

SKILS  
POWER TOOLS  
OPERATOR'S MANUAL

MODEL  
1690



SKIL CORPORATION  
SKIL CORPORATION (CANADA) LTD.

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CHICAGO, ILLINOIS 60630  
TORONTO 19, ONTARIO  
MADE IN CANADA

# SKIL<sup>®</sup>

## POWER TOOLS

SKILSAW chain saws are designed specifically for production usage, where both high performance and dependability are equal requisites. Your new saw has an unlimited service potential provided it is given normal care and receives proper maintenance.

This manual is a guide to correct operator maintenance and should be studied carefully before the saw is used. Anything not covered in this manual should be considered specialized service work, best handled by a SKIL Factory Service Center.

### WARNING

The internal moving parts of the 2-cycle engine fitted to this chain saw are lubricated solely by the oil which is added to the gasoline. The proportion of oil to gasoline is 1 part SKIL CHAIN SAW OIL or S.A.E. 30 or 40 Motor Oil of at least M.S. Detergency Rating to 16 parts regular gasoline, i.e. 8 ozs. oil to 1 U.S. Gallon of gasoline or 10 ozs. to 1 Imp. Gallon of gasoline. The gasoline and oil must be thoroughly mixed before being put into the fuel tank. It is recommended that SKIL CHAIN SAW OIL be used for proper engine lubrication.

### IMPORTANT

When ordering parts, state the PART NUMBER and also the NAME OF THE PART. Give the MODEL and the SERIAL NUMBER with each parts order. Register your serial number in the space provided below:

Model 1690

SERIAL NUMBER \_\_\_\_\_

For WARRANTY—see inside back cover.

# MODEL 1690



Your new chain saw has been through a complete factory run in, we do suggest however, that for trouble free operation the saw should be broken in gradually and that the following recommendations and maintenance instructions be followed.

## PREPARING SAW FOR USE

The combination wrench and screwdriver included with the saw is designed for the purpose of fitting the bar and chain and making necessary adjustments to chain tension.

To fit bar and chain, remove the two nuts securing chain cover (Fig. 7) remove cover. Install bar — fit chain over sprocket then bar, be sure that the chain fits into the bar groove, cutting edge of the teeth on top of the bar must face forward, pull bar forward taking up chain slack, refit chain cover making sure tension pin is located in hole in bar.

Adjust tension by means of the adjustment screw (see Figure 7). The chain should "HANG" from the bar so that the widest space between the tie strap or cutter bottoms and the lower edge of the bar is no more than  $\frac{1}{4}$ " or no less than  $\frac{1}{8}$ " (Figure 7, Page 8). Retighten bar nuts when correct tension is achieved.

Fill the chain oil tank with S.A.E. 10 or 20 Motor Oil:

Temperature: Above 40°—S.A.E. 20.  
Below 40°—S.A.E. 10.

Pull the chain around the bar, at the same time by means of the manual oiler, pump oil to the bar and chain. A properly adjusted chain should be tensioned to where it can be pulled around the bar easily by hand.

The chain should be thoroughly saturated with oil before the saw is started and should be kept overly well oiled for the first hour of operation. It is recommended that the same procedure be followed each time a new chain is fitted.

**NOTE:** Correct tension and lubrication is essential to long bar, chain and sprocket life. Make a practise of checking chain tension often and readjust.

Fill the fuel tank with THOROUGHLY MIXED fuel in the proportions: 1 part Skilsaw Chain Saw Oil or S.A.E. 30 or 40 automotive oil of at least MS detergency rating to 16 parts regular gasoline—i.e. 8 ozs. oil to 1 U.S. gallon of gasoline or 10 ozs oil to 1 Imp. gallon of gasoline. Chain oil tank should be refilled each time fuel tank is refilled.

## STARTING THE SAW:

To start the engine place the saw on level ground, make sure no one is near the front of the saw. Move the ignition switch to the "ON" position, pump the primer 1 or 2 times, place foot on step plate, hold saw firmly and with the throttle held in the open position pull the starter cord.

**NOTE:** In starting the chain saw always pull starter cord slowly until the slack is taken up (the starter is felt to engage in the starter cup) then give a fast short pull.

It is not necessary to prime a warm engine.

Run the saw at a fast idling speed until the engine is warm. The carburetor idle speed adjusting screw (see Figure 16) controls the idling speed of the saw. It should be set after the motor is warm so that the motor will idle without moving the chain around the bar. It may be necessary to slightly vary the high and low speed adjustments for peak performance..

## WARNING

Do not attempt to tension chain while engine is running.

Do not run the saw at High R.P.M. when bar and chain are out of the cut, under no load.

## PREVENTIVE MAINTENANCE

A system of regular inspections and tune-ups should be planned. Continued neglect eventually will mean wasted time and money through major failures and unnecessary repairs. The operator who wishes to avoid difficulties will practise preventive maintenance from the time he takes delivery of his new saw.

## BAR PAD OIL HOLE FIGURE 1

To provide adequate lubrication to the bar and chain, the bar pad oil hole must be kept clean. To inspect, remove bar and chain and clean dirt and sawdust from oil hole.

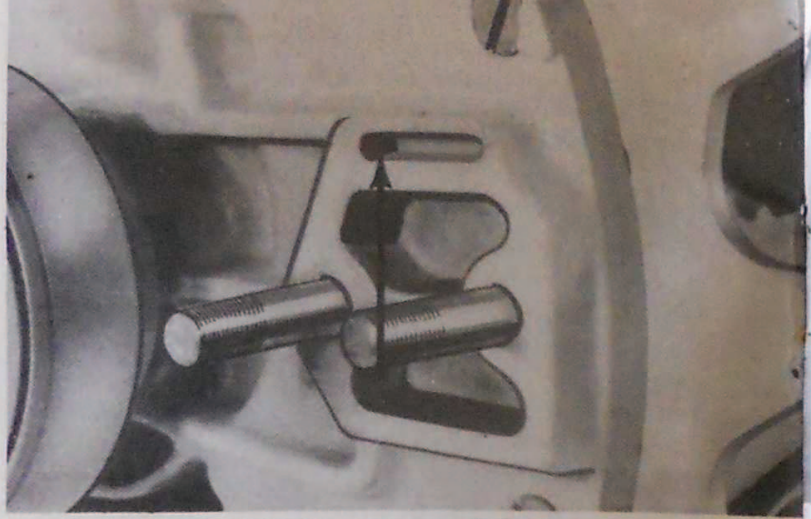


FIGURE 1 Clean Oil Hole

## CUTTER BAR FIGURE 2

To ensure sufficient lubrication to the chain the cutter bar groove must be kept clean (Figure 2). Keeping the bar clean will also prevent rail spreading. Check the cutter bar for wear at regular intervals and make a practise of turning it over to make sure that any wear encountered will be evenly distributed. When wear leaves a sharp or wire edge on the outer sides of the chain guide rails, remove it with a flat file.

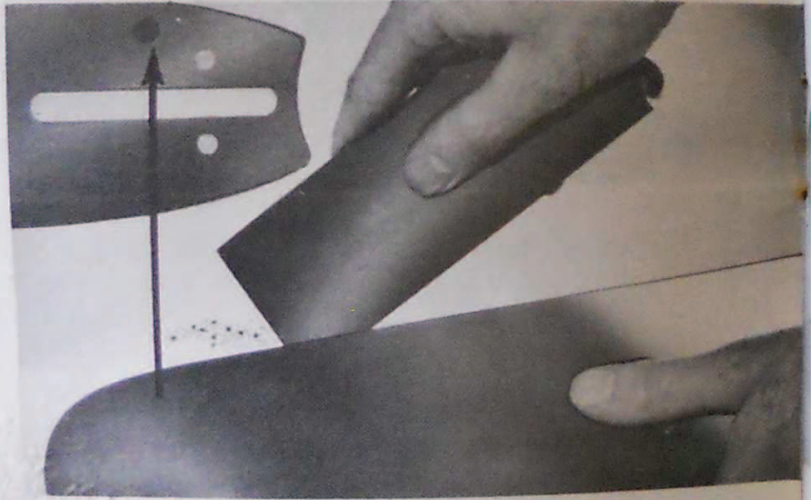


FIGURE 2 Clean Bar Rail and Oil Passages

## CYLINDER EXHAUST PORTS FIGURE 3

To inspect for carbon build-up in the area of the exhaust ports, remove the exhaust muffler and the spark plug, rotate the crankshaft by means of the starter until the piston is at top dead center in the cylinder. Turn the saw on end, exhaust ports facing down, this will prevent carbon particles from entering the cylinder. Remove carbon build-up around the exhaust port area with a blunt edged wooden tool, taking care not to damage metal surfaces. Inspect muffler gasket, replace if necessary. Never run the saw without the muffler in place.

Inspect and clean cylinder and cylinder head fins regularly, at the same time, remove all dirt and sawdust from around flywheel and starter screen areas.

## CARBURETOR AIR FILTER FIGURE 4

The saw comes equipped with a Flock screen-type filter. To clean, remove outer shroud, wash filter element in clean gasoline or solvents daily. Always carry a clean spare air filter. Never run the saw without the air filter in position.

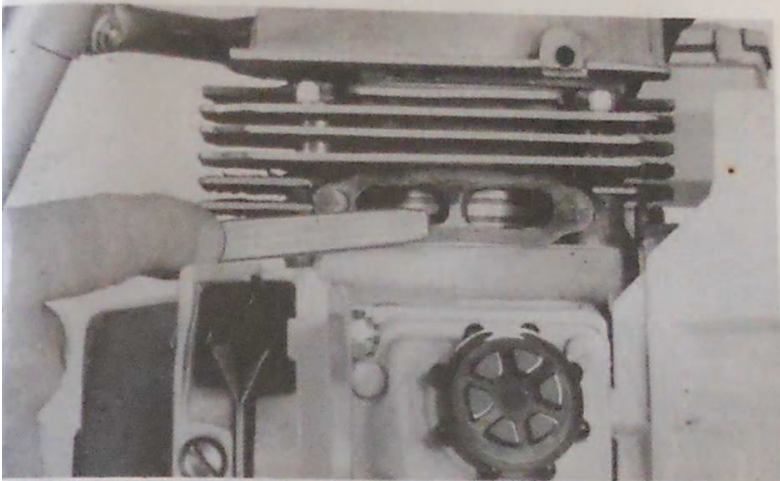


FIGURE 3 Clean Exhaust Ports

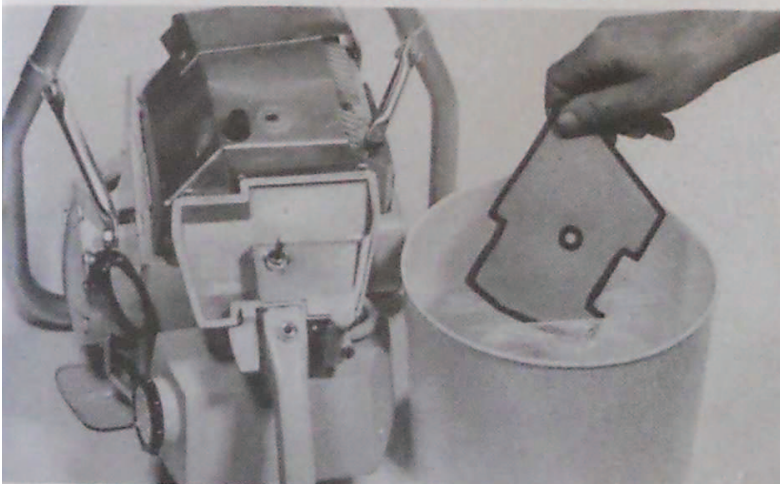


FIGURE 4 Clean Air Filter

## FUEL AND PRIMER PICK UP HEAD FIGURE 5

For trouble free operation the filter element of the fuel and primer pickup head in the fuel tank should be serviced frequently.

Should filter element become hard from long use, replace filter.

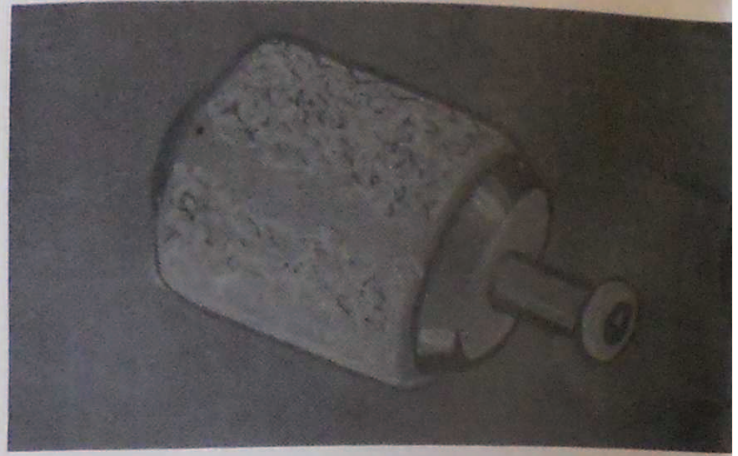


FIGURE 5 Fuel Pick Up Head Assembly

## OIL PICK UP HEAD

### FIGURE 6

The oil pick up head is a factory sealed unit. Providing clean oil of the recommended grade is used replacement of unit should not be required. NEVER use old crankcase oil. Besides being a POOR LUBRICANT it will plug the filter element very quickly resulting in excessive chain and bar wear.

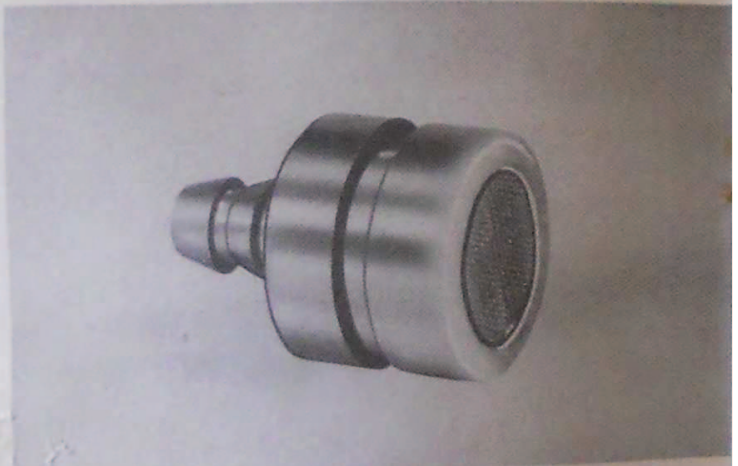


FIGURE 6 Oil Pick Up Head

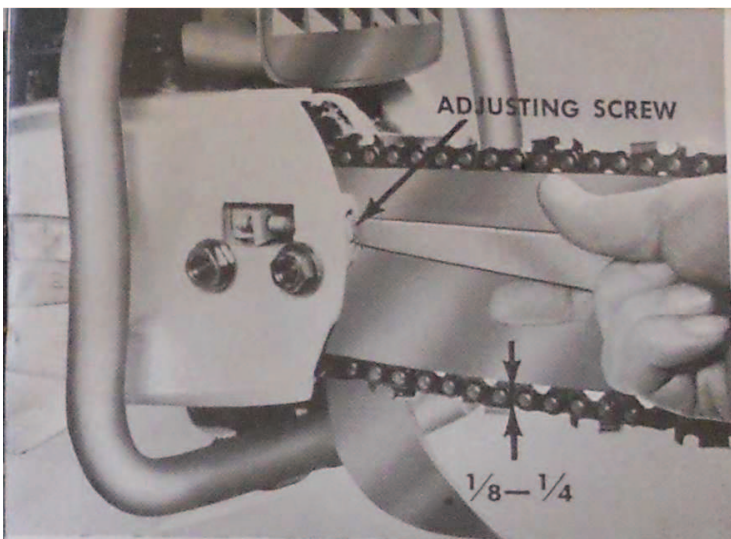


FIGURE 7 Chain Tension

## SPROCKET

Examine the sprocket periodically. Worn sprockets damage chain and greatly reduce cutting efficiency. Always install a new sprocket with a new chain. At frequent intervals squirt a few drops of oil on crankshaft behind clutch drum, this will provide adequate sprocket bearing lubrication. Should the bearing become stiff causing the chain to move around the bar remove the clutch and sprocket assembly (nut retaining clutch and sprocket assembly is left hand thread), clean the bearing and shaft thoroughly, before

refitting, repack the bearing with a good grade of waterproof grease. Replace the bearing if any damage is apparent.

## CLUTCH

Do not overload the clutch (example: the chain stops moving in the wood while making a cut) as this will cause excessive wear to the clutch drum—should the chain become pinched in a cut immediately release the throttle, free the chain before proceeding with the cut.

## COLD WEATHER OPERATION

Good maintenance of your saw is doubly important during cold weather. One of the main problems encountered during cold weather operation is water in the fuel mix. Add a deicing agent or methyl hydrate to your fuel mix (1 fuel mix cap full per gallon of mix).

Completely empty and clean the fuel tank at least once every week. Clean snow off the fuel mix can and from around the tank filler hole before filling tank.

## CHAIN OIL

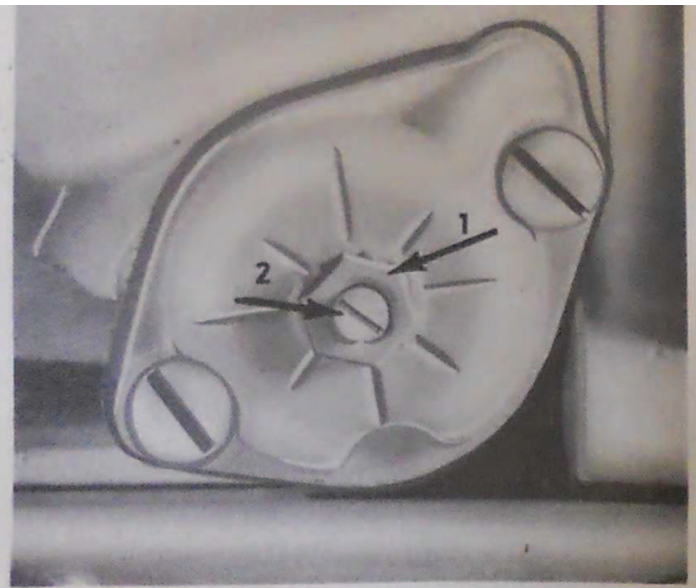
Use S.A.E. 10 or 20 motor oil. Dilute oil up to 50% with diesel oil or kerosene in extremely cold weather.

## WARNING

Do not dilute chain oil beyond 50%, otherwise the lubricating qualities will be destroyed.

## LUBE ASSIST AND MANUAL OILER

The lube assist provides a continuous flow of oil to the bar and chain and supplements the amount normally applied by the regular use of the manual oiler. The lube assist has been factory set for average operating conditions but may be adjusted to suit local conditions as follows:



**FIGURE 8 Lube - Assist**

1. Loosen locknut on adjusting screw.
2. Back screw off for more oil ( $\frac{1}{8}$  turn at a time).
3. Turn screw in for less oil ( $\frac{1}{8}$  turn at a time).
4. Retighten locknut.

## NOTE

It is extremely important that the bar and chain be adequately lubricated when cutting in cold weather—use your manual oiler often. Keep the oiling system clean and in good working order.

## CUTTER BARS AND CHAIN

Cutter Bars		.404 PITCH .058 GAUGE		½" PITCH .058 GAUGE	
Length	Hard Tip	Sprocket 7 Tooth	Chipper	Sprocket 6 Tooth	Chipper
16"	228416	270645	228554	270662	231554
20"	228420	270645	228555	270662	231555
24"	228424	270645	228556	270662	231556
30"	228430	270645	228557	270662	231557
36"	228436	270645	228559	270662	231559
42"	228442	270645	228560	270662	231560
48"	228448	270645	228561	270662	231561
CHAIN REPAIR KITS			228957		275787

## CHAIN SHARPENING AND JOINTING

When the chain is correctly filed, correctly jointed, properly lubricated and proper chain tension maintained, it will cut smoothly, be easier on the motor, bar, chain and the user.

### SHARPENING

For best results the chain should be removed from the bar and placed in a chain filing vice. If the chain is to be sharpened on the guide bar, increase the tension on the chain until you can just pull it around the bar before proceeding to sharpen.

Stand on one side of the chain and file only the cutters on the opposite side, then change direction of the chain in the vice, or turn the saw around so you can file the cutters on the opposite side. Use only a sharp  $7/32$ " full round file on  $3/8$ " and  $.404$  pitch chain and a  $1/4$ " full round file on  $1/2$ " pitch chain. File with long, straight, even strokes. Hold the file approximately 5 degrees from the horizontal with the handle low. Fig. 9. Keep  $1/5$  of the file diameter above top edge of cutter. Fig. 10. This produces the correct undercut. Maintain top angle basic 35 degrees. Fig. 9. Shape of correctly filed cutter Fig. 11.

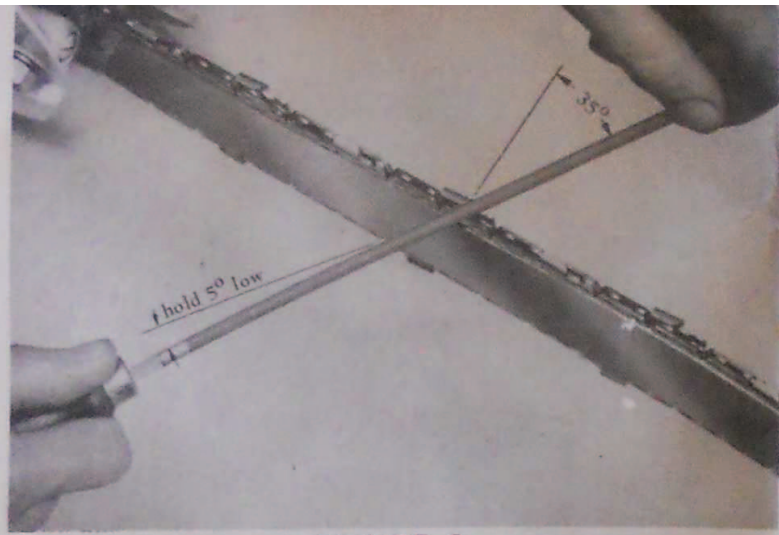


FIGURE 9

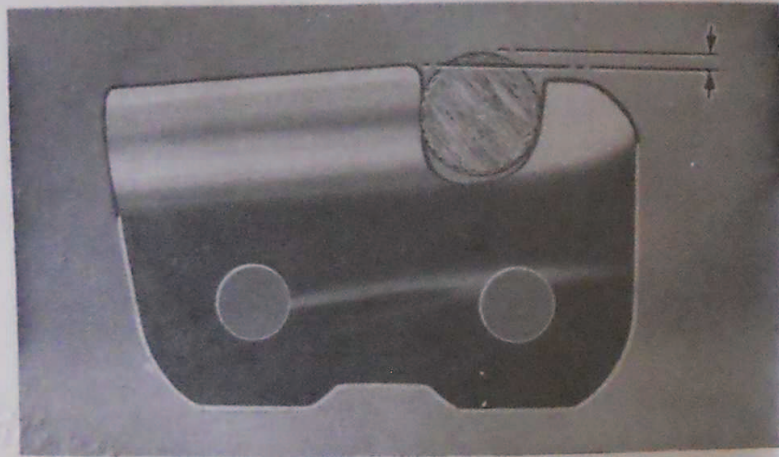


FIGURE 10



FIGURE 11



FIGURE 12



FIGURE 13

File held too high results in blunt slow cutting edge. Fig. 12.

File held too low results in thin, quick dulling edge with hook. Fig. 13. Keep all cutters the same length.

It is recommended that a SKIL FILE HOLDER Part Number 73171 which includes the correct file (SKIL part number 11622) be used for best results.

### JOINTING

Make a practice of jointing your chain with a depth gauge jointer after every second filing. The chain has a standard joint of  $.025$ ". However, to suit particular cutting conditions the joint can be changed as long as the joint heights are kept uniform. Use caution when changing from standard joint as the chain can be easily damaged by over filing.

Always work near the centre of the guide bar, this is necessary due to the contour of the bar. Using a jointing tool place the jointer on top of the chain with the depth gauge protruding through the slot in the jointing plate, file the depth gauge to the level of the jointing plate using a flat file. Fig. 14.

After all depth gauges have been filed and checked, shape the leading rounded corners with same file. Fig. 15.

Lack of care in jointing will result in uneven joint, giving poor chain performance.

### EXCESSIVE JOINT

Will cause the cutters to bite in, chain will grab, resulting in poor performance and damage to chain and bar.

Failing to check or joint regularly may result in insufficient joint.

### INSUFFICIENT JOINT

Cutters cannot bite into the wood, chain will not cut efficiently or to capacity. Usually extra pressure is applied to try and make the chain cut resulting in excessive wear to the guide bar chain and clutch drum.

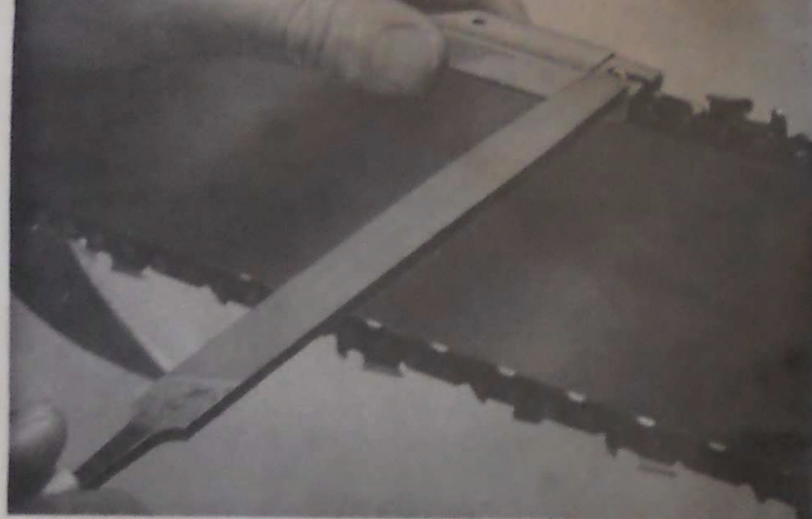


FIGURE 14

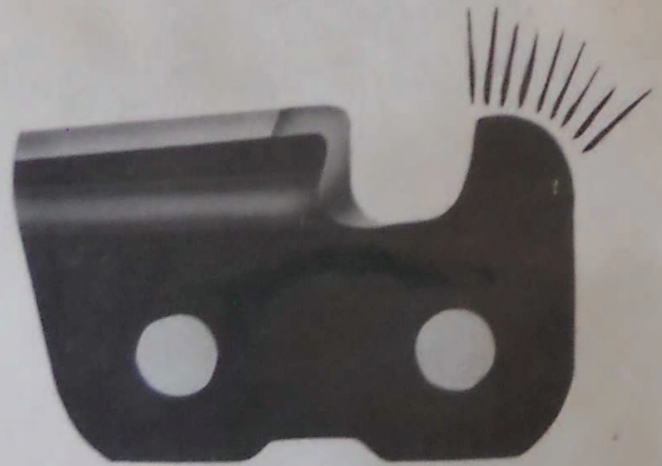


FIGURE 15

## CHAIN DIAGNOSIS

Trouble	Causes	Remedy
Chain cuts rough or digs in	Cutter angles incorrectly filed	Check filing instructions — refile to correct angles
	Too much or uneven joint	Check joint — rejoin chain
Chain cuts on an angle	Cutter angles not the same on both sides	Refile cutter to correct angle, check bar rails
	Uneven joint	Rejoin
	Cutter bar rails uneven	If worn, have bar serviced or replaced
Excessive wear drive links and/or side straps	Lack of lubrication	Check chain lubrication system — increase lubrication
	Excessive chain tension	Check chain tension
	Dull chain	File chain
	Worn sprocket	Check sprocket, replace if required
Chain breaks	Dull cutters — excessive pressure by operator	Refile — never force a dull chain
	Excessive joint	See filing and jointing instruction
	Insufficient lubrication	Check lubrication system — increase lubrication
	Loose guide bar	Refer chain tension instructions
Chain jumps bar	Incorrect chain tension	Refer chain tension instructions
	Loose guide bar	Refer chain tension instructions
	Damaged chain drive links	Replace damaged links or chain
Chain stiff, hard to tension	Insufficient lubrication	Use chain oil freely
	Inadequate maintenance — rust bound	When using saw only intermittently store chain in oil bath
	Damaged drive links	Repair or replace as required



### FELLING AND BUCKING TREES:

Before felling a tree survey it carefully: consider size, shape, direction of lean and danger from other trees or snags in area where you want the tree to fall. Clear work area around tree, limb branches on tree only high enough so that undercut can be made. Plan your escape route.

### UNDERCUTTING:

Make undercut facing direction you wish tree to fall, depth penetration should be  $\frac{1}{3}$  of tree's diameter. See Drawing. Never fell a tree without making a proper undercut.

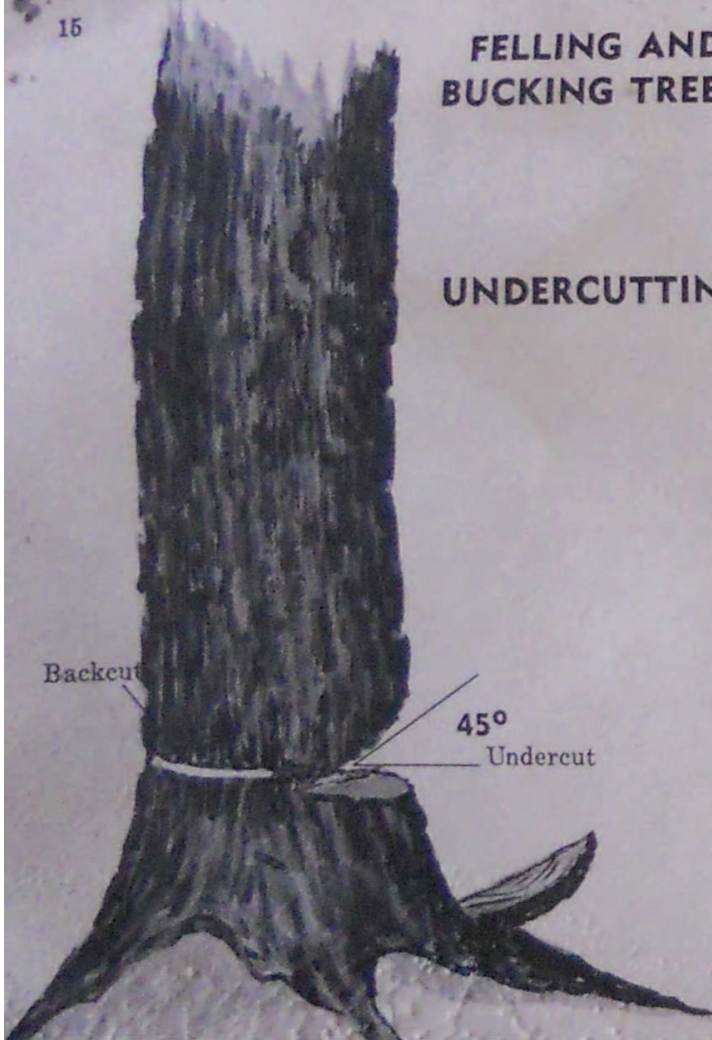
### BACKCUTTING:

Make the backcut about 2" above and parallel to undercut. See Drawing. Should your chain bind in cut, stop the saw, use wedges to free it.

Do not cut through holding wood as tree may spin off the stump when falling. Keep the saw in cut until the cut opens, remove saw, stop motor and place saw on ground away from direction of fall. Retreat at least 25 feet at a 45° angle over your planned escape route.

### LIMBING:

Keep a firm grip on saw, always limb from the butt end of the tree toward the top, with small logs stand on side opposite limb being cut, do not overreach, always maintain full control of saw. Be on the lookout for anything that can touch the tip of the bar and cause kickback.



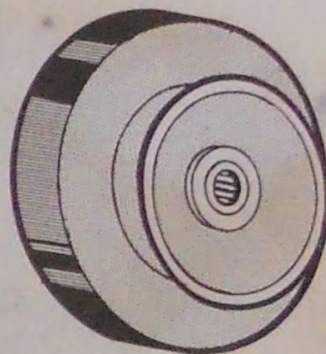
## OPTIONAL EQUIPMENT



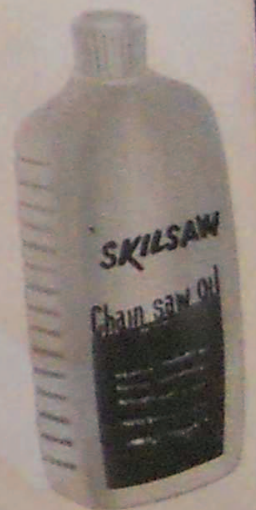
270341  
Bucking Spike



275768  
Flush Cut Handle  
276625  
Wrap Around Handle  
High with Grip



270662 6 Tooth  $\frac{1}{2}$ " Pitch - Clutch  
Drum Assembly complete  
with Bearing  
270653 8 Tooth .404 Pitch - Clutch  
Drum Assembly complete  
with Bearing



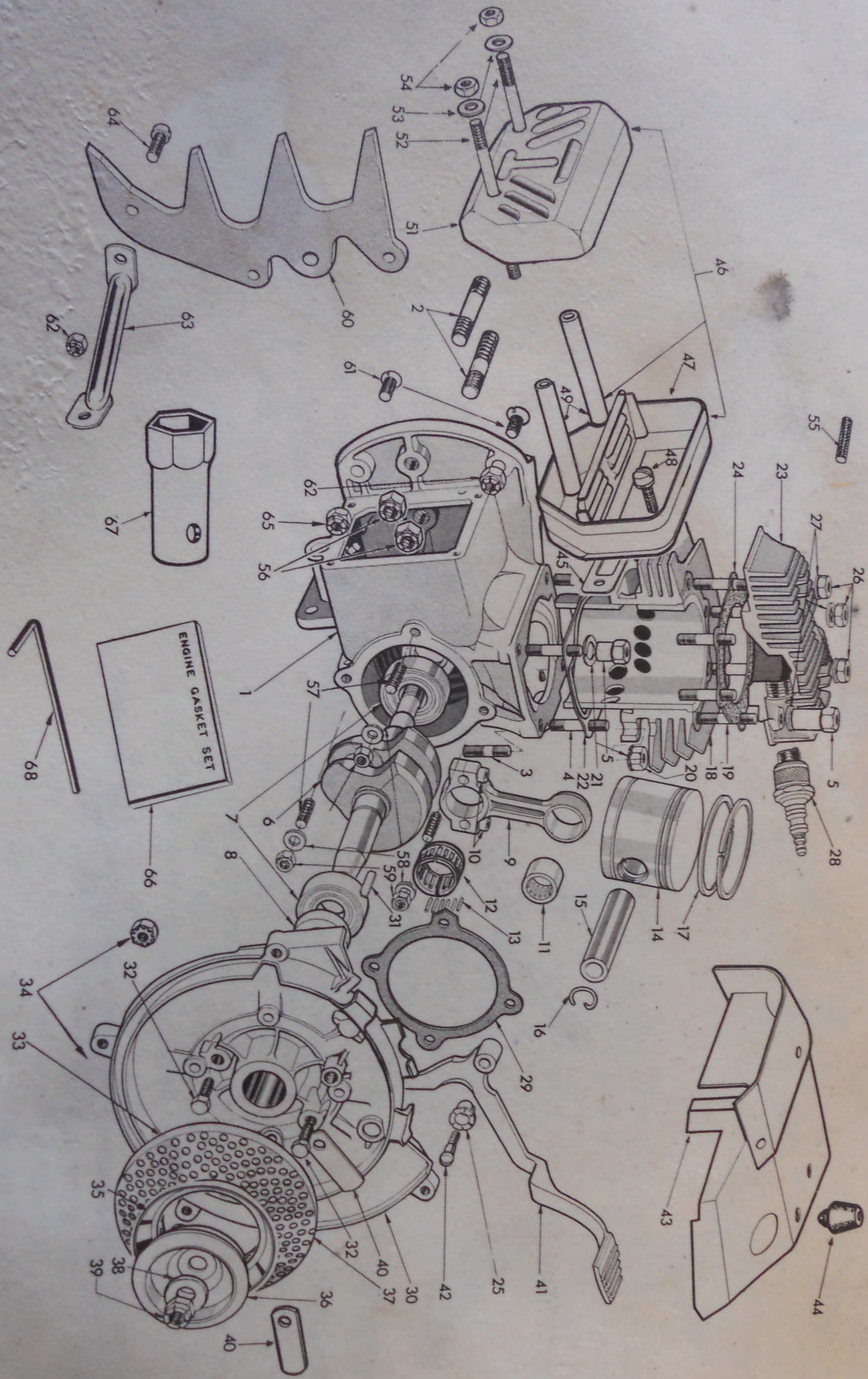
72781  
Skil Chain Saw  
Oil - 1 pint



73171  
File Holder, File 7/32 Dia. and Handle



281749  
Spark Arrestor



ENGINE

1	281602	Crankcase Assembly (includes *)	34	850210	Nut Keys (2 used)
2	271013	* Bar Stud (2 used)	35	281128	Starter Cup Shield
3	270010	** Tank Stud (2 used)	36	281126	Starter Cup
4	281023	* Cylinder Block Stud (4 used)	37	281127	Starter Screen
5	270073	Cylinder Nut (special) (3 used)	38	281117	Starter Cup Washer
6	281625	Crankshaft	39	850467	Crankshaft Nut — Left Hand
7	270030	Main Bearing (2 used)	40	275076	Thread — Flex Jam
8	270033	Seal Crankshaft (2 used)	41	281290	Retainer (2 used)
9	281606	Con. Rod Assembly (includes **)	42	270291	Lever Oiler
10	761060	** Con. Rod Cap Screw (2 used)	43	281619	Pivot Screw
11	281353	** Con. Rod Small End Bearing	44	281219	Inner Shroud
12	281605	** Con. Rod Big End Bearing	45	275140	Rubber Bumper
13	177040	Complete with Needles	46	281717	Gasket — Muffler to Cylinder Block
14	281645	Con. Rod Big End Needle	47	281617	Muffler Assembly (includes ***)
15	281017	Bearing (12 used)	48	706014	** Muffler Body Assembly
16	270047	Piston	49	281011	Screw — Muffler Body to Cylinder
17	281050	Wrist Pin	51	281136	*** Spacer Muffler (2 used)
18	281612	Wrist Pin Retaining Clips	52	281010	*** Cover Muffler
19	275009	(2 used)	53	275069	Stud — Muffler to Cylinder Block
20	850264	Piston Ring (2 used)	54	850064	Washer — Muffler Stud (2 used)
21	854214	Cylinder Head Stud (6 used)	55	270038	Nut — Muffler Stud (2 used)
22	275058	Cylinder Base Nut Hex Keys	56	850116	Stud — Handle Bar Brace
23	281670	(2 used)	57	270009	Nut — Bar Studs (2 used)
24	281071	Cylinder Base Washer Spring Loc	58	854214	Stud — Stator Backing Plate
25	281293	Cylinder Base Gasket	59	850064	Washer — Stator Backing Plate
26	850064	Cylinder Head	60	275341	(4 used)
27	281069	Head Gasket	61	741464	Nut — Stator Backing Plate (4 used)
28	270523	Bushing Oiler Lever (2 used)	62	850464	Bucking Spike
29	275074	Cylinder Head Nut (5 used)	63	275333	Screw — Bucking Spike (2 used)
30	281075	Cylinder Head Washer (6 used)	64	701264	Nut — Flex Regular (2 used)
31	856404	Spark Plug	65	850364	Nut — Flex Jam
32	706410	Gasket Stator Backing Plate	66	281710	Brace Bucking Spike Bottom
33	706010	Stator Backing Plate	67	270522	Screw — to Brace
		Key Flywheel	68	281502	Allen Wrench
		Screw (use at 2 and 10 o'clock positions)			Engine Gasket Set
		Screw (use at 4 o'clock position)			Plug Wrench

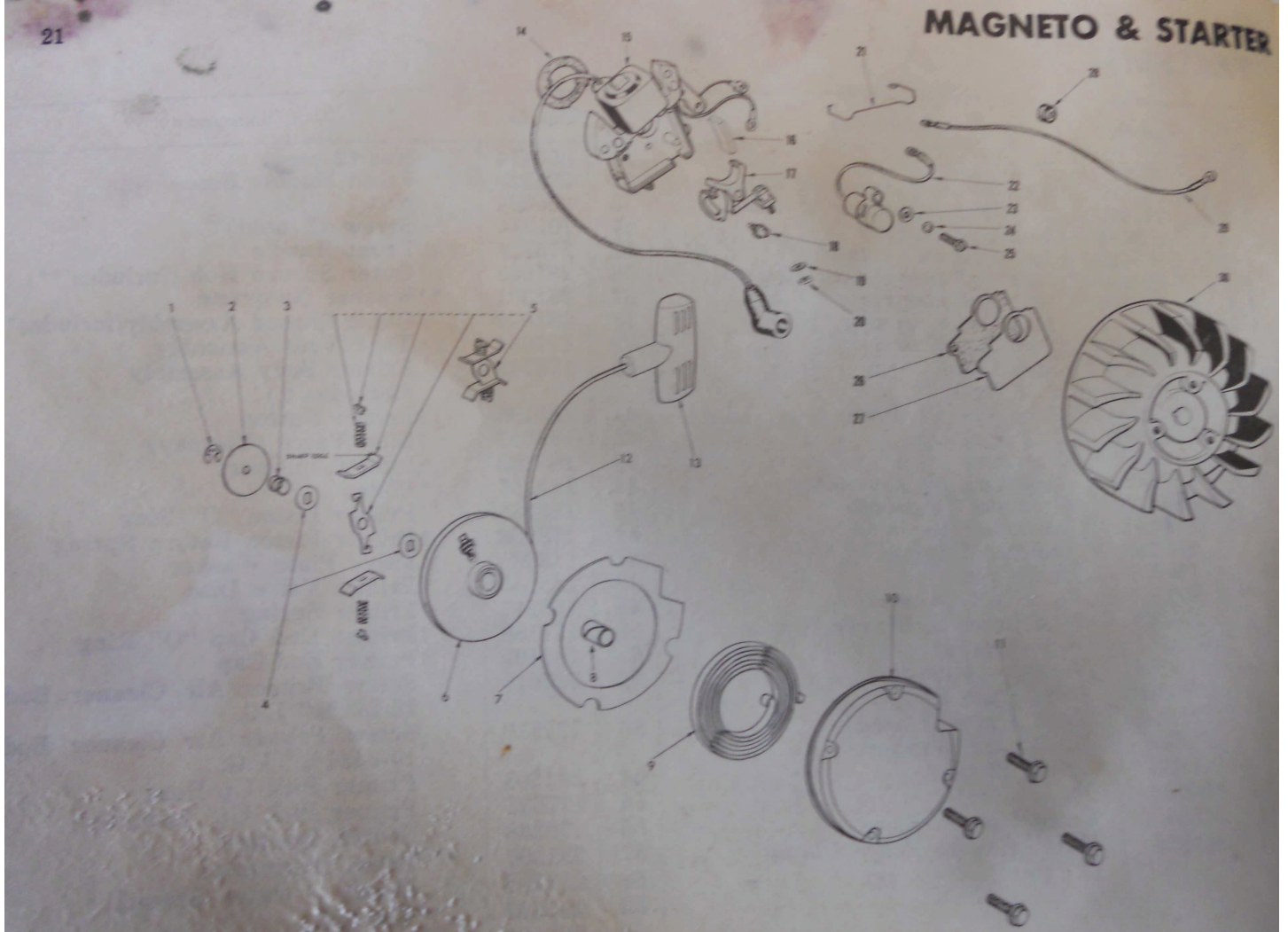


**FAN HOUSING - FUEL TANK - PRIMER  
FRONT HANDLE AND OUTER SHROUD**

275036

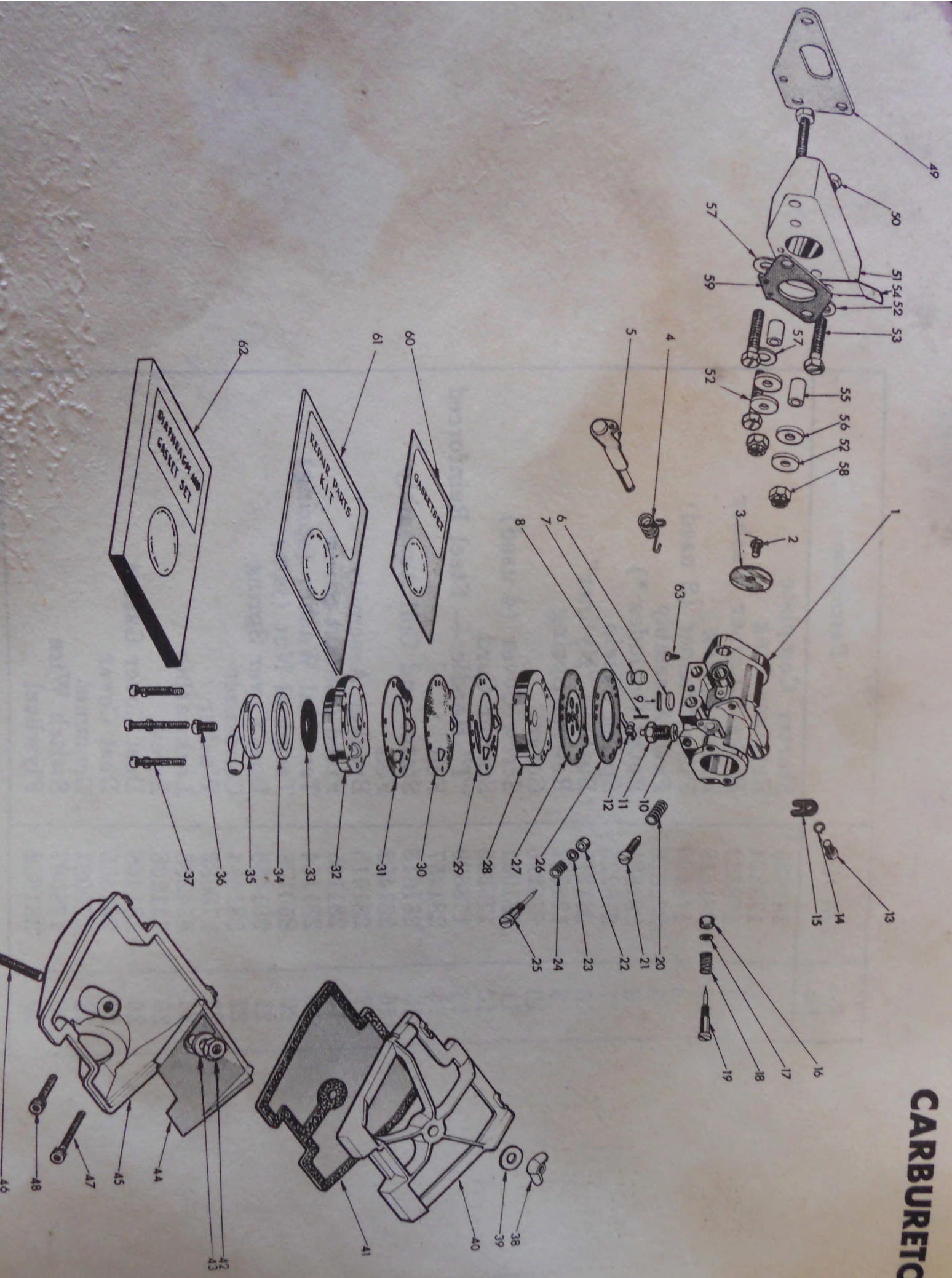
# PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	281677	Fan Housing	31	850414	Nut (2 used)
2	761210	Fan Housing Screw (2 used)	32	275329	Front Handle Brace
3	761610	Fan Housing Screw (2 used)	33	850264	Nut
4	275084	Roller (2 used)	34	701014	Screw (2 used)
5	726610	Roller Screw (2 used)	35	275325	Front Handle
6	275086	Starter Roller Spacer (2 used)	36	281603	Outer Shroud Nob (includes **)
7	275129	Starter Roller Plate	37	281301	**Washer Neoprene
8	270675	Fuel Cap (includes *)	38	281640	Outer Shroud Assembly(includes***)
9	270186	*Fuel Cap Gasket	39	177634	Tank Vent Assembly
10	275390	Step Plate	40	178743	Primer Body Assembly
11	281631	Fuel Tank	41	183195	(includes †)
12	178206	Fuel Pick Up Hose	42	183007	+Primer Button
13	177635	Fuel Pick Up	43	183263	+Inlet Valve (Viernay)
14	275210	Fuel Line	44	183197	+Inlet Connector
15	281209	Fuel Pick Up Connector	45	183155	+Piston
16	281210	Grommet (3 used)	46	178198	+Primer Piston "O" Ring
17	270232	Throttle Link	47	183385	+Primer Piston Return Spring
18	270230	Throttle Trigger	48	183256	+Valve Plate Washer
19	175231	Hinge Pin	49	183217	+Primer Valve Disc
20	850364	Tank Nut (4 used)	50	177188	+Primer Spring
21	270038	Stud Brace to Blower Housing	51	183199	+Primer End Cap "O" Ring
22	850314	Nut (2 used)	52	725610	+Primer End Cap
23	275069	Washer (4 used)	53	727810	Screw Primer/Air Cleaner Body
24	270295	Oiler Push Rod	54	281205	10-24x <sup>3</sup> / <sub>8</sub> " L.G.
25	701664	Tank Screw (2 used)	55	177635	Screw Primer/Air Cleaner Body
26	270326	No-Squash Washer	56	270238	10-24x1 <sup>3</sup> / <sub>4</sub> " L.G.
27	702414	Screw (2 used)	57	281307	Primer Pick Up Hose
28	850264	Nut	58	231303	Primer Pick Up Assembly
29	275330	Front Handle Brace	59	281302	Primer Ignition
30	281328	Front Handle Brace Clamp (2) used)	60	281169	Switch Ignition
					**Decal Instruction
					Decal — Outer Shroud
					**Washer
					Grip



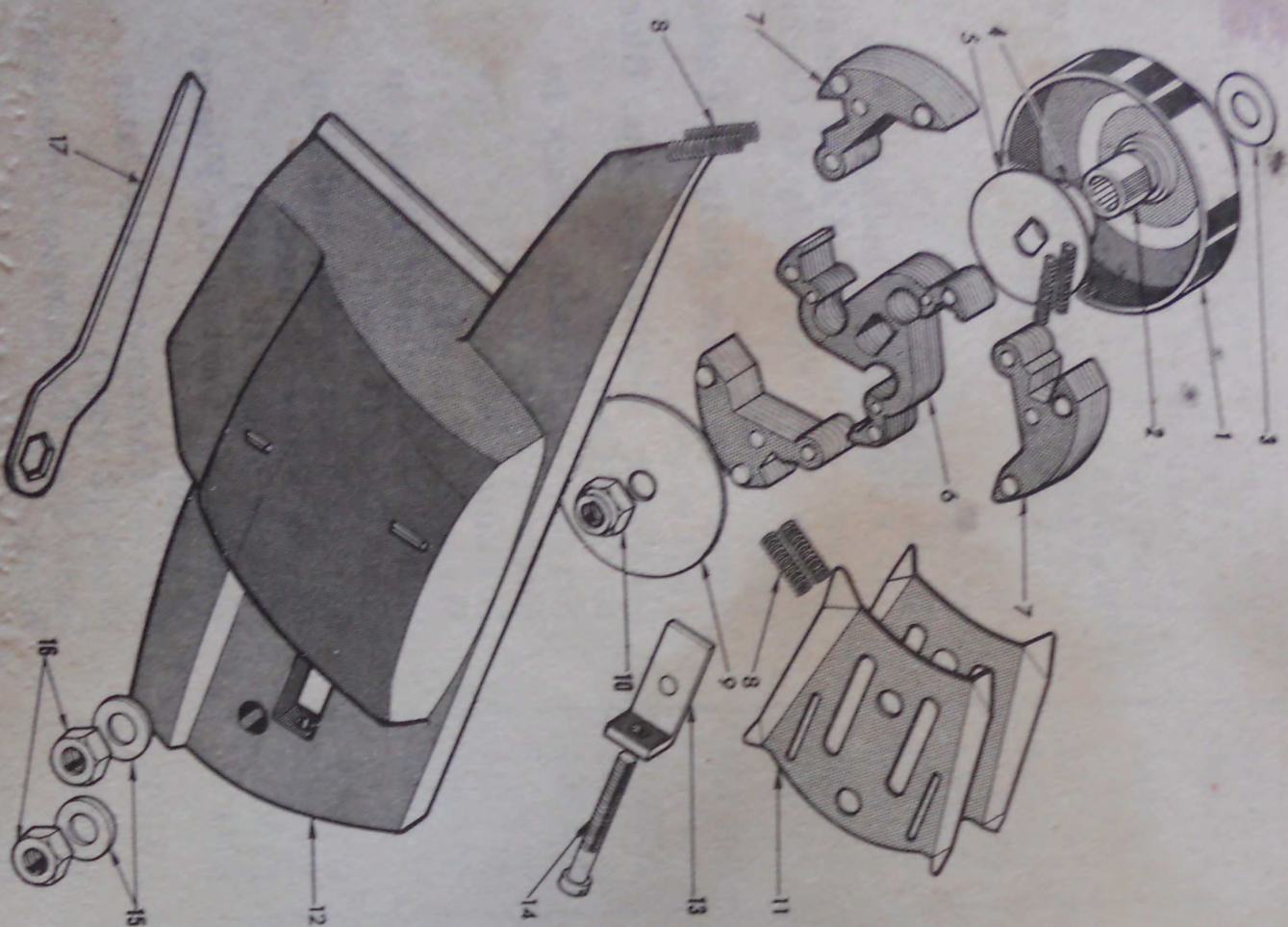
Ref. No.	Part No.	Description
	281620	Starter Complete
1	178324	Retainer Ring
2	178323	Brake Retainer Washer
3	281319	Brake Spring
4	178100	Fibre Washer (2 used)
5	281676	Pawl Assembly
6	281621	Rotor (includes *)
7	275225	Spring Shield
8	281275	*Bushing "Nyliner"
9	178317	Rewind Spring
10	275296	Cover
11	281031	Screw Cover (4 used)
12	178335	Starter Cord
13	178639	"T" Handle — Steel Reinforced
14	281457	Felt
15	281616	Stator and Coil Assembly
16	281452	Felt
17	281613	Breaker Assembly
18	281165	Fixed Contact Screw
19	281164	Terminal Washer (spring)
20	850108	Terminal Nut (jam)
21	281458	Dust Cover Spring
22	281664	Condenser
23	178083	Washer
24	854208	Lockwasher
25	731208	Screw
26	281456	Dust Cover Gasket
27	281455	Dust Cover
28	270081	Grommet
29	178087	Switch Wire
30	281658	Flywheel

# CARBURETOR



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	281095	Carburetor Complete	36	275146	*Retaining Screw Strainer Cover
2	281158	Body Service	37	275156	Fuel Pump Body Screw and Lockwasher (6 used)
3	281118	*Throttle Shutter Screw	38	850964	Wingnut
4	281142	*Throttle Shaft Return Spring	39	270026	**Washer
5	281693	Throttle Shaft and Lever	40	281752	Air Filter Cover (includes ***)
6	275053	*Welch Plug	41	281624	Air Filter Element
7	275123	Check Valve	42	850154	**Nut
8	183136	*Inlet Tension Spring	43	275069	**Washer
9	281150	*Fulcrum Pin	44	281172	**Baffle Plate
10	270214	Inlet Seat Gasket	45	281650	Air Filter Body (includes **)
11	281614	*Inlet Needle, Seat and Gasket Kit	46	281109	**Screw — Air Filter Cover Retaining
12	275155	*Inlet Valve Control Lever	47	767060	Screw Air Filter Body to Carburetor (right side)
13	270131	Throttle Shaft Clip Retaining Screw	48	766460	Screw Air Filter Body to Carburetor (left side)
14	854208	Throttle Shaft Clip Lockwasher	49	275097	Gasket — Carburetor Ins. Block to Crk./Case
15	270125	Throttle Shaft Clip	50	701764	Screw — Insulator Block to Carburetor (2 used)
16	275147	Packing — Adjusting Screw	51	281096	Insulator Block
17	270090	Washer — Adjusting Screw	52	275069	Washer (3 used)
18	275143	*Spring — Adjusting Screw	53	812014	Screw — Insulator Block to Crk./Case (3 used)
19	281122	*Main Adjusting Screw	54	276299	Spring Plate — Shroud Stop
20	275120	*Spring — Idle Speed Regulating Screw	55	270028	Sleeve Fibre (2 used)
21	275121	*Idle Speed Regulating Screw	56	270026	Washer Fibre (2 used)
22	275147	Packing — Adjusting Screw	57	270027	Washer — Carburetor Flange (2 used)
23	270090	Washer — Adjusting Screw	58	850164	Nut — Carburetor/Insulator Block (2 used)
24	275143	*Spring — Adjusting Screw	59	275098	Gasket — Carburetor/Insulator Block
25	275144	*Idle Adjusting Screw	60	275778	*Gasket and Packing Set
26	275110	Diaphragm Cover Gasket	61	281777	Repair Parts Kit (includes *)
27	275153	*Diaphragm Cover	62	281779	Diaphragm and Gasket Set
28	281119	Diaphragm Gasket	63	178149	*Indicates contents of Repair Parts Kit 281777
29	270110	Fuel Pump Gasket			*Control Lever Pinion Screw
30	281154	*Fuel Pump Diaphragm (pulse)			
31	281153	*Fuel Pump Diaphragm (valve)			
32	275092	Fuel Pump Body			
33	275100	*Strainer Screen			
34	275111	Strainer Gasket			
35	275145	Strainer Cover			



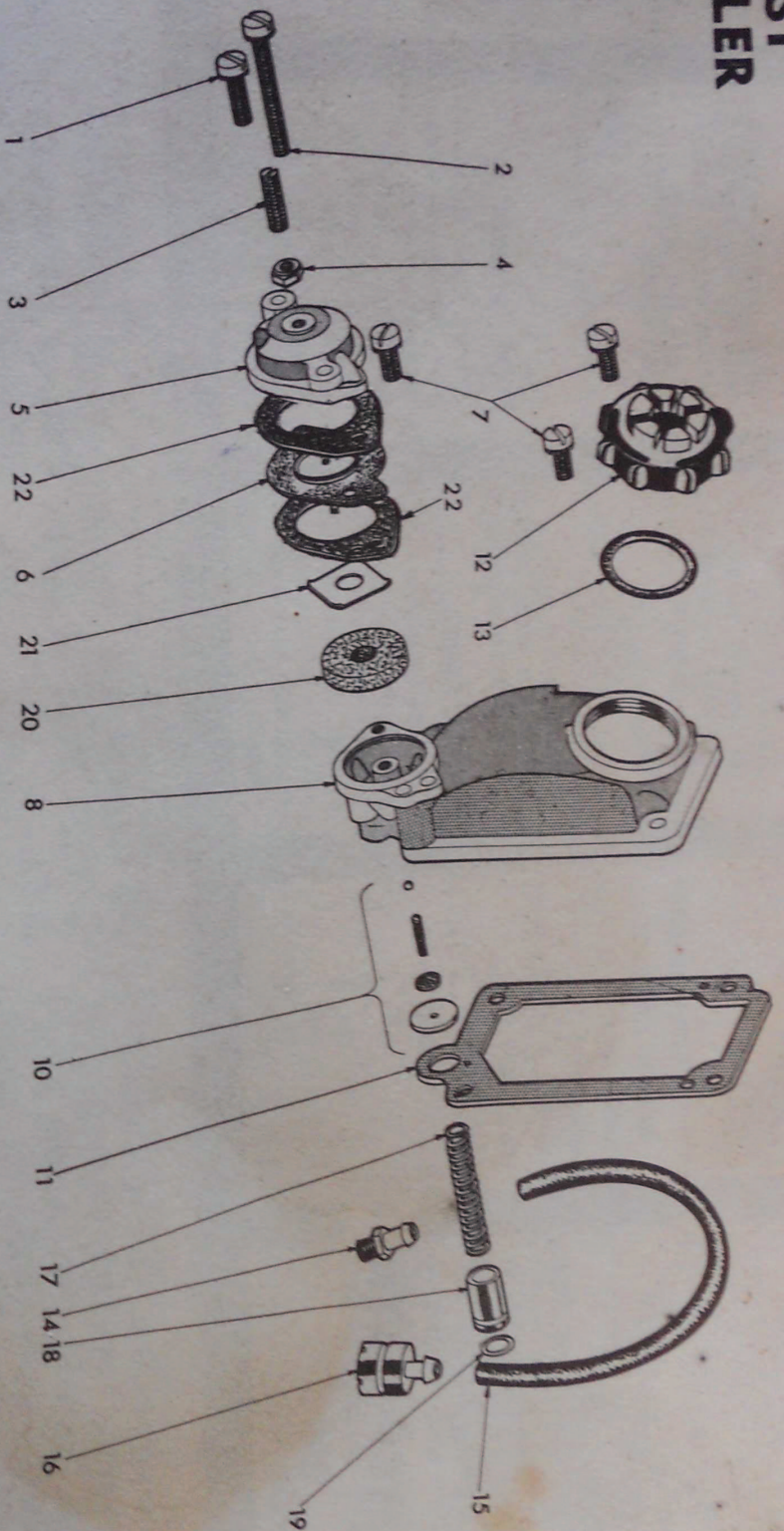


## PARTS LIST

## CLUTCH

Ref. No.	Part No.	Description
1	270645	7 Tooth Sprocket .404 Pitch (includes *)
2	177348	* Sprocket Bearing
3	276379	Thrust Washer (inner)
4	276378	Thrust Washer (outer)
5	275672	Clutch Assembly (includes **)
6	276364	Side Plate (inner)
7	276643	** Clutch Driver
8	275654	** Clutch Shoes (3 used)
9	270363	** Spring (6 used)
10	275364	Cover Clutch Plate
11	850467	Crankshaft Nut (left hand thread)
12	270160	Guide Plate (2 used)
13	281648	Chain Cover Assembly (includes ***)
14	178649	*** Chain Tensioner Assembly
15	737814	*** Chain Tensioner Screw
16	281359	Washer — Bar Bolts (2 used)
17	850066	Bar Nut (2 used)
17	270521	Bar Wrench

# LUBE ASSIST CHAIN OILER



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	725810	**Diaphragm Cover Screw (short)	12	275638	Oil Filler Cap Assembly (includes ***)
2	727810	**Diaphragm Cover Screw (long)	13	271258	***Gasket — Oil Filler Cap
3	781260	*Adjusting Screw	14	178627	Oil Pick Up Connector
4	850260	*Lock Nut	15	270270	Hose — Oil Pick Up
5	275611	**Diaphragm Cover Assembly (includes *)	16	271629	Oil Pick Up Head Assembly
6	275613	**Piston and Diaphragm Assembly	17	270198	Spring — Oiler Piston
7	725810	Screw — Tank Cover (3 used)	18	270260	Piston Oiler
8	275622	Oil Tank Cover Assembly (includes **)	19	270187	"O" Ring Piston Oiler
10	275718	**Oiler Valve Repair Kit	20	270286	Filter — Auto Oiler
11	275246	Gasket — Oil Tank Cover	21	270287	Retainer — Filter
			22	276079	Gasket (2 used)



## SPECIFICATIONS

### Front Handle:

Wrap around handle. Simply and directly attached for strength and easy maintenance.

### Air Filter:

Located in protected area; directly accessible for cleaning.

### Starter:

Shielded for cold weather operations and directly accessible for maintenance.

### Fuel Tank:

Large capacity with well located wide opening for easy re-fuelling. Rim - protected against dirt and water.

### Clutch:

High speed engaging for safety — mounted on flattened shaft for good alignment.

### Fuel Primer:

Direct fuel injection for rapid start in cold or hot weather. Automatic fuel shut-off to prevent bleed-through of fuel when saw is operating.

### Exhaust:

Noise reducing baffle - spark arrester type — directed to the safest area; away from the operator, from forest ground and saw-dust.

### Chain:

SKIL Guard, .401 Pitch, .058 Gauge Standard.

### Material:

Cast magnesium—light, strong and easily welded when required. Formed steel parts for unequalled durability.

### Motor:

2 cycle, air cooled, full balanced — no reed valve.

### Bore and Stroke: 2 11/16 x 1 1/2.

Displacement: 8.5 cu. in. producing flat power curve.

Crankshaft: Single throw, alloy steel, precision ground.

Con Rod: Forged alloy steel. Caged needle rollers top and bottom.

Fuel Capacity: 3 U.S. Pts.; 2 1/2 Imp. Pts.; 1.42 Li.

### Oil Capacity:

.6 U.S. Pts.; .5 Imp. Pts.; .3 Li.

### Fuel Mix:

16 to 1 — 8 ozs. per U.S. gal. or 10 ozs. per Imp. gallon.

### Ignition:

Completely isolated from dampness and dust.

### Carburetor:

All position with pressure compensated diaphragm to eliminate frequent adjustments.

### Fuel Primer:

Direct Fuel Injection—Automatic shut-off.

### Oil Tank:

Integral part of crankcase — provides rapid flow of heat to chain oil in cold weather.

### Controls:

All grouped at rear handle for safety.

### Spark Plug:

J-6-J — Well protected and well cooled under shroud, yet easily removed for cleaning.

### Bars:

SKIL, hard rail, stellite tipped, lightweight. Lengths: 16", 20", 24", 30", 36", 42", and 48".

## TROUBLE SHOOTING

Trouble	Causes	Remedy
Engine fails to start FUEL	Fuel tank empty	Fill with correct mixture
	Engine flooded	Hold throttle open — pull starter over several times
	Hot motor — flooded — spark plug wet with gas	Remove plug — blow dry — pull starter over several times with plug out
	Contamination in fuel system	Drain fuel tank — check pickup head element — check fuel line
	Cold motor — not sufficiently primed	Continue priming, pull till motor responds
	Incorrect carburetor settings	See CARBURETOR SETTINGS (p. 31)
SPARK	Ignition switch 'OFF'	Flick 'ON'
	Ignition switch shorting	Check for short by removing switch and disconnecting wire. Hold wire clear of motor
	Fouled or defective spark	Clean or replace as required. Champion J-6-J or equivalent. Adjust gap to .025"
	Ignition switch wire and/or high tension lead loose or shorting	Check for loose connections and points of worn insulation
	Magneto	Disconnect high tension lead from plug — hold lead end ¼" from a clean metal surface — pull starter. If no STRONG spark occurs across this gap, trouble is in the breaker points, coil and/or condenser — see your Dealer

Trouble	Causes	Remedy
	COLD WEATHER — ICE often separates from fuel at freezing temperatures	Use de-icing additive or methyl hydrate in fuel for cold weather operation
Motor cuts out, lean out, or misfires	FUEL	
	Fuel tank empty	Fill with correct mixture 16-1
	Contamination in fuel system	Drain fuel tank — check pickup head element — check fuel line
	Air leaks in the fuel system	Check lines and joints for cracks and poor fits
	Incorrect carburetor settings	See CARBURETOR SETTINGS (p. 31)
	Carburetor loose	Replace carburetor gaskets — tighten
	SPARK	
	Fouled, wet or defective spark plug	Clean, dry or replace as required
Ignition switch wire and/or high tension lead loose or shorting		Check for loose connections and points of worn insulation
	Breaker points dirty, burned or improperly set	Clean, replace or set (gap .015") as required
	Faulty magneto components	See your Dealer
Motor lacks power	Incorrect fuel mixture	Replace with correct mixture
	Incorrect carburetor settings	See CARBURETOR SETTINGS (p. 31)
	Clogged air filter	Clean — See air filter (p. 6)

Trouble	Causes	Remedy
	Carbon build-up in exhaust port and/or muffler	Clean using a wooden scraper — NOT metal
	Poor compression—worn engine	See your Dealer
Motor overheats	Dirty cylinder block and head fins	Clean
	Lean carburetor settings	See CARBURETOR SETTINGS (p. 31)
	Incorrect fuel mixture	Replace with correct mixture
	Plugged blower screen (starter side of motor)	Clean
	Wrong spark plug	Use Champion J-6-J or equivalent
	Loose cylinder—damaged gasket	Tighten — replace gasket
Engine starves on Acceleration or idles too fast	Incorrect carburetor settings (idle setting too lean)	See CARBURETOR SETTINGS (p. 31)
	Air leak in engine	Check conditions of all gaskets and seals — see your Dealer
	Loose muffler	Inspect for damaged exhaust manifold gasket — tighten
Oil not being delivered to the bar pad	Oil tank empty	Fill with S.A.E. 10 or 20 motor oil.
	Oil outlet plugged	Clean
	Cold oil — Low temperature operations	Dilute oil up to 50% with kerosene
	Dirt in oil system	Remove cap — clean tank with gasoline — replace pick-up head
	Faulty lube assist	See your dealer

## ADJUSTMENTS

### CARBURETOR

Note: Before making any carburetor adjustments, clean the air filter and filter chamber.

Adjust the carburetor in the following sequence:

1. Screw in main jet (H) lightly, then open 1 to 1½ turns.
2. Screw in idle jet (L) lightly, then open ¼" to 1¼ turns.
3. Unscrew idle speed screw until lever touches stop, then screw in 1 to 1¼ turns.

Note: Engine cannot idle correctly if idle speed screw is more than 1½ turns open.

Further fine adjustments to high and low speed jets may be required to obtain maximum power and cutting speed, these should be made under load

### FUEL MIX

Fuel mix 16 gas to 1 oil 8 oz. per U.S. gal.  
(10 oz. per Imp. gal.).

### IGNITION

Spark plug gap .025".

Ignition breaker point gap .015".

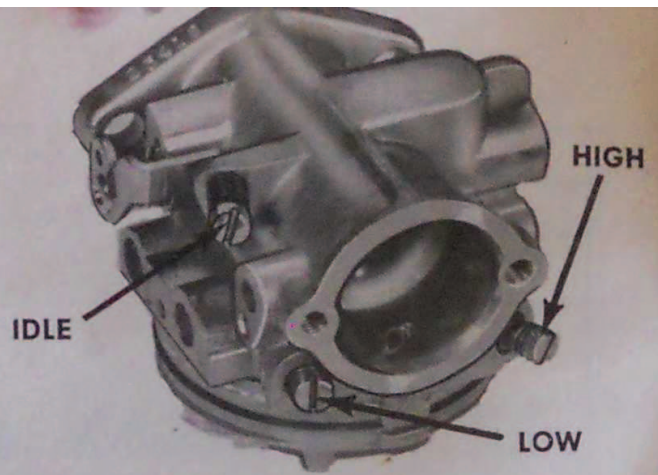


FIGURE 16 Carburetor Adjustment

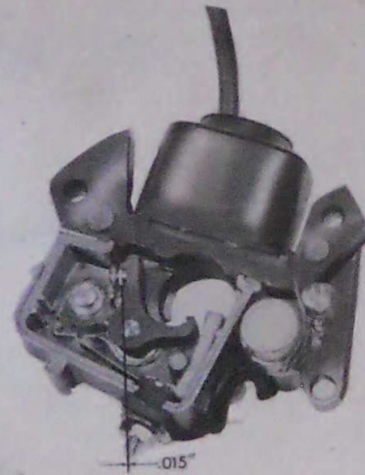


FIGURE 17 Breaker Point Adjustment



FIGURE 18 Spark Plug Gap

## BASIC SAFETY RULES FOR THE OPERATION OF CHAIN SAWS

1. Use a safety helmet
2. Use safety footwear.
3. Use snug fitting clothing
4. Mix and handle fuels in safety containers, re-fuel over bare ground, wipe off any fuel or oil spilled on the saw before starting
5. To start the saw, place it on the ground away from fueling area and make sure no-one else is near it.
6. Keep all bystanders at a safe distance from work area.
7. Never start cutting until you have a clear place to work, a secure place to stand and a safe exit from limbs and trees
8. Cut away from your body at all times, changing your position if necessary to work safely.
9. Do not stand on the tree when limbing, use supreme caution when cutting limbs supporting log.
10. When bucking, always stand on the high side of the log, place bumper against log, use both hands on saw, have a firm grip and keep the saw under control at all times.
11. When moving from tree to tree, stop the saw and always carry it by the handle bar with the guide bar to the rear.
12. Never operate the saw if the chain is dull or repairs are needed
13. Never run the saw without the muffler in place.

## REFERENCE NOTES

1. New Piston

No 2 New Boyle Piston Ring Cylinder & Head.  
New Bar & Chain

No 3 New Boyle as & Piston & Bar

No 4 New Boyle as & Head

No Good SABRE

2 chains

2 July 1978

Yes LASER good one

## MANUFACTURER'S WARRANTY

We warrant each SKILSAW Chain Saw and Bar and Chain to be free from defects in material and workmanship under normal use and service, our obligation under this warranty being limited to making good any part or parts thereof which shall, within 30 days from delivery to the original purchaser, prove to have been thus defective.

This warranty being 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 person to assume for us, any other liability in connection with the sale of our chain saws.

This warranty shall not apply to any chain saw which shall have been repaired or altered by any unauthorized person in any way, so as in our judgment to affect its stability and reliability, nor to any saw which has been subject to misuse, negligence or accident.

To make a claim under this warranty, return freight or postage prepaid to the nearest SKIL Factory Service Center. All the claims must be accompanied with the model and serial number of the saw.

It is the policy of SKIL Corporation to ensure continual improvement in the design, engineering and manufacturing of its product and consequently, the specification is subject to change without notice or obligation to make retroactive fitment in respect of units previously shipped from the factory.

NOW 57 SKIL

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