

OPERATING INSTRUCTIONS and PARTS LIST

for the

DAVID BRADLEY CHAIN SAW

MODEL NUMBERS

355.83131

With Wico Magneto

355.83132

With Hornet Magneto

The model number and saw serial number of your chain saw may be found on the plate mounted on the cover plate beneath the muffler. The engine serial number will be found on the plate located on the air shroud beneath the saw starter assembly. Always mention the model number, saw serial number, engine serial number when ordering repair parts.

For identification of starter, magneto and engine type number used on your saw, see information found on page 2.

HOW TO ORDER REPAIR PARTS

All parts listed herein may be ordered through Sears, Roebuck and Co. or Simpsons-Sears Limited. When ordering parts by mail from the mail order house which serves the territory in which you live, selling prices will be furnished on request or parts will be shipped at prevailing prices and you will be billed accordingly.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST:

1. The PART NUMBER
2. The PART NAME
3. The MODEL NUMBER
4. The SERIAL NUMBER
5. The NAME of item.

This list is valuable. It will assure your being able to obtain proper parts service at all times. We suggest you keep it with other valuable papers.

**SEARS, ROEBUCK AND CO. IN U. S. A.
SIMPSONS-SEARS LIMITED IN CANADA**

INTRODUCTION

YOUR DAVID BRADLEY CHAIN SAW has been designed to give you the best in performance with the least amount of trouble. Should you experience any minor service problem which you cannot adjust, take your saw to the Sears store where it was purchased. Do not tamper with your saw unless you are qualified to do so.

THIS MANUAL HAS BEEN WRITTEN to help you get better acquainted with your David Bradley Chain Saw. It covers assembly instructions, maintenance helps, service hints, fuel mixtures, lubrication, and a trouble chart.

READ THIS MANUAL CAREFULLY before starting your saw. By understanding its operation, and limitations, you will have long and trouble free operation.

- **Do Not Abuse Your Saw**

Do not use undue force.
Do not leave your saw in the rain.

- **Use Proper Fuel Mixture**

Proper lubrication is important to long engine life. Refer to page 5 for recommended mixtures.

- **Keep Chain Sharp**

Refer to filing instruction page 12.

- **Keep Your Saw Clean**

Dirt and dust will hamper the operation of your saw by clogging air filter, engine cooling fins and by hiding loose bolts.

- **Tighten Bolts Daily**

Vibration in the engine will cause nuts and bolts to eventually work loose. Check all nuts and bolts after daily use.

IDENTIFICATION OF SAW COMPONENTS

STARTER Look for name on outer housing.

ENGINE The engine serial number is found on the serial number plate found on the air shroud beneath the saw starter assembly. The type number of the engine is the last three characters of the serial number. For example 00000W70B. This indicates engine type 70B.

MAGNETO The magneto identification is also found on the engine serial number plate. The letter immediately preceding the engine type number is the magneto identification. For example:

00000W70B—Type 70B engine with WICO Magneto

00000H70B—Type 70B engine with HORNET Magneto

IMPORTANT READ PRECAUTIONS ON PAGE 15

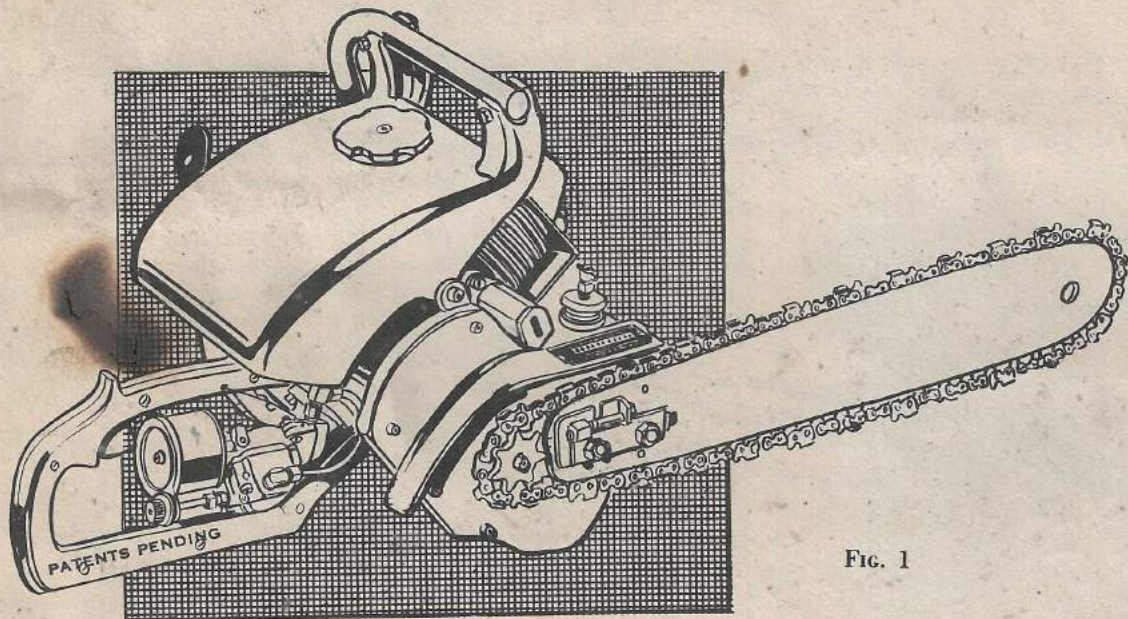


FIG. 1

DAVID BRADLEY CHAIN SAW

We guarantee every David Bradley Chain Saw to be free from defects in material and workmanship, and that it will render satisfactory service when used in accordance with instructions.

Should this saw cease to give satisfactory service, due to defects in workmanship or material within 30 days from date of purchase, return it to the store from which it was purchased and we will repair it free of charge, replacing all defective parts. After a 30 day period a nominal service charge will be made for all repairs.

Our obligation under this warranty is limited to the first thirty days after the date of purchase.

Our responsibility under this guarantee becomes void in case of any alterations, accidents, abuse or mis-use of this merchandise.

We do not authorize any person or representative to make any other guarantee, or to assume for us any liability in connection with the sale of this David Bradley Saw, other than those contained herein. Any agreements outside of or contradictory to the foregoing shall be void and of no effect.

WARRANTY

1. Fill in the enclosed postcard completely.
2. (a) Mail to Dept. 632, Sears, Roebuck and Co., 925 So. Homan Avenue, Chicago 7, Ill.
(b) Your 30 day guarantee is effective only if card is properly filled in and returned to Sears, Roebuck and Co. This card registers your purchase, serial number of the Saw, and your guarantee. Your 30 day warranty period started on the date of the purchase.

ASSEMBLING YOUR SAW

Included with your saw assembly are:

1. Chain assembly
2. Guide assembly
3. Tool kit
 - a) File 1/4"
 - b) File holder
 - c) 9/16" Wrench
 - d) Allen wrenches
 - e) Feeler gauges
 - f) Emergency chain kit
4. Operating manual

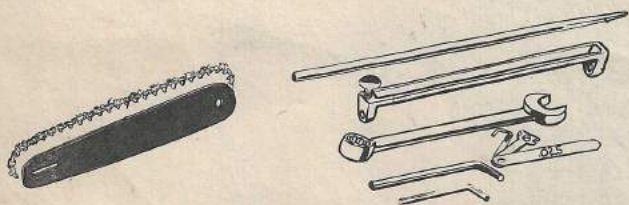


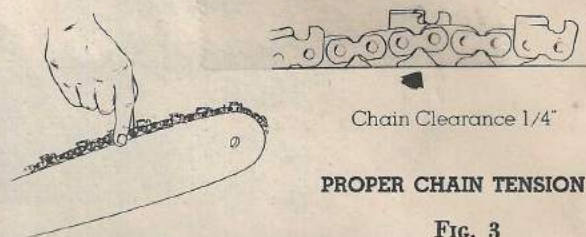
FIG. 2

ASSEMBLY

Remove all parts from the carton. Any claim for broken or missing parts should be filed immediately with your Sears store.

- 1) Remove the two nuts holding the chain tightener on the cover plate.
- 2) Remove chain tightener and install guide bar on the studs.
- 3) Re-install chain tightener so that the lug on the chain tightener is engaged in the guide bar slot.

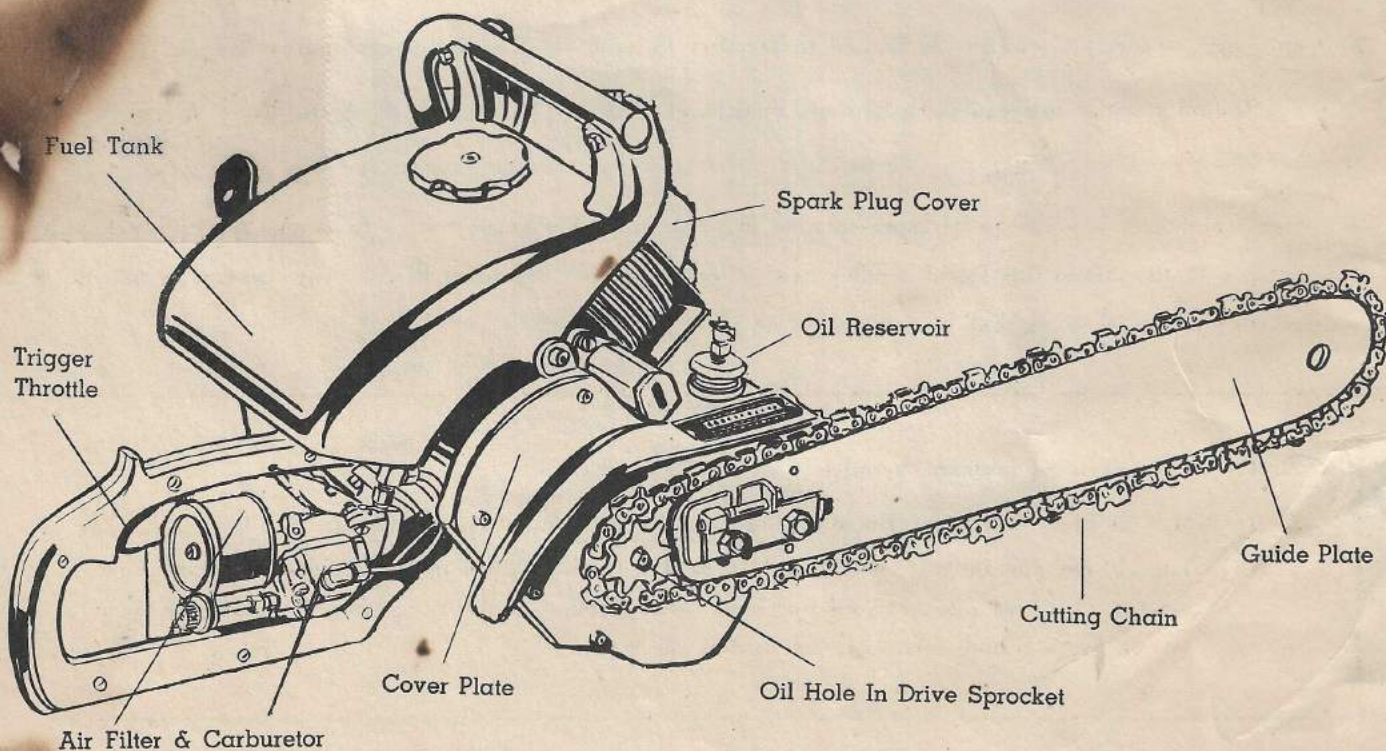
- 4) Remove chain from carton and snap in the master pin to join the chain. Master pin is included in chain kit envelope.
- 5) Loop the chain over the guide bar and put drive links in the groove. The teeth on the chain should be facing away from the engine when sitting on top of the guide bar.
- 6) Loop chain over the sprocket. (It may be necessary to slide the guide bar toward the sprocket so that the chain will loop over.)
- 7) Adjust tension on the chain — turning the adjusting screw on the chain tightener.



PROPER CHAIN TENSION

FIG. 3

- 8) Be sure to tighten the chain to the proper tension (Fig. 3, Pg. 4). You should be able to lift the chain from the center of the guide bar approximately one-quarter of an inch. Adjust tension accordingly to get proper clearance.
- 9) Tighten the nuts securely holding the chain tightener.
- 10) NOTE: A new chain will stretch during first few hours of operation. Check chain clearance (Fig. 3, Pg. 4) frequently during this period.



FUEL AND LUBRICATION

Lubrication and proper fuel mixture are essential to long and useful life of your Chain Saw. Extreme care should be exercised in following the lubricating and fuel recommendations. Fill with fuel and lubricate as per following directions:

ENGINE LUBRICATION

Your engine is lubricated by mixing oil with the gasoline. There is no oil in the crankcase as in 4 cycle engines. Improper fuel mixture will cause overheating and scoring of the engine, necessitating costly repairs.

ENGINE FUEL MIXTURE

During the break-in period (first 8 hours) use:

1 pint or 16 oz. of #30 oil to every 1 gallon of gas

— or —

1 quart or 32 oz. of #30 oil to every 2 gallons of gas

After the break-in period use:

1/2 pint or 8 oz. of #30 oil to every 1 gallon of gas

— or —

1 pint or 16 oz. of #30 oil to every 2 gallons of gas

OIL

Use non-detergent, high quality oil #30. Preferably outboard marine.

GAS

Use high quality non-ethyl (no-lead) gasoline.

NOTE: Gas tank capacity is approximately 2 quarts.

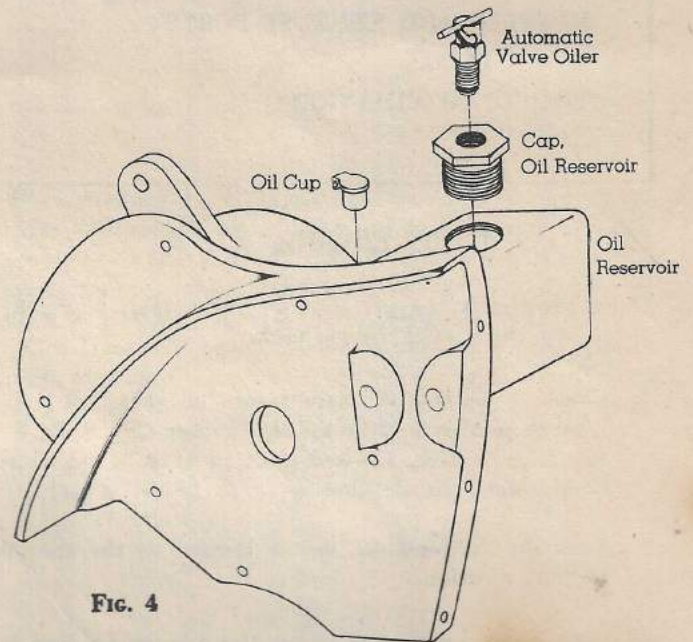


FIG. 4

GEAR CASE AND OIL RESERVOIR

TRANSMISSION LUBRICATION

Your saw is equipped with a dry type transmission and requires no lubrication, (that is, it does not run in oil). The main drive gear which is fiber however should receive three drops of oil every day. Insert the oil in the oil cup (Fig. 4, Pg. 5) located immediately below the muffler and on the top of the gear case. **CAUTION—Do not over-oil!**

CHAIN AND GUIDE LUBRICATION

The oil reservoir (Fig. 4, Pg. 5) located on the gear case is a constant source of oil for lubrication of the chain

and guide. Before starting your saw, fill reservoir with oil, replace cap and turn the automatic valve oiler (Fig. 4, Pg. 5) down or to the left. This will permit the oil to flow through the fiber gear shaft, out the small opening in the sprocket (Fig. 12, Pg. 9) on to the chain and guide. When saw is not in use, close valve to stop flow of oil.

OIL

In cold weather use #10 oil. In warm weather use #30 oil.

CAUTION

Keep oil reservoir filled at all times. *Do not* run the chain and guide without oil. Use clean oil only.

FACTS ON THE ENGINE

FUEL MIXTURE	1/2 pt. #30 oil to 1 gallon of gasoline.
ENGINE SPEED	2700—4000 R.P.M.
MAGNETO POINT SETTING020 inch.
SPARK PLUG GAP030 inch.
TILLOTSON CARBURETOR	Model MD60A.
WICO MAGNETO	FW-2288.
HORNET MAGNETO	F-1325D2.
MUFFLER AND EXHAUST PORTS	Should be cleaned after every 50 hours use.
SPARK PLUG	Use A.C. #45M, Champion J8J or equivalent
TIMING INFORMATION	Points should start to open when piston is 3/16" below dead center.

HOW TO START ENGINE

Open completely the gas shut off valve (Fig. 9, Pg. 8) located on the side of the gas tank.

1. Check to see that the carburetor dial (Fig. 9, Pg. 8) is set at number 7. Move the choke lever (Fig. 9, Pg. 8) to choke position. Choked position (Fig. 9, Pg. 8) is back toward the air filter.
2. Turn the "off and on" switch located on the shroud to "on" position.
3. With your right hand grasp the trigger holding it back. Rest your knee against the gas tank. With your left hand pull the rewind starter back. When starting engine it is important to know how to use the starter. It is not to be pulled suddenly backwards with a powerful jerk. Instead—first pull gradually back approximately 3 inches until you feel the starter engaged—then with a continuous movement pull straight backward approximately one foot more.

4. After the engine starts gradually work the choke lever (Fig. 9, Pg. 8) back as the engine warms up.
5. After the engine warms up, choking is not necessary to start again. Choking a warm engine or over choking a cold engine will cause flooding. Should the engine flood, continue cranking with the choke in "off" position (Fig. 9, Pg. 8) until the engine starts, or close shut off valve (Fig. 9, Pg. 8) until the engine starts.

HOW TO STOP ENGINE

1. Turn the "off and on" switch located on the shroud to "off" position to stop engine.

● IMPORTANT

At the end of each day's operation, close the shut-off valve (Fig. 9, Pg. 8) and let the engine run until it stops. This uses up all the fuel in the carburetor and permits easy starting the next time you use the saw.



FIG. 5—FELLING



FIG. 6—BUCKING

GENERAL OPERATING INSTRUCTIONS

CUTTING

A safe rule to follow when cutting with a chain saw is:

If you cannot make a cut with a crosscut saw, you cannot cut it with a chain saw. In other words, if the tree or log will bind on you with a crosscut saw—it will bind with a chain saw.

POSITIONS OF CUTTING

The saw will cut in any position, from vertical (Fig. 6, Pg. 6) to the horizontal (Fig. 5, Pg. 6) position, that is when lying on the right side. This means cutting is held through 90 degrees. In the vertical position (Fig. 5, Pg. 6) it may be tilted 60 degrees forward or 60 degrees backwards. When making a felling cut, (Fig. 5, Pg. 6) remember always cut with the chain side of the saw facing toward the ground.

IMPORTANT

For best results when cutting on the side, keep the gas tank as full as possible.

HOW TO CUT WITH THE SAW

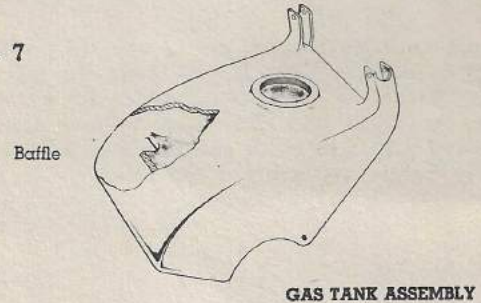
1. Pull trigger back to full throttle, the saw is designed to give you effortless cutting. It is not necessary to bear down on the log with great force trying to force the chain through.
2. When in bucking position, (Fig. 6, Pg. 6) before pushing the chain into the log have the engine running at top speed. The chain will cut the fastest when the engine is at top speed. It is not necessary to rock the saw back and forth. Remember, do not bear down unduly hard as this will cause the engine speed to be reduced. Keep the engine speed up and allow the chain to cut its own way through the log.

THE FUEL SYSTEM AND HOW IT WORKS

The saw uses a float type carburetor (Fig. 10, Pg. 8) because this type of carburetor is the simplest to operate, the least likely to give difficulty, and the easiest to repair. The carburetor is held on the saw at a forty-five degree angle to enable the saw to be used for both felling and bucking (cutting when the log is down). The gas feeds into the carburetor by gravity; and to see that the carburetor receives gas when the saw is held all the way forward in a bucking cut, the gas tank has a partition (baffle) (Fig. 7, Pg. 7) built into the rear. This holds

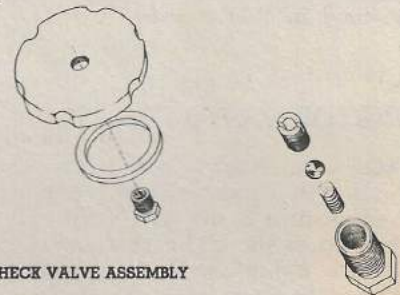
some gas in the back of the tank when it is tilted forward, and holds a column of gas in it when the saw is used to make a felling cut (side position) (Fig. 5, Pg. 6).

FIG. 7



When making a felling cut, the column of gas in the baffle will enable you to cut for approximately five minutes. At the end of that time (or when the engine seems to die down), take the saw out of the cut and hold it straight upwards with the guide pointing skywards. This will enable the baffle portion of the tank to refill. Best results are had when the gas tank is held more than half full.

FIG. 8



The vent on the gas cap is of the check valve type (Fig. 8, Pg. 7). This is to allow air to enter into the tank (if the tank does not receive air, gas will not flow into the carburetor) without too much gas splashing out as it would from a straight vent hole. See that the top portion of the check valve is not screwed too tightly against the ball in the valve. Any difficulty will be particularly noticed in a side position cut. *If the valve is closed too tightly the tank will not receive air and the engine will die out.* See that the screw on the check valve is open approximately a turn and a half so that there is a slight drip from it when the gasoline is against it.

CENTRIFUGAL CLUTCH

The saw has a centrifugal clutch (Fig. 16, Pg. 10). When the engine is idling, the clutch will not be engaged and the chain will not move. As you speed up the engine the clutch engages. If the chain is caught in a pinch or bind, the engine speed will be reduced and the clutch will slip. Do not speed up the engine when the chain is bound as this clutch slippage will wear out the clutch.

MAINTENANCE

IMPORTANT: Tighten all bolts after each day's use.

AIR FILTER

The engine must have clean air to operate properly. As the air filter becomes dirty it cuts down the efficiency of the engine. Brush the air filter off daily with a wire brush to remove saw dust and dirt. Once a week remove the air filter and put it in clean gasoline and then dry it off thoroughly before replacing it on saw.

IMPORTANT

These instructions, service and maintenance, are not sufficiently complete for you to attempt anything more than minor service and adjustments on your saw. Should you experience trouble which you are not able to locate and correct bring the saw to your Sears store for service. We know that this saw is as trouble free a one as you will find on the market today, and are sure that you will have good results with it—if you follow the instructions contained in this manual.

CARBURETOR ADJUSTMENTS

1. The carburetor has 2 adjustments—the main adjustment (Fig. 9, Pg. 8) and the idle adjustment. The main adjustment is the numbered dial (Fig. 9, Pg. 8) at the front of the carburetor and the setting is held against the bump on the air filter cover. The idle adjustment is located on top of the carburetor. The usual setting of the main adjustment is at number 7 or $3/4$ of a turn open and the idle adjustment is also $3/4$ of a turn open.
2. It is important in operating the saw that the main adjustment (Fig. 9, Pg. 8) is at the proper setting. To check this setting—first warm the engine up by running for approximately 5 minutes. Put the saw in a cut. If the engine runs unevenly and lacks power the main setting is too rich. The main adjustment should be turned gradually to the right toward a lower number until the engine seems to level out and run fastest in a cut. Do not turn too far to the right (closing the adjustment) as the fuel mix will be too lean and the engine will tend to die down in a cut. Usually the best position will be someplace between numbers 6 and 7. Do not totally close the main adjustment too tightly as it will damage the needle.
3. To check float level (Fig. 10, Pg. 8) loosen main adjustment screw lock nut and remove main adjustment screw. Remove the four screws holding the fuel bowl to the upper body of the carburetor. Remove fuel bowl and turn upside down. Edge of float should be level with the edge of the fuel bowl (Fig. 10, Pg. 8). Adjust to proper setting by finger pressure or by using a screw driver.

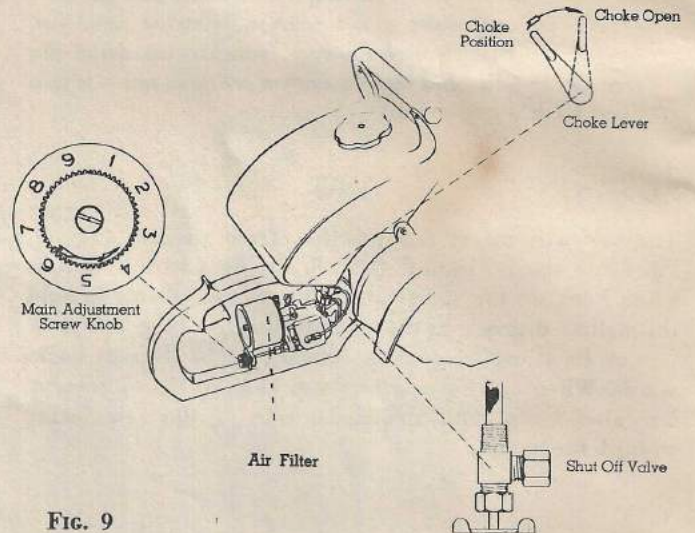


FIG. 9

CHECK VALVE AND GAS CAP

(See Fig. 8, Pg. 7)

If check is too loose, gas will squirt out of check. Use screw driver to tighten. If check is too tight, saw will start and run for a minute or so, then stop. This will be noticed more quickly on a side cut. Try starting with gas cap off. If saw runs satisfactorily, use screw driver to loosen check. The vent on the gas cap is of the check valve type. This is to allow air to enter into the tank (if the tank does not

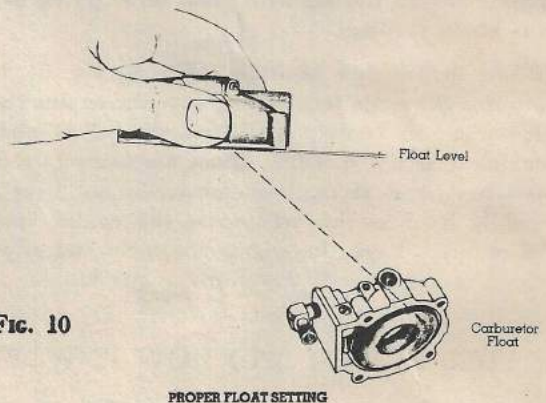


FIG. 10

receive air, gas will not flow into the carburetor) without too much gas splashing out as it would from a straight vent hole. See that the top portion of the check valve is not screwed too tightly against the ball in the valve. Any difficulty will be particularly noticed in a side position cut. *If the valve is closed too tightly the tank will not receive air and the engine will die out.* See that the screw on the check valve is open approximately a turn and a half so that there is a slight drip from it when the gasoline is against it.

MAINTENANCE (Continued)

ENGINE MAINTENANCE

The spark plug should be cleaned periodically. A dirty plug causes starting trouble and poor operation. Clean the plug and set at .030. When in doubt about plug, replace with an A.C. 45M or equivalent.

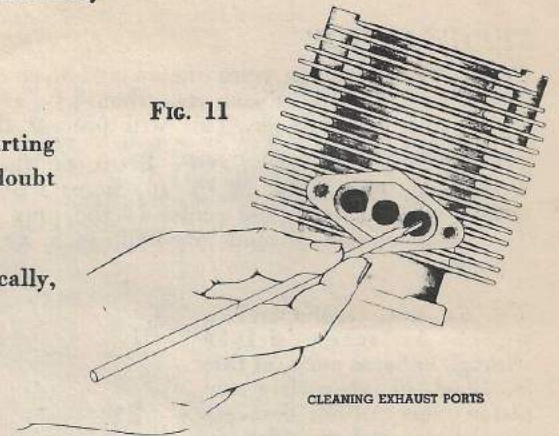
If the muffler and the exhaust ports (Fig. 11, Pg. 9) are not cleaned periodically, there will be loss of power in the engine. Clean the muffler and exhaust ports every 50 hours of engine use. To clean the cylinder exhaust ports (Fig. 11, Pg. 9) remove spark plug and turn the starter pulley so that the piston is at the bottom of the stroke,

below the exhaust hole. With a blunt instrument, scrape the carbon from the 3 cylinder exhaust holes so they are completely open and remove the carbon from the surrounding exhaust chamber. Blow out the loosened carbon by pulling the rewind starter through several times.

If the piston is ever removed from the engine, when replacing, remember the tapered side of the piston is placed toward the muffler side of the engine.

If the magneto is removed from the engine, be sure to replace the cam in the original position with beveled side out. There is also an arrow on the cam to show you the proper rotation.

FIG. 11



OILING SYSTEM MAINTENANCE

It is important that the sprocket continuously throw oil on the chain when the saw is operating. There is a small hole (Fig. 12, Pg. 9) in the sprocket which allows the oil to get on the chain and this should be checked daily to see that it is not plugged with saw dust.

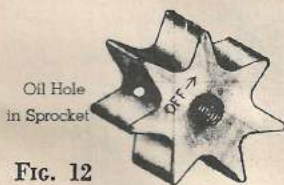


FIG. 12

IMPORTANT

If oil does not come through the hole in the sprocket when saw is running and air valve in oil reservoir cap (Fig. 4, Pg. 5) is open, blow compressed air down through small hole in air valve of reservoir cap, with air valve (Fig. 4, Pg. 5) twisted down in open position until oil comes out hole in sprocket. This is the only thing necessary to do.

CHAIN MAINTENANCE

1. It is very important that the chain be kept as sharp as possible. Just as you cannot cut with a dull knife no matter how much force you put behind it—so you cannot cut with a dull chain no matter how well the engine is running.
2. Always keep your chain sharp. It only takes a few minutes to touch up the chain and sharpen it. A chain should be sharpened lightly after every full day of use. Follow the directions and diagrams (page 12) for chain sharpening and you will have good results. Use the file which is furnished for this purpose. A properly sharpened chain should produce clean shavings when cutting. Always look for these. If instead of shavings, the chain is throwing out dust, the chain is not properly sharpened.

GUIDE BAR

To insure the long life of your guide bar be sure that it is properly lubricated at all times. Reverse the bar after every eight hours use in order to get uniform wear on both sides. Watch for uneven wear on or spreading of guide bar rails. Clean the guide bar groove periodically, as dirt and grit cause excessive wear.

DIS-ASSEMBLY AND SERVICE INSTRUCTIONS

TRANSMISSION

NOTE: To service the transmission and magneto, a piston stop (Fig. 14, Pg. 10) must be utilized to prevent piston from moving. Piston stop should be screwed into the spark plug opening and extend down at least one-half inch into the cylinder. This will prevent the piston from completing its cycle.

TO MAKE A PISTON STOP: Break off the porcelain from an old plug, (Fig. 13, Pg. 10) insert a piece of steel or bar stock through the center of the plug and braze. The steel should extend one-half inch beyond plug threads.

We do not recommend a punch or screw driver through exhaust ports, as this method of stopping the piston very often damages the piston and cylinder assembly.



Fig. 13

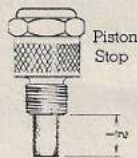


Fig. 14

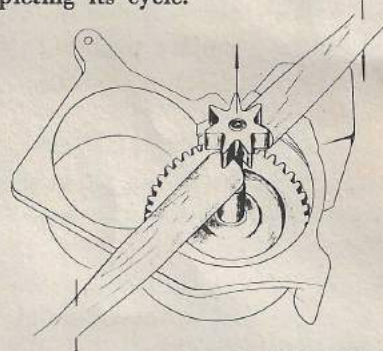


Fig. 17

REMOVING FIBRE GEAR ASSEMBLY

- 1. TO REMOVE CLUTCH:** Remove sprocket (Fig. 15, Pg. 10) by tapping firmly with hammer to the right or clockwise. (Sprocket has left hand thread.) Remove cover plate screws and cover plate. With piston stop (Fig. 14, Pg. 10) inserted in cylinder, bend back spanner nut lock washer (Fig. 16, Pg. 10) and loosen spanner nut (Fig. 16, Pg. 10). Lift out clutch assembly (Fig. 16, Pg. 10).

- 3. TO REMOVE MAGNETO FLYWHEEL:** Remove bolts holding air shroud—disconnect "off and on" switch. Use piston stop (Fig. 14, Pg. 10) as described above. Remove flywheel fan by removing crankshaft nut, or nut driven member of starter. Reinstall crankshaft nut. Strike nut halfway on crankshaft sharply with wooden hammer or leather mallet until magneto flywheel comes loose from the taper on shaft. A piece of wood may be used by placing it on top of nut, and hitting same with steel hammer. This will expose condenser, breaker points, and coil assembly. (See Fig. 18, Pg. 10).

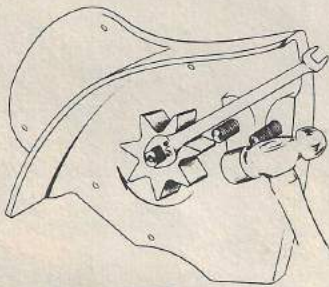


Fig. 15

REMOVING SPROCKET

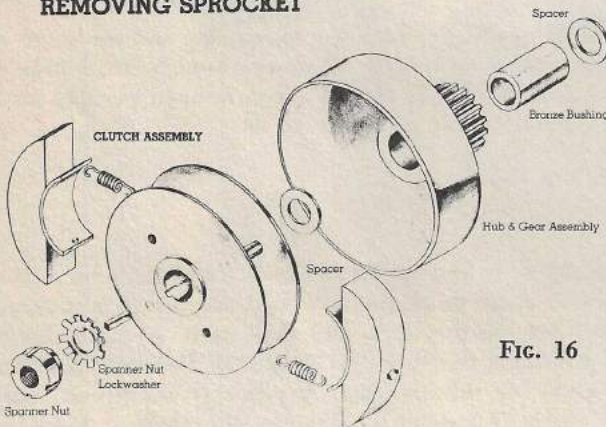
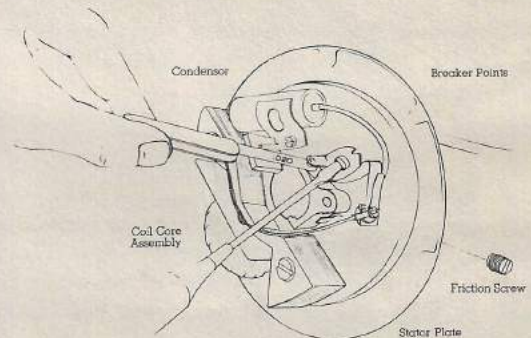


Fig. 16

- 2. TO REMOVE FIBRE GEAR:** Remove cover plate screws and cover plate as when removing clutch. Screw sprocket back on partially. Using two levers, wood or steel, (Fig. 18, Pg. 10) (Example: two hammer handles) facing each other under the sprocket pry up fiber gear and shaft assembly. The fiber gear (Fig. 17, Pg. 10) shaft is pressed into an oil seal at the rear of the gear case.



SETTING BREAKER POINTS

Fig. 18

- 4. TIMING THE ENGINE:** Timing marks are located on the crankcase and the stator plate (Fig. 18, Pg. 10). They are simply punch marks and should be directly opposite each other. You may locate these by turning saw upside down and examining crankcase where magneto wire crosses. Timing is set in the following manner: Remove magneto flywheel (par. 3) to expose breaker points (Fig. 18, Pg. 10). Bring piston to top dead center by turning crankshaft from the magneto side in a clockwise direction. Bring piston down 3/16 of an inch by turning crankshaft back to the left or counter clockwise. When the piston is 3/16 of an inch before top dead center the breaker points should begin to open. (A small rule should be inserted in the top of the cylinder to measure the 3/16 inch back off.) If the points do not begin to open at this point the saw is out of time. Points when fully open have setting of .020; (Fig. 18, Pg. 10) be sure to set points to

DIS-ASSEMBLY AND SERVICE INSTRUCTIONS (Continued)

this. If timing is set wrong, remove the gas tank to expose the stator plate (Fig. 18, Pg. 10). Loosen the friction screw (Fig. 18, Pg. 10) which holds the stator plate firmly to the crankcase and turn the stator plate until the points begin to open. When piston is 3/16 of an inch before top dead center, tighten stator plate friction screw (Fig. 18, Pg. 10) and mark correct timing position.

5. **CRANKSHAFT SEALS:** The crankshaft seals are located on the crankshaft inside the crankcase. Their purpose is to prevent loss of pressure in the crankcase. Should they become worn, the engine will lack power and be difficult to start. To change seals, remove spring retaining ring, crankshaft seal retainer and seal. Install new seal, seal retainer and spring retaining ring.

REED PLATE

The reed plate (Fig. 19, Pg. 11) is situated between the carburetor adaptor and the crankcase. It is a plate containing four reeds (spring steel) and four reed guards. The reeds must lie flat (Fig. 19, Pg. 11) to prevent loss of pressure from the crankcase when the piston is in its downward stroke. Should the engine lack power or be difficult to start, inspect the reed plate to see if the reeds are flat (Fig. 19, Pg. 11). Replace if needed.

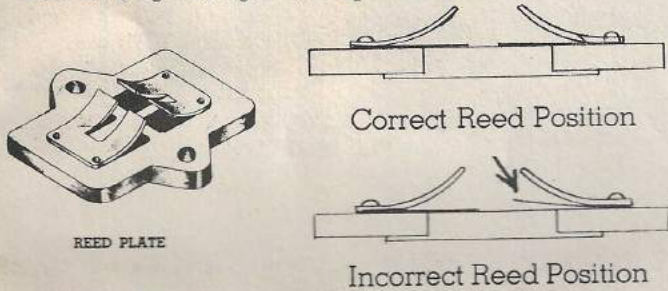


FIG. 19

CARBURETOR DIS-ASSEMBLY

Dis-assemble the carburetor in the following order:

1. Complete main adjustment screw and gland assembly from fuel bowl.
2. Body retaining screws and lockwashers, to separate upper body and fuel bowl assemblies.
3. Float lever pinion pin and float from fuel bowl.
4. Large plug screw, then inlet needle, seat and gasket assembly from fuel bowl.
5. Idle adjustment screw, spring, idle tube and gasket, also main nozzle channel plug screw from upper body.
6. Throttle shutter shaft and lever assembly.

To reassemble reverse the above instructions when installing parts indicated.

Clean all parts thoroughly with clean gasoline—use new gaskets. See carburetor adjustments under "MAINTENANCE".

ARMSTRONG STARTER

(Refer to parts illustration pg. 20)

DISASSEMBLY

1. Loss of spring can be avoided by holding washer #7 in position with the hand while removing Truarc retaining ring #6 with a screw driver.

2. Remove the following parts and assembly:

Large washer #7
Spring #8
Washers #9 & 10
Friction Shoe Assembly (#11, 12, 13 and 14)
Washers #10 & 9

3. To prevent spring rotation of rotor, #17 cord can be held, while removing the four screws. Continue to hold assembly and remove flanges #3 & #5. Now the tension of the re-wind spring can be relieved by releasing hold and allowing spring to rewind.
4. Prevent rewind spring #18 from escaping from cover by carefully lifting rotor #17 about 1/4 inch and detach inside spring loop from rotor.

CORD REPLACEMENT

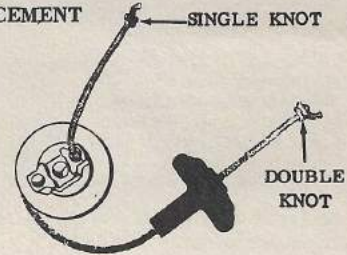


FIG. 20

1. When installing new cord in rotor tie single knot in end. Thread cord through rotor hole (Fig. 20) then wind rope on rotor. Replace handle tying a double knot.

REWIND SPRING REPLACEMENT

1. Starting with the inside loop remove spring #18 carefully from cover #20 by pulling out one loop at a time; holding back rest of turns. When replacing with new spring, note the position of spring loop (Fig. 21).

Engine rotation view from starter side.

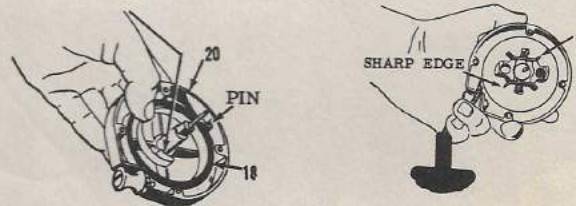


FIG. 21

FIG. 22

Spring holders furnished with replacement springs simplify the assembly procedure. Place spring in proper position as shown with the outside loop engaged around the pin. Then press spring into cover cavity thus releasing the spring holder. A few drops of S.A.E. 20 or 30 oil should then be applied to spring and light grease on the cover shaft.

ASSEMBLY

1. Place rotor #17 (complete with cord and handle) into cover #20 and hook inside loop of spring #18 to rotor with the aid of a screw driver.
2. Replace the following parts and assembly:
Washers #9 & 10
Friction shoe assembly (see Fig. 22 for position.)
(Including parts #11, 12, 13 and 14)
Washers #10 & 9
Spring #8
Large washer #7
Truarc retainer ring #6
3. Starter cord is now completely wound on rotor in direction as shown by Fig. 22.
IMPORTANT: Two additional turns are then added in the same direction for pretension.
4. Holding cord, the following parts are replaced:
Flanges #5 and 3
Screws #4
5. The Armstrong starter uses a cup on the crankshaft. To insure proper alignment of the pawls inside the starter cup be sure that the centering pin lines up with the countersink on the end of the crankshaft.

FILING INSTRUCTIONS

Always hold your file in one position, that is, horizontal (level with the cutter plate) and at a 45 degree angle to the chain.

Remember: The tooth is simple to file. Just hold the file in one position . . . level and at a 45 degree angle to the cutting tooth . . . and use firm, even filing strokes.



FIG. 23

Use only a 1/4" round straight (not rat-tail) file.

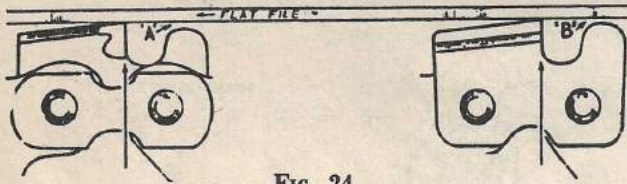


FIG. 24

To check depth gauge clearances "A" and "B", lay a straight edge (such as a flat file) on top of two cutters and measure with a feeler gauge.

Depth gauge clearance is shown at "A" and "B". As the teeth of the chain are filed back, the depth gauges on the chain must be filed down to maintain clearances "A" and "B".

IN NO CASE IS A CLEARANCE OF MORE THAN .030 INCH RECOMMENDED.

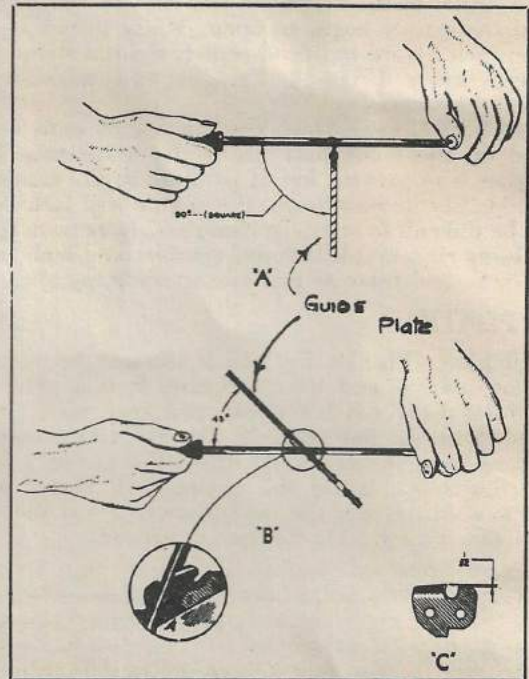


FIG. 25

TO SHARPEN CHAIN, use a 1/4" round chain saw file. Initially the only filing necessary will be to sharpen the front angle of the cutting teeth. Hold the file level at an angle of approximately 45 degrees as shown in "A" and "B". Two or three firm forward strokes of the file will put a keen cutting edge on the tooth. When filing exert a slight upward pressure so the radius of the file will sharpen the top cutting edge.

AS THE CUTTING TEETH WEAR, it will be necessary to "joint" or file down the rider in front of the tooth. The rider governs the depth of chip that each tooth pulls, and is ground at the factory .030 of an inch below the front cutting edge of the tooth ("C"). As the tooth wears back, this front cutting edge automatically lowers due to the clearance angle on top of the tooth; to maintain the difference between the tooth and the rider, the rider should be lowered.

TROUBLE CHART

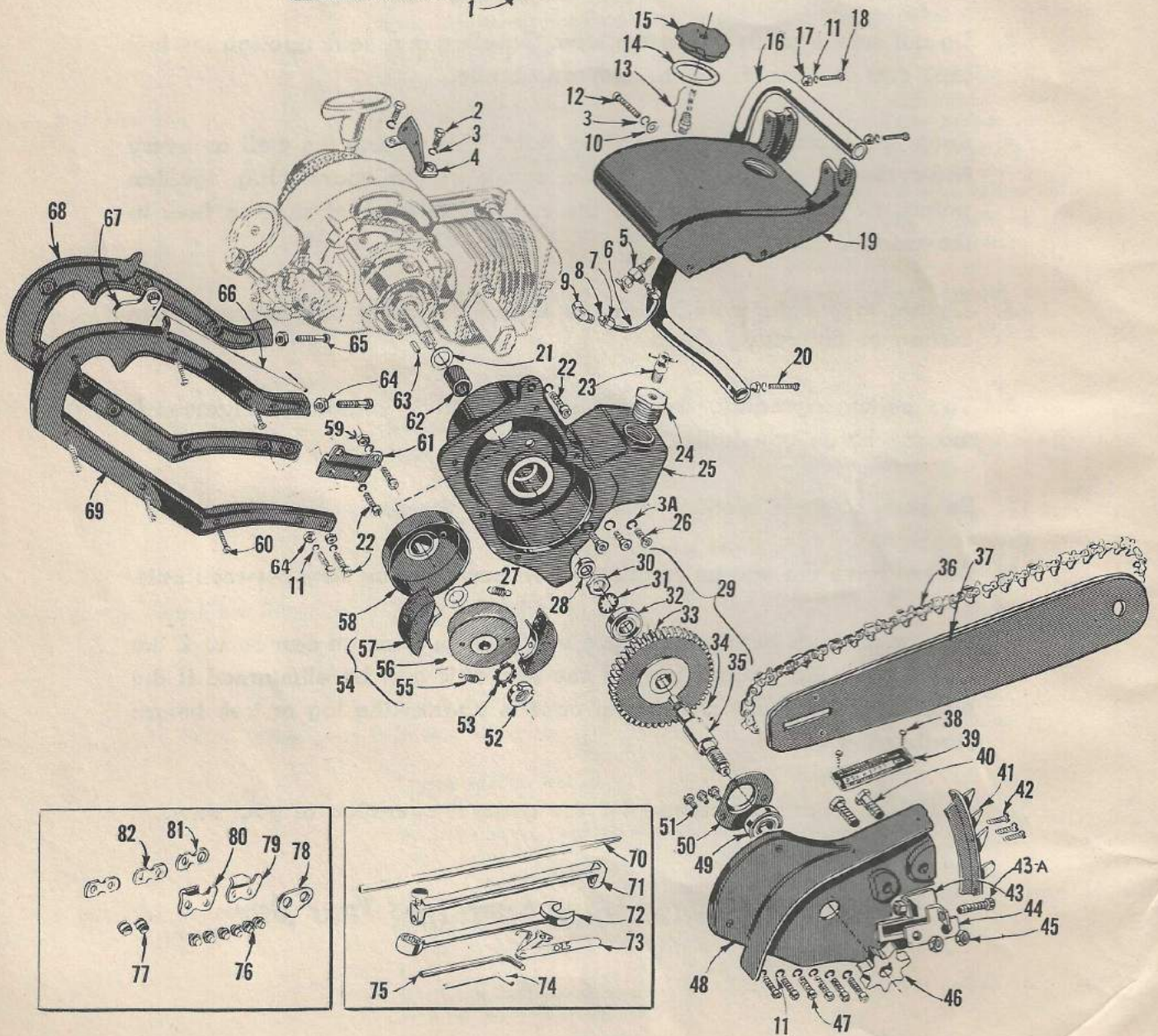
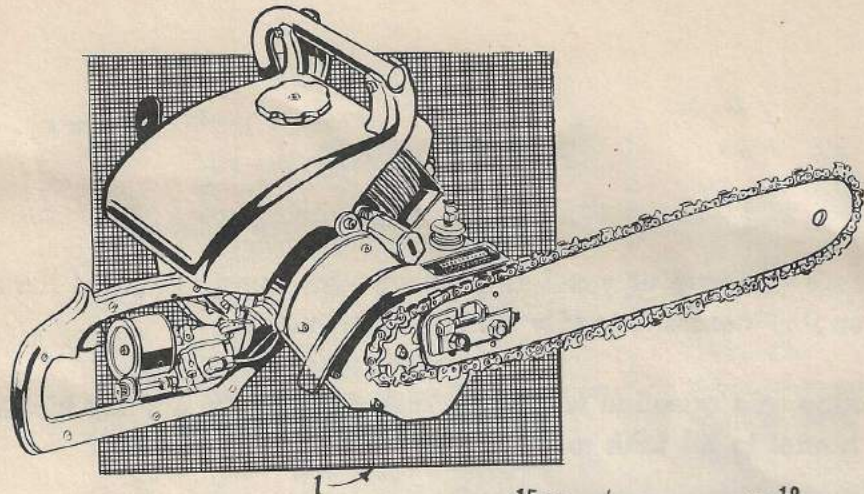
TROUBLE	CAUSE	REMEDY
<i>Failure of Engine to Start</i>	Pin hole in spark plug nipple grounding spark plug on shield.	Replace or tape up rubber nipple.
	Gas tank empty.	Fill with proper mixture. See Fuel.
	Shut-off valve closed.	Open.
	Fuel lines clogged with dirt and dust.	Remove shut-off valve and clean. Remove elbow fitting from carburetor and clean screen in carburetor.
	Water in fuel bowl.	Remove drain plug and drain fuel bowl.
	Main adjustment needle set too lean.	Loosen main adjustment lock nut and set main adjustment screw. See carburetor adjustments.
	Worn reed plates.	Reed plates. See Service.
	Fouled spark plug.	Clean and reset at .030.
	"Off and on" switch wire grounded.	Replace or repair wire.
	"Off and on" switch shorting.	Replace.
	Breaker points burnt or not set at proper clearance.	Clean or replace. Set at .020.
	Loose wire or shorting in the magneto assembly.	Check magneto for loose wires and shorts.
	Condenser dead.	Replace.
	Coil dead.	Replace.
<i>Any one or a combination of the above will make the engine fail to start.</i>		
<i>Carburetor Flooding</i>	Dirt holding inlet needle open.	Drain carburetor by removing drain plug. Allow fuel to run for few minutes.
	Inlet needle and seat worn.	Replace.
	Float level too high.	Reset. (See Carburetor Maintenance)
	Worn reed plate.	Replace. (See Reed Plate Service)
<i>Engine Starts and Stops</i>	Check valve too tight.	See check valve maintenance.
<i>Engine Cuts Out Under Load</i>	Main adjustment needle too lean.	Reset. (See carburetor adjustment under maintenance)
<i>Engine Cuts Off in Felling Position</i>	Check valve too tight.	Reset. (See check valve under ad- justment)
	Float level set too low.	Reset. (See carburetor maintenance)
<i>Engine Backfires or Misfires</i>	"Off and on" switch or wire shorted.	Inspect and replace if necessary.
	Fouled spark plug.	Clean or replace. Set at .030.
	Burnt or dirty breaker points.	Clean or replace. Set at .020.

TROUBLE	CAUSE	REMEDY
<i>Engine Backfires or Misfires (Cont'd.)</i>	Weak condenser. "Off and on" switch shorting intermittently. Intermittent shorting in the magneto assembly.	Replace. Check and replace if needed. Check for loose wires or loose assemblies.
<i>Engine Lacks Power and Overheats</i>	Coil breaking down under heat. Improper fuel mixture. Exhaust ports clogged. Main adjustment needle set too lean. Clogged air filter. Engine fins clogged with dirt. Main adjustment needle set too rich. Worn piston rings.	Replace. See Fuel. Clean. (See engine maintenance) Reset. (See carburetor maintenance) Wash in clean gasoline. Clean. Reset. (See carburetor maintenance)
<i>Engine Will Not Idle</i>	Worn reed plate. Air adjustment wrong. Idle speed regulating screw not set properly. Idle tube clogged.	Replace. (See service reed plates) Reset idle adjustment screws. (See carburetor maintenance) Reset—To increase idling speed turn to the right or clockwise, to decrease to the left or counter clockwise. Reference No. 23 carburetor illustration. Remove and clean with compressed air.
<i>Engine Races or Stops When Throttle is Released</i>	Air leak in fuel intake system.	Check gaskets around reed plate, cylinder, crankcase, transfer port cover and crankcase seals for possible leaks.
<i>Chain Not Getting Oil</i>	Automatic valve oiler not open. Reservoir empty. Hole in fiber gear shaft clogged. Sprocket hole clogged. Oil seal worn and oil entering gear case.	Open by turning down. Refill. (See lubrication) Blow through reservoir with compressed air. Remove sprocket (see transmission dis-assembly). Clean out hole. Remove fiber gear shaft (see service). Replace with new seal.
<i>Chain Will Not Turn When Engine is Speeded Up</i>	Chain is too tight. Chain and guide binding due to improper lubrication. Clutch key sheared. Engine idling too fast.	Loosen chain. Check chain and guide for proper lubrication. Replace. (See clutch service) Reset idle adjustment screw. (See carburetor adjustment)
<i>Chain Continues to Turn When Engine is Idling</i>	Clutch spring broken. Spanner nut holding clutch assembly too tight flaring ends of bronze bushing.	Replace. (See clutch service) Replace bushing. Tighten spanner nut sufficiently tight. However hub and gear must be able to rotate independent of clutch.
<i>Chain Cutting off to One Side, Excessive Vibration in Saw</i>	Chain too loose in guide will groove cover plate dulling one side of the chain. Chain will then cut to the right.	Resharpen chain and tighten to correct tension.
<i>Excessive Vibration in Saw</i>	Chain filed on wrong angle either one or both sides or a dull side. Dull chain (chain will throw dust rather than chips when it is dull).	Remove chain and sharpen properly. Resharpen.

PRECAUTIONS

1. **Dangers**—Beware of gasoline and gasoline fumes. Exhaust fumes from the engine contain deadly carbon monoxide.
2. Gasoline and gasoline fumes are inflammable. Do not mix fuel indoors. Use funnel to fill tank to avoid spilling inflammable fuel.
3. Do not smoke while using the saw. Gasoline may leak through the fuel tank cap or from the carburetor and ignite.
4. Keep spark plug wire connections tight. This engine (as well as every two-cycle gasoline engine) has a spark at the spark plug, ignition points, and in the exhaust at the muffler. Beware of starting fires in the woods.
5. Do not touch chain while engine is running. Stop the engine before testing or tightening chain.
6. The person operating the saw should start it without assistance. A moving chain can inflict a serious injury.
7. Be sure of your footing when operating the saw.
8. Do not have the engine running when carrying the saw between cuts.
9. Plan your work before starting a cut. Serious damage can occur if the chain jerks the engine toward the log. This can be eliminated if the bumper on the front of the gear case is against the log or tree before starting the cut.
10. Follow procedures outlined for the general operation of your saw.

Use Common Sense When Operating Your Saw



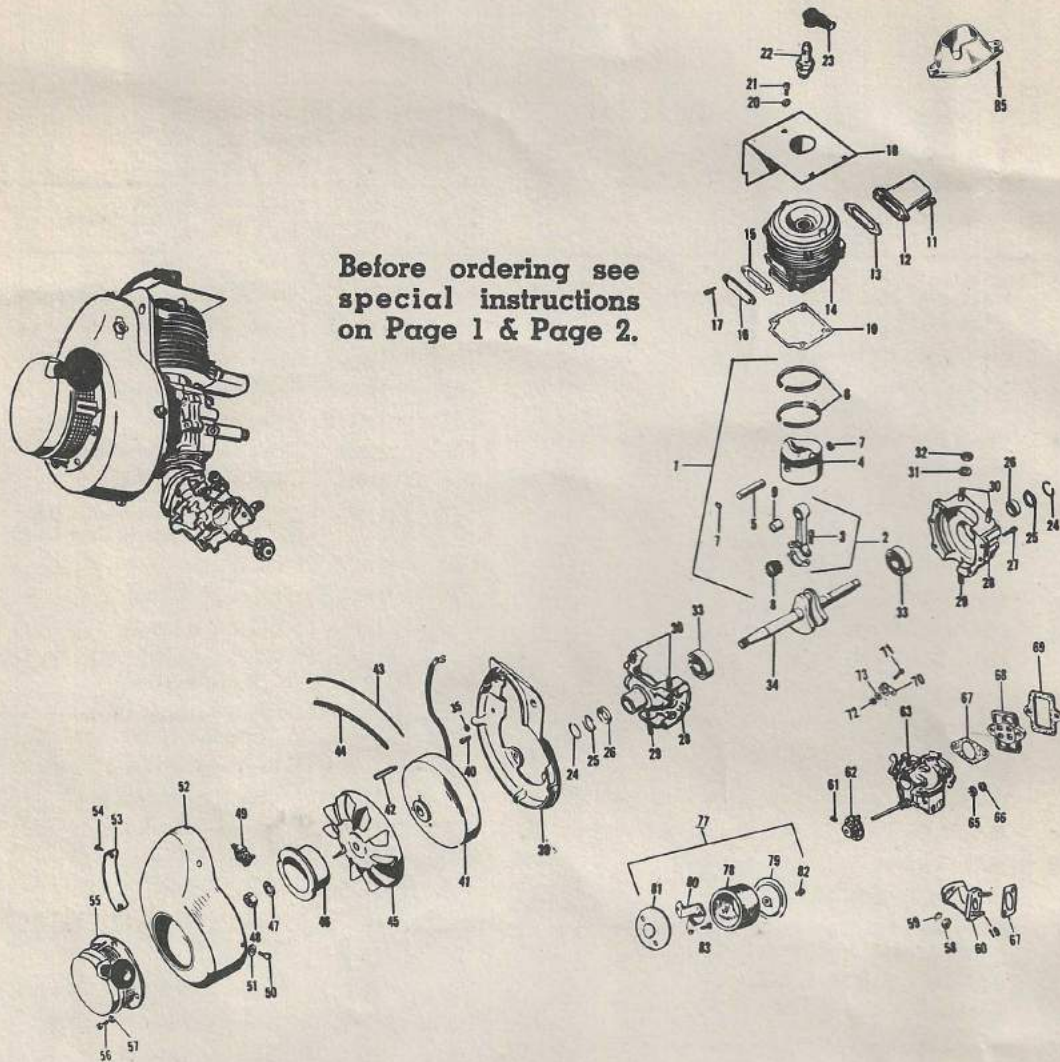
SEARS, ROEBUCK and CO.

PARTS LIST

355.83131-355.83132 CHAIN SAW

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
2	11013	1/4-20x5/8" Hex. Hd. Upper Bracket to Crankcase	42	11027	Screw 8-32x3/4" Self Tapping
3	11011	1/4" Spring Lockwasher	43	11006A	Sliding Bracket
3A	11013F	5/16" Countersunk Lockwasher (Use with 11013E)	43A	11006D	Screw 1/4-28x2" Fil. Hd.
4	11062B	Upper Bracket Assy. (Bracket, Nuts and Bolts)	44	11006C	Stationary Bracket
5	14056	Shut-Off Valve	44A	11006B	Chain Tightener Assembly
6	11056	Gas Line (With Nuts & Ferrules)	45	11009	Nut 3/8-24 (Guide Bar)
7		Nut } Not sold separately	46	11005	Sprocket 1/2" Pitch
8		Ferrules } Order 11056	47	11025	Screw 10-24x7/8 Socket Hd. (Cover Plate to Gear Case)
9	11055	Fitting—Elbow	48	11026	Cover Plate
10	11024B	1/4" Plain Washer	49	11029	Bearing (See 32)
11	11024	3/16" Spring Lockwasher	50	11030	Bearing Retainer
12	11060B	1/4-20x1-1/2 Soc. Hd. (Gas Tank to Cylinder)	51	11032	Screw 10-24x3/8" R.H. With Washer (Used in 11030)
13	11053A	Check Valve	52	11023A	Fafnir Locknut (Spanner Type) (Replaces 11023-32-15/32 Nut)
14	11054	Gasket—Gas Cap	53	11023B	Lockwasher (Used With 11023A)
15	11053	Gas Cap	54	11016A	Clutch Assembly
16	11052	Handle Bar	55	11019A	Spring—Clutch
17	11059B	10-24 Cap Nut	56	11017A	Flange—Clutch
18	11057	10-24x1-5/8" R.H. Mach. Screw	57	11018A	Shoes—Clutch
19	11050	Gas Tank (One 1/4"-20x1-1/2 S.H. and One 1/4-20x1 S.H. Screw Supplied)	58	11015	Drum & Gear Assembly
20	11057A	10-24x1-3/8 R.H. Mach. Screw	59	11059	Nut 10-24
21	11004	Spacer	60	11027	Screw 8-32x3/4 Self Tapping
22	11045	Screw 1/4-20x1" S.H.—Gear Case to Gas Tank	61	11068	Lower Bracket
23	11039	Valve, Automatic Oiler	62	11014	Bushing—Bronze
24	11040	Cap—Oil Reservoir	63	11021	Clutch—Key
25	11010	Gear Case	64	11065	10-24 Flex-Loc Nut
26	11013E	5/16-18x3/4 Counter Sunk S.H. (Gear Case to Crankcase)	65	11025	Screw 10-24x7/8 Socket Head
27	11004	Spacer (See 21)	66	11067	Throttle Wire
28	11038	Oil Seal (Gear Case)	67	11063	Trigger
29	11033S	Fiber Gear Shaft Assembly	68)	11070	Rear Handle Assembly
30	11037	Locknut 7/16-20 (Fiber Gear Shaft)	&69)		
31	11036	Lockwashers 7/16 SHKPRF. (Use With 11037)	70	18904	File 1/4" Round
32	11029	Bearing	71	18907	File Holder
33	11035D	Fiber Gear	72	18903	9/16" Wrench
34	11021	Key	73	18905	Feeler Gauge .020 & .030
35	11033	Shaft (Fiber Gear)	74	18916	5/32" Allen Wrench
36	11001	19" Chain	75	19009	5/32" Allen Wrench Long
37	11002	19" Guide Bar	76	19006A	Rivet
38	11044	Screw #6x1/4" Drive	77	19007A	Master Pin
39	18910	Model Plate	78	19002A	Drive Link
40	11003	Screw 3/8-24x1-1/4" Hex Hd. (Guide Bar)	79	19004A	Cutter—Right Hand
41	11028	Bumper Bracket or Spike	80	19001A	Cutter—Left Hand
			81	19005A	Master Link
			82	19003A	Tie Strap

ENGINE (TYPE 70B)



**Before ordering see
special instructions
on Page 1 & Page 2.**

Ref. No.	70B Part No.	Description	Ref. No.	70B Part No.	Description
1	005-07	Connecting Rod & Piston Assy.	23	1098	Spark Plug Nipple
2	005-06	Connecting Rod Assy.	24	1004	Crankcase Seal Retainer Springs
3	1007-02	Connecting Rod Screws	25	1003	Crankcase Seal Retainer
4	1015-07	Piston	26	1002	Crankshaft Seals
5	1016-02	Piston Pin.	27	S-1114	10-24x5/8 Crankcase Fastening Screw
6	1017-05	Piston Rings	28	020-29	Crankcase Assembly with Bearings
7	1119	Piston Pin Retaining Rings	29	1031	Carburetor Stud
8	Q-4212	Needle Bearings	30	1022	Cylinder Stud
9	B-68	Cartridge Bearing	31	S-1117	1/4 Lockwasher
10	1012-02	Cylinder Gasket	32	S-1116	1/4-20 Hex Nut
11	S-1142	1/4-20x3/4 Fil. Hd. SEMS Screw	33	3203	Crankshaft Ball Bearing
12	1058-02	Muffler	34	1001-20	Crankshaft
13	3014	Cylinder Exhaust Gasket	35	S-1155	1/4 Flatwasher
14	S-1378	Cylinder	39	1019-18	Shroud Base
15	1065-01	Transfer Port Cover Gasket	40	S-1119	1/4-20x5/8 Fil. Hd. SEMS Screw
16	1064	Transfer Port Cover	41	FW-2288	Magneto (Wico)
17	S-1115	10-24x1/2 Fil. Hd. SEMS Screw	41	F-1325D	Hornet Magneto
18	1023-01	Cylinder Shroud	42	1062	Flywheel Key (Use With FW-2288 Mag.)
19	1022	Carburetor Adapter Elbow Stud	42	4062	Flywheel Key (Use with F1325D2 Mag.)
20	S-1131	#10 Flatwasher	43	3066-01	Ignition Cut-off Wire
21	S-1114	10-24x5/8 Fil. Hd. SEMS Screw	44	1136	Cut-off Wire Sleeve
22	S-1106	45M Spark Plug			

ENGINE PARTS (Cont'd.)

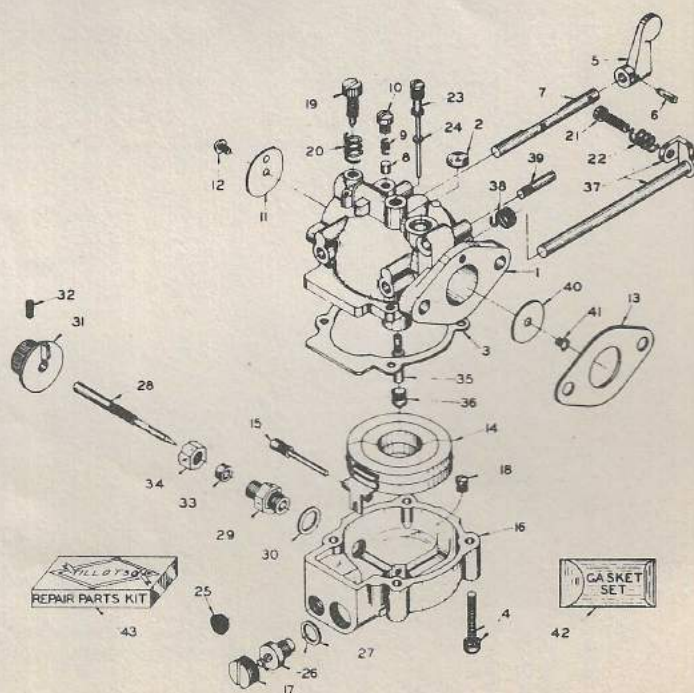
Ref. No.	70B Part No.	Description	Ref. No.	70B Part No.	Description
45	1063-06	Flywheel Fan	63	MD-60A	Carburetor
46	14-3	Starter Cup	65	S-1116	1/4-20 Hex Nut
47	S-1206	7/16 Lockwasher	66	S-1117	1/4 Lockwasher
48	S-1128	7/16-20 Hex Nut	67	1009	Carburetor Gasket
49	3084-02	Toggle Stop Switch	68	026-0+	Reed Plate Assy.
50	S-1357	1/4-20x1/2 Slotted Pam. Hd. SEMS Screws	69	1027	Reed Plate Gasket
51	S-1117	1/4" Lockwasher	70	3105-02	Throttle Lever
52	1018-30	Air Shroud	71	S-1149	10-32x5/8 Fil. Hd. SEMS Screw
53	1057-04	Name Plate	72	S-1213	10-32 Hex Nut
54	S-1290	#7x1/4 Slotted Hd. Self Tapping Screw	73	S-1131	#10 Flatwasher
55	S-1282K	Rewind Starter	77	029-07	Air Filter Assy.
56	S-1284	10-32x3/8 Rd. Hd. SEMS Screw	78	1029	Air Filter
57	S-1131	#10 Flatwasher	79	1047-04	Air Filter Cover
58	S-1116	1/4-20 Hex Nut	80	1077	Air Filter Bracket
59	S-1117	1/4 Lockwasher	81	1092	Air Filter Base
60	1091-02	Carburetor Adaptor Elbow	82	S-1115	10-24x1/2 Fil. Hd. SEMS Screw
61	S-1341	8-32x1/4 Dial Knob Set Screw	83	S-1125	8-32x1/2 Fil. Hd SEMS Screw
62	1105-01	Carburetor Dial Knob	84	S-1154	1/4-20x1/2 H.H. Screw (Not shown.) (Next to Toggle Stop Switch)
			85	14040	Shield—Spark Plug

Ref. No.	Part No.	Description
1	09527	Body, Upper Half
2	*02531	Body Channel Welch Plug
3	07903	Body Gasket
4	08872	Body Retaining Screw & Lockwasher
5	05566	Choke Lever
7	08454	Choke Shaft
8	*05454	Choke Friction Pin
9	*03860	Choke Friction Pin Spring
10	*07912	Choke Friction Pin Screw
11	08585	Choke Shutter
12	0120	Choke Shutter Screw
13	05591	Flange Gasket
14	07804	Float
15	*07901	Float Pinion Screw
16	07929	Fuel Bowl
17	07896	Fuel Bowl Plug Screw (Large)
18	*03311	Fuel Bowl Plug Screw (Small)
19	*06910	Idle Adjustment Screw
20	*05725	Idle Adjustment Screw Spring
21	*05095	Idle Speed Regulating Screw
22	*0788	Idle Speed Regulating Screw Spring
23	*07899	Idle Tube
24	07900	Idle Tube Gasket
25	*07283	Inlet Connection Screen
26	*07895	Inlet Needle, Seat & Gasket
27	02510	Inlet Seat Gasket
28	*08611	Main Adjustment Screw
29	0702	Main Adjustment Screw Gland
30	0676	Main Adjustment Screw Gland Gasket
31	08612	Main Adjustment Screw Knob
32	06969	Main Adjustment Screw Knob Set Screw
33	09112	Main Adjustment Screw Packing
34	0703	Main Adjustment Screw Packing Nut
35	*07911	Main Nozzle
36	02395	Main Nozzle Channel Plug Screw
37	09546	Throttle Shaft & Lever
38	*09602	Throttle Lever Return Spring
39	04594	Throttle Lever Stop Pin
40	08781	Throttle Shutter
41	*05204	Throttle Shutter Screw
42	*08025	GASKET & PACKING SET
43	09548	REPAIR PARTS KIT

(*) Indicates contents of REPAIR PARTS KIT.

MODEL MD-60A

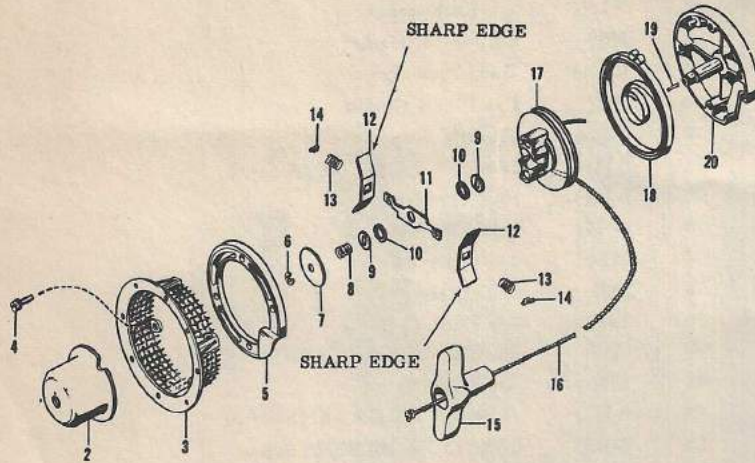
CARBURETOR



ARMSTRONG BULLDOG STARTER

PARTS LIST

Ref. No. *Part No.* *Description*



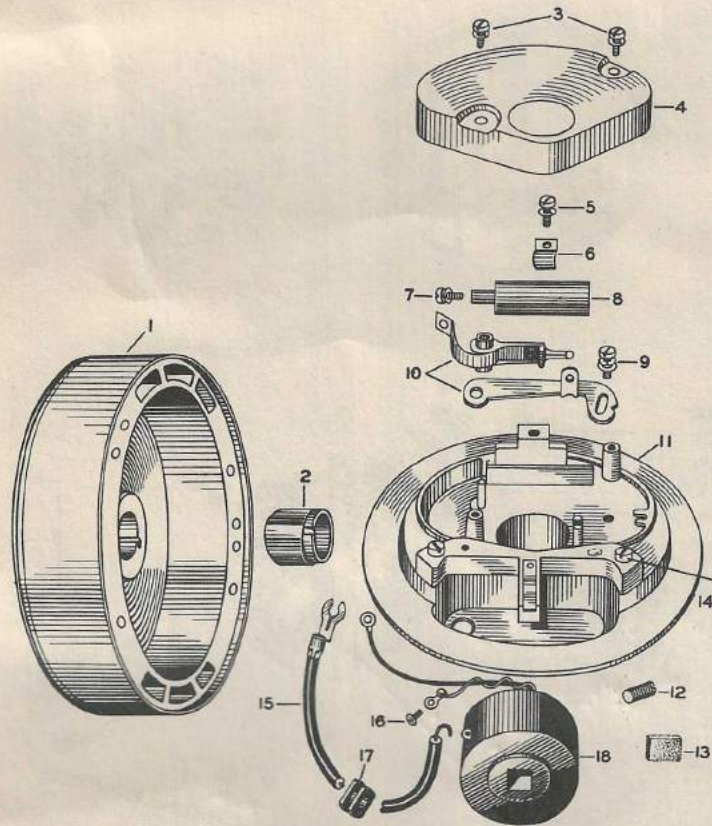
NOTICE—When reassembling starter unit, the position of sharp edge of item 12 must be as shown on illustration. The position of item 11 must also be as illustrated.

2	14-3	Cup
3	138-5	Mounting Flange & Screen Assy.
4	23-5	Machine Screw
5	38-4	Middle Flange
6	29-3	Retainer Ring
7	27-8	Brake Retainer Washer
8	20-3	Brake Spring
9	27-3	Brake Washer
10	27-2	Fibre Washer
11	16-4	Brake Lever
12	11-71	Friction Shoe Plate
13	20-2	Friction Shoe Spring
14	11-19	Spring Retainer Plate
15	144-2	"T" Shaped Grip
16	40-2	Cord
17	13-10	Rotor
18	20-1	Rewind Spring
19	25-9	Centering Pin
20	51-31	Cover

WICO MAGNETO

(Used on Model 355-83131)

PLEASE SPECIFY ENGINE SERIAL NUMBER
WHEN ORDERING PARTS



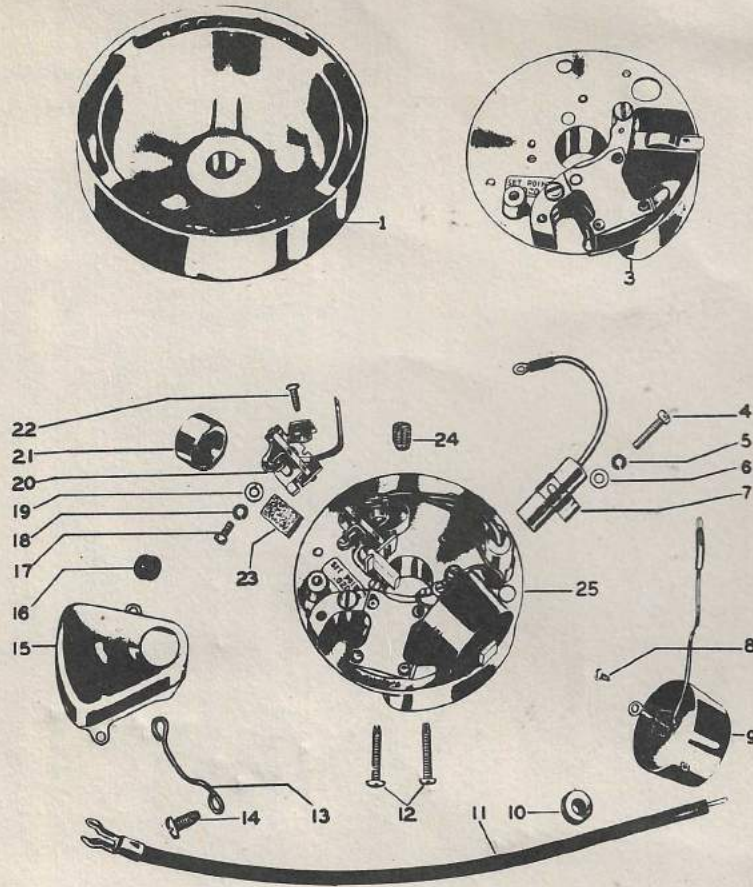
SERVICE PARTS LIST WICO MAGNETO SPECIFICATION

Ref. No.	Part No.	Description
1	Y8873	Rotor
2	8852	Breaker cam
3	5411	Breaker cover clamp screw
4	8855	Breaker cover
5	5411	Condenser clamp screw
6	8854	Condenser clamp
7	5431	Condenser connection screw
8	X7461	Condenser group
9	5900	Fixed contact clamp screw
10	X8920	Breaker contact set
11	X8919	Stator plate repl. assembly (includes stator plate, and coil core)
12	8857	Friction screw
13	6318	Cam wiper felt
14	5428	Core screw
15	X7782	Lead wire group
16	8732	Primary lead wire clip screw
17	5486	Lead wire grommet
18	X8877	Coil group
19	X8875	Stator plate unit (includes stator plate, core, coil, condenser, breaker mechanism and lead wire.)
	FW-2288	Complete Magneto

HORNET F-1325D2 MAGNETO

(Used on Model 355-83132)

PLEASE SPECIFY ENGINE SERIAL NUMBER
WHEN ORDERING PARTS



F-1325D-2

Ref. No.	Part No.	Description
1	FG-1442	Flywheel
3	FG-1592-B	Stator & Core Machined (Includes Magnet)
4	F-1356	Condenser Screw
5	F-147C	Condenser Screw Lockwasher
6	F-247	Condenser Screw Plain Washer
7	FG-1355	Condenser Assembly
8	F-422	Ground Terminal Screw
9	FG-1573-B	Coil Assembly
10	F-128	Grommet (Lead Wire)
11	FG-1838	Lead Wire Group
12	F-1404	Core Screws
13	F-1363	Dust Cover Clamp
14	F-1402	Clamp Screw
15	F-1324	Dust Cover
16	F-1353	Grommet (Dust Cover)
17	F-204	Fixed Contact Screw
18	F-147C	Fixed Contact Screw Lockwasher
19	F-247	Fixed Contact Screw Plain Washer
20	FG-1250	Breaker Point Assembly
21	F-1433	Cam
22	F-601	Breaker Connection Screw
23	F-341A	Cam Felt
24A	FG-358B	Friction Plug Group
25	FG-1456-B	Stator Plate Assembly (Includes Magnet)