

Instruction Manual

NO. 100

MODEL DD-F and DD-D DIRECT DRIVE

**MODEL DD and 133 DIRECT DRIVE
POWER CHAIN SAWS**

(FLOAT AND DIAPHRAGM CARBURETORS)

Including Parts List and Chain Sharpening Instructions

LOMBARD GOVERNOR CORPORATION

CHAIN SAW DIVISION

ASHLAND, MASSACHUSETTS

IMPORTANT OPERATING INSTRUCTIONS

AND GENERAL INFORMATION ON

LOMBARD DIRECT DRIVE SAWS

(Float & Diaphragm Carburetor Models)

1. ENGINE-STARTING INSTRUCTIONS

NOTE: Special Fuel Mixture for run-in of new engines. Use 3/4 pint SAE 30 motor oil per gallon of gas for first 20 hours of use.

(A) Permanent Fuel

In a clean container thoroughly mix 1/2 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 below 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 filter.

Pull handle of recoil starter straight out, on 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 in open position. In very cold weather, or if the 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, shut off ignition 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. 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 oiling device. Pressure from the crankcase is put into the oil reservoir. This pressure forces the oil up through the pick-up tube through a small hole into a slot in the cutterbar pad, thus into a hole in cutterbar onto chain.

The other small hole in left slot of cutterbar pad, near rear cutterbar stud, is for pressure venting.

The pressure valve elbow part No. DD-53 is not adjustable. It is manufactured to control the amount of pressure going into oil reservoir.

The cutterbar plate which is assembled against outside face of cutterbar is used to keep oil in slot of cutterbar.

To clean and check oil system, blow air into both small holes in slots on cutterbar pad. It may be necessary to remove plate from back of oil reservoir and check strainer-weight which is on the end of the pick-up tube.

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.

(C) Positions of Cutting

Remember this saw is direct drive, therefore, do not force when cutting. The weight of the saw itself will apply enough pressure.

This diaphragm carburetor saw will cut in any position. When starting a cut be sure engine is up to speed before entering chain into wood.

Float carburetor saw will cut in any position from vertical to 90° on the right side. The cutter bar side of saw should be held toward the ground when making a felling cut. 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 gap set at .030 inches. If there is any doubt about the condition of the plug, it should be replaced with a Champion No. JT-6-J or equivalent.

(B) Air Filter

This engine is equipped with a dry type tubular filter. It should be cleaned in gasoline at least twice a week and allowed to drain. The filter should be dry before replacing.

(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. 10) 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 by removing cord retainer from cord and tie knot in its place. Make two turns around rotor with cord in a clockwise 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. 10. Also, notes under Fig. 10. Check each part individually with Fig. 10 before assembling. Assemble rotor, being sure to engage rewind spring. Rewind cord on rotor clockwise. Make about two turns on rotor clockwise 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 clockwise. Check this action before reassembling starter to engine.

(E-1) Carburetor Adjustments - Diaphragm

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 (clockwise) until motor slows down or coughs and the position noted. The adjustment should then be turned open (counterclockwise) 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 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 the right 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 below.

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 leak have failed. Loosen screw just above choke lever. This screw must not be taken out, 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.

(E-2) Carburetor Adjustments - Float

There are two adjustments on the carburetor, the full load adjustment and the idling adjustment. The full load adjustment is the numbered dial located at the back of the carburetor below the air filter. The idling adjustment is located on top 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 (clockwise) until motor slows down or coughs and the position noted. The adjustment should then be turned open (counterclockwise) 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 left side of the projection on the filter cover. Tighten set screw.

To check the idling adjustment, the carburetor throttle must be held in the closed position and the idling adjustment screw on top 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.

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 ignition switch on air shroud.

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 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.

(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 in rewind starter.

Be sure to have correct fuel mixture; 1/2 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. (Items E-1 and E-2 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 $3/16''$ to $1/4''$ 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 70 lbs. or more. If compression is faulty, replace piston rings.

Check for gasoline and oil ratio in fuel. Be sure engine has 1/2 pint 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 setting020 inch

Spark Plug gap030 inch

Fuel Ratio 1/2 pt. No. 30 oil per gal. of gasoline

Recommended engine speed. 4200 to 5000 r.p.m.

Clean muffler and exhaust ports every 50 to 75 hours.

Clean air filter twice a week.

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 the proper dia. 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 filing 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 bar; therefore, reducing the lift of both items. Clean sawdust, etc., from bottom of slot.

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 Fig. 1

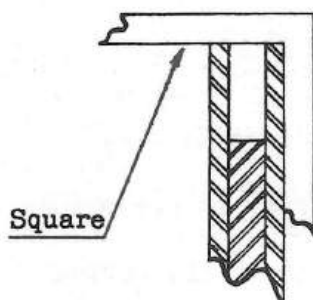


Fig. 1

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. The cutter bar on the Direct Drive saw is armoured tipped.

(C) Clutch

This saw is equipped with a special shoe-type, automatic clutch mounted on engine shaft. 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.

5. SERVICE AND REPAIR INSTRUCTIONS

(A) Suggested Procedure for Dismantling Saw

Remove Cutter Bar and Chain

Remove Sprocket Nut. To remove sprocket nut - insert holding rod #DD-60 under fins, on carburetor side of cylinder, and into one of the drilled holes on the back side of the magneto rotor. This will hold the crankshaft from turning while loosening the nut. NOTE: The sprocket nut has a left hand thread.

Remove special washer.

Remove drum and sprocket.

Remove oilite bushing.

Remove special washer.

Remove clutch.

Remove clutch key.

Remove dust shield.

Front handle bar, remove four screws.

Fuel line, disconnect and remove.

Remove throttle link between carburetor and arm.

Remove gas tank and rear handle bar.

(B) Suggested Procedure for Dismantling Engine

Air Filter - remove air filter cover and filter.

Carburetor and Reed Plate - remove two nuts.

Muffler - remove the screws holding muffler to the cylinder.

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

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

Flywheel - remove nut from inside starter cup and remove starter cup. Replace nut loosely and give it a sharp rap with a rawhide hammer until flywheel is loosened from taper of crankshaft.

Magneto Stator Assembly - loosen the core clamping or friction screw at the base of the stator assembly. Pull the stator assembly off by turning back and forth.

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

Shroud Base - remove four 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.

IMPORTANT INFORMATION ON OPERATING SAW - PLEASE READ CAREFULLY

This is a direct-drive saw with no gears. For best results, follow the following rules:

1. Don't bear down on saw.
2. Keep your chain sharp.
3. Keep oil reservoir filled.
4. Always let the chain feed into the log by itself - don't bear down.

Remember also - with a direct-drive saw, you must sharpen chain more frequently. To prolong life of bar and chain, keep oil reservoir filled. Always fill when you fill gas tank. Chain and bar must have plenty of oil for successful operation.

IMPORTANT INFORMATION ON CUTTER BARS - PLEASE READ CAREFULLY

This bar is a specially designed and specially hardened for use on a Direct Drive Saw. It will give you satisfactory service if kept properly oiled, and not abused.

Lombard Governor Corporation warrants the bars only with respect to material and workmanship, and does not warrant against bar wear or bar burning. Lombard will replace on the basis of unused life or repair any cutter bar that is returned prepaid and proven to have been defective in material and workmanship as originally manufactured.

LOMBARD DIRECT DRIVE SAWS

Handlebar and Gas Tank Assembly

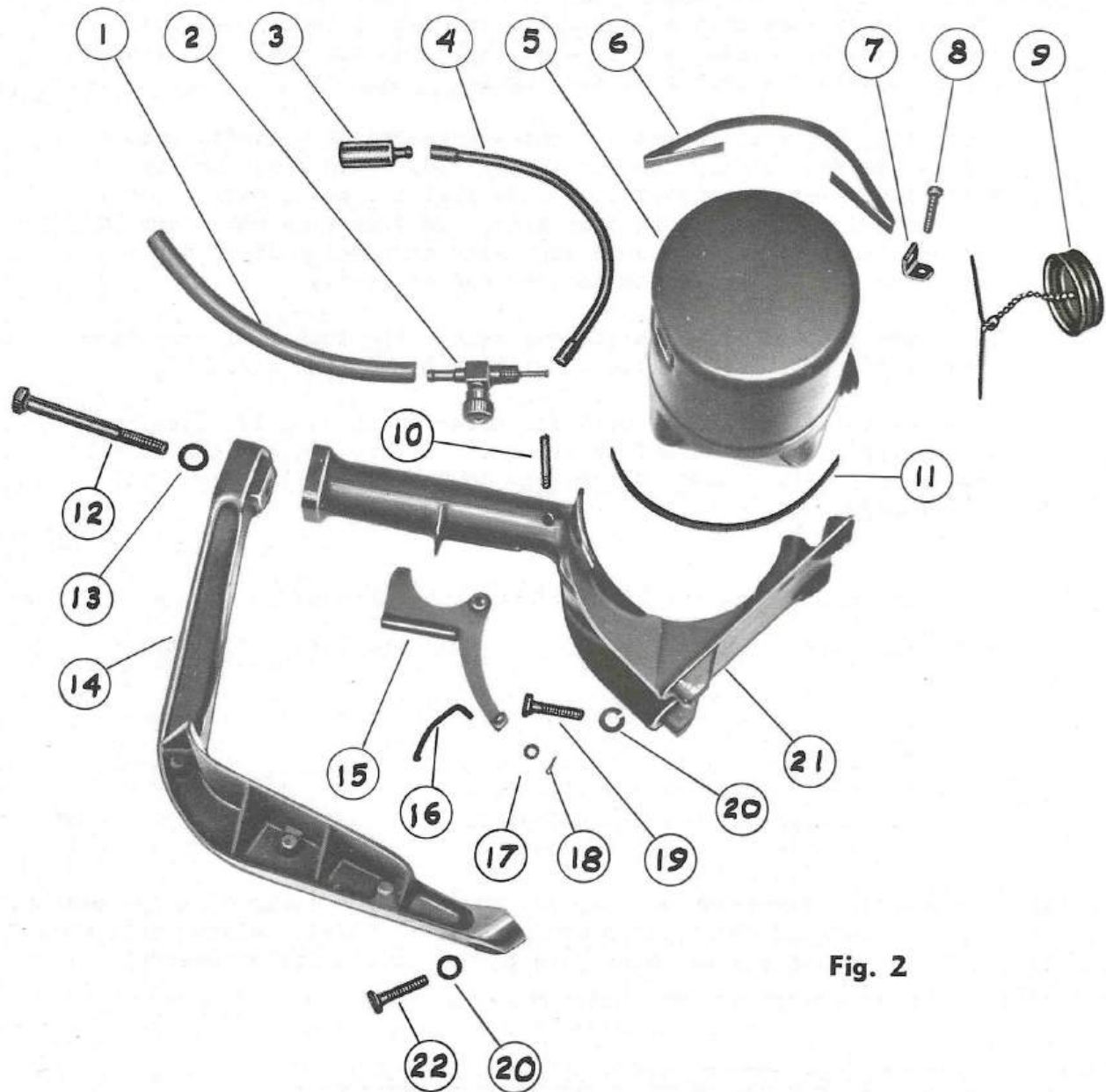


Fig. 2

LOMBARD GOVERNOR CORP., ASHLAND, MASS.

LOMBARD DIRECT DRIVE SAWS

Handlebar and Gas Tank Assembly

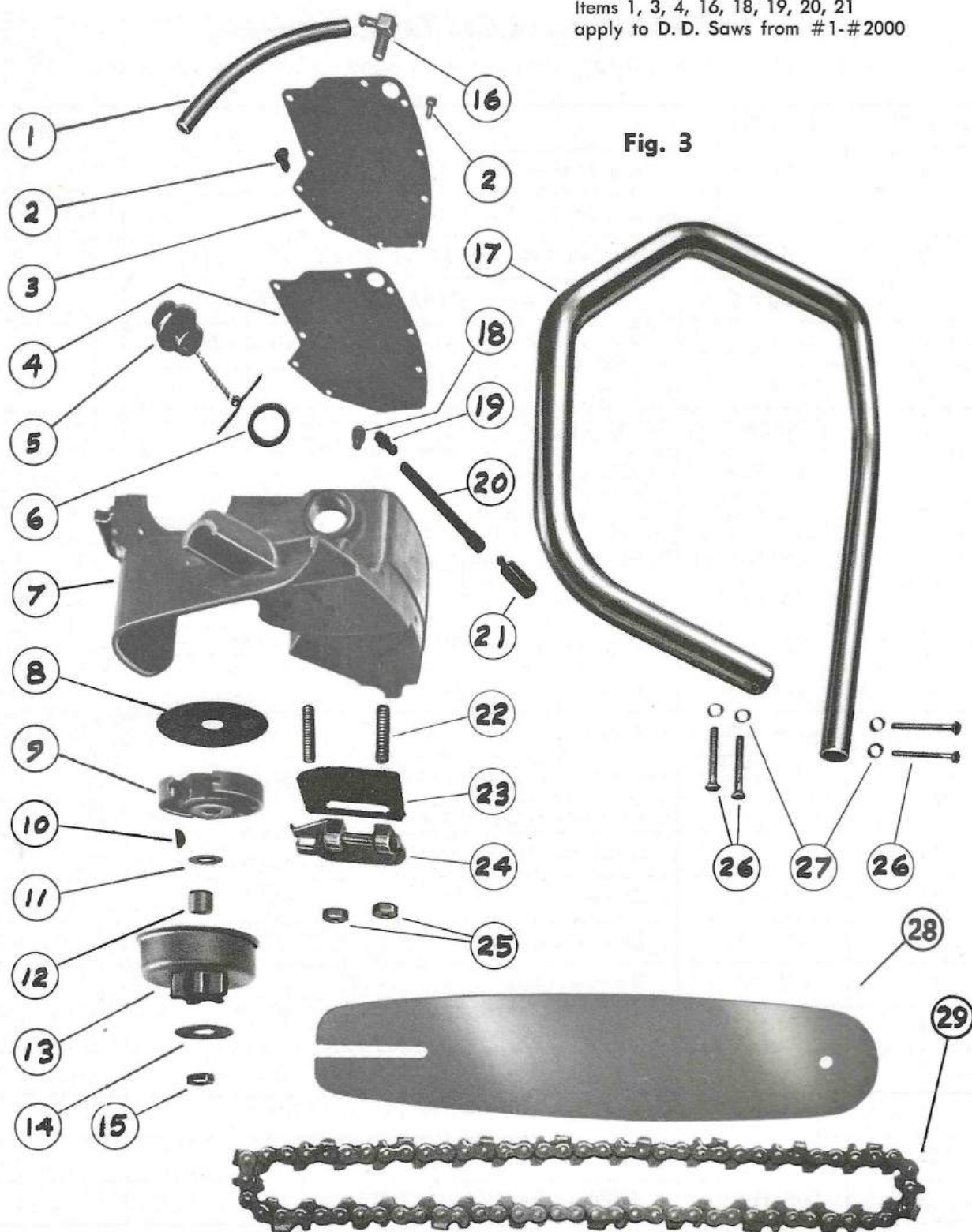
For Both Float and Diaphragm Carburetor Saws Unless Otherwise Noted.

Item No.	Part No.	Part Name	Qty. Per Unit
1	YS-2320	Gas Line — FLOAT ONLY	1
	YS-2336	Gas Line — DIAPHRAGM ONLY	
2	YS-2323	Shut-off-valve — FLOAT ONLY	1
	YS-2317	Shut-off valve — DIAPHRAGM ONLY	
3	5-42	Weight and strainer — DIAPHRAGM ONLY	1
4	5-41	Sleeve — DIAPHRAGM ONLY	1
5	DD-38	Gas tank	1
6	YS-2304	Strap, gas tank	2
7	YS-2303	Clip, gas tank strap	2
8	PS-613	Screw — Fil. Hd. 10-23 X $\frac{3}{4}$ lg.	2
9	PM-160	Cap, gas tank — FLOAT ONLY	1
	YS-2321	Cap, gas tank — DIAPHRAGM ONLY	
10	YS-2308	Pivot pin	1
11	YS-2306	Spacer, gas tank straps	2
12	PS-417	Screw — Hex Hd. 5/16-18 X $2\frac{3}{4}$ lg.	1
13	PW-207	Lockwasher — 5/16 std.	1
14	YS-2313-1B	Rear Handlebar (bottom)	1
15	YS-2307	Trigger	1
16	YS-2305	Link, throttle	1
17	PW-107	Washer, plain	2
18	PM-144	Cotter pin	2
19	PS-404	Screw — Hex Hd. $\frac{1}{4}$ -20 X 1 lg.	2
20	PW-204	Lockwasher, $\frac{1}{4}$ standard	3
21	DD-39-A	Rear handlebar (top)	1
22	PS-419	Screw — Hex Hd. $\frac{1}{4}$ -20 X $\frac{7}{8}$ lg.	1

LOMBARD DIRECT DRIVE SAWS

Front Handlebar, Reservoir and Drive Assembly

Items 1, 3, 4, 16, 18, 19, 20, 21
apply to D. D. Saws from #1-#2000



LOMBARD GOVERNOR CORP., ASHLAND, MASS.

LOMBARD DIRECT DRIVE SAWS

Front Handlebar, Reservoir and Drive Assembly

For Both Float and Diaphragm Carburetor Saws Unless Otherwise Noted.

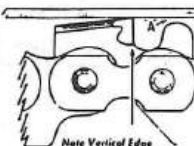
Item No.	Part No.	Part Name	Qty. Per Unit
1	DD-49	Pressure Line (Oil res.)	1
2	PS-701	Screw — 6-32 X 1/2 lg. Truss Hd. Sems	10
3	DD-24	Cover, Oil Res.	1
4	DD-27	Gasket, Oil Res. Cover	1
5	DD-33	Cap, Oil Reservoir	1
	YS-2341	Safety Chain	1
	YS-2347	Safety Catch	1
	RP-062-14	Rollpin	1
6	DD-27	Gasket, Oil Res. Cap	1
7		See Engine Parts List	
8	DD-40	Dust Shield	1
9	30001-1	Clutch	1
10	PM-202	Key, Clutch	1
11	YS-2032	Washer, Thrust	1
12	DD-42	Bushing, Clutch	1
13	DD-37	Sprocket and Drum	1
14	DD-41	Washer, Spec.	1
15	PN-310	Nut — 1/2-20 L. H.	1
16	DD-53	Valve Elbow	1
17	DD-26	Handlebar Front	1
18	PM-213	90° Elbow Adaptor	1
19	DD-44	Straight Adaptor	1
20	DD-43	Pick-up Tube	1
21	PM-212	Weight and Strainer (oil)	1
22	YS-2065	Stud, Cutterbar	2
23	DD-55	Cover, Plate	1
24	YS-2069	Chain Tension Assembly	1
	YS-2091	Consisting of: Bracket, Tension	Qty. 1
	YS-2094	Tension Plate	1
	YS-2093	Thrust Collar	1
	YS-2092	Screw, Tension	1
25	PN-103	Nut — 3/8-16 Std.	2
26	PS-405	Screw — Hex Hd. 1/4-20 X 1 1/2 lg.	4
27	PW-204	Lockwasher — 1/4 Std.	4
28	DD-47	Cutter Bar 16"	USE 1
	DD-48	Cutter Bar 20"	
	DD-56	Cutter Bar 24"	
29	DD-49	Chain 16"	USE 1
	DD-46	Chain 20"	
	DD-57	Chain 24"	

Filing Instructions

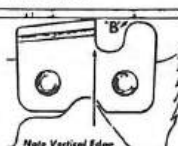
FOR #22 CHIPPER CHAIN

Chain Rider Clearance

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

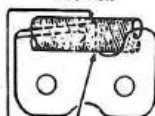


Move file to right before checking clearance at "B". Use same clearance in all species of wood.



Depth gauge clearance should be about .020 inch, or as set at factory.

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.

END VIEW



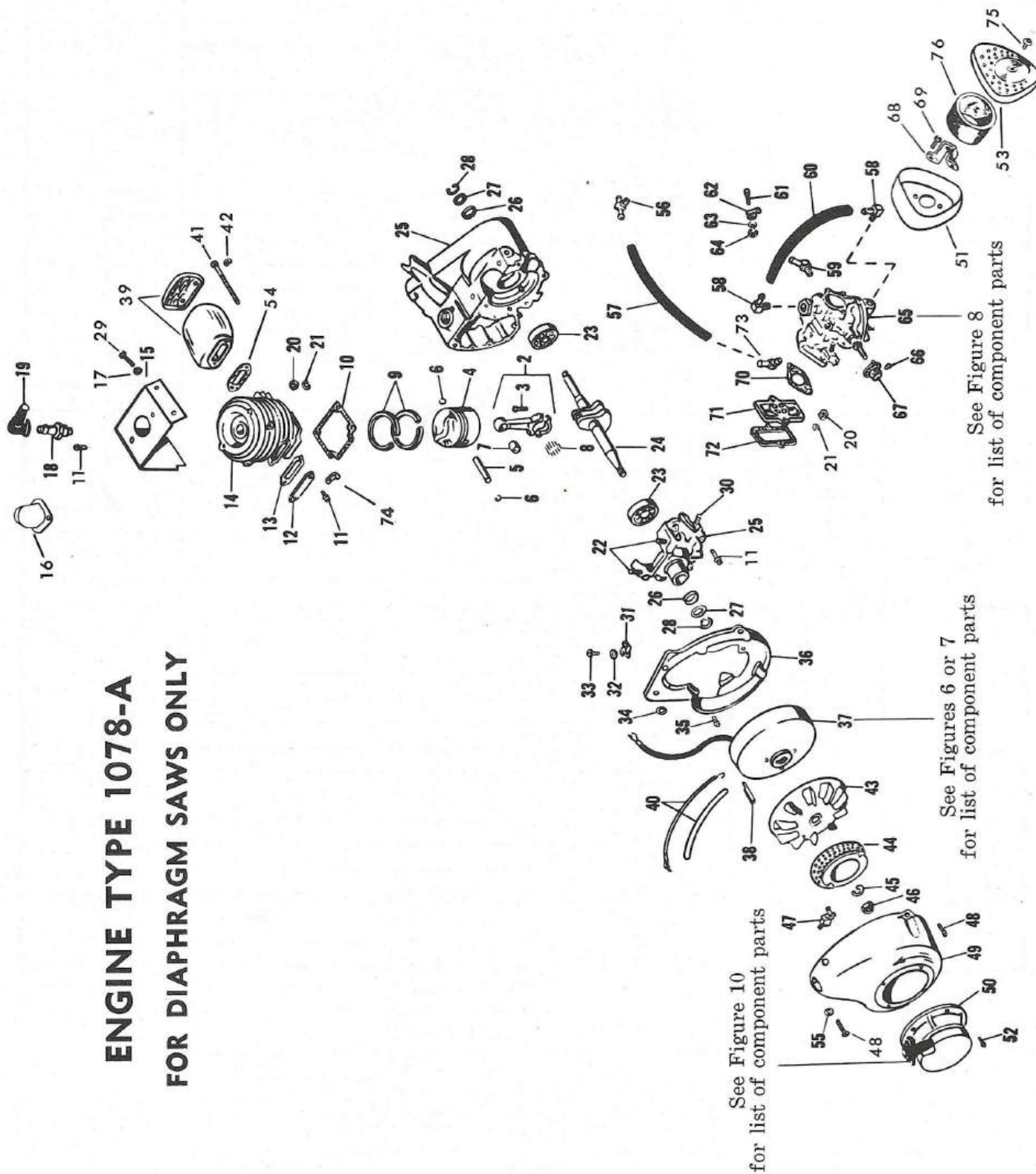
Keep file up. Low filing undercuts side of cutter, causing chain to grab. Never use a flat file to sharpen top plate.

TOP VIEW



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

ENGINE TYPE 1078-A **FOR DIAPHRAGM SAWS ONLY**



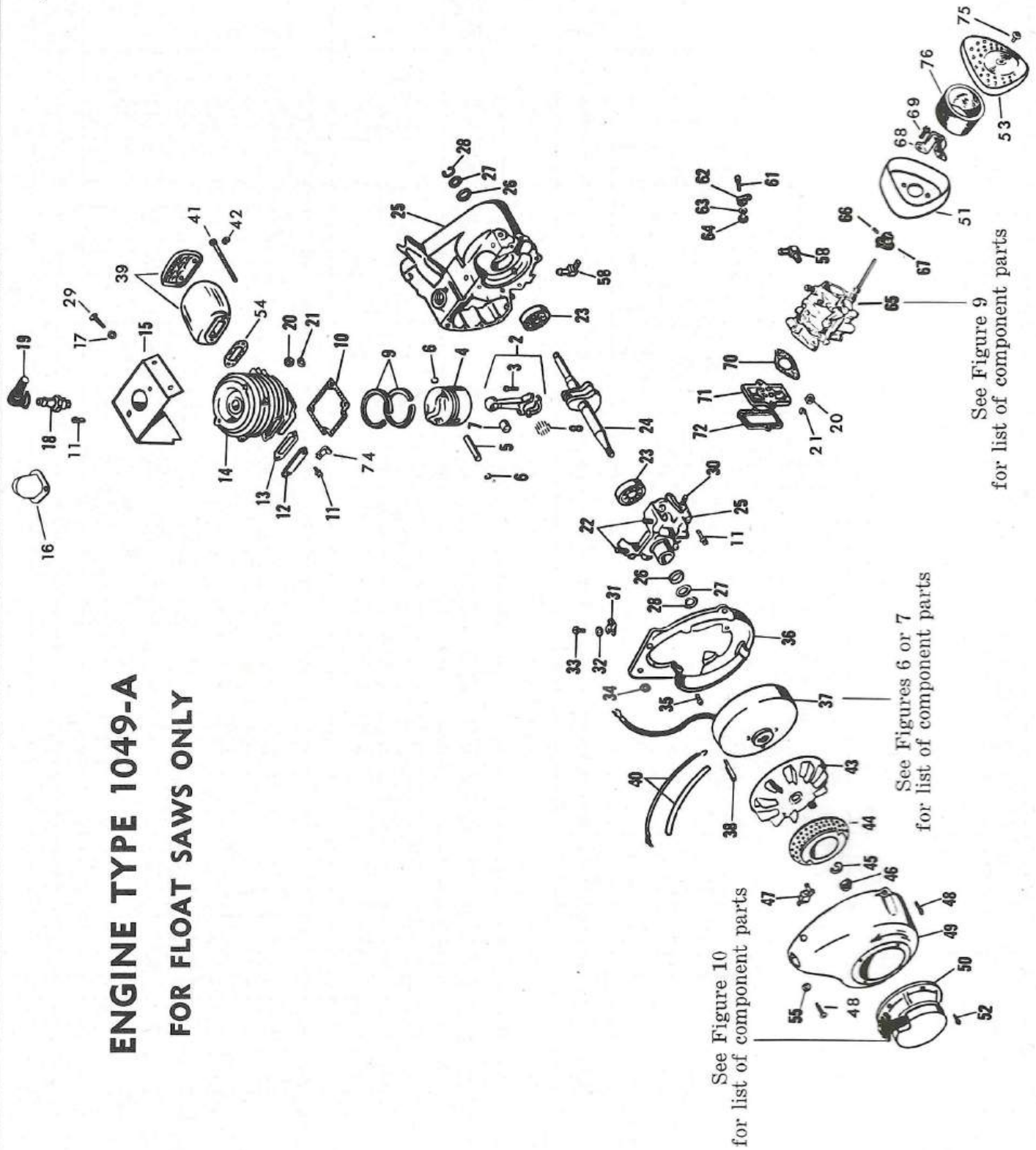
PARTS LIST ENGINE TYPE 1078-A

FOR DIAPHRAGM SAWS ONLY

Ref. No.	Part No.	Part Name	No. Req.
2	005-06	Conn. Rod Assy. (Includes Bearings)	1
3	1007-02	Screws	2
4	1015-18	Piston	1
5	1016-03	Piston Pin	1
6	1119	Piston Pin Retaining Ring	2
7	B-68	Bearing	1
8	Q4212	Bearing Set	1
9	1017-09	Piston Ring	2
10	1012-04	Cylinder Gasket	1
11	S-1114	10-24 X 5/8 Fil. Hd. Sems Screw	9
12	1064-01	Transfer Port Cover	1
13	1065-02	Gasket	1
14	S-1337	Cylinder	1
15	DD-54	Cylinder Shroud	1
16	YS-2013	Spark Plug Shield	1
17	PW-203	Lockwasher #10 Std.	2
18	JT6J	Spark Plug 14MM	1
19	227	Spark Plug Cover	1
20	PN-102	1/4-20 Nut	6
21	PW-204	1/4 Lockwasher	6
22	1022	Cylinder Stud	4
23	3203	Bearings	2
24	1001-96	Crankshaft	1
25	DD-8	Crankcase Assy.	1
26	1002	Crankcase Seal	2
27	1003	Seal Retainer	2
28	1004	Retainer Spring	2
29	PS-318	Screw 10-24 X 5/8 Rd. Hd.	2
30	1031	Carburetor Stud	2
31	1118	Cable Clip	1
32	PW-108	#10 Washer	1
33	S-1121	10-24 X 3/8 Screw	1
34	S-1386	1/4 Washer	4
35	S-1142	1/4-20 X 3/4 Screw	4
36	1019-31	Shroud Base	1
37	F-2120F FW-2364C	Magneto	1
38	1062	Flywheel Key	1
39	YS-2316	Muffler	1
40	3066-06	Ignition Cut-off Wire	1

Ref. No.	Part No.	Part Name	No. Req.
41	YS-2331	Screw Spec. 1/4-20 X 2 3/4	2
42	PW-216	Lockwasher 1/4 Spec.	2
43	1063-06	Flywheel Fan	1
44		Refer to Starter Parts List	
45	S-1371	7/16 Washer	1
46	S-1370	7/16-20 Nut (L.H. Thread)	1
47	3084-02	Toggle Switch	1
48	S-1142	1/4-20 X 3/4 Sems Screw	3
49	1018-57	Air Shroud	1
50	S-1574	Rewind Starter	1
51	YS-2218	Base Air Filter Protector	1
52	S-1357	1/4-20 X 1/2 Sems Screw	4
53	YS-2209	Cover Air Filter Protector	1
54	3014-02	Cylinder Exhaust Gasket	1
55	S-1386	1/4 Washer	3
56	DD-52	Pressure Line Tee	1
57	DD-59	Pressure Line	1
58	YS-2270	Fuel Line Elbow	2
59	PM-206	45° Elbow	1
60	YS-2262	Feed Line	1
61	S-1149	10-32 X 5/8 Sems Screw	1
62	3105-02	Clamp On Throttle Lever	1
63	PW-108	#10 Washer	1
64	PN-101	10-32 Nut	1
65	HP-12A	Carburetor	1
66	06969	8-32 X 1/4 Set Screw	1
67	08612	Carburetor Dial Knob	1
68	1077	Air Filter Bracket	1
69	S-1125	8-32 X 1/2 Fil. Hd. Sems Screw	2
70	1009	Gasket — Carburetor	1
71	S-1439	Reed Plate Assy.	1
72	1027	Gasket — Reed plate	1
73	DD-61	Vented 45° Elbow	1
74	1118-01	Cable Clip	1
75	S-1115	10-24 X 1/2 Fil. Hd. Sems Screw	1
76	1029	Element Air Filter	1

ENGINE TYPE 1049-A FOR FLOAT SAWS ONLY



PARTS LIST ENGINE TYPE 1049-A

FOR FLOAT SAWS ONLY

Ref. No.	Part No.	Part Name	No. Req.
2	005-06	Conn. Rod Assy. (Includes Bearings)	1
3	1007-02	Screws, Conn. Rod	2
4	1015-18	Piston	1
5	1016-03	Piston Pin	1
6	1119	Piston Pin Retaining Ring	2
7	B-68	Bearing, Cartridge	1
8	Q4212	Bearing, Needle	1
9	1017-09	Piston Ring	2
10	1012-04	Cylinder Gasket	1
11	S-1114	10-24X $\frac{5}{8}$ Fil. Hd. Sems Screw	9
12	1064-01	Transfer Port Cover	1
13	1065-02	Gasket	1
14	S-1337	Cylinder	1
15	DD-54	Cylinder Shroud	1
16	YS-2013	Spark Plug Shield	1
17	PW-203	Lockwasher #10 Std.	2
18	JT6J	Spark Plug 14MM	1
19	227	Spark Plug Cover	1
20	PN-102	$\frac{1}{4}$ -20 Nut	6
21	PW-204	$\frac{1}{4}$ Std. Lockwasher	6
22	1022	Cylinder Stud	4
23	3203	Bearings	2
24	1001-96	Crankshaft	1
25	DD-8	Crankcase Assy.	1
26	1002	Crankshaft Seal	2
27	1003	Seal Retainer	2
28	1004	Retainer Spring	2
29	PS-318	Screw 10-24 X $\frac{5}{8}$ Rd. Hd.	2
30	1031	Carburetor Stud	2
31	1118	Cable Clip	1
32	PW-108	#10 Washer	1
33	S-1121	10-24 X $\frac{3}{8}$ Sems Screw	1
34	S-1386	$\frac{1}{4}$ Washer	4
35	S-1142	$\frac{1}{4}$ -20 X $\frac{3}{4}$ Screw	4
36	1019-31	Shroud Base	1
37	F-2120-F FW-2364-C	Magneto	1

Ref. No.	Part No.	Part Name	No. Req.
38	1062	Flywheel Key	1
39	YS-2316	Muffler	1
40	3066-06	Ignition Cut-off Wire	1
41	YS-2331	Screw Spec. $\frac{1}{4}$ -20 X $2\frac{3}{4}$	2
42	PW-216	Lockwasher $\frac{1}{4}$ Spec.	2
43	1063-06	Flywheel Fan	1
44		Refer to Starter Parts List	
45	S-1371	7/16 Washer	1
46	S-1370	7/16-20 Nut (L.H. Thread)	1
47	3084-02	Toggle Switch	1
48	S-1142	$\frac{1}{4}$ -20 X $\frac{3}{4}$ Sems Screw	3
49	1018-57	Air Shroud	1
50	S-1574	Rewind Starter	1
51	YS-2230	Base Air Filter Protector	1
52	S-1357	$\frac{1}{4}$ -20 X $\frac{1}{2}$ Sems Screw	4
53	YS-2209	Cover Air Filter Protector	1
54	3014-02	Cylinder Exhaust Gasket	1
55	S-1386	$\frac{1}{4}$ Washer	3
58	YS-2270	Fuel Line Elbow	2
61	S-1149	10-32 X $\frac{5}{8}$ Sems Screw	1
62	3105-02	Clamp On Throttle Lever	1
63	PW-108	#10 Washer	1
64	PN-101	10-32 Nut	1
65	MD-77A	Carburetor	1
66	06969	8-32 X $\frac{1}{4}$ Set Screw	1
67	08612	Carburetor Dial Knob	1
68	1077	Air Filter Bracket	1
69	S-1125	8-32 X $\frac{1}{2}$ Fil. Hd. Sems Screw	2
70	1009	Gasket	1
71	S-1439	Reed Plate Assy.	1
72	1027	Gasket	1
74	1118-01	Cable Clip	1
75	S-1115	10-24 X $\frac{1}{2}$ Fil. Hd. Sems Screw	1
76	1029	Element Air Filter	1

PARTS LIST FOR WICO MAGNETO FW-2364C ONLY

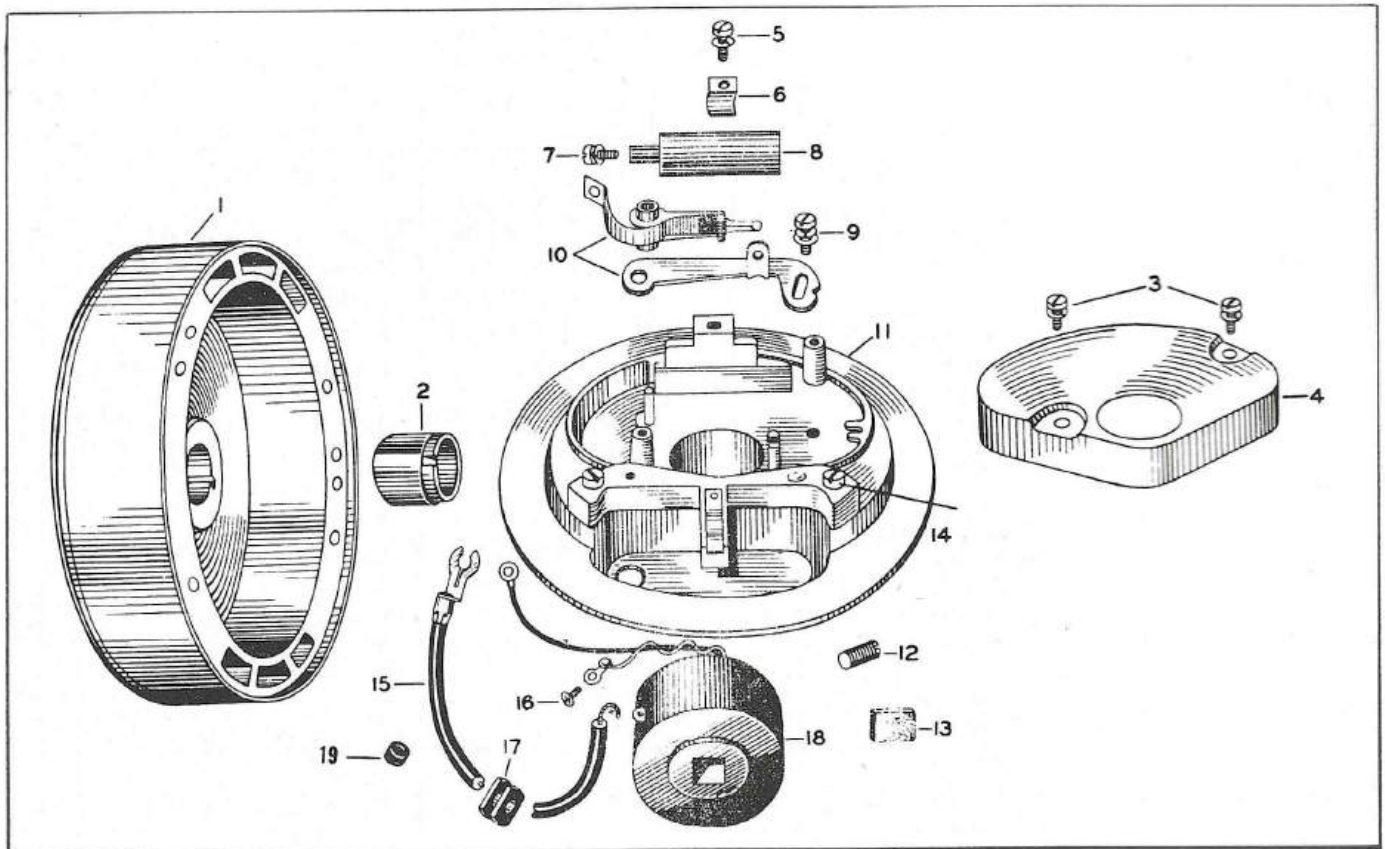


Fig. 6

Ref. No.	Part No.	Part Name	No. Req.
1	Y-9201	Rotor	1
2	9369	Breaker Cam	1
3	5411	Breaker Cover Clamp Sc.	2
4	8855	Breaker Cover	1
5	5411	Condenser Clamp Sc. (Sems)	1
6	8854	Condenser Clamp	1
7	5431	Condenser Conn. Sc. (Sems)	1
8	X8959	Condenser Group	1
9	5900	Fixed Contact Clamp Sc. (Sems)	1
10	X8920	Breaker Contact Set	1

Ref. No.	Part No.	Part Name	No. Req.
11	X9471	Stator Plate Repl. Assy. (Incl. Stator Pl. & Coil Core)	1
12	X8859	Friction Shoe Group	1
13	6318	Cam Wiper Felt	1
14	5428	Core Screw	2
15	X7782	Lead Wire Group	1
16	8731	Primary Lead Wire Clip Sc.	1
17	5486	Lead Wire Grommet	1
18	X8877	Coil Group	1
	X9470	Stator Plate Unit (Incl. Stator Plate, Core Coil, Condenser, Breaker Group & Lead Wire)	1
19	6678	Ground Lead Grommet	1

PARTS LIST FOR PHELON MAGNETO F-2120F ONLY

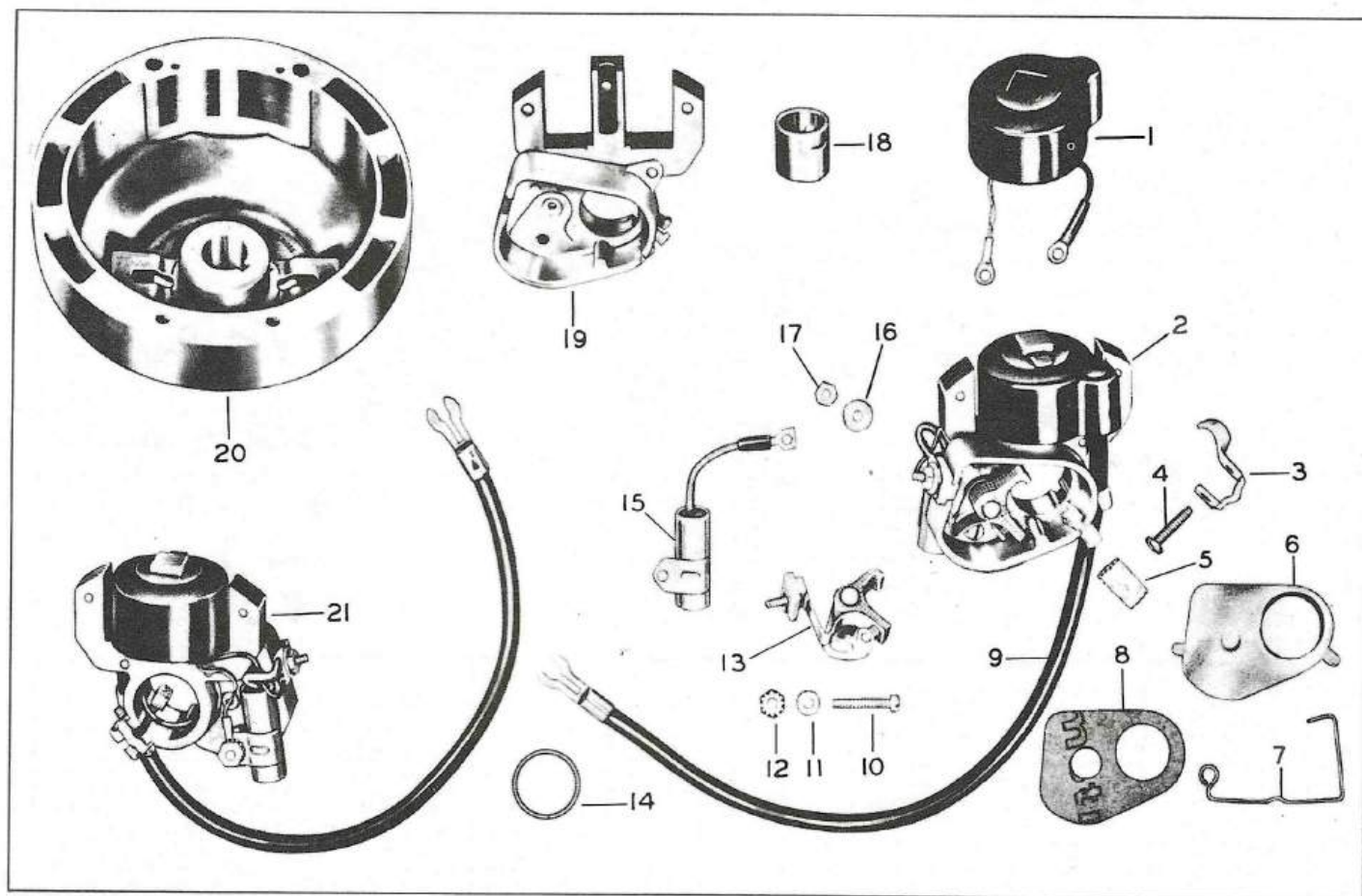


Fig. 7

Ref. No.	Part No.	Part Name	No. Req.
1	FG-2180	Coil Assembly	1
2	FG-2465-B	Complete Stator Assembly	1
3	F-2464	Core Clamp	1
4	F-2226	Core Clamping Screw	1
5	F-1078	Cam Wiper Felt	1
6	F-2457	Breaker Box Cover	1
7	F-2455	Breaker Box Cover Clamping Spring	1
8	F-2453	Breaker Box Cover Gasket	1
9	FG-2198	Lead Wire	1
10	F-1938	Breaker & Condenser Fastening Screw	1
11	F-247	Breaker Fastening Screw Washer	1

Ref. No.	Part No.	Part Name	No. Req.
12	F-2463	Breaker & Condenser Fastening Screw Nut	1
13	FG-2400	Breaker Assembly	1
14	F-2192	Spacing Ring	1
15	FG-2176	Condenser Assembly	1
16	F-2387	Terminal Washer	1
17	F-2187	Terminal Nut	1
18	F-2483	Breaker Cam	1
19	FG-2466	Breaker Box & Core Assembly	1
20	FG-2484	Flywheel	1
21	FG-2484	Bottom View of Complete Stator Assembly. (Reference No. 2)	

TILLOTSON CARBURETOR MODEL HP 12A

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

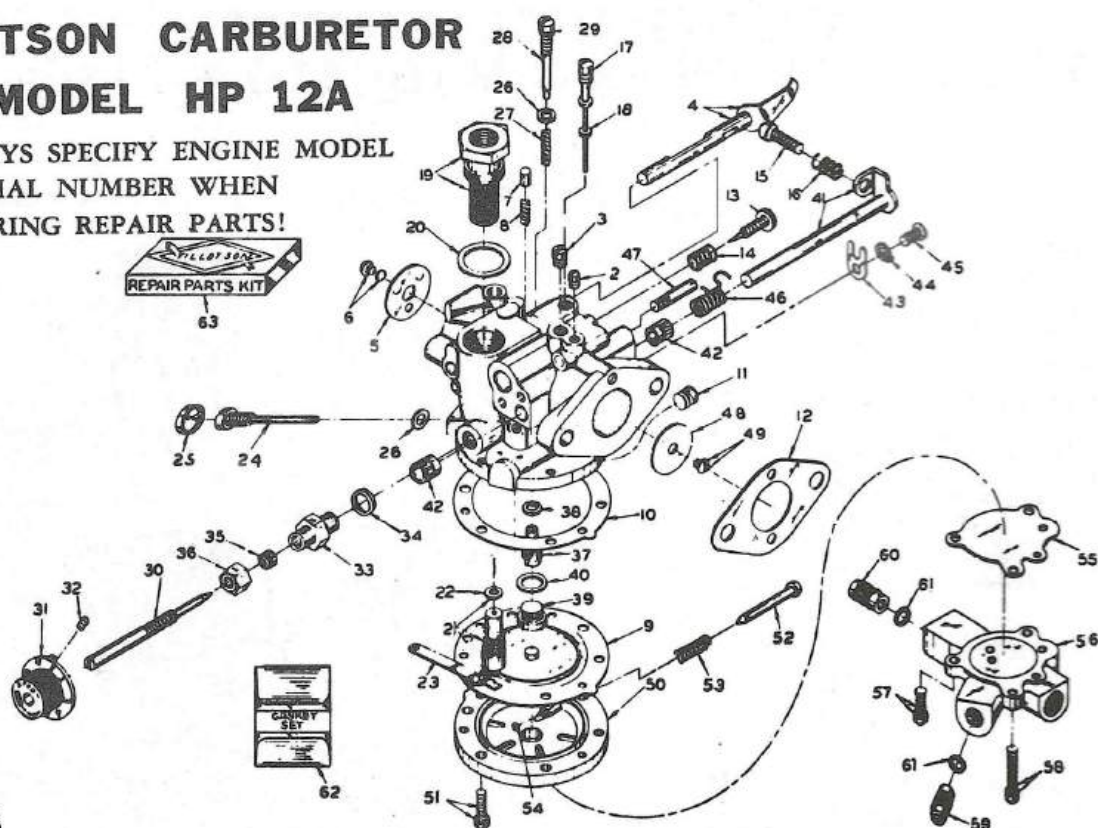


Fig. 8

Ref. No.	Part No.	Part Name	Qty.
2	02232	Body Channel Plug Screw	1
3	02983	Body Channel Plug Screw	1
4	09876	Choke Shaft & Lever	1
5	02405	Choke Shutter	1
6	08942	Choke Shutter Sc. & Lockwasher	1
7	05454	Choke Friction Pin	1
8	08805	Choke Friction Spring	1
9	*09698	Diaphragm	1
10	09676	Diaphragm Cover Gasket	1
11	02395	Drain Plug Screw	1
12	1009	Flange Gasket	1
13	*09697	Idle Adjustment Screw	1
14	*08793	Idle Adjustment Screw Spring	1
15	*05095	Idle Adj. Regulating Screw	1
16	*0788	Idle Speed Reg. Screw Spring	1
17	*09761	Idle Tube	1
18	07900	Idle Tube Gasket	1
19	09834	Inlet Connection & Screen	1
20	09681	Inlet Connection Gasket	1
21	*010141	Inlet Needle, Seat & Gasket	1
22	010165	Inlet Seat Gasket	1
23	*09708	Inlet Control Lever	1
24	*09695	Inlet Cont. Lever Pinion Screw	1
25	09884	Inlet Cont. Lever Pinion Sc. Cap	1
26	0648	Inlet Cont. Lever Pinion Sc. Gasket	1
27	*09683	Inlet Tension Spring	1
28	*010012-S	Inlet Tension Spring Retaining Screw & Washer	1
29	010004	Inlet Ten. Spring Ret. Sc. Washer	1
30	*09880	Main Adjustment Screw	1
31	08612	Main Adjustment Screw Knob	1
32	06969	Main Adj. Sc. Knob Set Screw	1
33	0702	Main Adjustment Screw Gland	1
34	0676	Main Adj. Screw Gland Gasket	1
35	09112	Main Adj. Screw Packing	1

Ref. No.	Part No.	Part Name	Qty.
36	0703	Main Adj. Screw Packing Nut	1
37	*09883	Main Nozzle	1
38	06076	Main Nozzle Gasket	1
39	09679	Main Nozzle Channel Plug Sc.	1
40	09930	M'n Nozzle Chn'l Plug Sc. G'ket	1
41	09878	Throttle Shaft & Stop Lever	1
42	09780	Throttle Shaft Bushings	1
43	09678	Throttle Shaft Clip	1
44	0992	Throttle Shaft Clip Lockwasher	1
45	01974	Throttle Shaft Clip Screw	1
46	*09602	Throttle Shaft Return Spring	1
47	04594	Throttle Stop Pin	1
48	08646	Throttle Shutter	1
49	08942	Th'tle Shutter Sc. & Lockwasher	1
50	010179	Diaphragm Cover (Includes Ref. 52, 53, & 54)	1
51	09689	Diaphragm Cv'r Sc. & Lckwshr.	1
52	010095	Flushing Plunger	1
53	010094	Flushing Plunger Spring	1
54	010093	Flushing Plunger Ret. Clip	1
55	*010090	Fuel Pump Diaphragm	1
56	010178	Fuel Pump Body	1
57	09689	Fuel Pump Body Sc. Lckwshr.	1
58	*010098	Fuel Pump Body Sc. & Lckwshr.	1
59	*010100	Fuel Inlet Check Valve	1
60	*010097	Fuel Outlet Check Valve	1
61	06076	Fuel Inlet & Outlet Check Valve Gasket	1
62	*GS-104	GASKET & PACKING SET	1
63	RK-153	REPAIR PARTS KIT	1
	010180	Fuel Pump Body Assembly (Includes Ref. 59, 60, & 61)	1
	010181-S	Fuel Pump & Diaphragm Cover Assy. (55-61 Inclusive)	1

* Denotes contents of REPAIR PARTS KIT

TILLOTSON CARBURETOR MODEL MD-77A

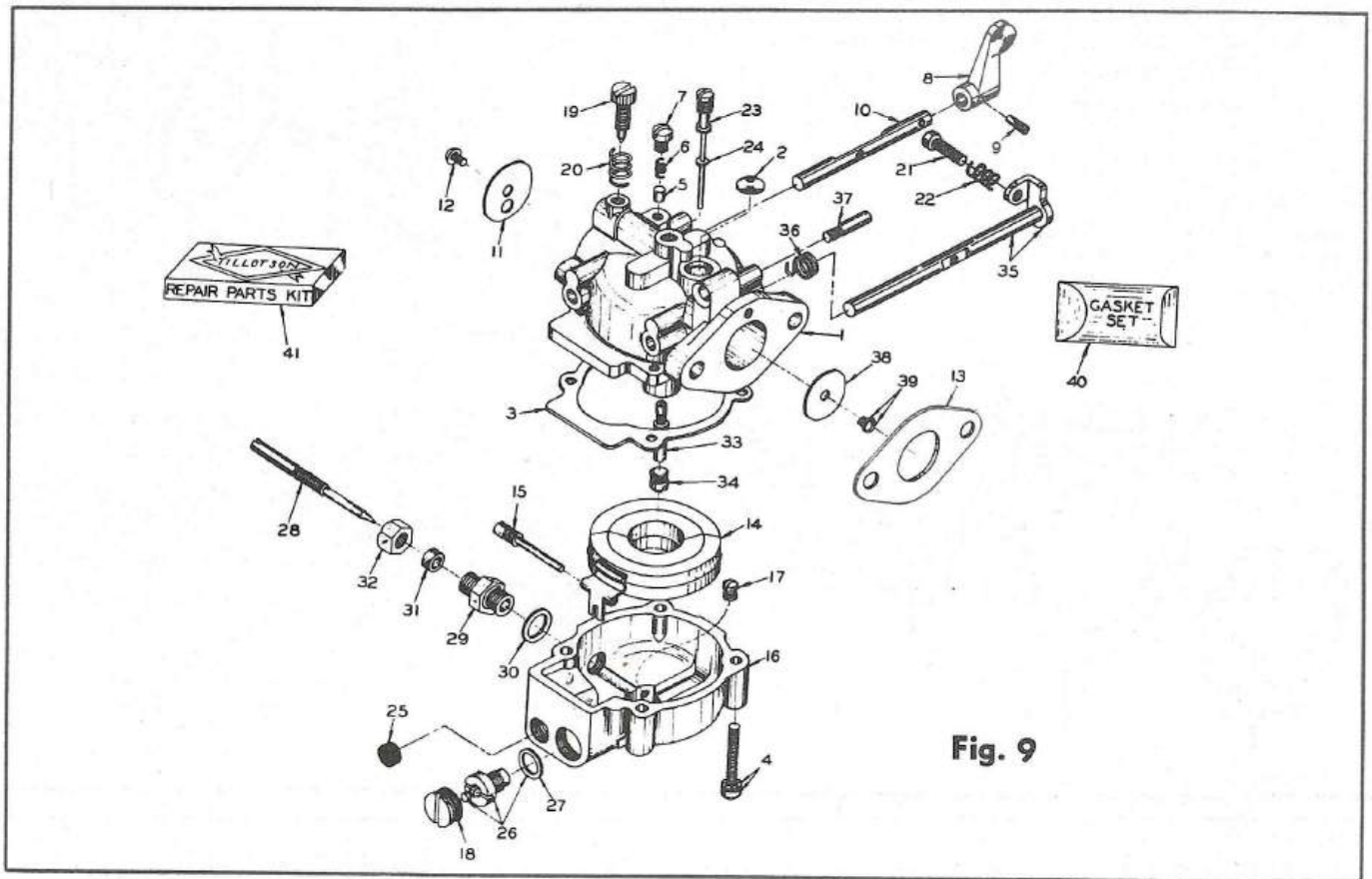


Fig. 9

When ordering, please specify full Carburetor Model and Complete Part Number, Name

Ref. No.	Part No.	Part Name	No. Req.
1	010010	Body	1
2	*02531	Body Channel Welch Plug	1
3	07903	Body Gasket	1
4	06062	Body Retaining Screw & Lockwasher	4
5	*05454	Choke Friction Pin	1
6	*03860	Choke Friction Pin Spring	1
7	*07912	Choke Friction Screw	1
8	05566	Choke Lever	1
9	03208	Choke Lever Retaining Pin	1
10	08454	Choke Shaft	1
11	08862	Choke Shutter	1
12	0120	Choke Shutter Screw	1
13	1009	Flange Gasket	1
14	07804	Float	1
15	*07901	Float Lever Pinion Screw	1
16	07929	Fuel Bowl	1
17	*03311	Fuel Bowl Drain Screw (Small)	1
18	07896	Fuel Bowl Plug Screw (Large)	1
19	*06910	Idle Adjustment Screw	1
20	*05725	Idle Adjustment Screw Spring	1
21	*05095	Idle Speed Regulating Screw	1
22	*0788	Idle Speed Regulating Screw Spring	1

Ref. No.	Part No.	Part Name	No. Req.
23	*08515	Idle Tube	1
24	07900	Idle Tube Gasket	1
25	07283	Inlet Connection Screen	1
26	*09899	Inlet Needle Seat & Gasket	1
27	02510	Inlet Seat Gasket	1
28	*08611	Main Adjustment Screw	1
29	0702	Main Adjustment Screw Gland	1
30	0676	Main Adjustment Screw Gland Gasket	1
31	09112	Main Adjustment Screw Packing	1
32	0703	Main Adjustment Screw Packing Nut	1
33	*08179	Main Nozzle	1
34	02395	Main Nozzle Channel Plug Screw	1
35	010007	Throttle Shaft & Lever	1
36	*09602	Throttle Lever Return Spring	1
37	04594	Throttle Lever Stop Pin	1
38	08646	Throttle Shutter	1
39	08942	Throttle Shutter Screw & Lockwasher	1
40	*08025	GASKET & PACKING SET	
41	RK-120	REPAIR PARTS KIT	

(*) Indicates contents of Repair Parts Kit.

FLOAT SETTING: To check correctly, separate Fuel Bowl Assembly from Upper Body Assembly and Gasket. Now with Fuel Bowl Assembly held in upside down position, the then lowest point of float, at free end, should project 1/64th of an inch below rim of fuel bowl.

STARTER ASSEMBLY S-1574

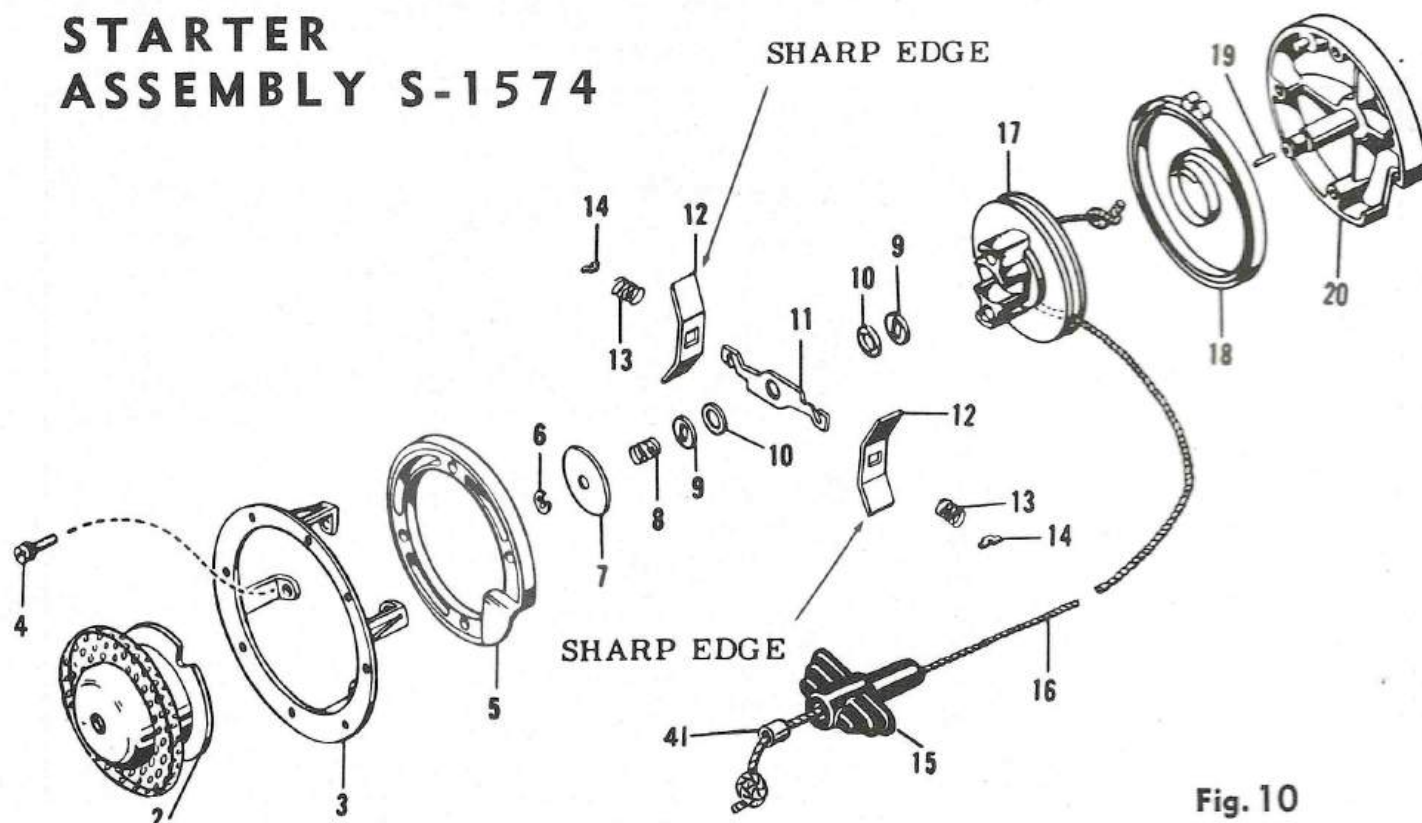


Fig. 10

Ref. No.	Part No.	Part Name	No. Req.
*2	114-55	Cup & Screen Assembly	1
3	1193	Mounting Flange	1
4	23-5	Machine Screw	4
5	38-4	Middle Flange	1
6	29-3	Retainer Ring (Truarc)	1
7	27-8	Brake Retainer Washer	1
8	20-3	Brake Spring	1
9	27-3	Brake Washer	2
10	27-2	Fibre Washer	2
11	16-4	Brake Lever	1

Ref. No.	Part No.	Part Name	No. Req.
12	11-71	Friction Shoe Plate	2
13	20-2	Friction Shoe Spring	2
14	11-19	Spring Retainer Plate	2
15	144-2	T-Handle Assembly	1
16	40-2	Cord	1
17	13-10	Rotor	1
18	20-1	Rewind Spring	1
19	25-9	Centering Pin	1
*20	151-31	Cover	1
41	27-17	T-Handle Washer	1

*Comprised of parts not furnished separately

Warranty

We warrant each New Chain Saw manufactured by us to be free from defects in material or workmanship. Our obligation under this warranty is limited to making good at our factory any parts thereof which shall within thirty days after delivery of such chain saw to the original purchaser be returned to us with transportation charges prepaid, and which our examination shall disclose to have been thus defective. This warranty will not apply to any chain saw which shall have been repaired or altered outside our factory in any way so as, in our judgment, to affect its stability or reliability nor which has been subject to misuse, negligence or accident. This warranty is expressly in lieu of all other warranties expressed or implied and all other obligations or liabilities on our part, and we neither assume nor authorize any other person to assume for us any other liability in connection with the sale of our chain saws.

LOMBARD GOVERNOR CORPORATION

ASHLAND, MASS.

This guarantee shall be effective only providing Warranty card is properly filled out and returned to Lombard Governor Corp. at the time of purchase.