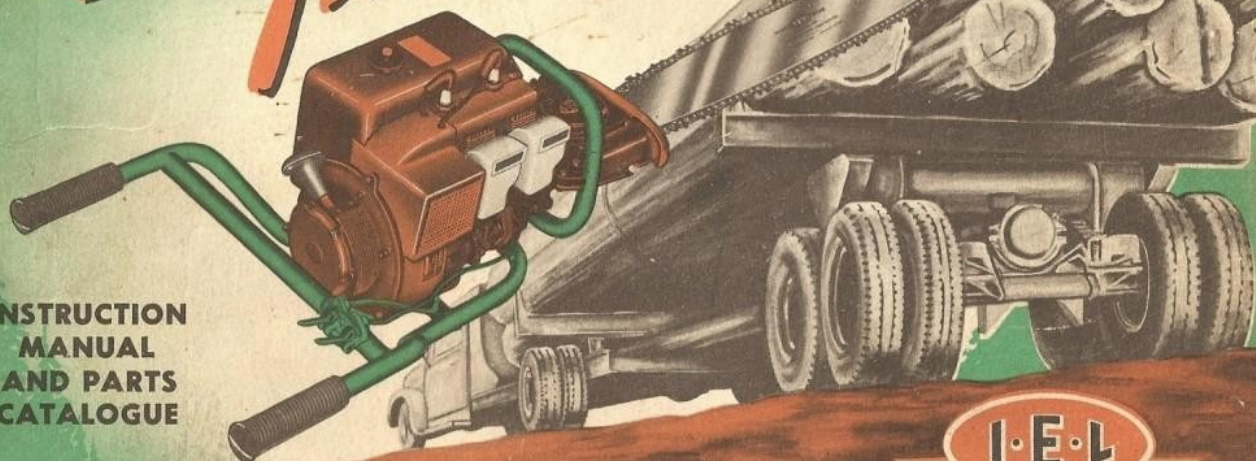


51 Super Twin

ONE & TWO MAN POWER CHAIN SAW

INSTRUCTION
MANUAL
AND PARTS
CATALOGUE



INDUSTRIAL ENGINEERING LIMITED

I.E.L.
Power
CHAIN SAWS

I.E.L. is proud to present the 51 Super Twin, the latest power chain saw on the market today. The 51 Super Twin, produced by the first makers of chain saws in America, represents many years of experience and research. Tested and retested, these machines are designed and built by our engineers and staff in close collaboration with the men who use this type of equipment. This new power saw has proved to be the ultimate in a labour saving machine for use in the logging and pulpwood industries. The 51 Super Twin is also used to great advantage in many other industries, for cutting mine props, railway ties, or general construction, etc.

I.E.L. Power Chain Saws are proudly offered by the owners, who work at the benches, lathes and desks. Any criticism, comment or suggestions that users may have to offer will be most sincerely appreciated in the spirit of co-operation.

100 PER CENT OWNED AND OPERATED BY THE EMPLOYEES

INDUSTRIAL ENGINEERING LIMITED
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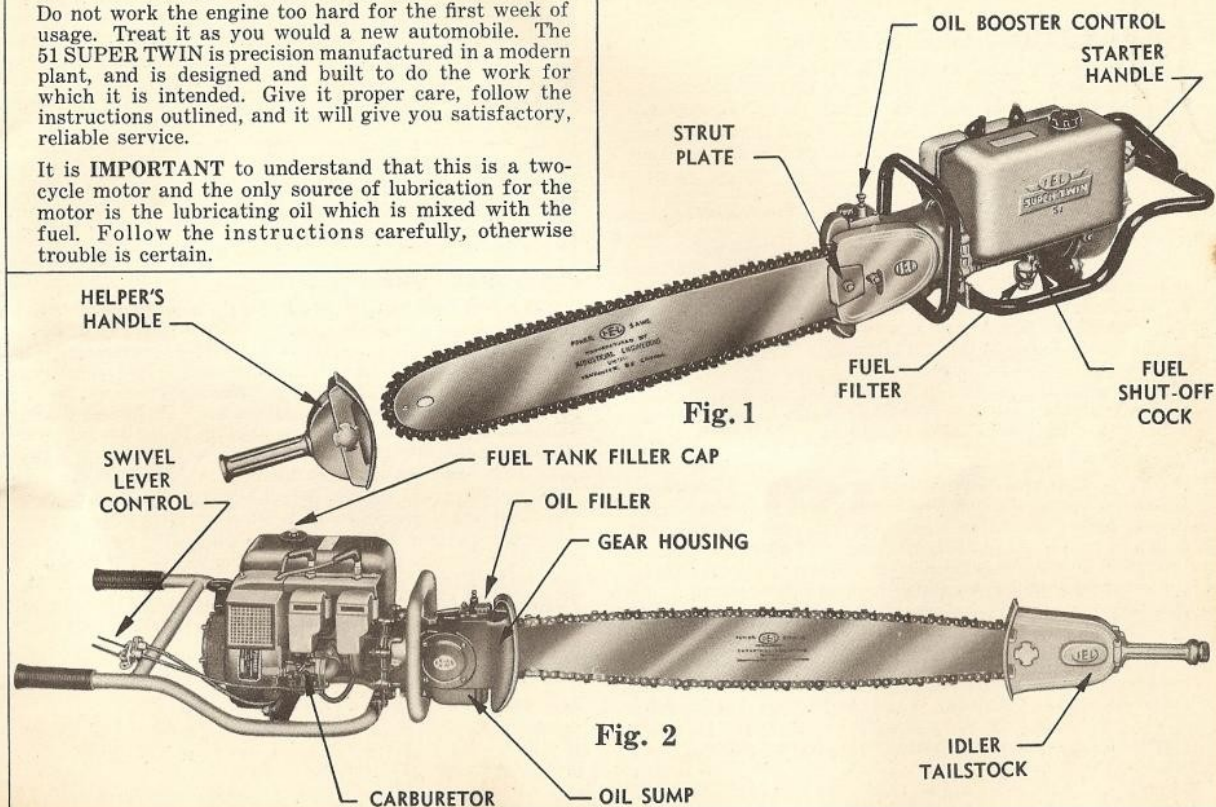
Eastern Division Office
158 Oak Street
North Bay, Ontario, Canada

U.S. Sales Representative
I.E.L. Power Saws, Inc.
1112 Westlake Ave. North, Seattle, 9, Washington

TO THE OWNER

Do not work the engine too hard for the first week of usage. Treat it as you would a new automobile. The '51 SUPER TWIN is precision manufactured in a modern plant, and is designed and built to do the work for which it is intended. Give it proper care, follow the instructions outlined, and it will give you satisfactory, reliable service.

It is **IMPORTANT** to understand that this is a two-cycle motor and the only source of lubrication for the motor is the lubricating oil which is mixed with the fuel. Follow the instructions carefully, otherwise trouble is certain.



Instructions for the Operation and Care of the '51 Super Twin Chain Saw

PREPARATION FOR STARTING

The cutter bar and sawing chain should be fitted to the machine. First slacken the two nuts and the strut plate (Fig. 1). Cutter bar can then be slid on to the machine between the facing on the main casting and the strut plate. On the strut, there is a pin on the strut face which must be engaged in the corresponding hole in the cutter bar. The nuts clamping the strut in place should be almost tightened up, and the bar drawn back to its fullest extent by means of the tightener screw.

The chain should then be loosely looped over the bar, taking care that the cutter teeth are facing the machine on the underside, and fitted carefully onto the sprocket. The rest of the chain can then be guided into the groove on the bar and around the end of the bar. The chain should then be tightened by means of the adjuster, moving the bar out until the chain can be lifted off the bar slightly, without strain. Do not tighten the chain too tightly. Finally, the two strut bolts should be tightened fully.

With an idler tailstock (Fig. 2) the same procedure should be followed, having first mounted the tailstock as far on the bar as possible and bolting both it and the strut tightly before mounting the chain. The chain in this case is looped over the tailstock idler last and all chain tension is applied by the screw adjustment in the tailstock. Apply sufficient tension only to allow the chain to be pulled up so that the lugs are just clear of the bar and any further movement is difficult.

It may be found necessary when installing a new chain, to reverse the bar mounting plate (PT-284) which holds the cutter bar to the tailstock. When the cutting chain is fully stretched or slightly worn it may be necessary to again change the bar mounting plate to its original position (see idler tailstock instructions).

It should be noted that a new chain stretches for the first few days and will require re-tightening at intervals until it is fully stretched.

The oil tank at front end of machine should be filled with oil sufficiently fluid to flow easily at prevailing temperatures. If the wood is pitchy, a half and half mixture of kerosene and lubricating oil should be used. This oil is fed to the chain automatically, but a booster control is fitted to enable an extra flood of oil to be forced on to the chain. This is a small knob beside the oil filler and it should be pushed down and held for a short interval. (Fig. 1).

FUEL MIXTURE

The fuel tank should be filled with a mixture of high-grade gasoline and SAE-40 lubricating oil, in the proportions of ten parts of gasoline to one part of lubricating oil. The gasoline and oil should be well mixed in a separate, CLEAN, container and must be thoroughly stirred with a paddle for proper mixing. Extra care should be taken when mixing in the winter, as cold oil is harder to mix. Always shake the mixture well before pouring into the tank, if it has been standing for any length of time.

Several oil companies prepare a power saw fuel "mix". These mixtures are made up in different proportions of oil and gas according to specifications laid down by different manufacturers of power saws. These specifications apply also to SAE viscosity rating of the oil, such as SAE 20, 30 or 40, etc. You should be certain that any "mix" to be used in your machine conforms to the specifications laid down in your manual.

STARTING THE ENGINE

1. Open the fuel tank shut-off cock. (Fig. 1).
2. An ignition switch is conveniently placed at the top of the blower housing. To start have the switch in "ON" position, "OFF" position to stop.

3. If the motor is cold, close the choke on the carburetor. The choke lever is placed at the outside rear of the carburetor, and is closed when lever is pointing towards operator. The colder the weather and the motor, the more choking is needed. The main needle valve adjustment should be approximately one full turn open. If the motor is cold it may be found necessary to open the adjustment another quarter turn. Be sure this is re-adjusted before starting to saw.
4. Open the throttle and pull the starter handle (Fig. 1) easily until engagement is felt. Then give the knob a firm, sharp pull, moving the hand not more than one or two feet. Open the choke after the motor starts to warm up. Run at half throttle for a few minutes to thoroughly warm up before starting to work.

NOTES ON STARTING

If the motor does not respond to the first pull and a second also does not produce results, choking or further flooding may be necessary and points 3 and 4 should be repeated. The colder the weather and the colder the machine, the more flooding is needed. It is almost impossible to overflood the engine when it is dead cold, but excessive flooding when warm will prevent a start. If overflooding is suspected, remove the drain cocks (B78, Fig. 3) on the underside of the crankcase and pull the motor over a few times, then replace cocks.

If the motor is to be left to stand for a long time, it is best to run the carburetor dry by shutting off the gasoline and let the motor run. If this is not done, the gasoline evaporates leaving the lubricating oil behind, and the engine gets a large slug of almost straight lubricating oil when a start is attempted, and oiled-up plugs will result.

TROUBLE IN STARTING

1. Make sure that there is fuel in the tank and that the shut-off cock is open.

2. Check ignition by removing spark plugs and attaching ignition wires to plugs with the body of the plugs touching the engine. Fat blue sparks should appear when the motor is turned over smartly. If the spark is not good, hold the wire alone $\frac{1}{8}$ inch from the engine and pull the engine over. If a good spark appears, then the plug is faulty. If the spark is poor, check magneto points, coils and condensers. Check wires from magneto to switch for grounding or shorting.
3. Overflooding can be corrected by removing base drain plugs and turning motor over a few times until fuel stops coming out of the drain. Be sure these plugs are replaced before attempting to start motor.

RUNNING INSTRUCTIONS

After starting the motor, allow it to warm up for a little while before starting to cut. This is particularly important when the weather is very cold or when the motor is cold. Then speed up the engine until the clutch engages and the chain starts moving and feed some oil to the chain by means of the booster valve.

Keep the motor speed low when warming the machine up and look the machine over to make sure everything is alright.

When starting a cut, do not race the motor and then jam the blade into a cut. Bring the engine up to cutting speed and then start the cut easily, opening the throttle at the same time. Keep the engine pulling hard by pressing it into the cut, but avoid lugging the engine slowly, as far as possible. The good operator is noticeable in the way he keeps the engine speed steady. A slight rocking motion to the blade gives the operator extra "feel" as to what is happening in the cut and also eases the load on the engine, giving faster cutting. If the machine is loaded down, the clutch will automatically disengage and if this happens, the throttle should be closed immediately.

NOTE: IF THE CLUTCH IS KEPT SLIPPING WITH THROTTLE OPEN, EXCESSIVE WEAR OF THE LININGS WILL OCCUR. The change from the bucking to the felling position is accomplished by pressing the swivel release trigger down and then turning the front end of the machine around by means of the front handle bar. Release of the trigger will lock the front end in the desired position.

GENERAL CARE OF THE MACHINE

1. Keep the machine clean and free of sawdust.
2. Clean the carburetor air screen and cooling screen regularly. (Fig. 7).
NOTE: DO NOT OPERATE WITH SCREEN LEFT OUT.
3. Clean the fuel filter (Fig. 1) regularly. A screen will be found in the adaptor which is the connection between fuel filter and gas tank. If clogging is suspected this point should be checked.
4. At regular intervals, remove the tank and shroud and clean dirt and sawdust from cylinder and head fins.
5. Check the tightness of all nuts and bolts on the machine regularly.
6. Keep the exhaust ports free from carbon.
7. Wash out the fuel tank if a lot of dirt appears in the filter.
8. Keep the cutting chain sharp, and properly jointed and set.

In some instances above, how often the job should be done is not given, because circumstances of operation vary the necessity for the work considerably. If a point is checked and found OK, then the interval between jobs can be lengthened. Conversely, if say the air filter is found to be very dirty, it should be cleaned more often.

CLEANING THE EXHAUST PORTS

The necessity for cleaning the carbon from the exhaust ports varies considerably and depends on the fuel and oil used, how well it is mixed, the carburetor, setting, etc.

However, once a month should be adequate. To clean the exhaust ports, the exhaust can be removed by unscrewing the four screws holding them in place. Three circular ports in each cylinder will then become visible. Remove the spark plugs and turn the motor over until one piston is at the bottom of the stroke and then clean off any carbon on the ports with a piece of wood. Try to avoid getting the carbon into the cylinder as far as possible and blow the carbon out before reassembling. Repeat this process with the second cylinder. **NOTE: DO NOT USE A METAL INSTRUMENT IN REMOVING CARBON FROM PORTS.**

CLEANING THE COOLING FINS

The dirt accumulated on the cooling fins of the cylinder heads should be removed regularly. The gas tank should first be removed and the accumulated dust and dirt cleaned out with a brush. The function of the fins is to cool the block and pistons. Great care should be taken not to break the fins while cleaning.

CARBURETOR ADJUSTMENT

There are two adjustments for idling, the idling mixture adjustment which is a small screw on the top of the carburetor toward the operator (Fig. 9), near the air intake. The screw should be around $1\frac{1}{4}$ turns open.

The other idling speed adjustment sets the opening of the throttle in the idling position and is to be found on the inner side of the carburetor. This adjustment cannot be made while motor is running. If motor idles too fast, stop and back off this stop screw.

The main needle valve adjustment is placed at the lower part of the carburetor toward the operator. This should be set at approximately one full turn open.

CUTTER BAR MAINTENANCE

The cutter bar should be removed and turned over from time to time in order to distribute the wear on both sides of the bar. As wear takes place, a sharp edge is left on the

extreme edge of the bar and this should be removed with a file when it becomes noticeable. The groove should be periodically cleaned of sawdust, particularly the oil hole to permit free passage of oil from the pump.

THE CLUTCH

The clutch is automatic and works on a self-energizing principle (Fig. 4). It will adjust itself as the linings wear, but when these are worn to the point where the clutch will not hold, new linings must be installed. If excess slippage occurs, there is probably oil on the facings.

GEAR HOUSING

The Gear Housing is lubricated with good grade gear grease such as Lubriplate and a small amount should be added every few weeks to make up for leakage. When renewing your grease completely, only fill the housing up to the level of the gearshaft. Excessive amounts of grease will only pump out and place an excessive strain on the grease seals. 3 to 1 or 4 to 1 is stamped near the vent plug on top of gear box. These numbers indicate gear ratio.

OIL PUMP ADJUSTMENT

As previously mentioned, the oil for the cutting chain is supplied from an automatically operated pump in the gearhousing. A by-pass valve is assembled in the oiler control body which allows part of the oil pumped to pass back into the sump. The booster control knob, when pushed down, merely closes off this by-pass hole and allows the entire flow of oil to get to the bar and chain. (Fig. 6).

The amount of oil which is by-passed can be adjusted at the by-pass valve, so that your regular oil flow can be set to suit your needs. The valve can be located by removing the oiler control body (top of gearhousing) and on the underside a locknut and valve with a screwdriver slot becomes visible. Slacken off the locknut and screwing the valve inwards gives more oil, outwards for less oil. When

desired adjustment is set, retighten locknut and re-assemble unit in place.

If oil fails to pump through, check all passages to ensure they are not blocked.

IDLER TAILSTOCK

The tailstock is provided with an adjustment for tensioning the chain. The tension should be increased until the chain can be pulled off the centre of the bar a distance of between one and two inches.

The idler wheel which is mounted in the tailstock does not normally require greasing as it is packed with sufficient grease to last the life of the bearings. If it is desired to repack the bearings, this can be accomplished by removing the cap screw at the outer end of the shaft, packing the hole with grease and re-assembling. It should be noted that there is a clip ring in the bore of the idler, thus the bearing can only be removed by pressure from the inside outwards. If bearings have been removed from idler, do not forget to replace the two spacer washers between bearings.

CHAIN

A Power Saw is only as good as its cutting chain, therefore, it is essential that the chain be kept sharp at all times. The section on chain filing should be carefully digested and the instructions followed.

It is highly advisable to remove the sawing chain and soak it in oil over night as regularly as possible. The chain should be cleaned with Kerosene before inserting it in the oil. The life of the sawing chain is greatly increased, if regular care of this nature is given it.

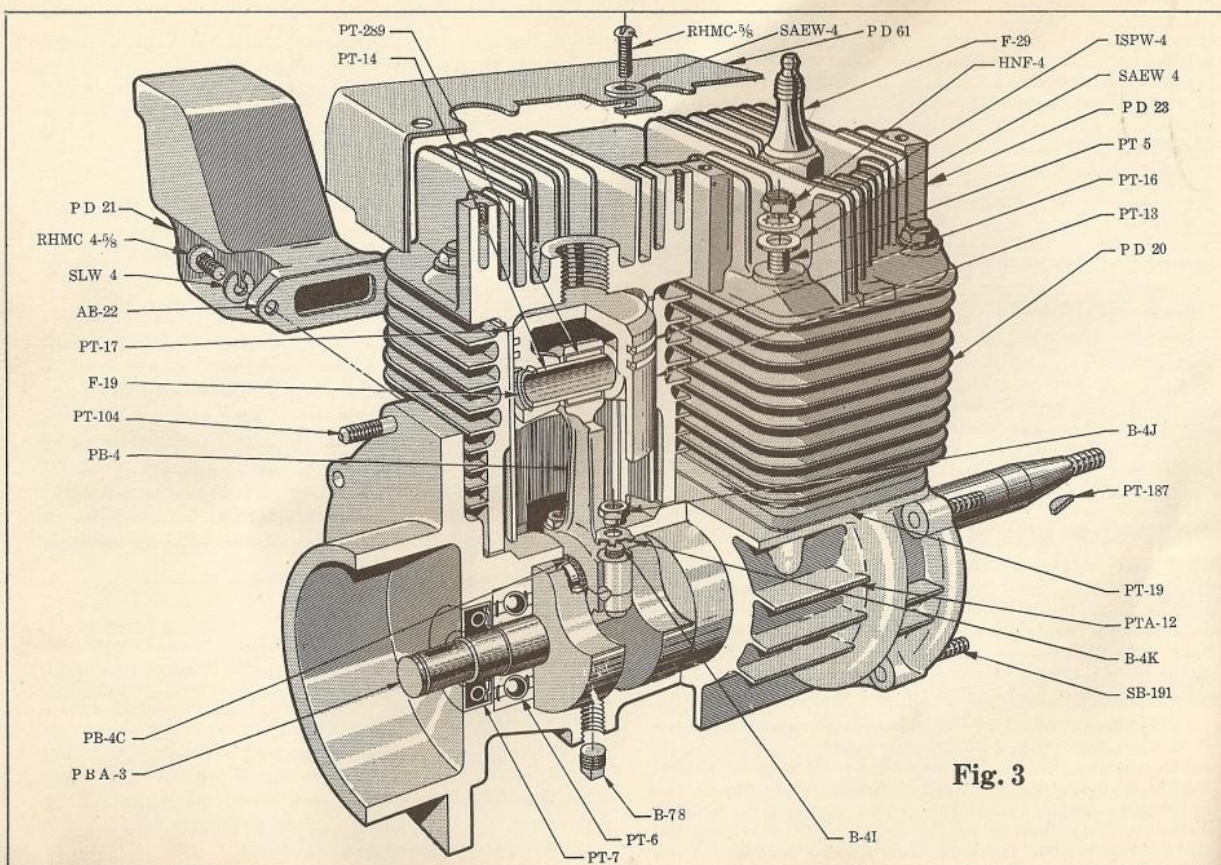


Fig. 3

ENGINE

AB-22	Exhaust manifold gasket (2 used)
B-4-I	Con rod bolt (4 used)
B-4-J	Con rod nut (4 used)
B-4-K	Con rod tab washer (4 used)
B-78	Plug for crankcase (2 used)
F-19	Retaining rings (4 used)
F-29	Spark Plug (2 used)
PBA-3	Crankshaft and Rotary valve
PB-4	Con rod assembly (2 used)
PB-4-C	Loose needles for con rod assembly (54 used)
PD-20	Cylinder unit (2 used)
PD-21	Exhaust manifold (2 used)
PD-23	Cylinder head (2 used)
PD-61	Outlet deflector
PT-5	Through studs (8 used)
PT-6	Bearing (2 used)
PT-7	Oil seal (2 used)
PT-13	Piston (2 used)
PT-14	Wrist pin (2 used)
PT-16	Piston rings (4 used)
PT-17	Cylinder head gasket (2 used)
PT-19	Cylinder base gasket (2 used)
PT-104	Swivel stud (3 used)
PT-187	Woodruff key (3 used)
PT-289	Needle bearing (wrist pin end) (2 used)

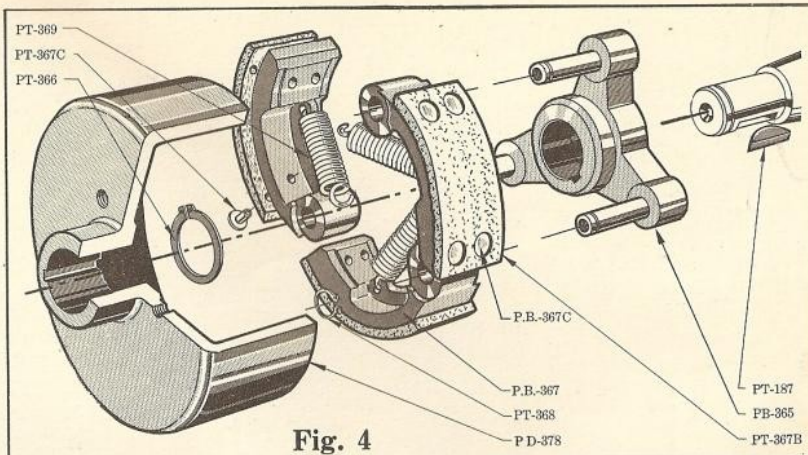


Fig. 4

PTA-12	Crankcase assembly
ISPW-4	Cylinder head lockwasher (8 used)
RHMC 4x5%	Outlet deflector screws (2 used)
RHMC 4x5%	Exhaust Body screws (4 used)
HNF-4	Cylinder head nuts (8 used)
SAEW-4	Outlet deflector washers (2 used)
SLW-4	Lockwashers (4 used)
SAEW-4	Flat washers (8 used)
SB-191	Fan housing studs (4 used)

CLUTCH

PB-365	Clutch driving plate
PB-367	Clutch shoe (3 used)
PB-367C	Clutch lining rivet (long) (6 used)
PBA-365	Clutch assembly, complete
PD-378	Clutch drum
PT-187	Pinion shaft key
PT-366	Clutch retainer clip (1 used)
PT-367B	Clutch lining (3 used)
PT-367C	Clutch lining rivet (short) (6 used)
PT-368	Clutch shoe clip (3 used)
PT-369	Clutch spring (3 used)

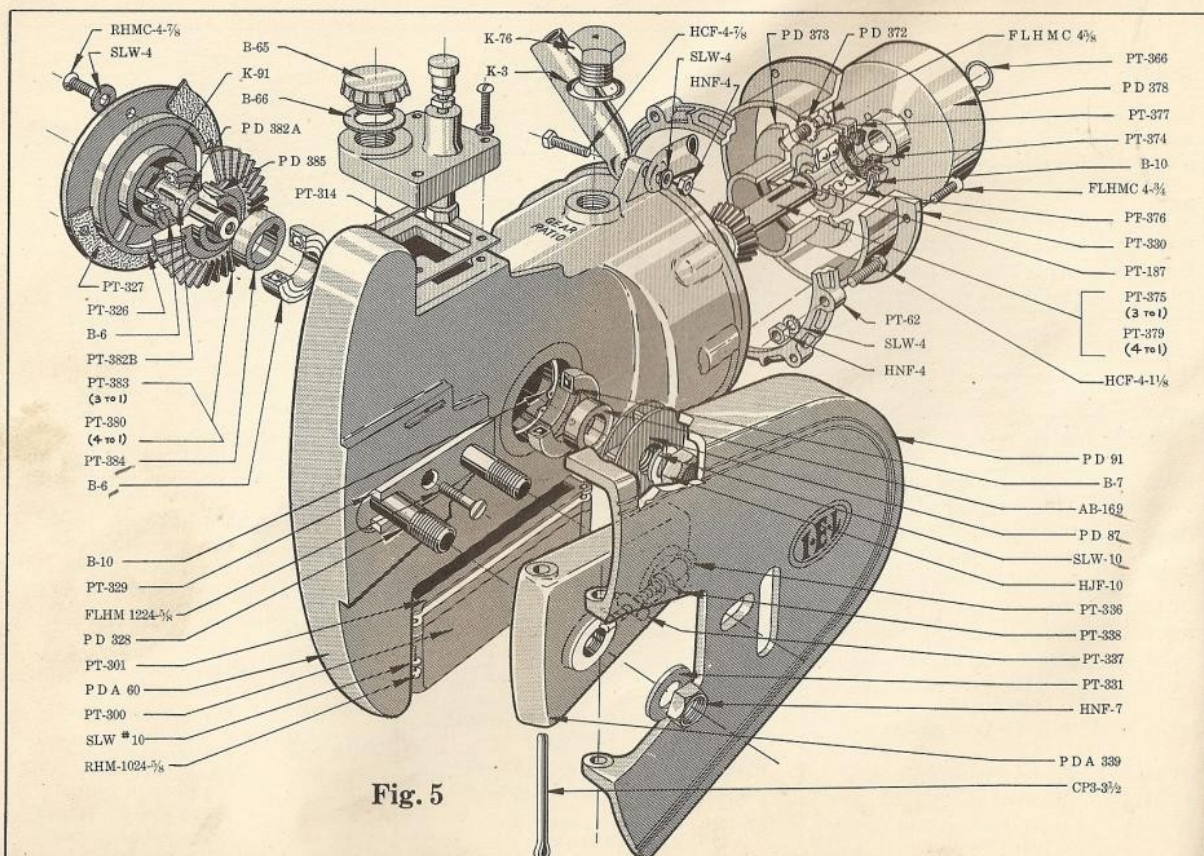


Fig. 5

TRANSMISSION

AB-169	Gearshaft spacer
B-6	Gearshaft bearing (2 used)
B-7	Gearshaft bearing seal
B-10	Pinion shaft bearing clip
B-10	Gearshaft bearing retainer clip
B-65	Oil filler cap
B-66	Oil filler cap gasket
K-3	Gearhousing vent plug washer
K-76	Gearhousing vent plug
K-91	Crown gear key
PDA-60	Gearhousing with key and studs only
PDA-60P	Gearhousing complete with insert and holding ring
PDAA-60	Transmission assembly
PD-87	Chain driving sprocket
PD-91	Chain guard
PD-328	Strut stud (2 used)
PDA-339	Adjusting type strut
PD-372	Lockwashers (4 used)
PD-373	Pinion bearing housing
PD-378	Clutch drum
PD-382A	Gear shaft
PD-385	Sprocket key
PT-62	Swivel holding ring
PT-187	Pinion shaft key
PT-300	Oil sump
PT-301	Oil sump gasket
PT-314	Oil control body gasket
PT-326	Gearhousing cover
PT-327	Gearhousing cover gasket (4 used)
PT-329	Strut key
PT-330	Gearhousing insert
PT-331	Strut stud washer (2 used)
PT-336	Chain tightener adjusting screw
PT-337	Chain tightener adjusting pin
PT-338	Screw adjuster retaining pin
PT-366	Clutch retainer clip
PT-374	Drum felt washer

PT-375	Pinion gear — 3-1 gear ratio—sold only in set as PTA-383
PT-376	Pinion shaft bearing
PT-377	Pinion shaft seal
PT-379	Pinion gear — 4-1 gear ratio—sold only in set as PTA-380
PT-380	Crown gear — 4-1 gear ratio—sold only in set as PTA-380
PTA-380	Crown and Pinion set — 4-1 gear ratio (sold only in sets)
PT-382B	Eccentric pin
PTA-383	Crown and Pinion Set — 3-1 gear ratio (sold only in sets)
PT-383	Crown gear — 3-1 gear ratio (sold only in set as PTA-383)
PT-384	Gearshaft eccentric
SLW-10	Sprocket lockwasher
FLHMC 4x5%	Screw for pinion bearing housing (4 used)
RHM 1024x5%	Oil sump screws (4 used)
RHMC 4x5%	Gearhousing cover screws (4 used)
FLHMC 4x5%	Gearhousing insert screws (8 used)
FLHM 1224x5%	Strut key screw
HCF 4x1½	Swivel holding ring bolt (5 used)
HCF 4x7%	Front handle upper brace bolt
HJF-10	Chain sprocket nut
HNF-4	Front handle upper brace nut
HNF-4	Swivel holding ring nut (8 used)
HNF-7	Strut stud nut (2 used)
SLW-4	Gearhousing cover washers (4 used)
SLW-4	Swivel holding ring washer (8 used)
SLW-4	Front handle upper brace washer
SLW No. 10	Oil sump washer (4 used)
CP3x3½	Guard hinge pin

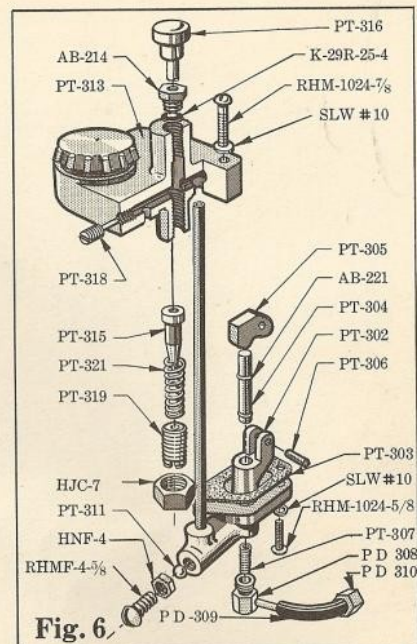


Fig. 6

OIL PUMP

AB-214	Oil control gland nut
AB-221	Oil pump plunger grommet (2 used)
PD-308	Oil pump inlet valve
PD-309	Oil pump intake tube
PD-310	Oil pump intake body
PT-302	Oil pump body and tube
PTA-302	Oil pump assembly
PT-303	Oil pump body gasket
PT-304	Oil pump plunger

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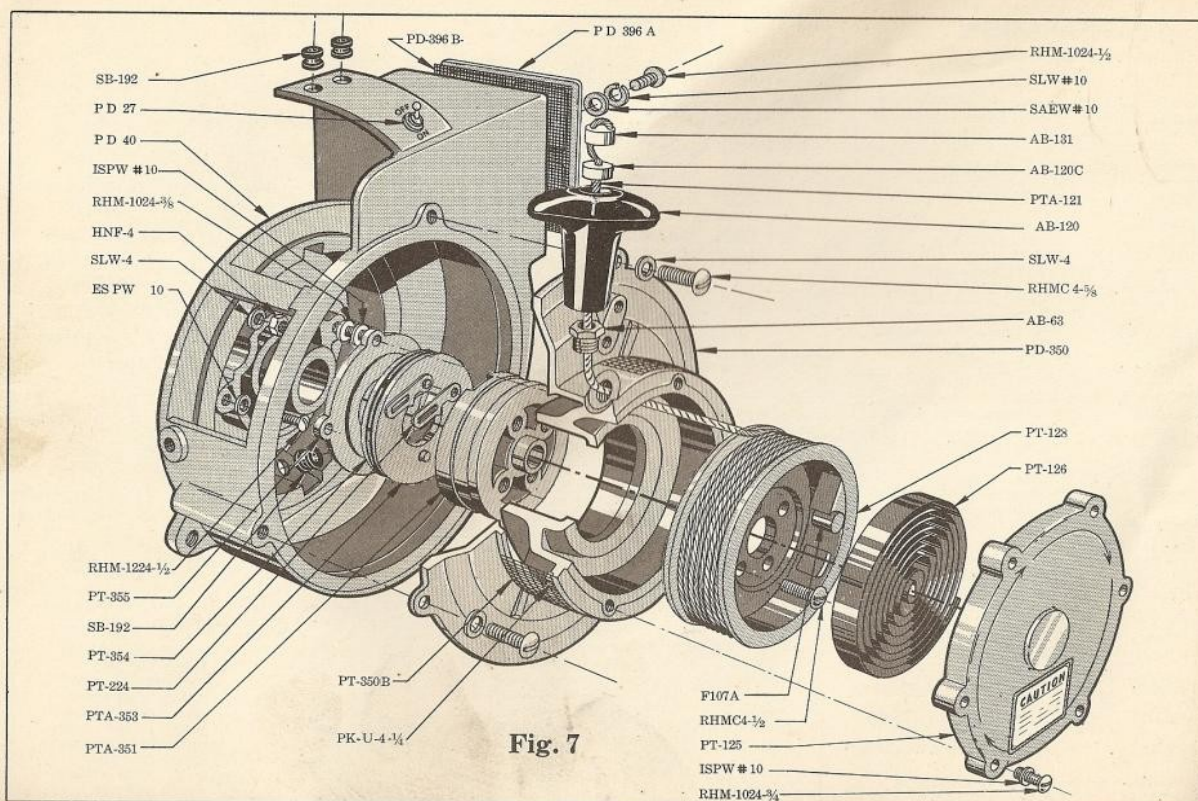


Fig. 7

PT-305 Oil pump rocker
PT-306 Oil pump rocker pin
PT-307 Oil pump plunger spring
PT-311 Oil pump outlet valve
PTA-313 Oiler control body assembly
PT-313 Oiler control body
PT-315 Oiler control valve
PT-316 Oiler control valve shaft
PT-318 Oiler metering plug
PT-319 Oiler control valve seat
PT-321 Oiler control valve spring

K-29R-25-4 Oiler control gland packing (2 used)
RHM 1024-% Oil pump body screw (3 used)
RHM 1024-% Oiler control body screw (3 used)
RHMF 4x% Oil pump outlet valve screw
HJC-7 Oiler valve seat locknut
SLW-No. 10 Oiler control body washer (3 used)
SLW-No. 10 Oil pump body washer
HJF-4 Oil pump nut

Fan Housing and Starter

AB-63 Starter cable bushing
AB-120 Starter handle
AB-120C Starter rope washer
AB-131 Starter cable anchor
PD-27 Ignition switch
PD-40 Fan housing
PD-350 Starter housing with screen

PD-396A Air cleaner element
PD-396B Air cleaner screen
PDA-350 Starter assembly, complete
PT-125 Starter cover
PT-126 Starter spring
PT-128 Starter pulley
PT-224 Starter pawl (4 used)
PT-350B Blower air intake screen
PT-354 Starter slip plate friction ring

PT-355 Starter back plate
PTA-121 Starter cable assembly
PTA-351 Starter Rotor assembly
PTA-353 Starter Slip Plate, complete with studs

F-107A Starter cable ferrule
SB-192 Ignition wire grommet (4 used)
HNF-4 Fan housing nut (4 used)
ESPW-No. 10 Magneto Stator washer (2 used)
SAEW-No. 10 Air cleaner washer
SLW-4 Starter housing washer (3 used)
SLW-4 Fan housing washer (4 used)
ISPW-No. 10 Starter cover washer (6 used)
ISPW-No. 10 Starter back plate lock-washer (4 used)
PK-Type U 4 x 4 1/4 Blower screen drive screws (6 used)
RHM 1224-1/2 Magneto Stator screw
RHMC 4x1/2 Starter pulley screw (4 used)
RHMC 4x% Starter housing screw (6 used)
RHM 1024x1/2 Air cleaner screw
RHM 1024x% Starter back plate screws (4 used)
RHM 1024x% Starter cover screws (6 used)
SLW-No. 10 Air cleaner lock washer

MAGNETO

B-34 Spark plug cover (2 used)
PD-25B Rotor
PC-356 Starter driver nut
PT-25 Magneto assembly, complete
PT-25A Stator plate unit (includes coil, condenser and breaker mechanism) (Wico X-7068)
PT-25C Breaker cam
PT-25D Ignition wire (2 used)
2264A Coil wedge (4 used)
2965 Fixed contact clamp screw washer (4 used)
5431 Screw (6 used)
5445 Core screw (4 used)
5446 Cam wiper felt (2 used)
5486 Ignition wire grommet (2 used)
X-5460 Coil (2 used)
X-5463 Condensor (2 used)

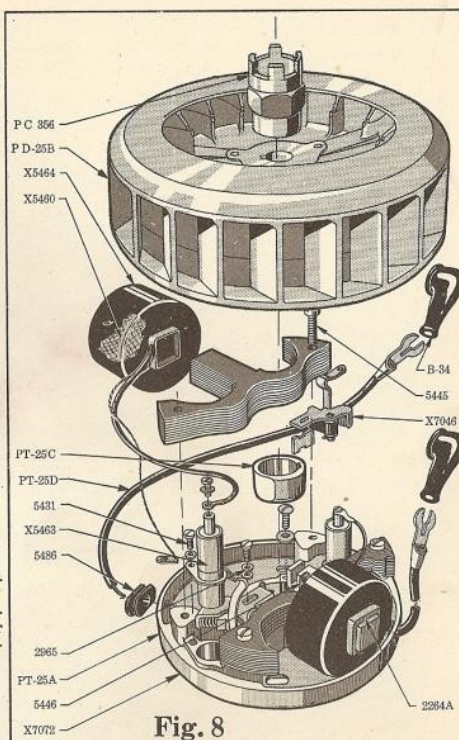


Fig. 8

X-5464 Coil terminal protector (2 used)
X-7046 Breaker contact set (2 used)
X-7072 Stator plate only

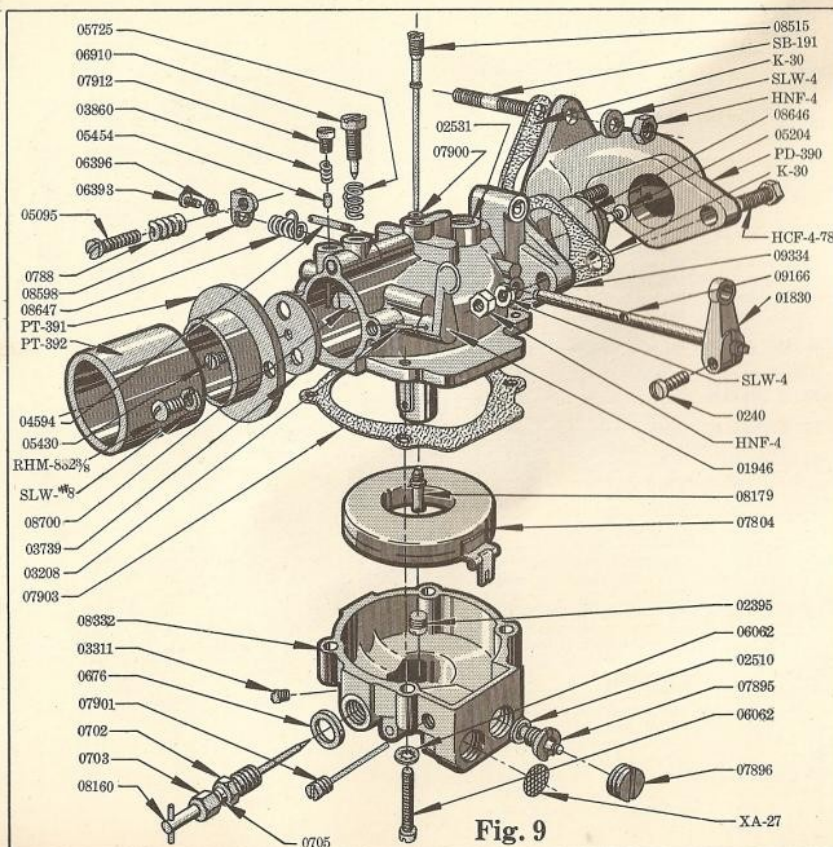


Fig. 9

CARBURETOR

PD-47 Carburetor, complete
PD-390 Carburetor manifold
PT-391 Carburetor intake adapter
PT-392 Carburetor intake grommet
K-30 Carburetor manifold gasket (2 used)
SB-191 Carburetor stud (2 used)
XA-27 Filter screen (2 used)
RHM 832x% Carburetor intake adaptor screw (2 used)
HCF 4x% Manifold bolt
HNF 4 Manifold locknut (4 used)
SLW No. 8 Carburetor intake adaptor washer (2 used)
SLW 4 Carburetor manifold washer (4 used)
09334 Body, Upper Half
02531 Body Channel Welch Plug
07903 Body Gasket
06062 Body Retaining Screw and Lockwasher (4 used)
05454 Choke Friction Pin
07912 Choke Friction Pin Screw
03860 Choke Friction Pin Spring
01946 Choke Lever
03208 Choke Lever Retaining Pin
08700 Choke Shaft
03739 Choke Shutter
05430 Choke Shutter Screw
07804 Float
07901 Float Lever Pinion Screw

08332	Float Bowl
03311	Float Bowl Drain Screw (Small)
07896	Float Bowl Plug Screw (Large)
06910	Idle Adjustment Screw
05725	Idle Adjustment Screw Spring
05095	Idle Speed Regulating Screw
0788	Idle Speed Regulating Screw Spring
08515	Idle Tube
07900	Idle Tube Gasket
07895	Inlet Needle, Seat and Gasket
02510	Inlet Seat Gasket
08160	Main Adjustment Screw
0702	Main Adjustment Screw Gland
0676	Main Adjustment Screw Gland Gasket
0705	Main Adjustment Screw Screw Packing
0703	Main Adjustment Screw Packing Nut
08179	Main Nozzle
02395	Main Nozzle Channel Plug Screw
01830	Throttle Lever
0240	Throttle Lever Retaining Screw
09166	Throttle Shaft
08647	Throttle Shaft Return Spring
08646	Throttle Shutter
05204	Throttle Shutter Screw
04594	Throttle Stop Lever Pin
08598	Throttle Stop Lever
06393	Throttle Stop Lever Retaining Screw
06396	Throttle Stop Lever Retaining Lockwasher

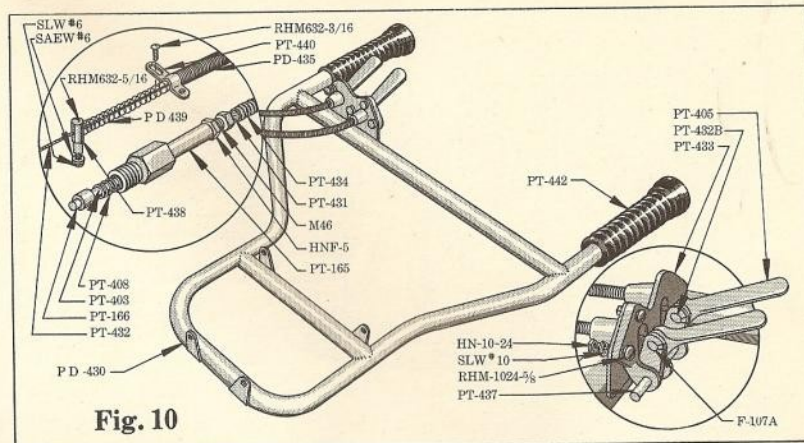


Fig. 10

OPTIONAL HANDLE BARS

PDA-430	Two-man handlebar, complete with controls	PT-440	Throttle clip
PD-430	Two-man handlebar	PT-441	3/4" Diameter Welch Plug (for plugging one-man swivel control hole in gas tank)
PDA-435	Throttle cable assembly	PT-442	Rubber handles (2 used)
PD-435	Throttle casing unit	M-46	Adjusting screw
PD-439	Throttle return spring	F-107A	Swivel control nipple
PT-165	Swivel lock body	SAEW No. 6	Throttle pin washer
PT-166	Swivel lock pin	SLW No. 6	Throttle pin lockwasher
PT-403	Swivel cable threaded end	RHM 632x7/8	Throttle clip screws (2 used)
PT-405	Control lever (2 used)	RHM 632x7/8	Throttle pin screws (2 used)
PT-408	Swivel lock spring	HN 1024	Dual control nuts (3 used)
PT-431	Swivel cable	RHM 1024x5/8	Dual control screws (3 used)
PT-432	Throttle cable unit	HNF 5	Swivel lock nut
PT-432B	Nipple	SLW No. 10	Lockwashers (3 used)
PT-433	Dual control body		
PTA-434	Swivel cable assembly		
PT-434	Swivel outer casing unit		
PT-437	Hinge pin		
PT-438	Throttle pin		

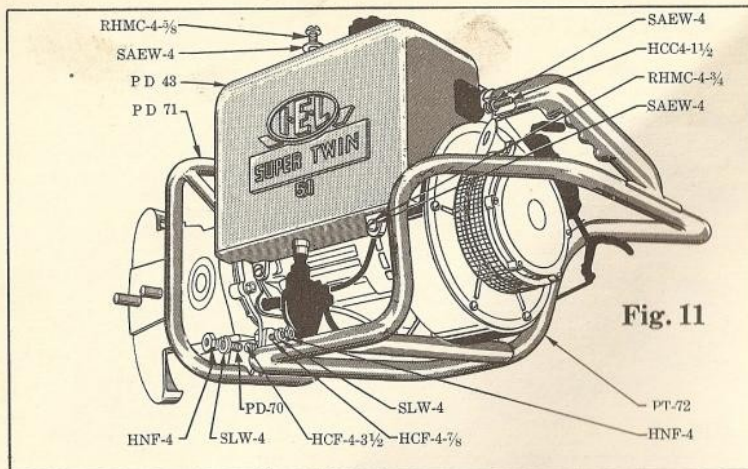


Fig. 11

TANK and HANDLEBARS

PD-43	Gas tank	SAEW-4	Gas tank washer (4 used)
PD-71	Front handle assembly	SAEW-4	Rear handle top brace washer
PD-72	Rear handle assembly	SLW-4	Front handle lower bracket washer (3 used)
PD-70	Front handle stud	SLW-4	Rear handle mounting washer (6 used)
RHMC 4x5/8	Gas tank side mounting screw (2 used)	HCF 4x3 1/2	Front handle lower bracket bolt (1 used)
HNF-4	Rear handle mounting nuts (4 used)	HCC 4x1 1/2	Rear handle top brace bolt
HNF-4	Front handle lower bracket nut (3 used)	RHMC 4x5/8	Gas tank screw (2 used)
HCF 4x5/8	Rear handle mounting bolts (4 used)		

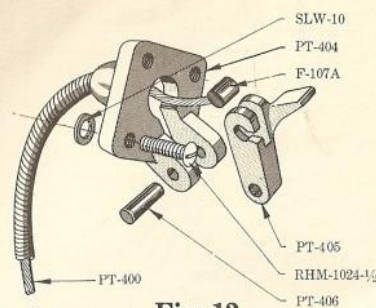


Fig. 12

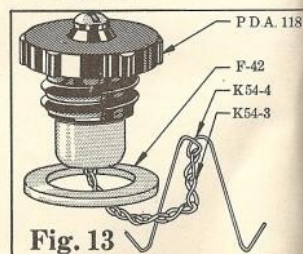


Fig. 13

SWIVEL LOCK ASS'Y

PDA-118	Gas tank filler cap unit
PT-165	Swivel lock body
PT-166	Swivel lock pin
PTA-400	Swivel cable assembly, complete
PT-400	Swivel cable
PT-401	Swivel cable outer casing
PT-403	Swivel cable threaded end

CUTTER BARS FOR '51 SUPER TWIN SAWS

ONE-MAN TYPE BARS

30" Beavertail or One-Man Type Bar.....	PT90-30G
36" Beavertail or One-Man Type Bar.....	PT90-36G
42" Beavertail or One-Man Type Bar.....	PT90-42G
48" Beavertail or One-Man Type Bar.....	PT90-48G
60" Beavertail or One-Man Type Bar.....	PT90-60G

TWO-MAN TYPE BARS

36" Two-Man or Idler Tailstock Bars.....	PT90-36GT
48" Two-Man or Idler Tailstock Bars.....	PT90-48GT
60" Two-Man or Idler Tailstock Bars.....	PT90-60GT
72" Two-Man or Idler Tailstock Bars.....	PT90-72GT
84" Two-Man or Idler Tailstock Bars.....	PT90-84GT

EEZY-FEED PLANER CHAINS FOR '51 SUPER TWIN SAWS

FOR ONE-MAN TYPE

30" One-Man Type, $\frac{3}{4}$ pitch.....	PD260-30G
36" One-Man Type, $\frac{3}{4}$ pitch.....	PD260-36G
42" One-Man Type, $\frac{3}{4}$ pitch.....	PD260-42G
48" One-Man Type, $\frac{3}{4}$ pitch.....	PD260-48G
60" One-Man Type, $\frac{3}{4}$ pitch.....	PD260-60G

FOR TWO-MAN TYPE

36" Two-Man Type, $\frac{3}{4}$ pitch.....	PD260-36GT
48" Two-Man Type, $\frac{3}{4}$ pitch.....	PD260-48GT
60" Two-Man Type, $\frac{3}{4}$ pitch.....	PD260-60GT
72" Two-Man Type, $\frac{3}{4}$ pitch.....	PD260-72GT
84" Two-Man Type, $\frac{3}{4}$ pitch.....	PD260-84GT

EEZY-FEED PLANER CHAIN PARTS

Right Planer Tooth, $\frac{3}{4}$ pitch.....	PD-238
Left Planer Tooth, $\frac{3}{4}$ pitch.....	PD-240
Centre Link Dud, $\frac{3}{4}$ pitch.....	F-172-14
Side Link Dud, $\frac{3}{4}$ pitch.....	F-167
Rivets, 14 Gauge.....	F-170

WHEN ORDERING BAR OR CHAIN SPECIFY:

1. Saw Serial Number and Model.
2. Length of Attachment Required.
3. Gauge and Type (state if One-Man type or Two-Man type is required).

Instructions for Filing the I-E-L $\frac{3}{4}$ Pitch "EEZY-FEED" Planer Chain

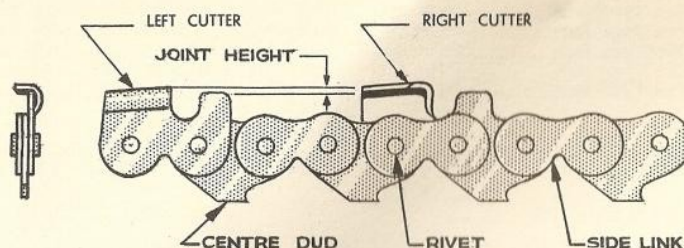


Fig. 18

CHAIN SEQUENCE

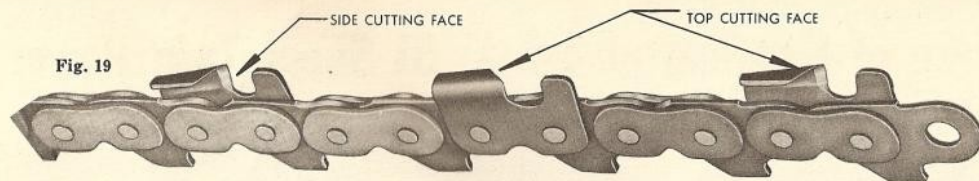
The chain leaves the factory accurately ground and jointed. It is jointed at .025 of an inch which is a nominal jointed depth. The operator may change the jointed height to suit his own requirements. There are two cutting edges to the planer tooth, the side and top, both edges must be sharp (Fig. 19). This new planer chain is the result of a vast amount of research work and is considerably faster and more versatile than anything previously produced. It can be used for cross-cutting or ripping in any type of wood.

The following instructions are very general in nature in order not to confuse the beginner. As the operator becomes more expert, he will develop his own variations from the standard to suit his own particular requirements.

SHARPENING

A general sharpening can be done right on the cutter bar. A No. 464 or 5/16" half round file is necessary and the angle of the cutting face should be maintained closely. The use of a 5/16" file ensures that both edges are done at once and at the same angles.

Figure 20 shows the file in position ready for the filing stroke. Only this angle face of the planer should be filed and the amount filed off should be just enough to put a keen edge on the tooth. Since the steel of which the teeth are made is a highly heat-treated special alloy, a really sharp file is necessary and a firm, steady thrust should be used with the file held firmly. The movement of the file must be in a straight line otherwise a rounded edge will result. This rounded edge will be visible by different light



Arrows indicate the Two Cutting Faces of a Planer Tooth. Both faces must be sharp and filed at the same angle.

shades. There should be only one shade to a properly filed tooth. After sharpening the tooth, a slight burr will be noticed on the outer curve. The initial cut should be made through green wood to remove the burr. Great care should be taken to take an even amount off both the right and left cutters. By filing the teeth back evenly you ensure a true cut with no running. If the teeth are filed unevenly a chain will run to the side which has the greatest amount of drag. It must be remembered at all times that 5/16" file must be employed. The use of a file less than 5/16" will often result in the file cutting the lower portion of the tooth away and not maintaining a keen edge on the tops of the teeth. This will result in drag and also a hook which will impair the proper operation of the chain. The outer edge of the cutter must be vertical or sloped slightly backwards at all times. A slight touch up at regular intervals will ensure longer life to the chain rather than letting the chain become completely dull and have to remove enough metal in order to bring the edge up again.

NOTE: If the chain starts to run in the cut it is in dire need of sharpening.

JOINTING

In the ordinary course of events, it will not be necessary to joint this chain as the factory setting should be sufficient for most purposes. It should be noticed that the jointed height is the distance that the runner is below the cutting edge of the planer (See Figure 18). The joint may be varied depending on type of wood but only by an experienced filer.

SETTING

The set of the chain is the amount that the planers are set outwards to give clearance for the chain and cutter bar in the cut. As the chain leaves the factory, there is ample set for all purposes and there should never be any necessity to give additional set.

FILING THE PLANER TEETH

Special Filings:

A planer chain is no different from any other saw so far as special filings are concerned. The face angle of the planer teeth can be varied to suit the requirements in the particular wood that is being cut.

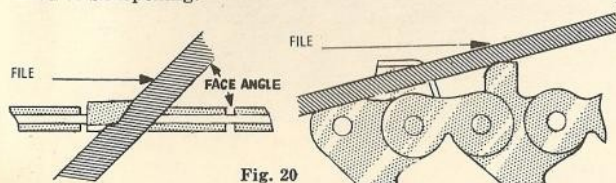


Fig. 20

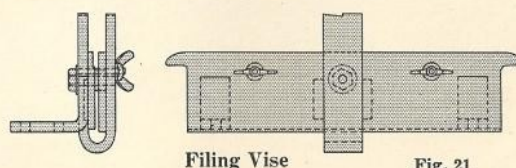
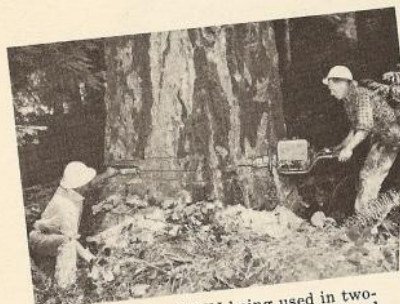


Fig. 21

The Ease of Handling an I-E-L '51 Super Twin Power Saw



The 51 SUPER TWIN being used in two-man falling, with the idler tailstock and two-man cutter bar in use.



The helper's handle being used in two-man one-man falling. The handle will be detached when one man takes over alone.



The beavertail cutter bar being used in one-man falling. The helper's handle is detached.



Two-man bucking with the 51 SUPER TWIN, the helper's handle being used with the beavertail cutter bar.



The 51 SUPER TWIN equipped with the beavertail cutter bar and the helper's handle for under bucking.



Bucking and limbing can be done by one man with the helper's handle detached.

Spare parts are stocked as listed on the preceding pages by the dealer in your vicinity.

When ordering Spare Parts, Specify:

- (1) Model and serial number of saw.
- (2) Part number and description of part in full.
- (3) Complete shipping instructions.

COMPLETE AND SPECIFIC INFORMATION ON SPARE PART
ORDERS ASSURES THE CUSTOMER OF PROMPT
AND EFFICIENT SERVICE

GUARANTEE — All machines are guaranteed for 30 days against defective parts, provided our recommendations regarding lubrication and general operation are observed.



LITHOGRAPHED IN CANADA

