26636 Link—Governor		2
	Used on type Nos. 306531, 306596, 306625, 306649, 306651, 306668.		
26576	Rod—Control		2
	<i>Note:</i> No. 26563 Rod—Control		1
	Used on type Nos. 306210, 306536, 306635.		
26578	Spring—Control Rod Return		1
26587	Spring—Fuel Pump Lever		1
26588	Spring—Fuel Pump Diaphragm		1
	<i>Note:</i> No. 26666 Spring—Fuel Pump Diaphragm.....		1
	Used on type No. 306312.		
26594	Thermostat		1
26637	Link—Choke		2
26641	Spring—Oil Hole Cover		1
26873	Crankshaft	3	
	<i>Note:</i> No. 26343 Crankshaft	3	
	Used on type Nos. 306503, 306517, 306523, 306535, 306555, 306557, 306561, 306562, 306583, 306597, 306613, 306626, 306628, 306659, 306665, 306674, 306675, 306683, 306690, 306694.		
	No. 26353 Crankshaft	3	
	Used on type Nos. 306700, 306701, 306706, 306710, 306711, 306712, 306720, 306721.		
	No. 26362 Crankshaft	3	
	Used on type Nos. 306502, 306511, 306512, 306520, 306524, 306525, 306528, 306534, 306551, 306558, 306578, 306579, 306581, 306584, 306586, 306593, 306595, 306596, 306625, 306629, 306630, 306637, 306639, 306642, 306644, 306645, 306649, 306651, 306662, 306668, 306669, 306676, 306679, 306682, 306685, 306691.		
	No. 26378 Crankshaft	3	
	Used on type Nos. 306400, 306401, 306402, 306403, 306404, 306405, 306406, 306407, 306408, 306409, 306410, 306411, 306412, 306413, 306414, 306420, 306421, 306422.		
	No. 26492 Crankshaft	3	
	Used on type Nos. 306530, 306632.		
	No. 23158 Sleeve—Bearing		1
	Uses: No. 23666 Locknut		1
	No. 62980 Washer		1
	No. 26499 Crankshaft	3	
	Used on type Nos. 307301, 307302.		
	No. 26589 Crankshaft	3	
	Used on type Nos. 306573, 306574.		
	No. 26596 Crankshaft	3	
	Used on type Nos. 306547, 306650, 307000, 307002, 307003, 307004, 307005, 307006, 307007, 307008, 307009, 307010, 307011, 307012, 307013, 307014, 307015, 307016, 307017, 307018, 307019, 307020, 307021, 307023, 307024, 307025, 307026, 307027, 307028, 307029, 307030, 307031, 307032, 307033, 307034, 307035, 307036, 307037, 307038, 307039, 307041, 307042, 307043, 307044, 307045, 307047, 307050, 307051, 307052, 307053, 307054, 307055, 307056, 307057.		

(See following page)

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
	307058, 307061, 307062, 307065, 307066, 307067, 307069, 307070, 307072, 307073, 307074, 307075, 307076, 307077, 307078, 307079, 307080, 307082, 307083, 307084, 307201.		
	No. 26597 Crankshaft	3	
	Used on type Nos. 306705, 306709, 306715.		
	No. 26617 Crankshaft	3	
	Used on type Nos. 306518, 306580.		
	No. 26620 Crankshaft	3	
	Used on type Nos. 306716, 307100, 307101, 307102, 307103, 307105, 307106, 307107, 307108, 307109, 307110, 307111, 307112, 307113, 307114, 307115.		
	No. 26625 Crankshaft	3	
	Used on type No. 306519.		
	No. 26632 Crankshaft	3	
	Used on type Nos. 306527, 306532, 306653.		
	No. 26635 Crankshaft	3	
	Used on type No. 306531.		
	No. 26648 Crankshaft	3	
	Used on type Nos. 306526, 306582.		
	Uses No. 23900 Sleeve—Bearing		1
	No. 26655 Crankshaft	3	
	Used on type Nos. 306305, 306314.		
	Uses No. 23739 Spacer		4
	No. 26658 Crankshaft	3	
	Used on type No. 306312.		
	No. 26732 Crankshaft	3	
	Used on type No. 306215.		
	No. 26740 Crankshaft	3	
	Used on type No. 306221.		
	No. 26767 Crankshaft	3	
	Used on type No. 306627.		
	No. 26775 Crankshaft	3	
	Used on type Nos. 306634, 307040, 307059, 307063, 307064, 307071, 307081.		
	No. 26778 Crankshaft	3	
	Used on type Nos. 306570, 306571.		
	No. 26831 Crankshaft	3	
	Used on type Nos. 306657, 306661.		
	Uses: No. 23158 Sleeve		1
	No. 23668 Locknut		1
	No. 62980 Washer		1
	No. 26886 Crankshaft	3	
	Used on type Nos. 306501, 306506, 306514, 306515, 306516, 306546, 306550, 306559, 306560, 306564, 306567, 306590, 306592, 306598, 306601, 306602, 306608, 306609, 306646, 306647, 306648, 306658, 306664, 306666, 306677.		
	No. 26890 Crankshaft	3	
	Used on type Nos. 306500, 306505, 306507, 306508, 306509, 306510, 306513, 306521, 306522, 306529, 306533, 306536, 306537, 306540, 306541, 306542, 306544, 306545, 306548, 306552, 306553, 306565, 306566, 306568, 306569, 306572, 306585, 306587, 306600, 306603, 306606, 306607, 306611, 306612, 306615, 306616, 306618, 306631, 306635, 306638, 306643, 306656, 306670, 306680, 306687, 306689, 306693.		
	No. 26891 Crankshaft	3	
	Used on type Nos. 306198, 306247, 306300, 306301, 306302, 306303, 306304, 306306, 306307, 306308, 306309, 306310, 306311, 306313, 306316, 306319, 306320, 306321, 306322, 306323, 306324, 306328, 306329, 306331, 306335, 306336, 306337, 306338, 306340, 306341, 306342.		
	No. 26892 Crankshaft	3	
	Used on type Nos. 306504, 306543, 306610, 306614, 306641, 306681.		

(See following page)

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
	No. 26894 Crankshaft	3	
	Used on type Nos. 306667, 306671, 306672, 306696.		
	Uses: { No. 23158 Sleeve		1
	{ No. 23666 Locknut		1
	{ No. 62980 Washer		1
	No. 26897 Crankshaft	3	
	Used on type Nos. 306187, 306275, 306315, 306317, 306325, 306326, 306327, 306339.		
	No. 26916 Crankshaft	3	
	Used on type Nos. 306594, 306624, 306660, 306678.		
	No. 26951 Crankshaft	3	
	Used on type Nos. 306190, 306191, 306239, 306241, 306242, 306244, 306246, 306252, 306253, 306254, 306265, 306278.		
	No. 26953 Crankshaft	3	
	Used on type Nos. 306617, 306655, 306684.		
	No. 260021 Crankshaft	3	
	Used on type Nos. 306549, 306556, 306591, 306652, 306654.		
	No. 260031 Crankshaft	3	
	Used on type No. 306640.		
	No. 260034 Crankshaft	3	
	Used on type Nos. 306702, 306703, 306704, 306707, 306708, 306713, 306714, 306717, 306718, 306719, 306722.		
*27043	Gasket—Engine Base		1
	Note: No. 67547 Gasket—Engine Base		1
	Used on type No. 306519.		
27108	Washer—Starter Lever		1
27138	Gasket—Gear Case		1
27139	Gasket—Gear Case Mounting		1
27140	Gasket—Governor Housing		1
27145	Packing—Fuel Shut-off Lever		1
27313	Gasket—Gear Case Cover		1
27314	Gasket—Fuel Pump Mounting		1
27323	Gasket—Breather Body		1
*27355	Gasket—Intake Elbow Mounting		1
27402	Gasket—Air Cleaner		1
27423	Gasket—Air Cleaner Mounting		1
	Note: No. 68957 Gasket—Air Cleaner Mounting		1
	Used on engines before Serial No. 1131618; also used on type Nos. 306654, 306657, 306664, 306667, 306677.		
	No. 27263 Gasket—Air Cleaner Mounting		1
	Used on type Nos. 306537, 306591, 306626, 307301.		
	No. 292252 Gasket Set		1
	Used on engines with plastic bowl air cleaner.		
29226	Cup—Oil		1
29667	Breaker Assembly—Ignition		2
	Note: No. 292648 Breaker Assembly—Ignition		2
	Used on type Nos. 306268, 306272, 306276, 306327, 306328, 306329, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306414, 306626, 306644, 306648, 306652, 306653, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306680, 306690, 306696, 307075, 307077, 307078, 307079, 307302.		
29693	Plug—Spark—with Gasket		3
	Note: No. 292519 Plug—Spark—with Gasket		4
	Used on type Nos. 306268, 306272, 306276, 306327, 306328, 306329, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306414, 306626, 306644, 306648, 306652, 306653, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306680, 306690, 306696, 307075, 307077, 307078, 307079, 307302.		
29806	Gasket—Spark Plug		1

* Included in Gasket Set — Part No. 291376.

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
29835	Flywheel—Magneto	6	
	<i>Note:</i> No. 290628 Flywheel—Magneto	6	
	Used on type Nos. 306395, 306314.		
	No. 292471 Flywheel—Magneto	6	
	Used on type No. 306339.		
29861	Condenser		2
	<i>Note:</i> No. 290593 Condenser		2
	Used on type Nos. 306213, 306268, 306272, 306276, 306317, 306319, 306323, 306324, 306325, 306326, 306327, 306328, 306329, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306414, 306591, 306624, 306626, 306644, 306648, 306652, 306653, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306680, 306690, 306696, 307075, 307077, 307078, 307079, 307301, 307302.		
29876	Rod Assembly—Choke		1
29878	Rope—Starter		6
	<i>Note:</i> No. 290282 Rope—Starter		6
	Used on type Nos. 306159, 306193; also type No. 306407 from Serial No. 522677 to 522697 inclusive.		
38852	Washer—Armature Governor Shield and Breaker Mounting		1
61703	Gear—Cam	1	8
61756	Ring—Piston, Compression, Center—Standard		1
61757	Ring—Piston, Oil—Standard		1
61760	Key—Flywheel		1
	<i>Note:</i> No. 21103 Key—Flywheel		1
	Used on type Nos. 306702, 306703, 306704, 306705, 306707, 306708, 306709.		
61768	Ring—Piston, Compression, Center—.010" O.S.		1
61769	Ring—Piston, Compression, Center—.020" O.S.		1
61770	Ring—Piston, Compression, Center—.030" O.S.		1
61771	Ring—Piston, Oil—.010" O.S.		1
61772	Ring—Piston, Oil—.020" O.S.		1
61773	Ring—Piston, Oil—.030" O.S.		1
61947	Housing—Starter Clutch		10
	<i>Note:</i> No. 21100 Housing—Starter Clutch		14
	Used on type Nos. 306702, 306703, 306704, 306705, 306707, 306708, 306709, 306713, 306714, 306715, 306717, 306718, 306719, 306722.		
61967	Stop—Throttle Lever		1
62536	Cup—Starter Return Spring		1
62538	Washer—Clutch Retainer		1
62552	Bushing—Cylinder		2
62577	Washer—Flywheel		1
	<i>Note:</i> No. 62903 Washer—Flywheel		1
	Used on type Nos. 306400, 306401, 306402, 306403, 306404, 306405, 306406, 306407, 306408, 306409, 306410, 306411, 306412, 306413, 306414, 306420, 306421, 306422, 306700, 306701, 306706, 306710, 306711, 306712, 306716, 306720, 306721, 307100, 307101, 307102, 307103, 307105, 307106, 307107, 307108, 307109, 307110, 307111, 307112, 307113, 307114, 307115.		
62835	Cover—Dust		4
62842	Spacer—Dust Cover		1
62851	Strap—Fuel Tank		3
62876	Screen—Fuel Filter (with round hole)		1
	<i>Note:</i> For screen with rectangular hole order No. 22547.		
62899	Washer—Thermostat		1
62965	Strap—Fuel Tank		3
	<i>Note:</i> { No. 69298 Strap—Fuel Tank		6
	{ Includes: { No. 91257 Screw—Machine, Fill. Hd.— $\frac{1}{4}$ -20x1 $\frac{1}{2}$ "		1
	{ { No. 90970 Nut—Sq.— $\frac{1}{4}$ -20		1
	{ No. 290418 Bracket—Fuel Tank	1	8
	Used on type No. 306585.		

(See following page)

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
	No. 89813 Strap—Fuel Tank	6	
	Used on type Nos. 306652, 306671, 306696.		
	Includes: {No. 91257 Screw—Machine, Fill. Hd.— $\frac{1}{4}$ -20x1 $\frac{1}{2}$ ".....	1	
	{No. 90970 Nut—Sq.— $\frac{1}{4}$ -20	1	
62966	Switch—Stop	2	
	Note: No. 62304 Switch—Stop	2	
	Used on type Nos. 306275, 306305, 306314, 306315, 306317, 306325, 306326, 306327.		
	Note: The following parts used to mount stop switch on type No. 306152:		
	No. 26373 Spring	1	
	No. 22835 Washer	1	
	No. 91274 Nut—Hex— $\frac{1}{4}$ -20	1	
	No. 91710 Screw—Machine, Rd. Head— $\frac{1}{4}$ -20x1 $\frac{1}{4}$ "	1	
63426	Locknut—Control Wire Casing	1	
63532	Spacer—Flame Arrestor	1	
63770	Ball—Clutch	1	
63771	Bushing—Starter Sector	1	
63785	Shaft—Cam	3	
63788	Tappet—Valve	1	
63821	Wrench—Socket Set Screw	2	
65294	Gasket—Filler Screw	1	
65304	Gasket—Filler Cap	1	
	Note: No. 65534 Gasket—Oil Filler Cap	1	
	Used on type No. 306519.		
	No. 65938 Gasket—Oil Filler Cap	1	
	Used on type Nos. 306704, 306708.		
65704	Plunger—Breaker Point	1	
65968	Disk—Breather	1	
66111	Connector—Fuel Pipe	1	
*66114	Washer—Cylinder Mounting	1	
66154	Washer—Terminal	1	
	Note: No. 66364 Washer—Terminal	1	
	Used on type Nos. 306268, 306272, 306276, 306327, 306328, 306329, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306414, 306626, 306644, 306648, 306652, 306653, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306680, 306690, 306696, 307075, 307077, 307078, 307079, 307302.		
66164	Washer—Terminal	1	
	Note: No. 66374 Washer—Terminal	1	
	Used on type Nos. 306268, 306272, 306276, 306327, 306328, 306329, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306414, 306626, 306644, 306648, 306652, 306653, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306680, 306690, 306696, 307075, 307077, 307078, 307079, 307302.		
66204	Gasket—Fuel Pump Valve	1	
66384	Rope—Starter ($\frac{3}{8}$ " Dia.)	1	
	Note: No. 66334 Rope—Starter ($\frac{3}{8}$ " Dia.)	1	
	Used on engines before Serial No. 1378610.		
66432	Washer—Speed Adjuster Retainer and Fuel Tank Strap	1	
66728	Grip—Starter Rope	2	
66986	Casing—Control Wire—48" long	8	
	Note: If a longer casing is needed, specify length in inches; if a short- er casing is needed order No. 66986 and cut to required length.		
67072	Washer—Fuel Tank Strap	1	
*67307	Gasket—Magneto Plate—.015" thick	1	
*67527	Gasket—Valve Cover	1	
67549	Valve—Fuel Shut-Off	1	
*67597	Gasket—Magneto Plate—.005" thick	1	
*67607	Gasket—Magneto Plate—.009" thick	1	

* Included in Gasket Set — Part No. 291376.

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
68122	Plug—Cam Shaft	1	
*68477	Gasket—Fuel Filter Bowl	1	
68487	Bowl—Fuel Filter	2	
68507	Washer—Fuel Shut-off Valve Packing	1	
†68857	Gasket—Carburetor Body	1	
68877	Gasket—Fuel Inlet Valve Seat	1	
†68887	Packing—Needle Valve	1	
†68897	Gasket—Carburetor Venturi	1	
†*68987	Gasket—Carburetor Mounting	1	
	<i>Note:</i> No. 27310 Gasket—Carburetor Mounting	2	
	Used on type Nos. 306531, 306596, 306625.		
69221	Cap—Fuel Tank	2	
	<i>Note:</i> No. 89988 Cap—Fuel Tank	2	
	Used on type Nos. 306323, 306329, 306331, 306342, 306591, 306626, 306648, 306653, 306654, 306657, 306664, 306667, 306677, 306690, 307301, 307302.		
69345	Cap—Oil Filler	2	
	<i>Note:</i> No. 291008 Cap Assembly—Oil Filler	3	
	Used on type Nos. 306704, 306708.		
	No. 291164 Cap Assembly—Oil Filler	6	
	Used on type No. 306519.		
69961	Cap—Fuel Tank	2	
	<i>Note:</i> No. 29136 Cap—Fuel Tank	2	
	Used on type Nos. 306652, 306671, 306696.		
89127	Clutch and Pulley Assembly—Starter	1	
	<i>Note:</i> No. 89739 Clutch and Pulley Assembly—Starter.....	3	8
	Used on type Nos. 306336, 306341.		
	No. 290221 Clutch Assembly—Starter	1	
	Used on type Nos. 306305, 306312, 306314, 306315, 306317, 306325, 306326, 306327.		
	No. 292504 Clutch and Pulley Assembly—Starter.....	3	8
	Used on type Nos. 306337, 306339.		
89190	Pipe—Fuel—13" long (used on engines before Serial No. 659059)	3	
	<i>Note:</i> No. 89503 Pipe—Fuel—11 $\frac{1}{4}$ " long	3	
	Used on type Nos. 306413, 307004.		
	No. 89663 Pipe—Fuel—11 $\frac{1}{2}$ " long	3	
	Used on type No. 307003.		
	No. 291181 Pipe—Fuel 12 $\frac{1}{4}$ " long	3	
	Used on type No. 306705.		
	No. 291266 Pipe—Fuel—10" long	3	
	Used on type No. 306168.		
89241	Blade—Governor	6	
	<i>Note:</i> No. 292194 Blade—Governor	6	
	Used on type Nos. 306268, 306272, 306328, 306414, 306626, 306648, 306653, 306664, 307075.		
	The following parts are used for ground lead connection:		
	No. 90051 Screw	1	
	No. 90310 Nut	1	
	No. 90362 Washer	1	
89283	Piston Assembly—.010" O.S.	8	
89285	Piston Assembly—.020" O.S.	8	
89287	Piston Assembly—.030 O.S.	8	
89289	Piston Assembly—Standard	8	
89346	Filter Assembly—Fuel (used under Fuel Tank only)	10	
	<i>Note:</i> No. 99910 Filter Assembly—Fuel	10	
	Used on type Nos. 306126, 306197, 306255.		
	No. 292052 Filter Assembly—Fuel	10	
	Used on type No. 306254.		
89347	Cover—Fuel Filter	3	
	<i>Note:</i> No. 99909 Cover—Fuel Filter	3	

(See following page)

† Included in Carburetor Overhaul Kit — Part No. 291691.

* Included in Gasket Set — Part No. 291376.

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
	Used on type Nos. 306126, 306197, 306255. No. 292053 Cover—Fuel Filter		2
	Used on type No. 306254.		
89363	Sector Assembly—Starter		14
89365	Starter Assembly—Foot	1	8
	Note: No. 291230 Starter Assembly—Foot	1	8
	Used on type Nos. 306305, 306314, 306315, 306317, 306325, 306326, 306327, 306339.		
89495	Body Assembly—Upper Carburetor		4
89600	Starter Assembly—Hand	3	
	Note: No. 290328 Starter Assembly—Hand	3	
	Used on type Nos. 306304, 306324. No. 292455 Starter Assembly—Hand	3	
	Used on type Nos. 306335, 306337, 306340.		
89611	Sector Assembly—Starter		14
	Note: No. 290331 Sector Assembly—Starter		14
	Used on type Nos. 306304, 306324. Uses: No. 23756 Pin—Starter Lever		1
89660	Seal—Oil		1
89677	Bushing—Cylinder or Magneto		3
	Includes: No. 89660 Seal—Oil.		
89694	Control Assembly—Choke		1
	Note: No. 290216 Control Assembly—Choke		1
	Used on type Nos. 306275, 306305, 306314, 306315, 306317, 306325, 306326, 306327, 306339, 306594. No. 291084 Control Assembly—Choke		1
	Used on type Nos. 306704, 306708.		
89742	Shield—Spark Plug		6
	Note: No. 291630 Shield—Spark Plug		6
	Used on type Nos. 306235, 306265, 306637, 306691.		
89838	Wrench—Spark Plug		6
89966	Muffler		4
	Note: No. 89945 Muffler	1	
	Used on type Nos. 306159, 306193, 306407, 307017, 307079, 307107. No. 290910 Muffler		8
	Used on type Nos. 306126, 306197, 306255. No. 292054 Muffler.....		6
	Used on type Nos. 306113, 306114, 306173, 306184, 306214, 306215, 306244, 306269, 306270, 306274, 306277, 306638, 307005, 307050, 307059, 307083.		
89970	Case Assembly—Gear		12
89976	Seal—Oil		1
90029	Screw—Machine, Round Head—4-36x $\frac{1}{4}$ "		1
90050	Screw—Machine, Round Head—6-32x $\frac{1}{4}$ "		1
90074	Screw—Machine, Round Head—8-32x $\frac{3}{4}$ "		1
90078	Screw—Machine, Round Head—10-32x $\frac{1}{2}$ "		1
90200	Screw—Machine, Fillister Head—8-32x $\frac{1}{2}$ "		1
90202	Screw—Machine, Fillister Head—10-32x $\frac{1}{2}$ "		1
90310	Nut—Hexagon—6-32		1
90355	Nut—Hexagon—10-32		1
90362	Washer—Lock—No. 6x3/64x $\frac{1}{2}$ "		1
90366	Washer—Lock— $\frac{1}{8}$ x $\frac{1}{2}$ x $\frac{1}{8}$ "		1
90367	Washer—Lock—No. 8x5/64x $\frac{1}{2}$ "		1
90369	Washer—Lock—No. 4x3/64x $\frac{1}{2}$ "		1
90576	Nut—Hex.—8-32		1
90686	Screw—Cap, Hexagon Head— $\frac{3}{8}$ -24x1"		1
	Note: No. 92812 Screw—Cap, Hex. Hd.— $\frac{3}{8}$ -24x1"		1
	Used on type Nos. 306335, 306337, 306340.		
90810	Screw—Cap, Fill. Hd.— $\frac{1}{4}$ -20x $\frac{3}{4}$ "		1
	Note: No. 92803 Screw—Cap, Fill. Hd.— $\frac{1}{4}$ -20x $\frac{3}{4}$ "		1
	Used on type No. 307302.		

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
90832	Washer—Lock— $\frac{1}{4} \times \frac{3}{8} \times 5/64$ "		1
	<i>Note: No. 92706</i> Washer—Lock—Shakeproof		1
	Used on type Nos. 306268, 3063272, 306276, 306327, 306328, 306329, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306414, 306626, 306644, 306648, 306652, 306653, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306680, 306690, 306696, 307075, 307077, 307078, 307079, 307302 to mount the blower housing.		
90844	Washer—Lock— $\frac{1}{4} \times 1/16 \times 1/16$ "		1
90847	Nut—Hexagon— $\frac{1}{4}$ -28		1
	<i>Note: No. 92120</i> Nut—Hex.— $\frac{1}{4}$ -28		1
	Used on type Nos. 306276, 306335, 306336, 306337, 306339, 306652, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306677, 306678, 306690, 306696, 307079, 307302.		
91059	Washer—Lock—No. 12x1/16x1/16"		1
91084	Plug—Pipe— $\frac{3}{8}$ "		1
	<i>Note: No. 92737</i> Plug—Oil Drain— $\frac{1}{4}$ "		1
	Used on type Nos. 306680, 307075, 307077, 307078.		
	<i>No. 92814</i> Plug—Oil Drain— $\frac{3}{8}$ " Headless, Slotted.....		1
	Used on type No. 306273.		
91107	Washer—Lock—Shakeproof No. 1210		1
91208	Nut—Hexagon— $\frac{1}{8}$ -24		1
91237	Washer—Lock— $\frac{1}{4} \times \frac{3}{8} \times 3/64$ "		1
91324	Washer— $\frac{1}{4}$ " Standard		1
91413	Cotter Pin— $\frac{1}{8} \times 1$ " long		1
91419	Screw—Cap, Hexagon Head— $\frac{1}{4}$ -20x $\frac{5}{8}$ "		1
91539	Key— $\frac{1}{8}$ " square		1
91541	Screw—Cap, Hexagon Head— $\frac{1}{8}$ -24x $\frac{3}{8}$ "		1
91698	Screw—Machine, Rd. Hd.— $\frac{1}{4}$ -20x $\frac{5}{8}$ "		1
	<i>Note: No. 90916</i> Screw—Machine, Rd. Hd.— $\frac{1}{4}$ -20x $\frac{1}{2}$ "		1
	Used on engines before Serial No. 1315773.		
	<i>No. 90773</i> Screw—Machine, Rd. Hd.— $\frac{1}{4}$ -20x $\frac{3}{4}$ "		1
	Used on type Nos. 306268, 306272, 306327, 306328, 306329, 306331, 306414, 306626, 306644, 306648, 306653, 307075, 307077, 307078.		
	<i>No. 92089</i> Screw—Blower Housing Mounting		1
	Used on type Nos. 306276, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306652, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306690, 306696, 307079, 307302.		
	<i>No. 92419</i> Screw—Machine, Fillister Head— $\frac{1}{4}$ -20x $\frac{5}{8}$ "		1
	Used on type Nos. 306400, 306402, 306405, 306410, 306413, 306420, 306517, 306537, 306557, 306591, 306626, 306627, 306700, 306706, 306712, 306713, 306720, 307006, 307100, 307102, 307108, 307109, 307112, 307114, 307301.		
	To mount blower housing to head.		
91708	Nut—Flywheel		1
	<i>Note: No. 91900</i> Nut—Flywheel		1
	Used on type Nos. 306400, 306401, 306402, 306403, 306404, 306405, 306406, 306407, 306408, 306409, 306410, 306411, 306412, 306413, 306414, 306420, 306421, 306422, 306700, 306701, 306706, 306710, 306711, 306712, 306716, 306720, 306721, 307100, 307101, 307102, 307103, 307105, 307106, 307107, 307108, 307109, 307110, 307111, 307112, 307113, 307114, 307115.		
	<i>No. 92284</i> Nut—Hexagon— $\frac{5}{8}$ -18		1
	Used on type No. 306704 Engines equipped with Starter Pulleys.		
	<i>No. 92514</i> Nut—Flywheel		1
	Used on type Nos. 306305, 306314.		
91711	Screw—Cylinder Head (1" long)		1
	<i>Note: No. 63423</i> Spacer		1

(See following page)

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
	No. 91386 Screw—Cylinder Head (2" long)		1
	This screw used on type Nos. 306208, 306253 after Serial No. 1156817.		
	No. 91162 Screw—Cylinder Head (1½" long)		1
	No. 23978 Spacer		1
	Used on type Nos. 306202, 306322.		
	No. 92393 Screw—Cylinder Head		1
	Used on type Nos. 306276, 306335, 306336, 306337, 306339, 306652, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306677, 306678, 306690, 306696, 307079, 307302.		
91712	Screw—Cylinder Head (1¼" long)		1
	Note: No. 91449 Screw—Cylinder Head (1½" long)		1
	Used on engines before serial No. 729202.		
	{ No. 91442 Screw—Cylinder Head (2¼" long)		1
	{ No. 68873 Spacer		1
	Used to mount bracket and cylinder head on type Nos. 306168, 306173, 307038, 307059, 307103.		
	No. 92395 Screw—Cylinder Head		1
	Used on type Nos. 306276, 306335, 306336, 306337, 306339, 306652, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306677, 306678, 306690, 306696, 307079, 307302.		
91741	Screw—Pedal Return Spring Cup		1
	Note: No. 92434 Screw—Pedal Return Spring Cup		1
	Used on type Nos. 306335, 306337, 306339.		
91758	Screw—Set, Socket Head— $\frac{1}{8}$ -24x½"		1
	Note: No. 92433 Screw—Set, Socket Head— $\frac{1}{8}$ -24x½"		1
	Used on type Nos. 306336, 306337, 306341.		
91796	Screw—Cap, Hex. Hd.—5/16-24x1¼"		1
	Note: No. 92805 Screw—Cap, Hex. Hd.— $\frac{1}{8}$ -24x1¼"		1
	Used on type No. 307302.		
91808	Washer—Lock— $\frac{1}{8}$ x $\frac{1}{2}$ x½"		1
91810	Elbow—Exhaust		3
	Note: No. 91812 Elbow—Exhaust		3
	Used on type Nos. 306117, 306157, 306165, 306211, 306215, 306220, 306278, 306531, 306655, 306703, 306714, 306718, 307005, 307006, 307032, 307045, 307061, 307065, 307069, 307081, 307201.		
	No. 92554 Nipple—Pipe—½x3¼"		3
	No. 92555 Coupling—Pipe—½"		3
	Used on type Nos. 306185, 306276.		
91811	Locknut—Exhaust Elbow		2
91833	Stud—Dust Cover		1
91896	Key—No. 5 Standard—Woodruff		1
91901	Screw—Cap, Hexagon Head— $\frac{1}{8}$ -20x1½"		1
91920	Screw—Machine, Fillister Head—8-32x $\frac{5}{8}$ "		1
91984	Pin—Cotter— $\frac{1}{8}$ x½" long		1
92015	Plug—Oil Drain (Gear Cover)		1
92017	Screw—Machine, Fillister Head—8-32x $\frac{1}{8}$ "		1
92040	Nut—Jam— $\frac{5}{8}$ -18		1
	Note: No. 92802 Nut—Jam— $\frac{5}{8}$ -18		1
	Used on type No. 307302.		
92054	Nut—Starter Pedal		1
92067	Nut—Wing		1
	Note: No. 22930 Washer		1
	No. 90335 Nut—Hexagon—10-32		1
	No. 92290 Washer—Lock—No. 10x $\frac{1}{8}$ x3/64"		1
	Used on type Nos. 306705, 306715, 306722.		
92085	Screw—Set, Socket Head— $\frac{1}{8}$ -24x½"		1
92089	Screw—Machine, Fillister Head—¼-20x¾"		1
	Note: No. 91222 Screw—Machine—Fillister Head—¼-20x1"		1
	Used on type Nos. 306531, 306596, 306625.		

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
92129	Nut—Hexagon— $\frac{1}{4}$ -28	1	
92208	Screw—Connecting Rod— $\frac{7}{8}$ " Long	1	
92227	Washer—Lock—Shakeproof No. 1120	1	
	<i>Note:</i> No. 92429 Washer—Cylinder Mounting	1	
	Used on type Nos. 306276, 306335, 306336, 306337, 306339, 306652, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306677, 306678, 306690, 306696, 307079, 307302.		
92287	Screw—Machine, Round Head—10-32x $\frac{1}{4}$ "	1	
92290	Washer—Lock—No. 10x $\frac{1}{2}$ x3/64"	1	
92291	Nut—Fuel Shut-off Valve Packing	1	
92292	Nut—Hexagon— $\frac{3}{8}$ -24	1	
	<i>Note:</i> No. 92495 Nut—Hex.— $\frac{3}{8}$ -24	1	
	Used on type Nos. 306335, 306337, 306340.		
92306	Screw—Cap, Hexagon Head— $\frac{1}{4}$ -28x $\frac{5}{8}$ "	1	
92317	Washer—Lock—Shakeproof No. 1203	1	
92413	Pin—Cotter— $\frac{1}{8}$ x $\frac{3}{8}$ " long	1	
92419	Screw—Machine, Fillister Head— $\frac{1}{4}$ -20x $\frac{5}{8}$ "	1	
	<i>Note:</i> No. 90916 Screw—Machine, Rd. Hd.— $\frac{1}{4}$ -20x $\frac{1}{2}$ "	1	
	Used on type Nos. 306126, 306167, 306197, 306305, 306314, 306317, 306594.		
92427	Connector—Fuel Pipe	1	
	<i>Note:</i> No. 53029 Connector—Fuel Pipe	1	
	Used on type No. 306126.		
	No. 66111 Connector—Fuel Pipe	1	
	Used on type No. 306254.		
92506	Screw—Machine, Round Head—6-32x1"	1	
92530	Screw—Machine, Fillister Head—8-32x $\frac{1}{4}$ "—Drilled Head	1	
92532	Screw—Machine, Fillister Head—8-32x $\frac{3}{8}$ "—Drilled Head	1	
92604	Screw—Connecting Rod—1" Long	1	
92605	Screw—Oil Filler	1	
92612	Washer—Lock—Shakeproof No. 1228	1	
	<i>Note:</i> No. 92801 Washer—Lock	1	
	Used on type No. 307302.		
92617	Plug—Breather	2	
	<i>Note:</i> No. 92820 Plug—Breather	2	
	Used on type No. 307079.		
92644	Rivet—Tubular— $\frac{1}{8}$ x $\frac{1}{8}$ "	1	
	<i>Note:</i> No. 37346 Rivet—Tubular— $\frac{1}{8}$ x $\frac{1}{2}$ "	1	
	No. 62641 Plate—Speed Adjuster Retainer	2	
	Used on engines before Serial No. 656724.		
92646	Pin—Cotter— $\frac{1}{8}$ x1 $\frac{1}{2}$ "	1	
92663	Screw—Starter Mounting	1	
92664	Nut—Starter Mounting	1	
92665	Screw—Cap, Hex. Hd.—5/16-24x1 $\frac{1}{4}$ "	1	
	<i>Note:</i> No. 92804 Screw—Cap, Hex. Hd.— $\frac{1}{8}$ -24x1 $\frac{1}{4}$ "	1	
	Used on type No. 307302.		
92666	Screw—Cap, Hex. Hd.— $\frac{1}{4}$ -20x $\frac{1}{2}$ "	1	
	<i>Note:</i> No. 92734 Screw—Blower Housing Mounting	1	
	Used on type Nos. 306276, 306335, 306336, 306337, 306339, 306652, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306677, 306678, 306690, 306696, 307079, 307302.		
92670	Screw—Self-Tapping, Hex. Hd.—10-32x $\frac{3}{4}$ "	1	
92678	Screw—Set, Socket Hd.—6-32x $\frac{1}{8}$ "	1	
92701	Screw—Magneto Mounting Sem	1	
	<i>Note:</i> No. 92723 Screw—Magneto Mounting Sem	1	
	Used on type Nos. 306276, 306335, 306336, 306337, 306339, 306652, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306677, 306678, 306690, 306696, 307079, 307302.		

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
92702	Screw—Condenser Mounting Sem	1	
	<i>Note:</i> No. 90367 Washer—Lock—No. 8x5/64x1/32"	1	
	Used on earlier model engines.		
92703	Screw—Dust Cover Mounting Sem	1	
	<i>Note:</i> No. 90367 Washer—Lock—No. 8x5/64x1/32"	1	
	Used on earlier model engines.		
92706	Washer—Lock—Shakeproof	1	
92708	Screw Armature Mounting Sem	1	
	<i>Note:</i> No. 92317 Washer—Lock—Shakeproof No. 1208	1	
	Used on earlier model engines.		
92709	Screw—Breaker Mounting Sem	1	
	<i>Note:</i> No. 92317 Washer—Lock—Shakeproof No. 1208	1	
	Used on earlier model engines.		
92710	Screw—Cylinder Mounting—1½" lg. (Washer Head)	1	
	<i>Note:</i> No. 92235 Screw—Cylinder Mounting—1½" lg. (Slotted Hd.)	1	
	Used on engines before Serial No. 1249802.		
	No. 92724 Screw—Cylinder Mounting	1	
	Used on type Nos. 306276, 306335, 306336, 306337, 306339, 306652,		
	306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675,		
	306677, 306678, 306690, 306696, 307079, 307302.		
92715	Screw—Governor Housing Mounting and Control Lever Sem.....	1	
92716	Screw—Cylinder Mounting (Washer Hd.)	1	
	<i>Note:</i> No. 92236 Screw—Cylinder Mounting	1	
	Used on engines before Serial No. 1249802.		
	No. 92606 Screw—Cap, Hexagon Head—¼-28x1½"	1	
	No. 90832 Washer—Lock—¼x $\frac{3}{4}$ x5/64"	1	
	Used on type No. 306519.		
	To mount cylinder to base.		
	No. 92725 Screw—Cylinder Mounting	1	
	Used on type Nos. 306276, 306335, 306336, 306337, 306339, 306652,		
	306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675,		
	306677, 306678, 306690, 306696, 307079, 307302.		
92734	Screw—Cap, Hex. Hd.—¼-20x½"	1	
	<i>Note:</i> No. 91422 Screw—Cap, Hex. Hd.—¼-20x $\frac{5}{8}$ "	1	
	Used to mount the choke control to air cleaner elbow on type		
	Nos. 306275, 306305, 306314, 306315, 306317, 306325, 306326, 306327,		
	306594.		
92739	Screw—Self-Tapping, Hex. Hd.—10-32x½"	1	
	<i>Note:</i> [No. 90083 Screw—Machine, Rd. Hd.—10-32x $\frac{5}{8}$ "	1	
	[No. 90321 Nut—Square—10-32	1	
	[No. 91406 Screw—Machine, Rd. Hd.—10-32x $\frac{7}{8}$ "	1	
	[No. 92290 Washer—Lock—No. 10x1/16x3/64"	1	
	Used to mount one gallon tank on engines before Serial No.		
	1226676.		
	No. 92744 Screw—Self Tapping, Hex. Hd.—10-32x1".....	1	
	Used on type No. 306678.		
92744	Screw—Self Tapping, Hex. Hd.—10-32x1"	1	
92747	Screw—Gear Case Cover Mounting Sem	1	
	<i>Note:</i> No. 92818 Screw—Gear Case Cover Mounting Sem	1	
	Used on type No. 307079.		
93043	Pin—Throttle Stop and Governor Lever	1	
99082	Pedal—Foot Starter	1	
	<i>Note:</i> No. 99103 Pedal—Foot Starter	1	
	Used on type Nos. 306305, 306314, 306315, 306317, 306325, 306326,		
	306327, 306339.		
99158	Bearing—Ball—Used on NP Engines only	8	
	<i>Note:</i> No. 62552 Bushing—Cylinder	2	
	Used on type Nos. 306547, 306627, 306650, 306716.		
99176	Seal—Oil—Used on NP Engines only	6	
	<i>Note:</i> No. 99440 Seal—Oil	6	

(See following page)

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
	Used on type Nos. 306526, 306530, 306582, 306632, 306657, 306661, 306667, 306671, 306672, 306696.		
99180	Tank Assembly—Fuel (Used on engines before Serial No. 659059)	3	
	<i>Note:</i> No. 99510 Tank Assembly—Fuel (Combination)	3	8
	Used on type Nos. 306200, 306204, 306226, 306316, 306524, 306557, 306597, 306609, 306610, 306614, 306618, 306630, 307024, 307113.		
	Includes: No. 67549 Valve—Shut-off		1
	No. 69355 Pipe—Fuel		3
	No. 99511 Tee		1
99272	Clutch Assembly—Starter	1	
	<i>Note:</i> No. 99615 Clutch Assembly—Starter	1	
	Used on type Nos. 306702, 306703, 306704, 306705, 306707, 306708, 306709, 306713, 306714, 306715, 306717, 306718, 306719, 306722.		
99288	Cable—Ignition		2
	<i>Note:</i> No. 69854 Cable—Ignition		2
	Used on type Nos. 306275, 306312, 306315.		
	No. 99391 Cable—Ignition		3
	Used on type Nos. 306147, 306222, 306314, 306511, 306516, 306520, 306521, 306522, 306525, 306528, 306534, 306538, 306573, 306574, 306578, 306581, 306584, 306586, 306593, 306595, 306596, 306608, 306617, 306625, 306629, 306630, 306637, 306639, 306642, 306643, 306645, 306649, 306651, 306662, 306668, 306679, 306682, 306685, 306691, 306702, 307018.		
	No. 290401 Cable—Ignition		5
	Used on type Nos. 306213, 306317, 306319, 306323, 306324, 306325, 306326, 306591, 306624, 307301.		
	No. 292044 Cable—Ignition		5
	Used on type Nos. 306268, 306272, 306276, 306327, 306328, 306329, 306331, 306335, 306336, 306337, 306338, 306339, 306414, 306626, 306644, 306648, 306652, 306653, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306680, 306696, 307075, 307077, 307078, 307079, 307302.		
	Includes: No. 92707 Terminal—Shielding		1
	No. 292946 Cable—Ignition		2
	Used on type Nos. 306235, 306256, 306265.		
	No. 293169 Cable—Ignition		5
	Used on type Nos. 306340, 306341, 306342.		
99307	Starter Assembly—Foot	3	
99339	Starter Assembly—Hand	3	
	<i>Note:</i> No. 80352 Starter Assembly—Hand	3	
	Used on type No. 306414.		
99395	Arrestor—Flame		6
99622	Float—Carburetor		3
99632	Tooth Assembly—Spring		1
99634	Body—Upper Carburetor		4
†99636	Valve and Seat—Fuel Inlet		1
99665	Yoke—Fuel Filter		2
99679	Lever Assembly—Choke		2
	<i>Note:</i> No. 291040 Lever Assembly—Automatic Choke		3
	Used on type Nos. 306531, 306596, 306625, 306649, 306651, 306668.		
99700	Shaft and Lever—Choke		2
	<i>Note:</i> No. 23252 Shaft—Choke		1
	Used on type Nos. 306126, 306197, 306255, 306275, 306305, 306312, 306314, 306315, 306317, 306325, 306326, 306327, 306339, 306529, 306548, 306594, 306702, 306703, 306704, 306705, 306707, 306708, 306714, 306715, 306717, 306718, 306722.		
	No. 291039 Shaft, Lever, and Vane Assembly—Automatic Choke		4
	Used on type Nos. 306531, 306596, 306625, 306649, 306651, 306668.		
99714	Filter Assembly—Fuel (used at carburetor only)		10
99764	Support Assembly—Foot Pedal	1	8

† Included in Carburetor Overhaul Kit — Part No. 291691.

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
99793	Tube Assembly—Control Casing		2
99858	Sector Assembly—Starter		14
99860	Starter Assembly—Kick	3	8
99865	Support Assembly—Foot Starter	2	8
99868	Shaft and Lever Assembly—Throttle		1
99874	Adjuster—Speed		1
99876	Carburetor Assembly	1	
	<i>Note:</i> No. 89507 Carburetor Assembly	1	
	Used on type Nos. 306275, 306305, 306312, 306314, 306315, 306317, 306325, 306326, 306327, 306339, 306529, 306548, 306594, 306702, 306703, 306704, 306705, 306707, 306708, 306714, 306715, 306717, 306718, 306722.		
	No. 291024 Carburetor Assembly	1	
	Used on type Nos. 306531, 306596, 306625, 306649, 306651, 306668.		
	No. 291059 Carburetor Assembly	1	
	Used on type Nos. 306126, 306197, 306255.		
	No. 292116 Carburetor Assembly	1	
	Used on type Nos. 306262, 306641, 306643, 306646, 306647, 306656, 306659, 306662, 306665, 306674, 306679, 306681, 306694, 307070.		
99879	Cover—Fuel Filter		3
99896	Lever—Foot Starter	1	
210028	Body—Breather		1
220093	Retainer—Spring		1
220106	Cover—Cylinder Head		1
220111	Housing—Blower		14
	Used on engines after Serial No. 1092451; before Serial No. 1092452 use part No. 22889.		
	<i>Note:</i> No. 291781 Housing—Blower		14
	Used on type Nos. 306168, 306173, 306327, 306339, 306518, 306531, 306544, 306580, 306585, 306702, 306703, 306705, 306707, 306709, 306714, 306715, 306717, 306719, after Serial No. 1092451; before Serial No. 1092452 use part No. 291042.		
	No. 291046 Housing—Blower		14
	Used on type Nos. 306704, 306708.		
	No. 291794 Housing—Blower (For Retrievable Starter).....	1	4
	Used on type No. 306278.		
	No. 292200 Housing—Blower		14
	Used on type Nos. 306652, 306671, 306690, 306696.		
220137	Screen—Blower Housing		2
	Used only on engines with a retrievable starter.		
220234	Lock—Gear Case Mounting Screw		1
220547	Pulley—Rope Starter		6
	<i>Note:</i> No. 22323 Pulley—Rope Starter		6
	Used on type No. 306407 from Serial No. 522677 to 522697 inclusive.		
	No. 29743 Pulley Assembly		
	Used on type No. 306572.		
220865	Washer—Spring (Used to lock starter clutch).....		1
*230005	Valve—Needle		1
	<i>Note:</i> No. 292088 Valve—Needle		1
	Used on type Nos. 306262, 306641, 306643, 306646, 306647, 306656, 306659, 306662, 306665, 306674, 306679, 306681, 306694, 307070.		
230010	Wrench—Socket Screw		1
230228	Pin—Starter Grip		1
290014	Cover Assembly—Gear	1	3
290015	Shaft Assembly—Drive	1	
290017	Crank—Governor		2

* Included in Carburetor Overhaul Kit — Part No. 291691.

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
290062	Control Assembly—Throttle		4
	<i>Note:</i> No. 290463 Control Assembly—Throttle		
	Used on type Nos. 306594, 306624, 306631, 306660, 306678, 307057.		
	No. 291079 Control Assembly Throttle		4
	Used on type Nos. 306704, 306708.		
	No. 291634 Control Assembly—Throttle		4
	Used on type Nos. 306705, 306715		
290141	Control Assembly—Governor		3
290166	Gear—Governor		6
290239	Cylinder Assembly	14	
	<i>Note:</i> This group of cylinders including part		
	No. 290239 used on "NP" engines only.		
	No. 89913 Cylinder Assembly	14	
	Used on type Nos. 306526, 306530, 306532, 306632, 306661, 306672.		
	Includes: { No. 91648 Screw—Cap, Hex. Hd.— $\frac{1}{8}$ -24x $\frac{1}{2}$ "		1
	{ No. 91865 Washer—Lock		1
	No. 290257 Cylinder Assembly	14	
	Used on type Nos. 306547, 306627, 306650, 306716.		
	No. 290498 Cylinder Assembly	14	
	Used on type Nos. 306644, 306651, 306676.		
	No. 290501 Cylinder Assembly	14	
	Used on type Nos. 306560, 306591, 306624, 306626, 306648, 306652, 306653, 306654, 306660, 306664, 306669, 306675, 306677, 306678, 306680, 306690.		
	No. 290971 Cylinder Assembly	14	
	Used on type No. 306519.		
	No. 291037 Cylinder Assembly	14	
	Used on type Nos. 306531, 306573, 306574, 306617, 306655, 306684.		
	No. 292256 Cylinder	14	
	Used on type Nos. 306657, 306667, 306671, 306696.		
	Includes: { No. 91648 Screw—Cap, Hex. Hd.— $\frac{1}{8}$ -24x $\frac{1}{2}$ "		1
	{ No. 91865 Washer—Lock		1
290257	Cylinder Assembly	14	
	<i>Note:</i> These cylinders used on "NPR" engines only.		
	No. 290504 Cylinder Assembly	14	
	Used on type Nos. 307034, 307075, 307077, 307078, 307079, 307301, 307302.		
290281	Wire—Ground—37" long		1
	<i>Note:</i> No. 291637 Wire—Ground—73" long		2
	Used on type No. 307045.		
	No. 292151 Wire—Ground		2
	Used on type Nos. 306268, 306276, 306327, 306328, 306335, 306338, 306414.		
	No. 292512 Wire—Ground		1
	Used on type Nos. 306337, 306340.		
	No. 292575 Wire—Ground		1
	Used on type No. 306339.		
290290	Ring Set—Standard Piston		3
290291	Ring Set—.010" O.S. Piston		3
290292	Ring Set—.030" O.S. Piston		3
290414	Pulley—"V" Belt—2" Dia.		1
290465	Pump Assembly—Fuel	1	4
	<i>Note:</i> No. 291238 Pump Assembly—Fuel	1	4
	Used on type No. 306312.		
290568	Lever Assembly—Control		4
290584	Base—Control Lever		2
290596	Ring Set—.020" O.S. Piston		3
290622	Diaphragm—Fuel Pump		2
290623	Valve—Fuel Pump		1
290642	Lever—Control		2

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
290738	Cylinder Assembly	14	
	<i>Note:</i> This group of cylinders including part No. 290738 used on "N" engines only. (For NP Engines see part No. 290239; for NPR engines see part No. 290257.)		
	No. 80465 Cylinder Assembly	14	
	Used on type Nos. 306114, 306225, 306230, 306239, 306243, 306265, 306277.		
	No. 290500 Cylinder Assembly	14	
	Used on type Nos. 306185, 306267, 306268, 306272, 306276, 306314, 306317, 306319, 306323, 306325, 306326, 306327, 306328, 306329, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306414.		
	No. 291189 Cylinder Assembly	14	
	Used on type Nos. 306215, 306312.		
290763	Magneto Assembly	6	
	<i>Note:</i> No. 290527 Magneto Assembly	6	
	Used on type No. 306323.		
	Includes: No. 292042 Wire—Ground		1
	No. 290703 Magneto Assembly	6	
	For Mechanical Governor on type Nos. 306529, 306531, 306703, 306705, 306707, 306709, 306713, 306714, 306715, 306717, 306718, 306719, 306722.		
	Includes: No. 22530 Guide—Air		1
	No. 292042 Wire—Ground		1
	No. 290764 Magneto Assembly	6	
	Used on type Nos. 306101, 306120, 306121, 306137, 306138, 306150, 306151, 306157, 306163, 306179, 306185, 306247, 306249, 306259, 306264, 306302, 306304, 306305, 306306, 306313, 306406, 306408, 306412, 306533, 306545, 306546, 306547, 306548, 306551, 306583, 306639, 306712, 306716, 307021.		
	Includes: No. 291637 Wire—Ground		1
	No. 290766 Magneto Assembly	6	
	Used on type Nos. 306526, 306530, 306532, 306632, 306661, 306672.		
	No. 290767 Magneto Assembly	6	
	Used on type Nos. 306147, 306222, 306516, 306521, 306525, 306608, 306629, 306639, 307018.		
	Includes: No. 292042 Wire—Ground		1
	No. 290768 Magneto Assembly	6	
	Used on type No. 306314.		
	Includes: No. 290281 Wire—Ground		1
	No. 290769 Magneto Assembly	6	
	For Mechanical Governor on type Nos. 306511, 306520, 306522, 306528, 306534, 306558, 306573, 306574, 306578, 306581, 306584, 306586, 306593, 306595, 306596, 306617, 306625, 306630, 306637, 306642, 306643, 306645, 306649, 306651, 306662, 306668, 306679, 306682, 306685, 306691, 306702.		
	Includes: No. 22530 Guide—Air		3
	No. 292042 Wire—Ground		1
	No. 290770 Magneto Assembly	6	
	Used on type Nos. 306684, 307045, 307065, 307069.		
	Includes: No. 292042 Wire—Ground		1
	No. 290777 Magneto Assembly	6	
	For Mechanical Governor on type Nos. 306125, 306126, 306127, 306152, 306153, 306162, 306166, 306169, 306182, 306191, 306195, 306197, 306198, 306210, 306242, 306263, 306303, 306308, 306309, 306405, 306510, 306512, 306524, 306536, 306541, 306579, 306706.		
	Includes: No. 22530 Guide—Air		3
	No. 290795 Magneto Assembly	6	
	Used on type Nos. 306213, 306317, 306319, 306324, 306325, 306326, 306591, 306624, 307301.		
	Includes: No. 292042 Wire—Ground		1

(See following page)

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
	No. 291023 Magneto Assembly	6	
	Used on type Nos. 306704, 306708.		
	Includes: No. 22530 Guide—Air		3
	No. 22868 Spring—Contact		3
	No. 27308 Insulator—Contact Spring		1
	No. 29055 Wire—Ground		1
	No. 291240 Magneto Assembly	6	
	Used on type Nos. 306275, 306312, 306315.		
	Includes: No. 292042 Wire—Ground		1
	No. 292045 Magneto Assembly	6	
	Used on type Nos. 306268, 306272, 306328, 306414, 306626, 306648, 306653, 306664, 307075.		
	Includes: No. 292042 Wire—Ground		2
	No. 292190 Brush Assembly—Flywheel Grounding....		3
	Uses: No. 292155 Brush		1
	No. 90050 Screw (Brush Lead)		1
	No. 92181 Washer—Lock (Brush Lead)		1
	No. 90923 Screw (For Mounting Brush Assembly)		1
	No. 292204 Magneto Assembly	6	
	Used on type Nos. 306235, 306265.		
	No. 292207 Magneto Assembly	6	
	Used on type Nos. 306329, 306331, 306644.		
	Includes: No. 292042 Wire—Ground		2
	No. 292190 Brush Assembly—Flywheel Grounding		3
	Uses: No. 292155 Brush		1
	No. 90050 Screw (Brush Lead)		1
	No. 92181 Washer—Lock (Brush Lead)		1
	No. 90923 Screw (For Mounting Brush Assembly)		1
	No. 292255 Magneto Assembly	6	
	Used on type Nos. 306657, 306667, 306671, 306696.		
	Includes: No. 292042 Wire—Ground		2
	No. 292289 Magneto Assembly	6	
	Used on type No. 306256.		
	No. 292361 Magneto Assembly	6	
	Used on type Nos. 306276, 306327, 306335, 306336, 306337, 306338, 306339, 306652, 306654, 306660, 306669, 306675, 306677, 306678, 306680, 306690, 307077, 307078, 307079, 307302.		
	Includes: No. 292042 Wire—Ground		2
	No. 292475 Magneto Assembly	6	
	Used on type No. 306676.		
	Includes: No. 292042 Wire—Ground		2
	No. 292517 Magneto Assembly	6	
	Used on type Nos. 306340, 306341.		
	Includes: No. 292042 Wire—Ground		1
	No. 293762 Magneto Assembly	6	
	Used on type No. 306342.		
	Includes: No. 292042 Wire—Ground		1
290779	Case Assembly—Gear	1	8
290792	Plate—Magneto	2	
	Note: No. 290351 Plate—Magneto	2	
	Used on type Nos. 306526, 306530, 306582, 306632, 306657, 306661, 306667, 306671, 306672, 306696.		
	No. 290869 Plate—Magneto	2	
	Used on type Nos. 306101, 306120, 306121, 306137, 306138, 306150, 306151, 306157, 306163, 306179, 306185, 306249, 306259, 306264, 306302, 306304, 306305, 306306, 306313, 306406, 306408, 306412, 306533, 306545, 306546, 306547, 306548, 306550, 306583, 306689, 306712, 306716, 307021.		
	No. 292197 Plate—Magneto	2	
	Used on type Nos. 306268, 306272, 306328, 306329, 306414, 306626, 306644, 306648, 306653, 306664, 307075.		

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
290802	Shaft Assembly—Drive	3	8
	Note: No. 291764 Shaft Assembly—Drive	2	8
	Used on type No. 307201.		
290938	Base Assembly—Engine	1	10
	Note: No. 290041 Base Assembly—Engine	6	
	Used on type Nos. 306400, 306401, 306403, 306405, 306406, 306407, 306408, 306409, 306410, 306411, 306412, 306414, 306420, 306421, 306422, 306700, 306701, 306706, 306710, 306711, 306712, 306716, 306720, 306721, 307100, 307101, 307105, 307106, 307107, 307109, 307110, 307111, 307112, 307113, 307114, 307115.		
	No. 290943 Base Assembly—Engine	6	
	Used on type Nos. 306402, 306404, 306413, 306702, 306703, 306705, 306707, 306709, 306713, 306714, 306715, 306717, 306718, 306719, 306722, 307102, 307103, 307108.		
	No. 290946 Base Assembly—Engine	1	10
	Used on type Nos. 306108, 306114, 306127, 306132, 306133, 306134, 306135, 306141, 306157, 306165, 306172, 306175, 306176, 306178, 306199, 306203, 306208, 306210, 306211, 306215, 306217, 306224, 306225, 306229, 306230, 306232, 306239, 306240, 306241, 306242, 306243, 306245, 306247, 306250, 306253, 306264, 306265, 306273, 306274, 306277, 306322, 306529, 306531, 306542, 306548, 306624, 306655, 306660, 306673, 306693, 307003, 307004, 307005, 307006, 307008, 307026, 307029, 307033, 307038, 307043, 307045, 307052, 307053, 307059, 307061, 307063, 307064, 307065, 307069, 307081, 307082, 307201.		
	No. 290969 Base Assembly—Engine	3	10
	Used on type No. 306519.		
	No. 291010 Base Assembly—Engine	6	
	Used on type Nos. 306704, 306708.		
	No. 292290 Base Assembly—Engine	1	10
	Used on type Nos. 306680, 307075, 307077, 307078.		
290963	Rod Assembly—Connecting		12
290980	Pin Assembly—Piston—Standard		2
290981	Pin Assembly—Piston—.005" O.S.		2
291015	Housing and Pulley Assembly—Starter Clutch		10
	Note: No. 21517 Housing and Pulley—Clutch.....	3	
	Used on type Nos. 306336, 306341.		
	No. 210169 Housing and Pulley—Clutch.....	3	
	Used on type No. 306337.		
	No. 291017 Housing—Starter Clutch		14
	Used on type Nos. 306305, 306312, 306314, 306315, 306317, 306325, 306326, 306327, 306339.		
	No. 291018 Housing and Pulley Assembly—Starter Clutch.....		10
	Used on type No. 306304.		
291043	Thermostat Assembly		6
291044	Lever Assembly—Thermostat		1
291047	Lock Assembly—Ignition		6
	Includes: No. 22367 Retainer—Lock		1
291113	Cover—Oil Hole		2
291114	Cover Assembly—Oil Hole		2
	Note: No. 292336 Oil Filler and Drain Assembly		6
	Used on type No. 306339.		
291220	Screen—Blower Housing		2
	Note: No. 291430 Screen—Blower Housing (Full Screen)		2
	Used on engines without starters on magneto side.		
291286	Tank Assembly—Fuel (used on engines after Serial No. 659058)	3	
	Note: No. 291579 Tank Assembly—Fuel	3	
	Used on type Nos. 306323, 306329, 306331, 306342, 306591, 306626, 306648, 306653, 306654, 306657, 306664, 306667, 306677, 306690, 307301, 307302.		
	No. 291844 Tank Assembly—Fuel	3	
	Used on type No. 306623.		

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
291288	Pipe—Fuel—8 $\frac{3}{8}$ " long (used on engines after Serial No. 659058)	3	
	<i>Note:</i> No. 65849 Pipe—Fuel—12" long	3	
	Used on type No. 306204.		
	No. 65850 Pipe—Fuel—15" long	3	
	Used on type Nos. 306190, 306191, 306218, 306239, 306240, 306241, 306242, 306244, 306246, 306252, 306253, 306254, 306570, 306571, 307027, 307028, 307040, 307043, 307059, 307063, 307064, 307071.		
	No. 65919 Pipe—Fuel—18" lg.	4	
	Used on type No. 306278.		
	No. 69355 Pipe—Fuel—10" long	3	
	Used on type Nos. 306173, 306714.		
	No. 69500 Pipe—Fuel—14" long	3	
	Used on type Nos. 307045, 307069.		
	No. 89226 Pipe—Fuel—11 $\frac{1}{2}$ " long	3	
	Used on type Nos. 306200, 306223, 306226, 306316, 306524, 306557, 306597, 306609, 306610, 306614, 306618, 306630, 307024, 307113.		
	No. 291636 Pipe—Fuel—13 $\frac{1}{2}$ " long	3	
	Used on type No. 306572.		
	The following Fuel Pipes and Connection used with No. 291844 Tank—Fuel (Combination) on type No. 306628:		
	No. 67759 Tee	1	
	No. 291845 Pipe—Fuel—9" long	3	
	No. 291846 Pipe—Fuel—7 $\frac{7}{8}$ " long	3	
	The following Fuel Pipes and Connections used on type Nos. 306262, 306641, 306643, 306646, 306647, 306656, 306659, 306662, 306665, 306674, 306679, 306681, 306694, 307070.		
	No. 69716 Pipe—Fuel—2 $\frac{1}{8}$ " long	1	
	No. 290848 Pipe—Fuel—12 $\frac{3}{4}$ " long	3	
	No. 92713 Coupling	1	
	No. 99511 Tee	1	
	No. 292486 Wing Plug, Chain and Clip Assembly.....	1	
291301	Gasket—Cylinder Head ($\frac{1}{8}$ " thick)	1	
	<i>Note:</i> Two No. 291301 Cylinder Head Gaskets are used on type Nos. 306200, 306204, 306226, 306262, 306316, 306524, 306557, 306597, 306609, 306610, 306614, 306618, 306628, 306630, 306641, 306643, 306646, 306647, 306656, 306659, 306662, 306665, 306674, 306679, 306680, 306694, 307024, 307070, 307113.		
	*No. 67537 Gasket—Cylinder Head ($\frac{1}{8}$ " thick)	1	
	Used on engines before serial No. 729202; also used with all cylinder heads having seven fins.		
291376	Gasket Set	4	
291379	Head Assembly—Cylinder	1	8
	<i>Note:</i> No. 210022 Head—Cylinder	1	
	Used on type Nos. 306200, 306204, 306226, 306262, 306268, 306272, 306276, 306316, 306327, 306328, 306329, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306414, 306524, 306557, 306597, 306609, 306610, 306614, 306618, 306626, 306628, 306630, 306641, 306643, 306644, 306646, 306647, 306648, 306652, 306653, 306654, 306656, 306657, 306659, 306660, 306662, 306664, 306665, 306667, 306669, 306671, 306674, 306675, 306676, 306677, 306678, 306680, 306681, 306690, 306694, 306696, 307024, 307070, 307075, 307077, 307078, 307079, 307113, 307302.		
	No. 291411 Head Assembly—Cylinder	1	8
	Used on type Nos. 306531, 306558, 306574, 306578, 306586, 306595, 306596, 306625, 306637, 306642, 306649, 306651, 306668, 306679, 306691.		
291391	Housing—Starter		13
291420	Tank Assembly—Fuel (one gallon)	3	
	* <i>Note:</i> No. 29034 Tank Assembly—Fuel (one gallon)	3	
	Used on type Nos. 306104, 306126, 306144, 306148, 306155, 306159, 306163, 306176, 306177, 306185, 306307, 306313, 306407, 306511,		
	(See following page).		

* Included in Gasket Set — Part No. 291376.

MASTER PART NO.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
	306512, 306518, 306520, 306526, 306528, 306536, 306544, 306550, 306558, 306569, 306594, 306703, 306704, 306707, 306708, 307019, 307023.		
	No. 92656 Coupling		2
	Used on outlet of some No. 29034 tanks.		
	No. 200354 Tank Assembly—Fuel (Two gallon)	3	8
	Used on type Nos. 306652, 306671, 306696.		
291421	Pipe—Fuel—9" long		3
	Note: No. 69355 Pipe—Fuel—10" long		3
	Used on type Nos. 306173, 306585, 306703, 306719.		
	No. 69419 Pipe—Fuel—13 1/4" long		2
	Used on type Nos. 306707, 306717.		
	No. 59520 Pipe—Fuel—12 3/4" long		1
	Used on type Nos. 306104, 306144, 306148, 306155, 306159, 306176, 306177, 306185, 306307, 306313, 306407, 306511, 306512, 306520, 306526, 306528, 306536, 306544, 306550, 306558, 306569, 307019, 307023.		
	No. 290848 Pipe—Fuel—12 3/4" long		3
	Used on type Nos. 306518, 306580.		
	No. 291045 Pipe—Fuel—10 1/4" long		3
	Used between carburetor and fuel pump on type Nos. 306215, 306655, 306684 and other engines which may be equipped with a fuel pump		
	No. 291941 Pipe—Fuel—16" long		3
	Used on type No. 306285.		
291495	Clutch Assembly—Starter (Use Part No. 293578)		1
291617	Armature—Magneto		1
	Note: No. 292184 Armature—Magneto		1
	Used on type Nos. 306256, 306268, 306272, 306276, 306327, 306328, 306329, 306331, 306335, 306336, 306337, 306338, 306339, 306340, 306341, 306342, 306414, 306626, 306644, 306648, 306652, 306653, 306654, 306657, 306660, 306664, 306667, 306669, 306671, 306675, 306676, 306677, 306678, 306680, 306690, 306696, 307075, 307077, 307078, 307079, 307302.		
291691	Carburetor Overhaul Kit		6
291730	Cover Assembly—Gear Case	1	4
291783	Housing—Blower		2
	Used on engines after Serial No. 1092451; before Serial No. 1092452 use part No. 89386.		
	Note: No. 291791 Housing—Blower		2
	Used on type Nos. 306147, 306222, 306272, 306276, 306323, 306329, 306331, 306336, 306341, 306342, 306516, 306521, 306522, 306525, 306534, 306591, 306608, 306617, 306625, 306626, 306629, 306630, 306642, 306643, 306645, 306648, 306653, 306654, 306657, 306664, 306667, 306668, 306677, 306679, 306680, 306682, 307018, 307075, 307077, 307078, 307079, 307301, 307302 after Serial No. 1092451; before Serial No. 1092452 use part No. 290167.		
	No. 291796 Housing—Blower (For Retrievable Starter)		2
	Used on type Nos. 306190, 306191, 306239, 306241, 306242, 306244, 306246, 306252, 306253, 306254, 306634, 307040, 307059, 307063, 307064, 307071, 307081.		
291829	Housing—Blower		2
	Used on engines after Serial No. 1092451; before Serial No. 1092452 use part No. 89447.		
	Note: No. 89447 Housing—Blower		3
	Used on type No. 306635.		
	No. 291786 Housing—Blower		2
	Used on type Nos. 306213, 306268, 306328, 306335, 306337, 306338, 306340, 306414, 306511, 306520, 306528, 306558, 306573, 306574, 306578, 306581, 306584, 306586, 306593, 306595, 306596, 306624, 306639, 306644, 306649, 306651, 306660, 306662, 306669, 306675, 306676, 306678, 306685, after Serial No. 1092451; before Serial No. 1092452 use part No. 290231.		

(See following page)

MASTER PART No.	NAME	SHIPPING WEIGHT	
		Lbs.	Oz.
	No. 291933 Housing—Blower (For Retrievable Starter)		
	Used on type No. 306265.		
	No. 292200 Housing—Blower	1	
	Used on type Nos. 306652, 306671, 306690, 306696.		
	No. 292719 Housing—Blower	2	
	Used on type Nos. 306637, 306691.		
291838	Cleaner Assembly—Air	1	
	Note: No. 89376 Cleaner Assembly—Air	1	
	Used on type Nos. 306172, 306402, 306413.		
	No. 89980 Cleaner Assembly—Air		1
	Used on type Nos. 306626, 306654, 306657, 306664, 306667, 306677, 306690, 307302.		
	No. 290452 Cleaner Assembly—Air	1	
	Used on type Nos. 306537, 306591, 306626, 307301.		
291849	Starter Assembly—Retrieval	2	
291905	Breather Assembly		2
291907	Control—Throttle		6
	Note: No. 292328 Control—Throttle		6
	Used on type Nos. 306257, 306670.		
292046	Spring—Starter		6
292136	Control Assembly—Governor		2
292271	Ratchet—Retrieval Starter		6
292272	Pulley—Retrieval Starter	1	
292681	Valve Assembly—Carburetor Idle		1
293432	Screen Assembly—Rotating		8

NATION-WIDE SERVICE ORGANIZATION

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

Each 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 engines.

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 Warranty.

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

In a difference of opinion regarding a Service Organization's decision, their terms should be accepted and, either through them or direct, have all materials and supporting facts submitted to the factory for review.

Genuine Briggs & Stratton service will assure continuous engine satisfaction. Our long experience in engine 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 Service Distributor or Engine Service Station. The Service Distributor nearest you (see back page) will be glad to give you the name of our Engine Service Organization in your locality. Space does not permit listing here.

BRIGGS & STRATTON ENGINE WARRANTY

BE SURE TO FILL IN AND MAIL WARRANTY REGISTRATION CARD WHICH ACCOMPANIED ENGINE AT TIME OF PURCHASE

THE WARRANTY—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 any Factory Authorized Distributor or at our Factory at Milwaukee, Wisconsin, 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 warranty must be borne by purchaser.

WHAT THIS WARRANTY DOES NOT INCLUDE—This warranty 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 engine 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 Service Organization, in any way which, in our judgment, affects its condition or operation.

WARRANTY INSTRUCTIONS

When sending an engine, or engine parts, to a Briggs & Stratton Service Organization for service, at the same time always send by mail the following information:

Model Letter (or Number), Type Number, and Serial Number of the engine (take from metal plate on engine).

Date purchased.

Kind of equipment engine is used on.

Name or trademark of manufacturer.

Name and address of dealer purchased from.

Approximate number of hours engine has run since equipment was bought.

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

The above information is necessary to insure prompt and proper service.

AUTHORIZED SERVICE ORGANIZATION

There is a member of the Briggs & Stratton Service Organization in your neighborhood who is fully qualified to take care of your service needs. Refer to the yellow pages of your telephone directory. If none are listed write to the nearest Central Distributor listed below, they will be glad to supply you with name and address.

STATE	CITY	NAME	LOCATION
Alabama	Birmingham 3	Birmingham Electric Battery Co.	Ave. B at 23rd St.
Arizona	Phoenix	Motor Supply Co.	402-414 N. Central Ave.
California	Burlingame	Frank Edwards Co.	1541 Adrian Road
California	Los Angeles 15	Electric Equipment Co.	1611 S. Hope St.
Colorado	Denver 1	Spitzer Electric Company	43 W. 9th Ave.
Florida	Jacksonville 1	Spencer Electric, Inc.	40 W. Beaver St.
Florida	Miami 42	Electrical Equipment Co.	1415 N.W. 21st Terrace
Florida	Tampa 1	Spencer Auto Electric, Inc.	607-11 E. 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	Gulling Auto Electric Inc.	450 N. Capitol Ave.
Iowa	Des Moines 9	Magneto Carburetor & Electric Co., Inc.	1308 Grand Ave.
Kentucky	Louisville 2	Central Service Sales Div.	737 S. 3rd St.
Louisiana	New Orleans 1	A. C. Suhren Co.	4640 So. Carrollton Ave.
Louisiana	Shreveport	Chain Battery & Automotive Supply, Inc.	Spring at Fannin St.
Massachusetts	Boston 64	W. J. Connell Co.	210 Needham St.
Michigan	Detroit 38	Auto Electric & Service Corporation	15550 Woodrow Wilson Ave.
Minnesota	Minneapolis 16	Reinhard Brothers Co., Inc.	4301 Highway No. 7
Missouri	Kansas City 8	The E. S. Cowie Electric Co.	1819 Wyandotte St.
Missouri	St. Louis 3	Medart Auto Electric Co., Inc.	3134 Washington Blvd.
Montana	Billings	Original Equipment, Inc.	905 Second Ave. No.
Nebraska	Omaha 2	Carl A. Anderson, Inc.	16th and Jones St.
New Mexico	Albuquerque	Spitzer Electrical Co. of New Mexico	3rd and Mountain Rd.
New York	Buffalo 14	The Battery & Starter Co., Inc.	2505 Main St.
New York	New York 19	The Durham Co., Inc.	606 W. 49th St.
New York	Syracuse 4	F. A. Crossman, Inc.	943 W. Genesee St.
North Carolina	Charlotte 1	Automotive Electric Associates, Inc.	306-14 N. Graham St.
Ohio	Cincinnati 2	Gardner, Inc.	1847 Reading Rd.
Ohio	Cleveland 15	The Electric Power & Maintenance Co.	Prospect at East 30th
Ohio	Toledo 2	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 Glisan
Pennsylvania	Philadelphia 30	Auto Equipment & Service Co., Inc.	1522-24 Fairmount Ave.
Pennsylvania	Pittsburgh 24	Pitt Auto Electric Company	5135 Baum Blvd.
Tennessee	Knoxville 7	R. T. Clapp Company	2016 Magnolia Ave., N.E.
Tennessee	Memphis 4	Automotive Electric Service Co.	982 Linden Ave.
Texas	Amarillo	Beard & Stone Electric Company, Inc.	700 E. 10th St.
Texas	Dallas 1	Beard & Stone Electric Company, Inc.	3909 Live Oak St.
Texas	El Paso	Motor Supply Co.	308 Chihuahua St.
Texas	Houston 1	Beard & Stone Electric Company, Inc.	Milam at Polk Ave.
Texas	San Antonio 6	S. X. Callahan	425 N. Flores St.
Utah	Salt Lake City 13	Frank Edwards Co.	551 So. State St.
Virginia	Richmond 21	Richmond Battery & Ignition Co.	2912 W. Leigh St.
Washington	Seattle 4	Charles Stewart, Inc.	1741 First Ave. South
Washington	Spokane	Sunset Electric Co.	N. 703 Division St.
Wisconsin	Milwaukee 2	Wisconsin Magneto Co.	918 N. Broadway

DOMINION OF CANADA

British Columbia	Vancouver	Auto Electric Service (Pacific) Ltd.	1025 Howe St.
Manitoba	Winnipeg	Auto Electric Service (Western) Ltd.	170 Fort St.
Ontario	Toronto 5	Auto Electric Service Company, Limited	1009 Bay St.

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