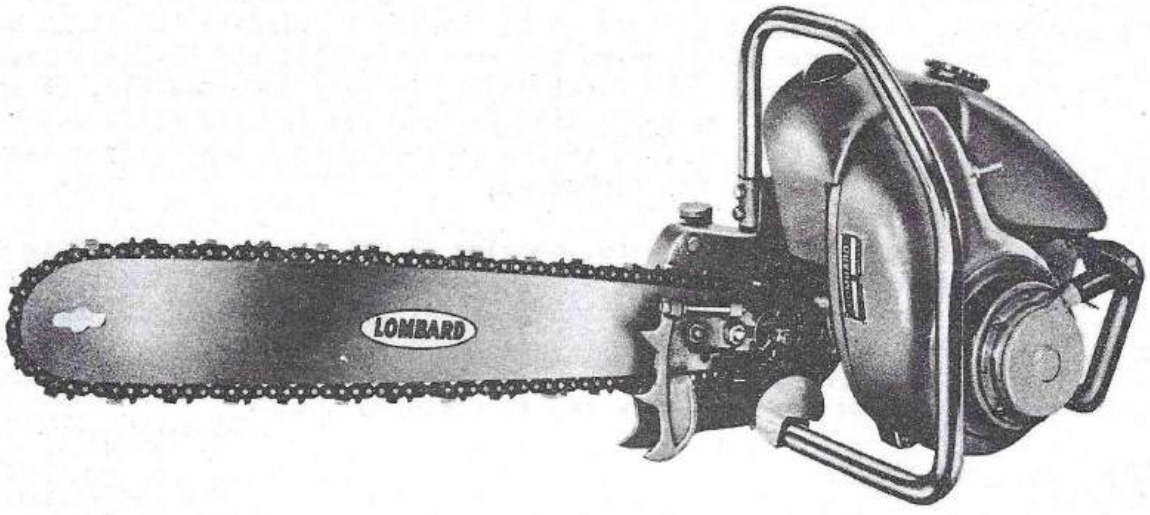
Instruction Manual

Lombard

MODEL 5A POWER CHAIN SAW

Including Parts List
and
Chain Sharpening Instructions



LOMBARD GOVERNOR CORPORATION

CHAIN SAW DIVISION

ASHLAND, MASSACHUSETTS

IMPORTANT OPERATING INSTRUCTIONS

AND GENERAL INFORMATION ON

LOMBARD MODEL 5-A CHAIN SAW

1. ENGINE*STARTING INSTRUCTIONS

(A) Fuel

In a clean container thoroughly mix 3/4 pint of No. 30 motor oil with each gallon of gasoline. (Low grade or white gasoline is preferred, but any grade of gasoline will operate satisfactorily.) Fill the tank with this mixture.

(B) Starting Engine

Completely open the shut-off valve, located on the right side of the engine at bottom of gas tank.

Snap switch to "On" Position.

Move the choke lever to the choke position. Check to see that the carburetor dial is set at No. 7 NOTE: The choke lever is on the left side of the carburetor and the choke position is back toward the rear handle bar.

Pull handle of recoil starter straight out, or same angle that it is mounted, with your left hand. Hold the saw by placing the right hand on the rear handle bar, and at the same time hold the throttle lever down with the thumb of the right hand. In very cold weather, or if engine has not been run for a long period, two or more pulls may be necessary. After the engine starts gradually move the choke lever back until the engine has warmed up.

When restarting a warm engine, choking is not necessary. Choking a warm engine, or over-choking a cold engine may result in flooding. If this occurs, continue cranking engine, with the choke pushed back until the engine starts. In severe cases of flooding, the shut-off valve should be closed and the engine cranked until it starts. After the engine starts, the valve should again be opened.

(C) Stopping Engine

To stop the engine, snap off switch located on air shroud, left side of engine. Completely close gas shut-off valve.

2. SAW OPERATION

(A) Chain Tension

To get the correct tension of chain, loosen the two nuts on studs so cutter bar can be moved easily. Tighten chain tension screw until chain is reasonably tight. Tighten the two nuts -- (Continued)

firmly. To check for correct tension, the chain on the lower part of the cutter bar should be hanging loose so there is at least 1/8" between the side links and the edge of cutter bar. The chain tension is an important item and should be watched carefully. If chain tension is too tight, chain will not run, or end of bar may become burnt.

(B) Chain Lubrication

The chain is lubricated by an automatic oiler which works only when the chain is moving. Therefore, when engine is idling the chain will not be oiled. Remove the filler cap on the oil reservoir to fill with SAE #30 oil.

It may be necessary in sub-zero weather to mix kerosene with the oil or use a much lighter oil. Kerosene may also be added to cut gummy pitch.

There is a small hole 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 sawdust.

(C) Gear Lubrication

An oil hole cover, on gear case near muffler, has been provided for lubricating gears. Hold the throttle lever down enough so chain is moving very slowly and oil will be distributed on teeth of driven gear inside gear case, (use two or three squirts from an oil can). There is a small hole in the back of the gear case which acts as an overflow if excess oil is used on gears. Leakage through this hole is a normal function and should not cause alarm.

(D) Positions of Cutting

This Model 5-A Saw will cut in any position. When cutting, be sure engine is up to speed before entering chain into wood.

3. ENGINE MAINTENANCE

(A) Spark Plug

The spark plug should be checked periodically. A dirty, oily or carboned plug causes starting trouble and poor operation.

The spark plug should be cleaned, and the points set at .030 inches. If there is any doubt about the condition of the plug, it should be replaced with an A. C. No. 45M or equivalent.

(B) Air Filter

Air filters are the dry type and normally need little attention. If the engine is run in a dusty atmosphere, the filter element should be removed and cleaned in gasoline twice a week.

These engines are equipped with a tubular filter, and should be cleaned in gasoline and allowed to drain. The filter should be re-installed dry.

(C) Muffler & Exhaust Ports

The muffler and the exhaust ports should be cleaned every 50 hours. Failure to clean these parts periodically results in loss of power.

To clean the muffler, remove from cylinder and scrape carbon from all cavities and the exhaust outlet space.

To clean the cylinder exhaust ports, remove the spark plug, and turn the starter pulley so that the piston is at the bottom of the stroke, below the exhaust holes. With any blunt instrument scrape the carbon from the three cylinder exhaust holes so that they are completely open and remove the carbon from the surrounding exhaust chamber. Crank the engine several times to blow out the loosened carbon. Replace the spark plug and muffler.

(D) Starter

If the emergency arises where the rewind starter fails, it may be removed from the air shroud to expose a conventional rope pulley starter which can be used until rewind starter is repaired.

To repair starter remove four screws holding starter to air shroud. Refer to exploded view of starter (Fig. 8) before disassembling. All parts of the drive mechanism may be replaced by removing the retainer ring. Take notice of the way the parts are assembled. They must be reassembled in exactly the same way for the starter to operate.

To replace cord or rewind spring, remove four screws holding mounting flange, flange and cover together. Hold rotor from turning and remove mounting flange and flange. Allow rotor to turn, about two turns, to relieve preset of rewind spring and remove rotor being careful to disengage rotor from rewind spring so spring will remain in cover. To replace cord, take out old cord and insert new one. Remove cord retainer from cord and tie knot in its place. Make two turns around rotor with cord in a counterclockwise direction when looking at outward end of rotor. Spring may be replaced if needed. Spring must be replaced with care as it is apt to fly while taking it out or putting it in.

Before reassembling, refer to Fig. 8. Also, notes under Fig. 8. Check each part individually with Fig. 8 before assembling. Assemble rotor, being sure to engage rewind spring. Rewind cord on rotor counterclockwise. Make about two turns on rotor counterclockwise to preset spring. Hold in this position and reassemble parts. When starter is assembled and cord is pulled, the sharp edges of the friction shoe plates should protrude and turn counterclockwise. Check this action before reassembling starter to engine.

(E) Carburetor Adjustments

There are two adjustments on the carburetor, the full load adjustment and the idling adjustment. The full load adjustment is the numbered dial located on the right side of the carburetor. The idling adjustment is located on left side of the carburetor. The normal setting of full load adjustment is at No. 7, and the idling adjustment is about 3/4 turn open.

Should it be necessary to check the adjustments, the engine should first be run at full load until it is warmed up. The full load adjustment may then be checked by turning it in (clockwise) until motor slows down or coughs and the position noted. The adjustment should then be turned open (counter-clockwise) until the engine after speeding up again slows down and runs unevenly; this position should be noted. Correct adjustment will be half way between these two points. At this position, the engine should deliver maximum power.

Make sure that the numbered dial is tight on the carburetor shaft. If it should become loose, remove it from the adjustment shaft. Turn the adjustment shaft in until it seats in the carburetor. Do not turn in too tight as this may damage the seat. Then back out 1/8 turn; place the dial on the needle valve, push all the way in and rotate clockwise until the stop on the back of the dial strikes the side of the projection on the dial stop. Tighten set screw.

To check the idling adjustment, the carburetor throttle must be held in the closed position and the idling adjustment screw on left side of carburetor turned in or out until the engine runs smoothly. If after this adjustment the engine keeps stalling, it can be adjusted with the idling adjusting screw on the throttle shaft.

If carburetor leaks flush as outlined.

Flush the diaphragm chamber. Tilt saw backward so the drain plug (located on lower left hand side of carburetor below choke lever) is the lowest spot in the diaphragm chamber. Open fuel line valve on tank. Remove the drain plug. Press flushing plunger thus permitting fuel to flush past the inlet needle through the diaphragm chamber and out the drain hole. This will clean the inlet needle and remove any foreign particles from the chamber.

This step should only take place after all other methods of stopping a leak have failed. Loosen screw just above choke lever. <u>This screw must not be taken out</u>, * or loosened enough to bring head more

than 1/8 inch above casting. With the screw in this position, break the copper washer that is under the head and remove it. Retighten the screw and recheck.

* If by chance this screw is loosened too much or taken out, the spring will become dislodged from the nib on the inlet control lever. This nib is visible through the drain plug hole. If the spring cannot be put in proper place on nib through the drain plug hole, then the diaphragm cover on the bottom of the carburetor must be removed to make this spring accessible.

Two-cycle engines when running under light loads may appear to miss. This in no way affects the operation of the engine.

(F) Should Engine Fail to Start

The following material is presented as an aid in the maintenance and repair of the engines. Proper maintenance of an engine will result in hundreds of hours of satisfactory operation.
Check that ignition switch is in "On" position.
Check for fuel in the gas tank and check to see that shut-off valve is open.
Check magneto. Hold the spark plug wire 3/16" from engine, spark should jump from the terminal to the engine when cranked. If no spark occurs, test the condenser and coil; if faulty, replace.

Check for spark; remove spark plug and with magneto wire attached hold the base of the plug against the engine, crank engine. A spark should jump across the plug points. If it doesn't, clean the plug or replace with a new one.

Check and clean carburetor, remove fuel line and fuel line connector from carburetor. Remove inlet connection and filter. Clean filter by washing in clean gasoline. Replace and connect up gas line again.

Check for flooding. Remove spark plug and if plug is wet or if gap is closed by liquid fuel, the plug should be dried, and with main adjustment needle closed, the engine should be cranked until vapor stops coming out of spark plug hole. Re-insert plug and open adjustment dial to No. 7 or 3/4 turn open.

Check for gasket leaks and for leaks around the crankshaft seal. Do not be alarmed by an apparent leak in the pressure fitting on the fuel pump. There is a breather hole located at this point and may show signs of leaking when engine is first started or flooded. This vent hole is necessary to insure proper engine operation.

(G) Should Engine Overheat

Check the flow of air over the cylinder. If restricted by dust or dirt, remove the cylinder shield and clean the cylinder fins.

and if necessary, remove the air shroud and clean the flywheel fan and the air intake holes on rewind starter.

Be sure to have correct fuel mixture; 3/4 pt. of No. 30 motor oil to each gallon of gasoline. Use a separate clean container for mixing oil and gasoline.

(H) Should Engine Lack Power

Check carburetor adjustment. See instructions. (Item E in engine maintenance).

Check magneto timing. Corresponding match marks on the stator plate and crankcase should be lined up. If the timing has been changed, loosen the stator plate lock screw. Move the stator plate to the correct timing position as indicated by the marks and tighten the screw. Proper timing is indicated by the breaker points opening when the piston is .093-.100 before the top dead center of the stroke.

Check for carbon. If exhaust ports and muffler are restricted by carbon, scrape clean.

Check compression. Remove spark plug and place compression gauge in cylinder spark plug hole. After cranking the engine several times, the gauge should register 85 lbs. or more. If compression is faulty, replace piston rings.

Check for gasoline and oil ratio in fuel. Be sure engine has 3/4 pt. of oil for each gallon of gasoline.

Check cylinder, carburetor, reed plate, and transfer port gaskets for leaks. Also check for leaks around the crankshaft seals.

(I) General Information

Magneto point setting..... .020 inch

Spark Plug gap..... .030 inch

Fuel Ratio.....3/4 pt. No. 30 oil per gal. of gasoline

Recommended engine speed..... 2700 to 4000 r.p.m.

Clean muffler and exhaust ports every 50 to 75 hours.

If magneto is removed from the engine, be sure to replace cam in original position, with the beveled side out.

When replacing piston, be sure tapered side of baffle is toward muffler side of engine.

4. SAW MAINTENANCE

(A) Chain

One of the most important parts of the saw is the chain. The cutting efficiency of the unit depends on the condition of the chain. Therefore, it should be inspected daily for sharpness and damage. If the chain appears to be dull (noticed by slower cutting) or if it has struck a hard object such as a stone, etc., do not continue to cut. Use a round file with file holder to sharpen this Chipper Chain. A chain cutting wood after becoming dull will damage both chain and cutter bar as it will require forcing the saw. It will also reduce the life of the chain as it necessitates excessive filling of the radius face angles of the cutters.

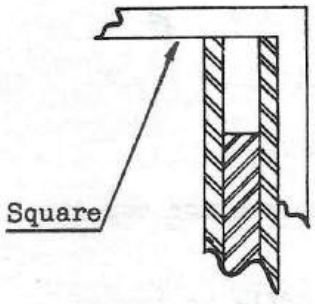
Use your chain with care and see that it has plenty of lubrication so parts will not wear and keep it sharp at all times.

If a cutter is broken or damaged beyond repair, it may be replaced from the spare parts that are shipped with all new chains. Check to be positive the correct cutter, that is, left or right, is assembled into the chain. When peening rivets, do not strike too hard, or you will bulge large diameter of rivet in center blanks; therefore, binding the chain. Light blows using the ball end of a small hammer is sufficient. Always check chain for flexibility at repaired joint.

(B) Cutter Bar

Many cutter bars are damaged by ill use, that is, lack of proper lubrication on chain and cutter bar, unnecessary forcing of saw when cutting, and twisting of cutter bar in some cuts. Always remember the lack of proper oil will cause excess wear on both chain and cutter bars; therefore, reducing the life of both items.

The top edges of slot of cutter bar, where side links of chain run, should be checked for parallelism periodically. A good method is to place a square on side of cutter bar as shown in sketch #7.



Sketch #7

File or stone edges parallel and remove all burrs. If one edge is lower than the other, the chain will cut crooked, and then the operator will force the saw to try and remedy this situation; therefore, resulting in considerable damage to the cutter bar.

(C) Clutch

This saw is equipped with a special shoe-type, automatic clutch mounted on engine shaft, inside gear housing. It will automatically engage and release according to engine speeds, which are controlled by the throttle lever.

This clutch cannot be adjusted. If chain creeps, then the idling speed of the engine is incorrect. This is remedied by adjusting idle mixture.

When repairing saw, never run engine with clutch assembly on engine shaft unless drum is also assembled in proper position on same shaft, as the shoes will fly off because of centrifugal force, and may be lost or damaged.

5. SERVICE AND REPAIR INSTRUCTIONS

(A) Suggested Procedure for Dismantling Saw

Remove Cutter Bar and Chain.

Sprocket - Remove sprocket nut. Hold teeth of sprocket stationary to loosen nut. Lift sprocket from spline shaft.

Oil Pump - Remove and drain oil.

Gear Case Cover - Remove eleven screws.

Lock nut - Remove from engine shaft.

Clutch - Remove.

Drum and Thrust Washers - Remove from engine shaft.

Driven Gear and Transmission Shaft assembly are removed as one unit.

Front Handlebar - Remove four screws.

Gear Case - Remove four screws.

Gas line - Disconnect and remove.

Throttle link between carburetor arm and throttle arm, remove.

Gas tank - Remove two screws holding cylinder shield to gas tank. Remove three screws holding gas tank to rear handlebar.

Rear Handlebar - Remove four screws holding handlebar to crank case.

Air Filter - Remove three screws at one end. Remove plate, gasket and air filter.

(B) Suggested Procedure for Dismantling Engine

Carburetor and Reed Plate -- remove two nuts.

Muffler -- remove the screws holding muffler to the cylinder.

Air Shroud -- remove screws holding the air shroud to the shroud base, and remove wire to stop button.

Rewind Starter -- remove four screws holding starter to air shroud.

Flywheel -- loosen the starter nut two turns; sharply strike the end of the nut with a raw-hide hammer until the flywheel is loosened from the crankshaft taper.

Magneto Stator Plate -- loosen the friction screw at the base of the stator plate. Pull the stator plate off by turning back and forth.

Cam and Key -- remove by tapping. Note position before removal.

Shroud Base -- remove three screws holding the shroud base to the engine.

Cylinder -- remove four nuts.

Crank Case -- remove six screws holding the crankcase together, then tap the end of the crankshaft gently to separate the case and bearing from shaft, tap the shaft gently.

To replace ball bearing in the case, remove lock ring, washer and seal. Heat the case evenly with a blow torch or over a gas flame until the bearing drops out. At this temperature a new cold bearing can be dropped in. Make sure that the beveled side of the inner race of the bearing is up when it is dropped into the crankcase. Also, be sure when replacing the seal that the lip is toward the center of the engine.

Connecting Rod -- to remove the connecting rod from shaft remove the two screws holding the cap to the rod. When reassembling the rod and cap to the shaft be sure that the match markers on the rod and cap are on the same side. Be sure that there are 30 rollers in assembly. Be sure that the straight side of the piston baffle is toward the tapered end of shaft.

To remove the rod from the piston, remove the lock ring from one side of the piston and slide the piston pin to one side.

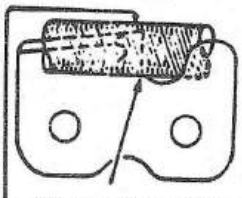
It is extremely important that all parts be thoroughly clean, and the moving parts oiled before assembly. A reassembled engine will require a run-in period of about an hour before full power will be developed.

Filing Instructions

FOR #10 CHIPPER CHAIN

"Your file held in one position does the job"

SIDE VIEW

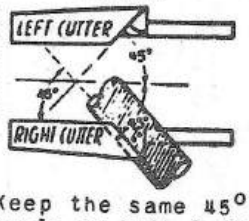


Use only a 1/4 inch round, straight (not rat-tail) file. Draw long, even strokes. Press firmly back and slightly up. Hold one position.

Always keep this edge vertical when viewed from side. Keep 1 5 of file diameter above top plate.

Keep file up. Low filing undercuts side of cutter, causing chain to grab. **Never** use a flat file to sharpen top plate.

TOP VIEW

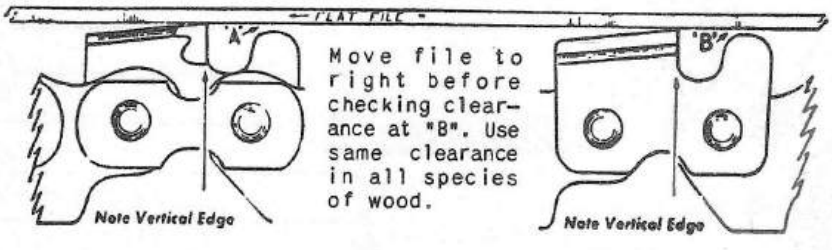


Keep the same 45° angle on both left and right cutters.

END VIEW

Chain Rider Clearance

To check rider clearance place a flat file on two cutters as illustrated...Use a feeler gauge in space "A".

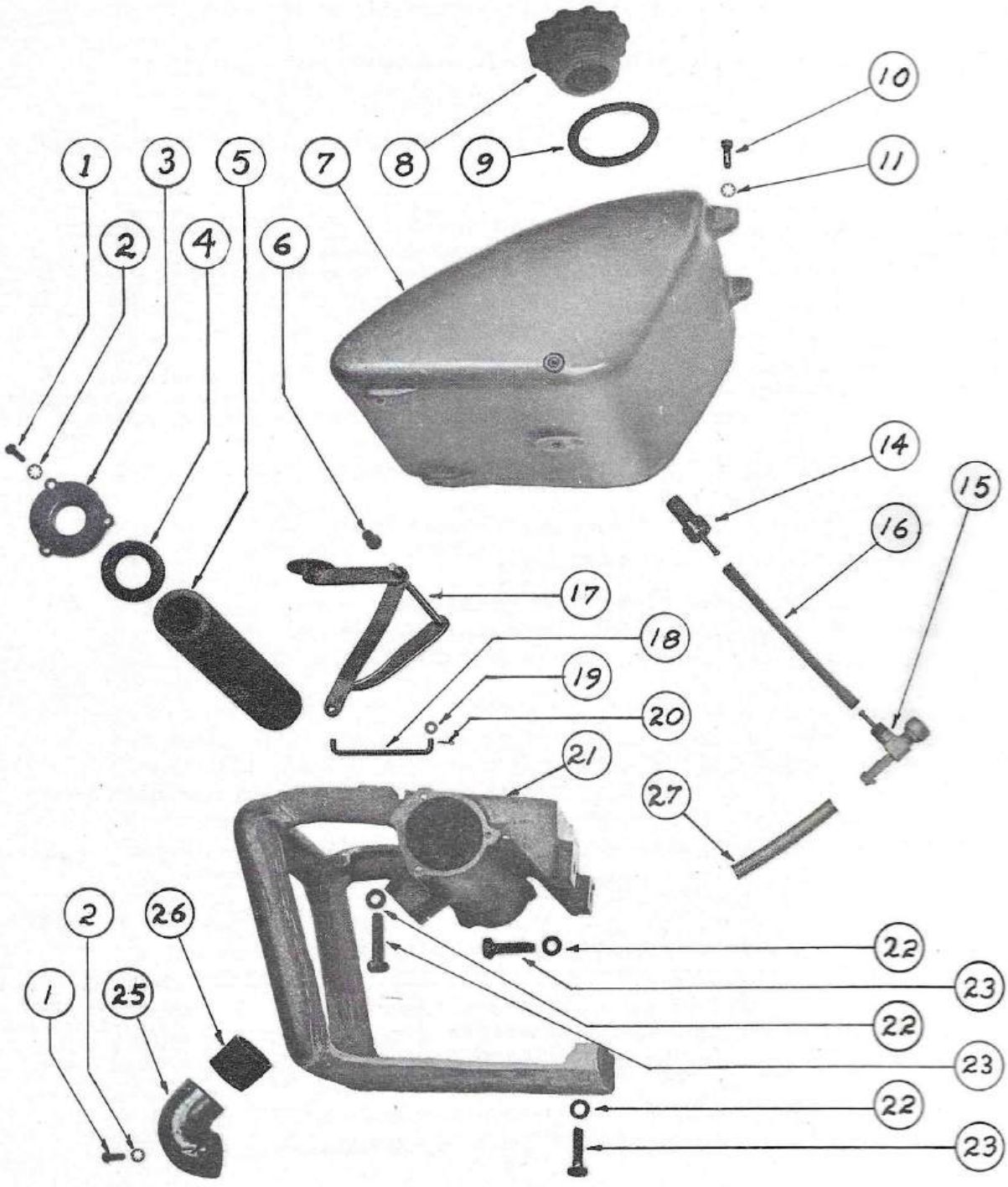


Move file to right before checking clearance at "B". Use same clearance in all species of wood.

Depth gauge clearance should be about .030 inch, or as set at factory.

LOMBARD LOGGER GAS SAW MODEL #5A

PHOTO #5-6 GAS TANK + REAR HANDLE BAR ASSEMBLY



LOMBARD GOVERNOR CORP ~ ASHLAND, MASS.

PARTS LIST 5-6

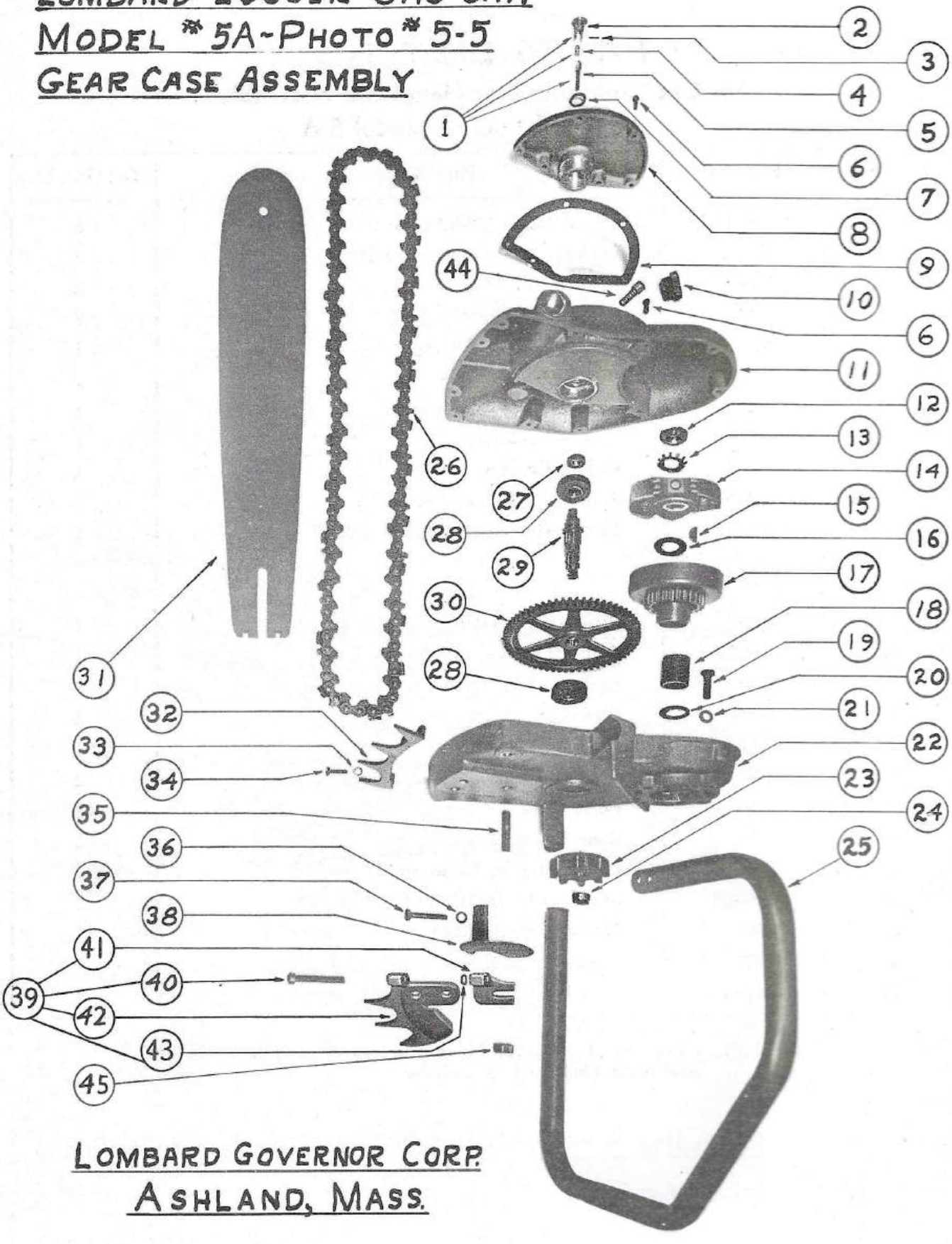
For Gas Tank and Rear Handlebar Assembly

Lombard Logger Model 5 A

Item No.	Part No.	Part Name	Qty. Per Unit
1	PS-308	Screw-Rd. H'd. 8-32 x 3/8 lg.	8
2	PW-209	Lockwasher Shakeproof #1208	8
3	5-31	Plate — Air Filter	2
4	5-34	Gasket Air Filter	2
5	5-30	Element — Air Filter	1
6	YS-2014	Bushing — Throttle	2
7	5-12	Gas Tank	1
8	5-119-1	Cap — Gas Tank	1
9	5-53	Gasket Gas Cap	1
10	PS-604	Screw — Fil. H'd. 10-24 x 1/2	2
11	PW-210	Lockwasher — Shakeproof #1210	2
14	5-42	Strainer & Weight	1
15	5-115	Shut-off Valve	1
16	5-41	Sleeve — Gas Tank	1
17	5-29	Throttle	1
18	5-15	Link	1
19	PW-107	Washer — Special	2
20	PM-144	Cotter Pin	2
21	5-13	Rear Handlebar	1
22	PW-204	Lockwasher 1/4 Standard	7
23	PS-404	Screw — Hex H'd. 1/4-20 x 1	7
25	5-14	Elbow — Carburetor	1
26	5-27	Connector — Elbow	1
27	5-116	Fuel Line	1

CAUTION: When ordering, include serial number of saw, part number, part name and quantity desired.

LOMBARD LOGGER GAS SAW
MODEL * 5A-PHOTO * 5-5
GEAR CASE ASSEMBLY

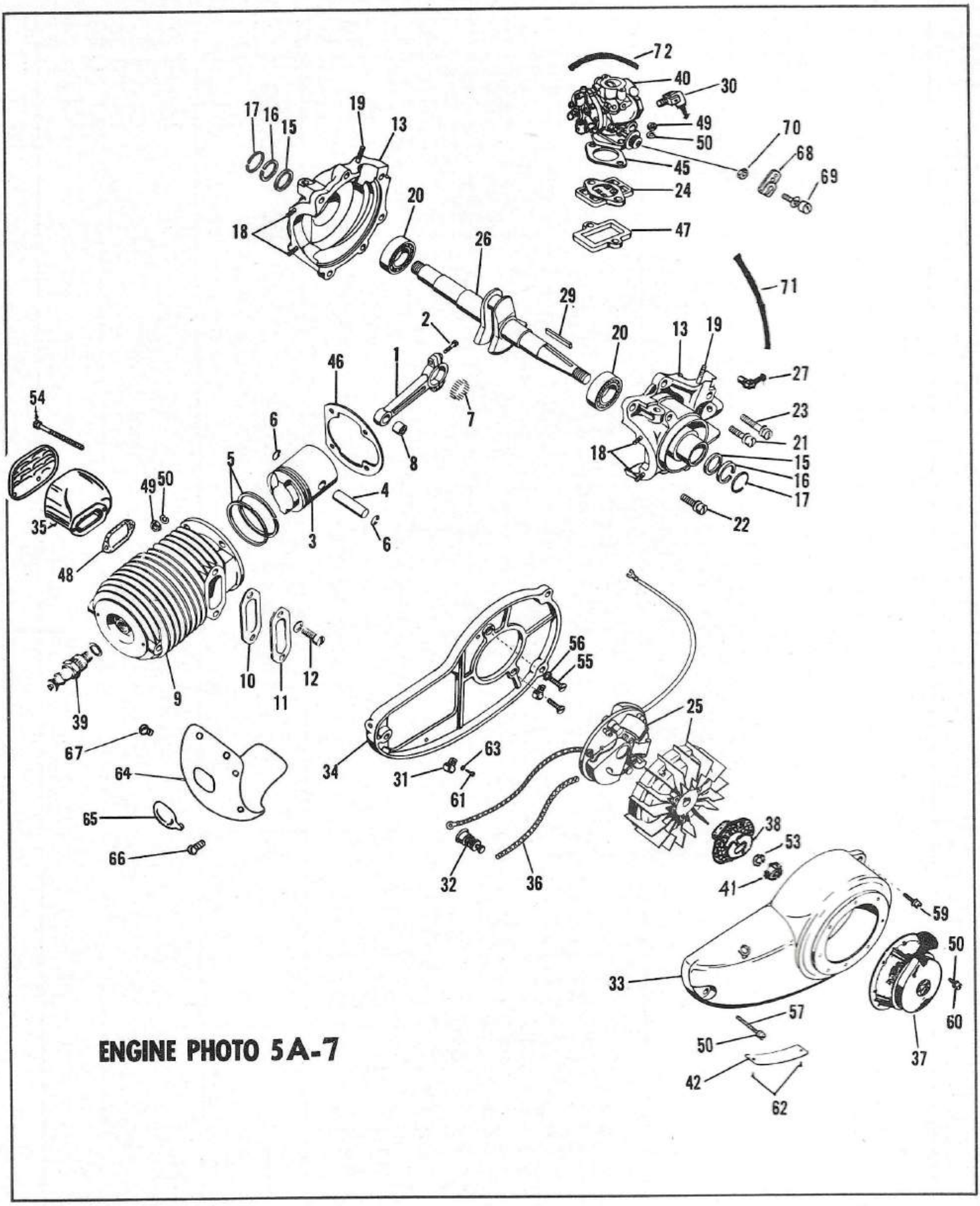


LOMBARD GOVERNOR CORP.
ASHLAND, MASS.

PARTS LIST 5-5

For Gear Case Assembly – Lombard Logger Model 5 A

Item No.	Part No.	Part Name		Qty. Per Unit
1	5-25	Oil Pump Assembly		1
		Consisting of:	Qty.	
2	5-24	Holder — Oil Pump	1	
3	YS-2084	Pin — Oil Pump	1	
4	YS-2085	Spring — Oil Pump	1	
5	5-23	Shaft — Oil Pump	1	
6	PS-604	Screw — Fil. H'd. 10-24 x ½ lg.		17
7	YS-2031	Gasket — Oil Pump		1
8	5-37	Cover — Oil Reservoir		1
9	5-38	Gasket — Oil Reservoir		1
10	YS-2330	Cap — Oil Reservoir		1
11	5-11	Cover — Gear Case		1
12	PM-154	Locknut		1
13	PM-155	Lockwasher		1
14	30801-1	Clutch Lombard		1
		Consisting of:	Qty.	
	30802-1	Hub - Clutch	1	
	30803	Weight – Clutch	1	
	30807-24	Springs — Clutch	2	
15	PM-156	Key — Clutch		1
16	5-45	Washer — Thrust Rear		1
17	5-26	Gear — Driver W/ Bushing # 5-47		1
18	5-47	Bushing — Oilite		1
19	PS-402	Screw — Hex H'd. 5/16-18 x 1" lg.		4
20	5-44	Washer — Thrust Front		1
21	PW-207	Lockwasher — 5/16 Standard		4
22	5-10	Gear Case		1
23	5-57	Sprocket — Chipper Chain		1
24	PM-157	Locknut		1
25	5-28	Handlebar — Front		1
26		Chain (One of the following)		1
	PM-147	" 20" Chipper		
	PM-171	" 24" Chipper		
	PM-172	" 30" Chipper		
	PM-173	" 36" Chipper		
	PM-174	" 42" Chipper		
	PM-175	" 48" Chipper		
27	PM-132	Oil Seal		1
28	PB-103	Ball Bearing		2
29	5-20	Shaft — Gear Case		1
30	5-21	Gear Driven		1
31		Cutterbar (One of the following)		1
	YS-2052	" 20"		
	5-65	" 24"		
	5-68	" 30"		
	5-70	" 36"		
	5-73	" 42"		
	5-78	" 48"		
32	5-36	Spike Bumper		1
33	PW-210	Lockwasher — Shakeproof #1210		4
34	PS-318	Screw Fil. H'd. 10-24 x ⅝ lg.		4
35	5-50	Stud — Cutterbar		2
36	PW-204	Lockwasher ¼ Standard		4
37	PS-405	Screw — Hex H'd. ¼-20 x 1½		4
38	5-51	Guard — Front Handlebar		1
39	5-48	Auxiliary Spike & Chain Tension Assembly Consisting of:		1
40	5-55	Screw — Chain Tension	1	
41	5-60	Plate — Chain Tension	1	
42	5-59	Auxiliary Spike	1	
43	YS-2093	Thrust Collar	1	
44	5-58	Gear Oiler		1
45	PN-103	Nut —Hex ⅜ Standard		2



ENGINE PHOTO 5A-7

ALWAYS SPECIFY ENGINE MODEL & SERIAL NUMBER WHEN ORDERING REPAIR PARTS!

PARTS LIST MODEL 5-7 ENGINE

Ref. No.	Part No.	Part Name	Qty. Per Unit
1	S-1205	Connecting Rod Assembly w/bearing	1
2	4007-01	Connecting Rod Screw	2
7	Q-4216	Needle Bearing	30
8	B-88	Cartridge Bearing	1
3	4015-01	Piston	1
4	4016	Piston Pin	1
5	4017	Piston Ring	2
6	4119	Retainer Ring	2
9	S-1202	Cylinder Assembly	1
10	4065-01	Transfer Port Cover Gasket	1
11	4064-01	Transfer Port Cover	1
12	S-1191	1/4-20 x 1/2 Fil. Hd. Sems Screw	2
13	S-1203	Crankcase Assembly w/bearings	1
15	4002	Crankcase Seal	2
16	4003	Crankcase Seal Retainer	2
17	4004	Crankcase Seal Retainer Spring	2
18	1022	Cylinder Studs	4
19	1031	Carburetor Studs	2
21	S-1142	1/4-20 x 3/4 Fil. Hd. Sems Screw	4
22	S-1162	1/4-20 x 1 Fil. Hd. Sems Screw	1
23	S-1187	1/4-20 x 1 1/2 Fil. Hd. Sems Screw	1
20	3L05	Ball Bearing	2
24	S-1439	Reed Plate Assembly	1
25	F-1325B	Magneto	1
26	4001-01	Crankshaft	1
27	4042-07	Elbow, Pressure Line	1
29	4062	Flywheel Key	1
30	1042-05	Elbow Fuel Line	1
31	1118	Cable Clip	2
32	1149	Stop Switch	1
33	4018-03	Air Shroud	1
34	4019-03	Shroud Base	1
35	5-75	Muffler	1
72	VS-2262	Feed Line	1

Ref. No.	Part No.	Part Name	Qty. Per Unit
36	4136	Sleeve — Ignition Cut-off Wire	1
37	S-475	Rewind Starter	1
38	114-62	Cup & Screen Asbly	1
39	JT-6-J	Spark Plug	1
40	H P 9A	Carburetor	1
41	S-1128	7/16-20 Hex Nut	1
42	4057-03	Name Plate	1
		Gaskets	
45	1009	Carburetor Gasket	1
46	4012-01	Cylinder Gasket	1
47	1027	Reed Plate Gasket	1
48	4014	Exhaust Gasket	1
		Hardware	
49	PN-102	1/4-20 Hex Nut	6
50	PW-204	1/4 Split Lockwasher	6
53	PW-213	7/16 S. A. E. Lockwasher	1
54	5-74	Muffler Screw	2
55	PS-612	1/4-20 x 5/8 Flat Hd. Screw	2
56	PW-214	1/4 Countersink Shakeproof Lockwasher	2
57	S-1240	1/4-20 x 2 Fil. Hd. Sems Screw	1
59	S-1162	1/4-20 x 1 Fil. Hd. Sems Screw	2
60	PS-409	1/4-20 x 1/2Hex Hd. Cap Screw	4
61	S-1115	10-24 x 1/2 Fil. Hd. Sems Screw	2
62	S-1259	#6-3/8 Drive Screw	4
63	PW-108	#10 Flatwashers	2
64	5-35	Cylinder Shield	1
65	5-40	Spark Plug Shield	1
66	PS-613	Screw Fil. Hd. 10-24 x 3/4 lg.	4
67	PS-306	Screw, Rd. H'd. 1/4-20 x 1/2	1
68	3105-03	Throttle Shaft Clamp-on Lever	1
69	S-1260	Screw Fil. Hd. Sems 8-32 x 5/8	1
70	PN-108	8-32 Nut	1
71	5-116	Pressure Line	1

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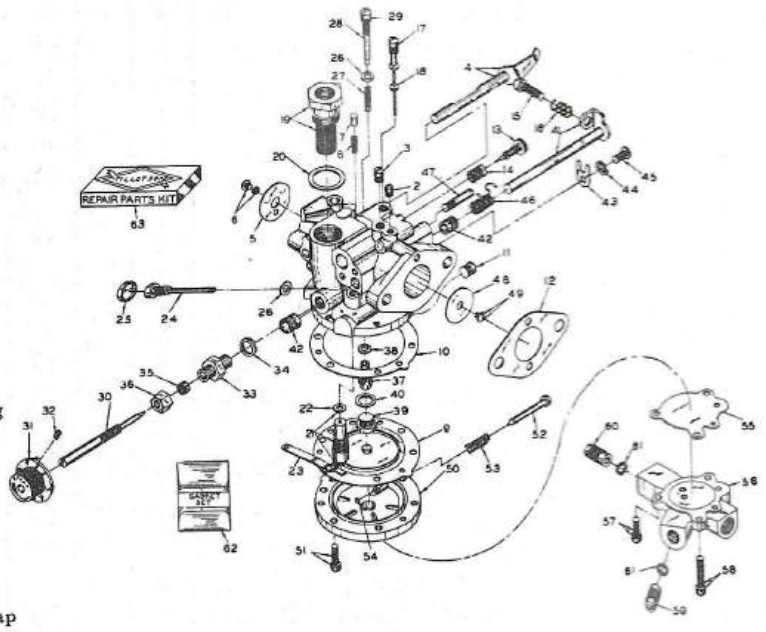
TILLOTSON CARBURETOR
MODEL HP 9 A

Ref. No.	Part No.	Part Name
2	02232	Body Channel Plug Screw
3	02983	Body Channel Plug Screw
4	09876	Choke Shaft & Lever
5	02405	Choke Shutter
6	08942	Choke Shutter Screw & Lockwasher
7	05454	Choke Friction Pin
8	08805	Choke Friction Spring
9	*09698	Diaphragm
10	09676	Diaphragm Cover Gasket
11	02395	Drain Plug Screw
12	1009	Flange Gasket
13	*09697	Idle Adjustment Screw
14	*08793	Idle Adjustment Screw Spring
15	*05095	Idle Adjustment Regulating Screw
16	*0788	Idle Speed Regulating Screw Spring
17	*09881	Idle Tube
18	07900	Idle Tube Gasket
19	09834	Inlet Connection & Screen
20	09681	Inlet Connection Gasket
21	*010141	Inlet Needle, Seat & Gasket
22	010165	Inlet Seat Gasket
23	*09708	Inlet Control Lever
24	*09695	Inlet Control Lever Pinion Screw
25	09884	Inlet Control Lever Pinion Screw Cap
26	0648	Inlet Control Lever Pinion Sc. Gasket
27	*09683	Inlet Tension Spring
28	*010012-S	Inlet Tension Spring Retaining Screw & Washer
29	010004	Inlet Tension Spring Retaining Screw Washer
30	*09880	Main Adjustment Screw
31	08612	Main Adjustment Screw Knob
32	06969	Main Adjustment Screw Knob Set Screw
33	0702	Main Adjustment Screw Gland
34	0676	Main Adjustment Screw Gland Gasket
35	09112	Main Adjustment Screw Packing
36	0703	Main Adjustment Screw Packing Nut
37	*09883	Main Nozzle
38	06076	Main Nozzle Gasket
39	09679	Main Nozzle Channel Plug Screw
40	09930	Main Nozzle Channel Plug Screw Gasket
41	09878	Throttle Shaft & Stop Lever
42	09780	Throttle Shaft Bushings
43	09678	Throttle Shaft Clip
44	0992	Throttle Shaft Clip Lockwasher
45	01974	Throttle Shaft Clip Screw
46	*09602	Throttle Shaft Return Spring
47	04594	Throttle Stop Pin
48	08646	Throttle Shutter
49	08942	Throttle Shutter Screw &Lockwasher
50	010179	Diaphragm Cover (Includes Ref. 52, 53, & 54)
51	09689	Diaphragm Cover Screw & Lockwasher
52	010095	Flushing Plunger
53	010094	Flushing Plunger Spring
54	010093	Flushing Plunger Retaining Clip
55	*010090	Fuel Pump Diaphragm
56	010178	Fuel Pump Body
57	09689	Fuel Pump Body Screw & Lockwasher
58	*010098	Fuel Pump Body Screw & Lockwasher
59	*010100	Fuel Inlet Check Valve
60	*010097	Fuel Outlet Check Valve
61	06076	Fuel Inlet & Outlet Check Valve Gasket
62	*GS-104	GASKET & PACKING SET
63	RK-154	REPAIR PARTS KIT
	010180	Fuel Pump Body Assembly (Includes Ref. 59, 60, & 61)
	010181-S	Fuel Pump & Diaphragm Cover Assy. (Includes 55-61 Inclusive)

* Denotes contents of REPAIR PARTS KIT



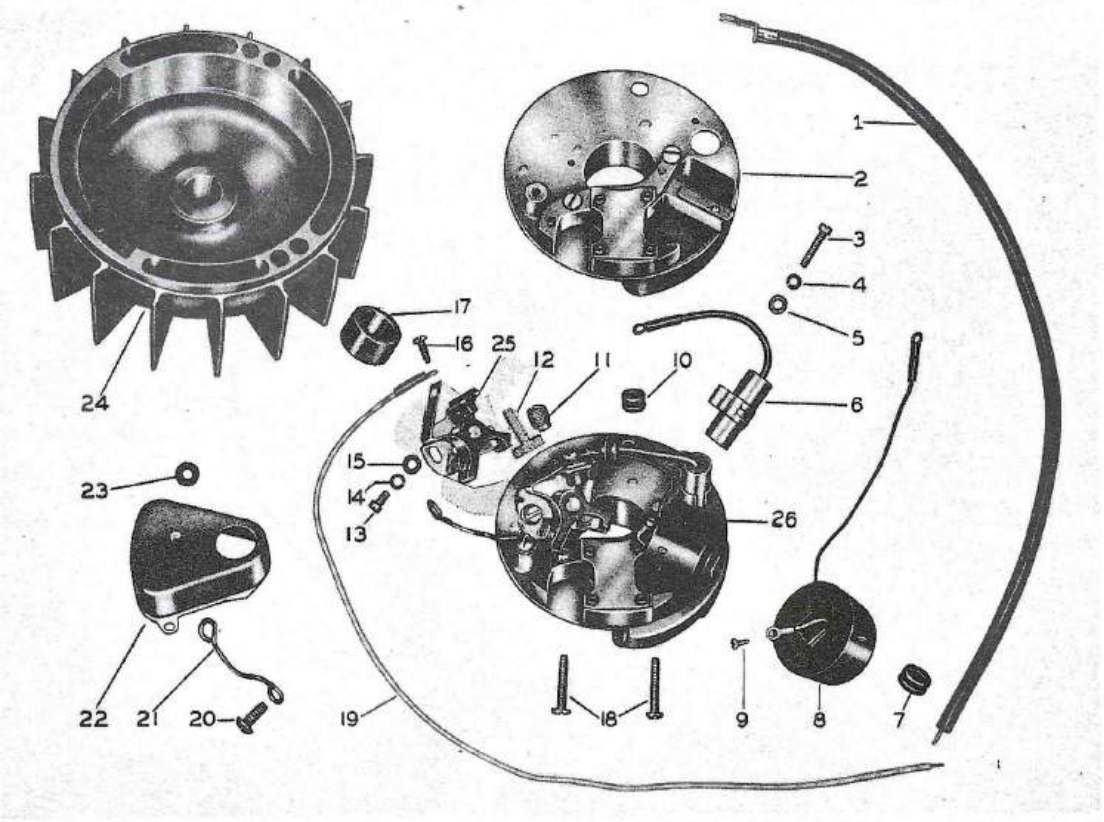
OPERATING INSTRUCTIONS

CARBURETOR ADJUSTMENTS: Main Adjustment Screw (Ref. 30) located on right side: Approximate setting - Open from closed position counter-clockwise to approximately one turn open.
Idle Mixture Adjustment Screw (Ref. 13) located on top left side of carburetor: Setting - Open from closed position counter-clockwise to approximately 5/8 turn open.
Idle Speed Control Screw (Ref. 15) located on throttle stop lever, left side of Carburetor: Turn this screw clockwise to open throttle about one turn. Setting - After engine has been started turn this screw so the idle speed is approximately 1800 to 2200 R.P.M. or so there is not quite sufficient speed to engage clutch and cause chain to move.

STARTING PROCEDURE: After the Idle (Ref. 13) and Main Adjustment Screw (Ref. 30) have been set as previously described, pull choke lever toward operator. It is located on the right side of carburetor.
With the ignition switch in "on" position and with the carburetor in full choke position, hold throttle in wide open position and proceed to crank engine.
After the engine has fired, warm up for approximately 15 to 20 seconds with choke in half open position.
OPERATING PROCEDURE: (Carburetor Adjustment). The above adjustments are approximate and the saw operator may have to adjust slightly from them to obtain maximum efficiency from his unit.
FLUSHING THE DIAPHRAGM CHAMBER: To flush the diaphragm chamber, run engin e to build up pressure in the tank and tilt the engine so that the Drain Screw(Ref. 11) is the lowest spot in the chamber. Remove the Drain Screw (Ref. 11) and push gently on the Flushing Plunger (Ref. 52) which will depress the diaphragm and unseat the needle, thus permitting fuel to flush past the inlet needle through the diaphragm chamber and out the drain hole. This will clean the inlet needle and remove any loose foreign particles from the chamber.

PHELON MAGNETO F-1325B-3

Replacement Parts List



Ref. No.	Part No.	Description	No. Req.
1	FG-240E	Lead Wire Group	1
2	FG-1453	Stator and Core Machined (Includes Magnet)	1
3	F-1356	Condenser Screw	1
4	F-147C	Condenser Screw Lockwasher	1
5	F-247	Condenser Screw Plain Washer	1
6	FG-1355	Condenser Assembly	1
7	F-128	Grommet	1
8	FG-1573B	Coil Assembly	1
9	F-422	Ground Terminal Screw	1
10	F-1125	Grommet (Stator Plate)	1
11	FG-358B	Friction Plug Group	1
12	F-1614A	Cam Felt	1
13	F-204	Fixed Contact Screw	1
14	F-147C	Fixed Contact Screw Lockwasher	1

Ref. No.	Part No.	Description	No. Req.
15	F-247	Fixed Contact Screw Plain Washer	1
16	F-1208	Breaker Connection Screw	1
17	FG-2228	Cam	1
18	F-1404	Core Screw	2
19	FG-1409	Ground Lead Group	1
20	F-1362	Clamp Screw	1
21	F-1363	Dust Cover Clamp	1
22	F-1324	Dust Cover	1
23	F-1353	Grommet (Dust Cover)	1
24	FG-2290	Flywheel	1
25	FG-1773	Breaker Point Assembly	1
26	FG-2227	Stator Plate Assembly (Includes Magnet)	1
	F-1325B-3	Magneto Complete	1

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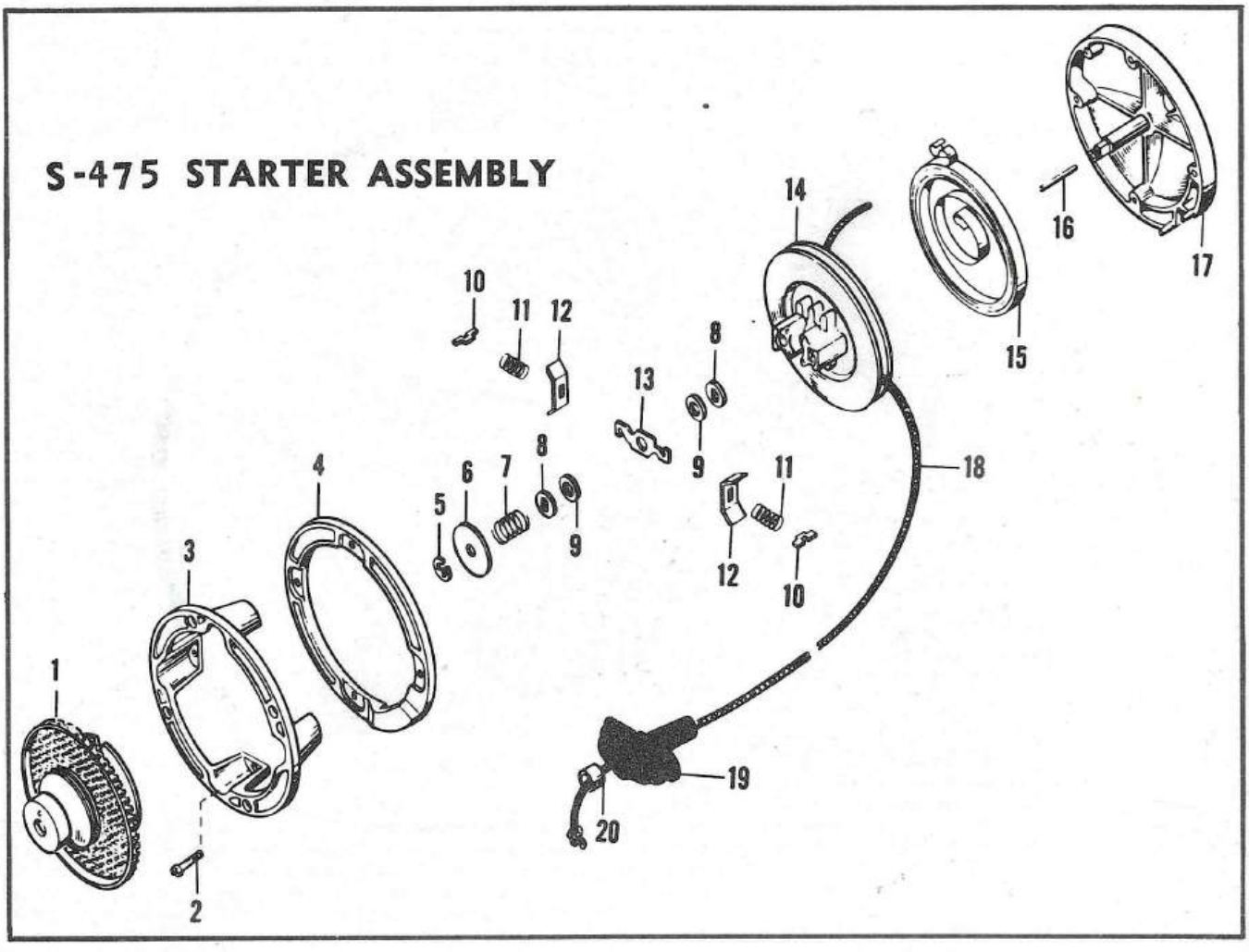
S-475 STARTER ASSEMBLY



Ref. No.	Part No.	Description	No. Req.
1	114-62	Cup & Screen Assy.	1
2	23-5	Machine Screw	4
3	38-11	Mounting Flange	1
4	38-10	Middle Flange	1
5	29-3	Retainer Ring	1
6	27-8	Brake Ret. Washer	1
7	20-3	Brake Spring	1
8	27-3	Brake Washer	1
9	27-2	Fibre Washer	1
10	11-19	Plate Spring Ret.	2

Ref. No.	Part No.	Description	No. Req.
11	20-2	Friction Shoe Sprg.	2
12	11-71	Friction Shoe Plate	2
13	16-4	Brake Lever	1
14	13-3	Rotor	1
15	20-28	Rewind Spring	1
16	25-9	Centering Pin	1
17	51-6	Cover	1
18	40-3	Cord	1
19	144-2	T-Handle Assy.	1

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