

MCCULLOCH
CHAIN SAW

Owner's Manual



MODEL 1-72



MARCH 1961

57762

SERVICE

Service on McCulloch Corporation products is provided by McCulloch distributors and their authorized dealers located throughout the United States and Canada. Each McCulloch distributor and his dealers carry a stock of parts for McCulloch products and are equipped with special tools for servicing in order to provide expert repair service. Factory representatives keep McCulloch distributors and their dealers fully informed as to the latest design advances and service techniques.

McCULLOCH CORPORATION CHAIN SAW WARRANTY

We warrant to each original retail Purchaser (hereinafter called Purchaser) each part (except bar, chain and sprocket) of each new McCulloch chain saw to be free under normal use and service from defects in material or workmanship for a period of thirty (30) days from the date of delivery to the Purchaser. Our obligation under this warranty is limited to supplying without charge to such Purchaser a genuine replacement part in exchange for any part which, in our sole judgment, is defective if the part is returned for our examination at Purchaser's expense through an authorized McCulloch dealer or distributor.

This warranty shall not apply to any new McCulloch chain saw or part thereof that has been tampered with or which has been subject to misuse, negligence, or accident, or which has its serial number altered or removed, or which has been altered or repaired outside of an authorized McCulloch service station. This warranty is expressly in lieu of all other warranties, express or implied, and shall not become effective unless the "Warranty Notice" attached to the Warranty accompanying the chain saw is mailed to us within five (5) days after delivery. We do not assume or authorize any person to assume for us, any other obligation or liability in connection with the sale of McCulloch chain saws.

WARRANTY INSTRUCTIONS

Do not return parts to the factory. Any chain saw part or parts returned for exchange under the above Warranty must be returned through an authorized dealer or distributor of McCulloch products and not to the factory (see distributor list on back cover of manual).

Service Manager
McCulloch Corporation
6101 W. Century Blvd.
Los Angeles 45, Calif.

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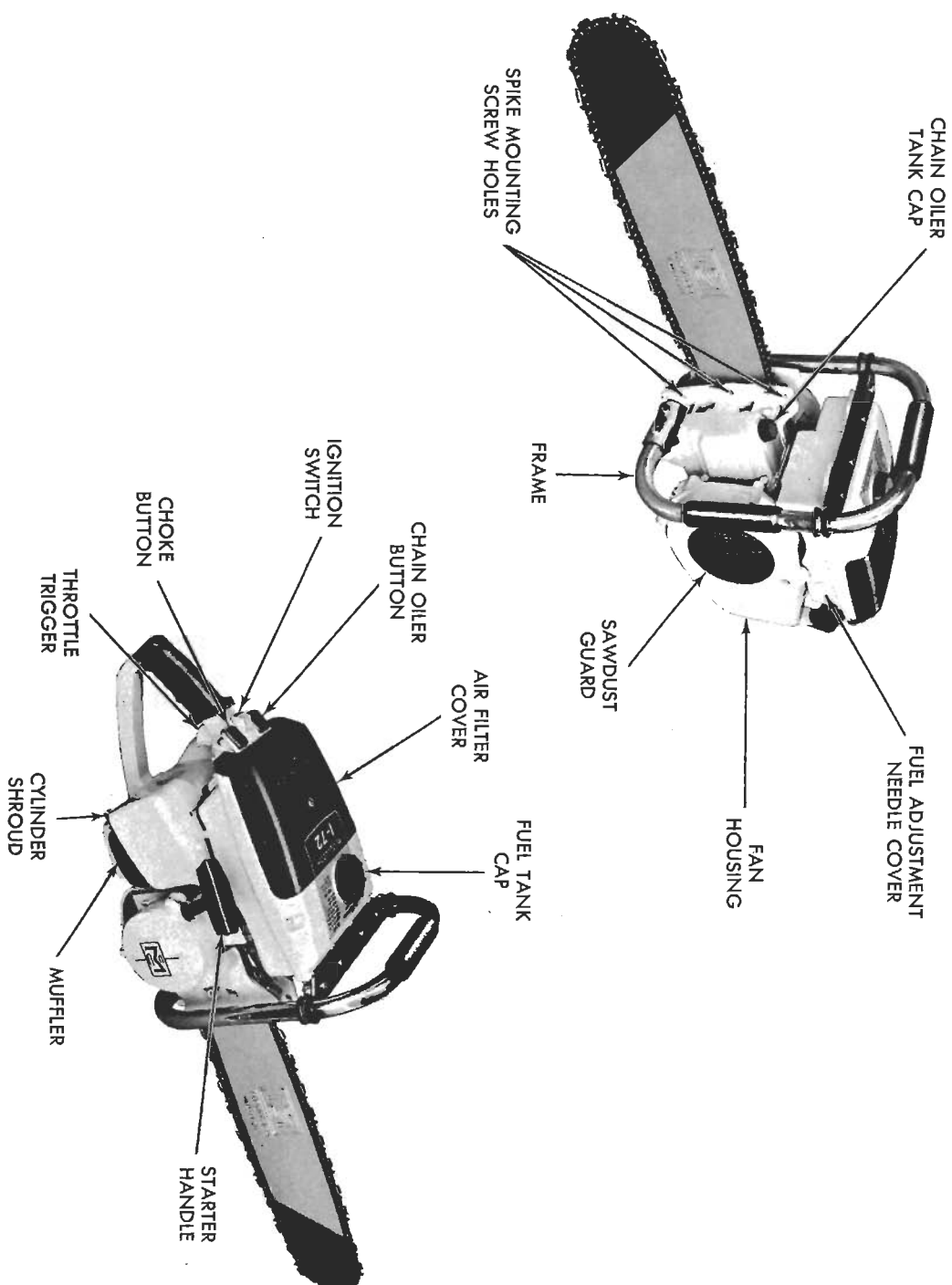
INTRODUCTION

Your new McCulloch chain saw is designed and constructed to give you the very best service and performance. The finest materials and the most advanced manufacturing methods have been used in its construction. In order to take full advantage of these high standards, you should study this Manual of Operating Instructions. Don't just glance at it or read part of it, for you will find the information it contains will help you to obtain the service and performance built into your new McCulloch chain saw.

Along with this Manual of Operating Instructions, you should receive with your new chain saw, an Illustrated Parts List, a Warranty Card and an envelope containing the parts shown in Figure 2. Make sure the Warranty Card is properly filled out and mailed to the Factory. The serial number of your chain saw is stamped underneath the crankcase. Write the serial number down and keep it in a safe place so that you'll be able to identify your chain saw if it's lost or stolen and recovered.

LOCATION OF CONTROLS AND FEATURES

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INSTALLATION OF BAR AND CHAIN

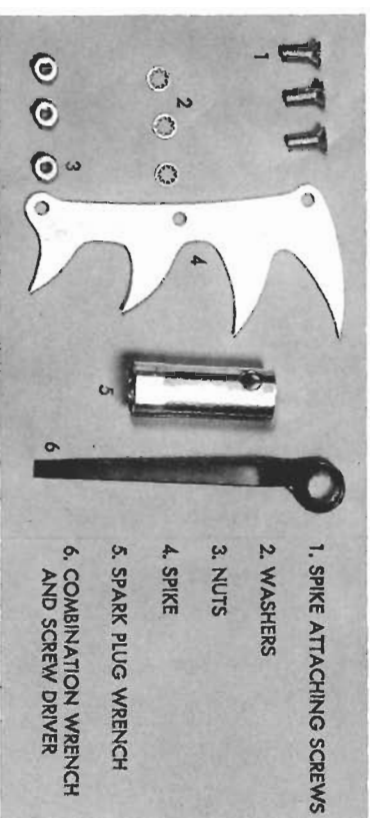
The bar used on your chain saw fits between the starter assembly base and the bar mounting pad on the side of the oiler tank (figure 3). A chain protector fits on each side of the slotted end of the bar. The bar is secured on the bar mounting pad by the starter assembly base when the two mounting nuts are tightened. The bar is adjusted for correct chain tension by turning the chain tension adjustment screw. Turning the screw counter-clockwise tightens the chain; turning the screw clockwise loosens it. It will be necessary to loosen the bar mounting nuts whenever you adjust chain tension and to retighten them after chain tension is correctly adjusted.

Before installing your new chain, soak it for at least five minutes in SAE 30 motor oil. This will help to make your chain last longer.

INSTALLING YOUR SPIKE

The spike provides a pivot point when bucking and a bumper plate when making other types of cuts. Always operate your saw with the spike against the wood being cut except when boring.

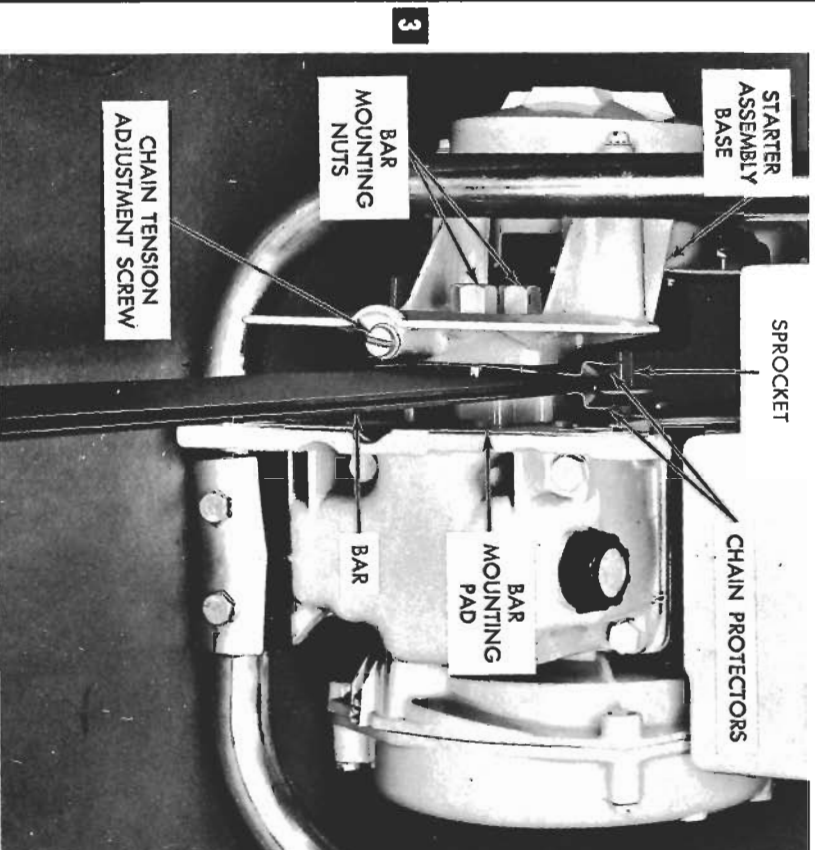
1. Remove the spike and its three attaching screws, nuts and lockwashers from the parts envelope (figure 2).
2. Mount the spike on the front of the oiler tank with the teeth curving upward. Put the lockwashers under the nuts and tighten the nuts securely.



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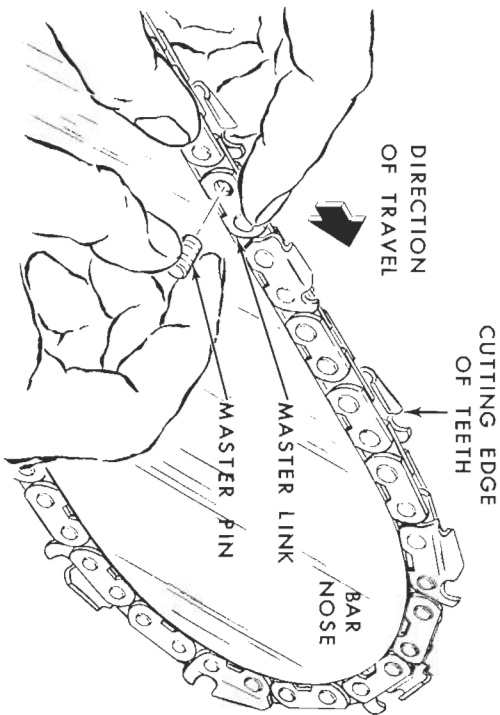
INSTALLING YOUR BAR AND CHAIN

1. Remove the bar mounting nuts (figure 3), the starter assembly and one of the chain protectors from the studs on the side of the oiler tank. Make sure the flanged sides of the second chain protector are toward the chain oiler tank.



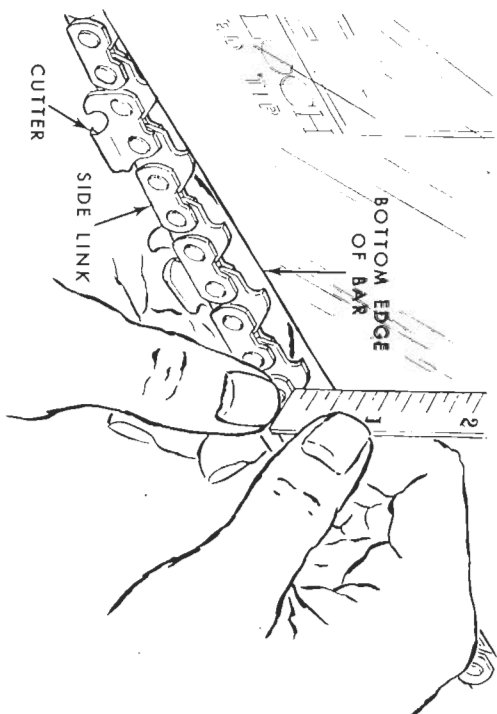
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2. Put the bar on the second chain protector with the slot in the bar fitting over the two studs and the small tab of the chain protector fitting into the tab cutout in the bar. Place the first chain protector on the bar mounting studs on top of the bar. Make sure the tab fits into the bar cutout and that the flanged sides are away from the bar.
3. Turn the chain tension adjustment screw clockwise until the head of the screw fits into the recess in the side of the bar.
4. Replace the starter assembly base and the bar mounting nuts. Tighten the nuts just enough to hold the bar in place. You may have to gently pull the starter handle and release it so the starter can engage the shaft before you can tighten the bar mounting nuts.
5. Fit the center link tangs of your oil-soaked chain into the groove on the upper edge of your bar. Make sure the cutting edges of the chain teeth point toward the nose or rounded end of your bar (figure 4).



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6. Slide the rear or engine-end of your chain over the sprocket (the colored gear just in back of the slotted end of your bar) and around the sprocket so that it hangs down beneath the chain saw. You may have to turn the sprocket in order to start the chain across the sprocket top. Make sure the center link tangs fit between the teeth of the sprocket.
7. Pull the chain along the bottom groove of the bar and up around the bar nose. Fasten the chain ends together with the master pin (figure 4.)
8. Turn the chain tension adjustment screw counter-clockwise to tighten the chain. Pull the chain down at the center of the bottom of the bar and continue to tighten the chain until there is between 3/8 and 1/2-inch clearance between the side link or cutter that you are holding and the bottom of the bar (figure 5).



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9. Tighten the bar mounting nuts securely.

10. Move your oil-soaked chain around the bar several times and squirt additional oil onto the chain so that bar and chain are thoroughly lubricated.

Caution

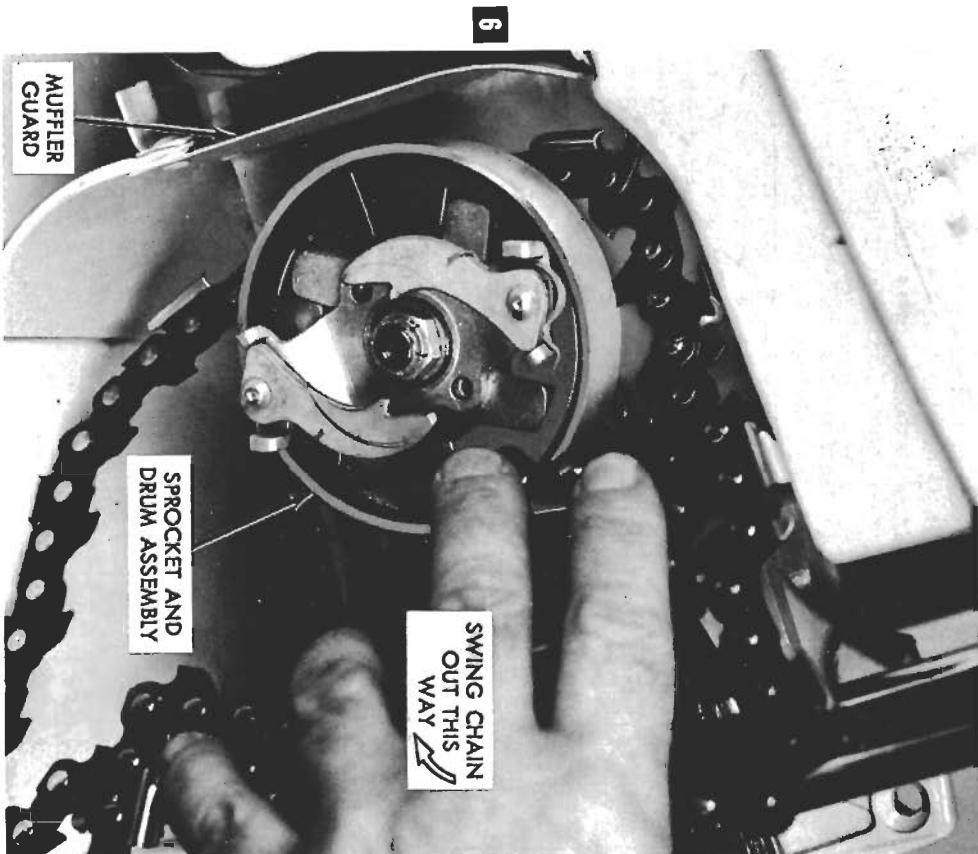
It's normal for a new chain to lengthen or "stretch" as it wears in during the first few hours of use. Keep a close check on chain tension. If the tension becomes too loose, the chain can jump off the bar and damage itself. If it's too tight, it will overheat the bar and wear down the bottoms of the side links and cutters. Too tight or too loose a chain tension cuts service life of your chain. Remember to pump plenty of oil onto your chain when cutting.

REMOVAL AND INSTALLATION OF ENDLESS CHAIN

After your chain has been in use for some time, it will become very difficult to remove the master pin and separate the ends of your chain. When this happens you can remove your chain in the following way:

1. Remove the starter assembly base and loosen the chain tension as much as possible.
2. Take the chain off the bar at the bar nose. Lift the center link tangs out of the bar groove.
3. Gather the chain together at the sprocket end of the bar and swing the gathered chain out away from the bar with the rear of the chain turned ninety degrees from the saw; you now can remove the chain (figure 6).

When installing endless chain, turn the chain tension screw until the bar is shortened as much as possible. Insert the end of the chain between the muffler guard and the sprocket and drum assembly. Gather the rest of the chain and bring it forward under the handle bar. Pull the chain out and fit the center link tangs into the bar groove. Replace the starter assembly base and adjust chain tension.



FUEL AND LUBRICATION

GASOLINE

Lubrication of the internal moving parts of your chain saw, is obtained by mixing a measured quantity of lubricating oil with the gasoline. Use regular grade gasoline with as low an octane rating as you can find. "ETHYL" and high-octane gasolines are not good for chain saw engines and their continued use will result in poor operation. Mix oil and gasoline in the quantities shown in the Fuel Mixture Table.

Prepare only the quantity of oil and gasoline that you will use within a day or two. Do not prepare large quantities of mixed fuel and store the fuel over long periods. Temperature and humidity changes will cause condensation of moisture on the inside of the storage can and will result in adding water to the fuel. Gasoline stored over long periods loses its higher fractions into the atmosphere and, when used in your chain saw, will make your engine hard to start. Thoroughly mix the oil and gasoline together before putting them in your fuel tank. Use a container equipped with a flexible spout and strainer. You will find it easier to fill your fuel tank and less fuel will be spilled, reducing the danger of fire. When mixing oil and gasoline, pour half of the gasoline and all of the oil into your container. Cap the container and shake the container to mix the oil and gasoline. Then add the balance of the gasoline and shake the container again.

FUEL MIXTURE TABLE

Oil Quantity	Gasoline Quantity	
	(Mixed with McCulloch Oil)	(Mixed with SAE 30 motor oil)
1/2 pint	1-1/4 gallons	1 gallon
1 pint	2-1/2 gallons	2 gallons
1 quart	5 gallons	4 gallons
2 quarts	10 gallons	8 gallons
1 gallon	20 gallons	16 gallons

OIL

McCulloch Chain Saw Oil is the best oil to use when mixing your fuel. It is specially compounded for use in two-cycle, air-cooled engines and it lubricates better than other oils at the high internal temperatures at which air-cooled engines operate. This means that less McCulloch Oil is required to a gallon of gasoline in the fuel mixture. Do not use two-cycle outboard oil or motor oil containing additives for these will cause the formation of excessive carbon. If McCulloch Oil is not available, use a medium grade, non-detergent SAE 30 motor oil. Do not use reclaimed oils.

Caution

If you run your chain saw with less oil in the fuel mixture than the Table calls for, your engine will become overheated and may be severely damaged. If you add too much oil, your chain saw engine will run unevenly and may lack power.

CHAIN LUBRICATION

Your saw chain must be properly lubricated when it's running or it will wear out very fast. Fill the chain oiler tank of your chain saw with clean oil every time you fill the fuel tank. Use a good grade of SAE 30 motor oil when temperatures are above 40 degrees, and SAE 10 motor oil when temperatures go below 40 degrees. Avoid the use of reclaimed or dirty oils.

When cutting wood containing wood sap or pitch, you can mix kerosene with the chain oil, but never use more kerosene than oil in the mixture.

When cutting in sandy areas, use your chain oiler more frequently so that the oil can reduce chain wear and help to keep your chain clean.

FELT SPROCKET SEAL

The felt sprocket seal, located behind the sprocket shroud, acts as an oil reservoir for the sprocket drum bearing. It must be lubricated periodically with SAE 30 motor oil. See page 12 for lubrication instructions.

STARTING YOUR ENGINE

See figure 1 for location of controls

1. Fill the fuel tank of your chain saw with the correct fuel mixture.
2. Fill the oiler tank with the correct grade of oil.
3. Make sure your bar is tightly clamped into place and that your chain is correctly tensioned.
4. Move the ignition switch to the rear or "ON" position.
5. Grasp the starter handle with your right hand. Operate the throttle trigger and choke button with your left hand.
6. Pull the starter handle with a smooth rapid stroke. Do not release the handle so that the rope rewinds itself for this will damage the rope. Instead, guide the rope back into the starter. Your engine should start within two or three pulls. A new engine or one that has been in storage, will require additional pulls to draw the fuel mixture from the tank into the engine.
7. When the engine starts, release the choke button. Push it in only enough to keep the engine running.
8. Use the throttle as necessary until the engine is warm enough to run at idle speed without further throttling. Do not run the engine at full speed to make it warm up faster.

OPERATING YOUR ENGINE

Pay attention to the following suggestions and your chain saw will last much longer.

1. Never run your engine with the throttle pulled full back unless you are cutting wood.
2. Never run your engine with the muffler off. Adjust your muffler for the proper cutting conditions. If you are working in the city or in an area where noise is objectionable, make sure the muffler gate is closed. If you are cutting in the woods or where noise is not

OPERATING INSTRUCTIONS

objectionable, you can operate your engine with the muffler gate open.

3. Never do any cutting with the air filter removed from your engine for dirt can be sucked into the crankcase and cylinder and can cause rapid wear of the moving parts of your engine.
4. Never operate your engine with any of the shrouding around the crankcase and cylinder removed from your engine, for your engine will become overheated and can be seriously damaged.

STOPPING YOUR ENGINE

1. Release the throttle trigger.
2. Push the ignition switch forward to the "OFF" position.

IF THE ENGINE FLOODS

1. Place the engine on its side with the muffler down.
2. Make sure the ignition switch is in the "ON" position.
3. Hold the throttle full back and pull the starter until the engine starts.

BREAKING IN A NEW ENGINE

Breaking in a new engine is as important as breaking in a new car or truck. Run your engine for its first few minutes at one-third throttle. Increase speed to about half-throttle and run for a few minutes longer. Cut a few limbs or small logs at first. Check your chain tension frequently and make frequent use of your chain oiler button. Make small cuts and get the feel of your saw. Remember that your chain saw is a precision product and its treatment during its first half-hour of operation will determine how long and how well it will serve you.

STORING YOUR CHAIN SAW

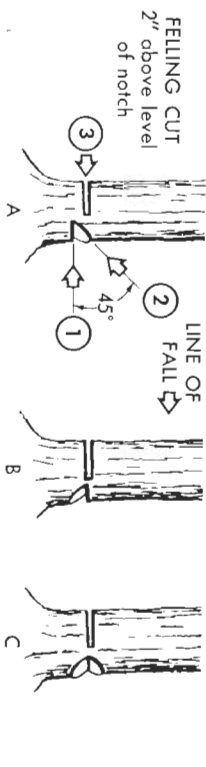
Never store your chain saw without performing the following operations:

1. Run your engine with the choke button pushed all the way down so that your engine stops because of flooding. This will put a heavy coat of oil and gasoline on all the interior parts of your engine.
2. Remove the spark plug. Pour about a teaspoonful of clean oil through the spark plug hole into the combustion chamber. Pull the starter handle slowly at least twice. This will coat the interior of the combustion chamber with oil. Replace the spark plug.
3. Remove the chain and bar. Soak the chain in oil and oil the bar groove.
4. Drain the fuel from the fuel tank.
5. Wrap the chain in plastic or put it in a coffee can. Cover the engine and bar with canvas or a tarpaulin or plastic sheet.

REMOVING YOUR CHAIN SAW FROM STORAGE

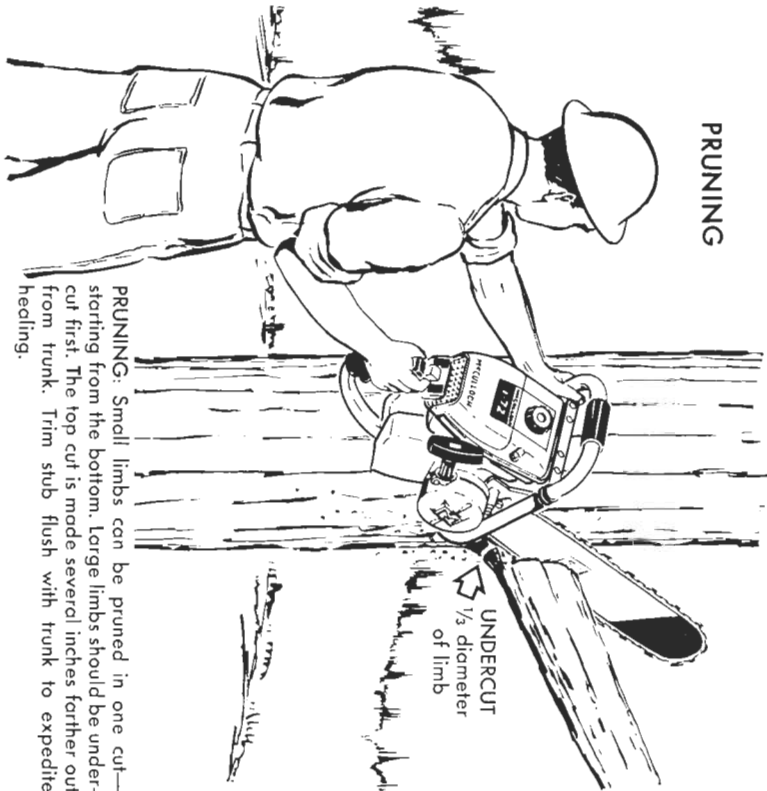
1. Remove the spark plug. Pull the starter rope briskly to clear the cylinder of the excess oil and fuel mixture. Clean and adjust the spark plug gap or install a new spark plug.
2. Fill the fuel tank with the correct fuel mixture and fill the chain oiler tank with the correct grade of oil. Follow the standard starting procedure.

FELLING



FELLING: Direction of fall is controlled by the undercut. Type "A" is easy to make and is commonly used for small trees. Type "B" leaves butt end of log cut squarely across. Type "C" is a variation of Type "A." Notch should be about $\frac{1}{3}$ the diameter of the tree. On felling cut, do not cut through to notch. Uncut band of wood parallel to notch serves as a hinge. Make cuts in order shown 1, 2, 3, on "A."

PRUNING



PRUNING: Small limbs can be pruned in one cut—starting from the bottom. Large limbs should be under-cut first. The top cut is made several inches farther out from trunk. Trim stub flush with trunk to expedite healing.

BUCKING: Log should be raised off the ground by use of limbs, logs or other means.



SAFETY PRECAUTIONS

FIRE PRECAUTIONS

OPERATING YOUR CHAIN SAW CAN BE DANGEROUS SO:

- * Start your engine without assistance.
- * Stop your engine before carrying the saw between cuts.
- * Never touch, or try to stop, a moving chain with your hand.
- * Be sure of your footing when operating your chain saw.
- * Select a safe exit path before felling a tree.
- * Use wedges to help control felling and prevent binding.
- * Beware of falling limbs.
- * Keep your chain sharp and in good condition. A dull or improperly filed chain will cause the saw to buck and jump, which can result in personal injury.

BE ALERT AND FIRE CONSCIOUS

- * Refuel your saw in an area of unflammable material.
- * Avoid spilling fuel.
- * Use correct gasoline-oil mixture to minimize carbon deposits which can be given off in the exhaust in the form of sparks.
- * Don't start your saw where you refueled it.
- * Keep your saw clean and free of twigs and sawdust.
- * Keep the muffler in good condition and never run your engine without it.
- * Keep spark plug and wire connections tight.
- * Keep a fire extinguisher within easy reach at all times.
- * Do not smoke in restricted areas.
- * Put out any fires and report them to the proper authorities together with causes.

KEEP THE FOREST GROWING

The easiest and cheapest way to care for your chain saw is to follow a regular inspection and service procedure which will help prevent major breakdowns and costly repair bills. Listed below are four major steps in the care of your chain saw which will help prevent trouble.

VISUAL INSPECTION

At the end of each work day, check your saw for loose wires or wires with worn insulation. Tighten the loose wires and replace wires that are bare or have worn insulation. Look for loose nuts and screws and for cracked or broken parts. Tighten any loose nuts and screws and have any cracked or broken parts replaced. If you have any doubt about the operating condition of your chain saw, take it to your McCulloch Dealer for servicing.

CLEANING

Keep your chain saw, bar and saw chain clean. Do not allow dirt, sawdust, grass or twigs to build up on the cooling fins or plug the holes in the sawdust guard. Clean the sawdust guard and cooling fins regularly. Keep your saw chain clean and covered with a good grade of oil to prevent rust.

HANDLING

Use your chain saw only for those jobs for which it is intended. Do not abuse it by trying to use it for other purposes. Protect it from the weather. If you carry it in a truck or car, protect it from being tossed about as you drive over rough roads or across open land.

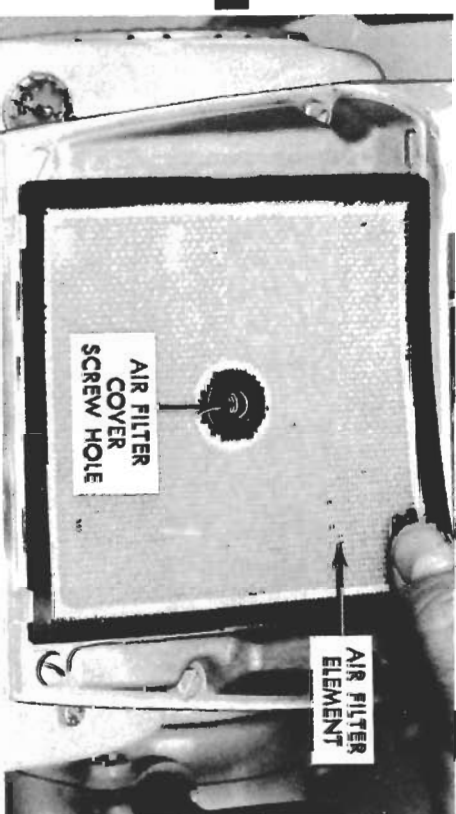
PERIODIC INSPECTION

Once a week, check the operating controls to see that they are in good working order, check the fuel tank for the presence of water, check the starter rope for signs of fraying, check the operation of the chain oiler, apply oil to the felt sprocket seal behind the sprocket shroud and examine your chain and bar for evidences of abnormal wear.

AIR FILTER ELEMENT

The air filter element of your chain saw must be kept clean in order that the engine may have enough filtered air. When the saw is operated in dusty, sandy or loose soil areas or continuously throughout the day, the filter can become clogged and will prevent your engine from getting enough air for proper combustion of the fuel mixture. Therefore, make sure you keep your filter element clean. To save time, carry an extra element with you and change elements mid-way through the working day. You can clean the filter element at night without loss of working time.

1. Clean the air filter cover and the sides of the carburetor enclosure of all dust, dirt and oil to prevent dirt from falling into the carburetor enclosure.
2. Loosen the air filter cover screw (figure 1) and lift off the air filter cover.
3. Lift the filter element from the top of the carburetor enclosure (figure 7). If the element is stuck to the enclosure, work a screwdriver or knife under the edge of the element and carefully pry the element free. Be careful not to damage the edge of the element with the screwdriver or knife.



4. Clean the filter element by sloshing it in clean gasoline or solvent. If you use solvent, make sure it is a petroleum solvent. Chloride-base solvents, lacquer thinners and toluene will dissolve the bonding agent which holds the flock material to the screen.
5. After the gasoline or solvent has evaporated from the element, replace it on the carburetor enclosure. Replace the air filter cover and tighten the cover screw.

To save time, carry an extra element with you and change elements mid-way through the working day. You can clean the filter element at night without loss of working time.

Caution

Do not operate the engine with the air filter element removed because dust and dirt in the air will be sucked into the engine and can cause rapid wear of the piston rings and cylinder wall. The only time the engine should be run without the filter element is during adjustment of the carburetor and then only for as short a time as possible.

FELT SPROCKET SEAL

The felt sprocket seal acts as an oil reservoir for the bearing in the sprocket drum. Unless the seal is kept moist with oil, the sprocket shroud and sprocket will begin to vibrate and "scream". Use SAE 30 motor oil and apply it with an oil can.

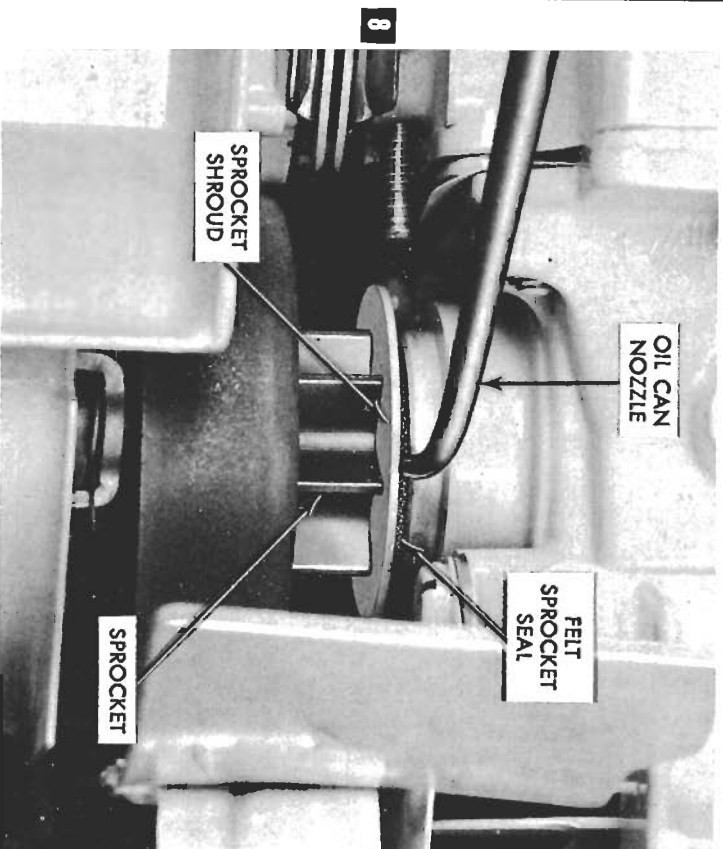
1. Turn the chain saw upside down.
2. Put the nozzle of the oil can against the felt sprocket seal which is located just behind the sprocket shroud (figure 8). Squirt at least a dozen drops of oil onto the felt seal. The more oil you can put on the seal, the better lubrication you will provide for the sprocket drum bearing.

SPARK PLUG

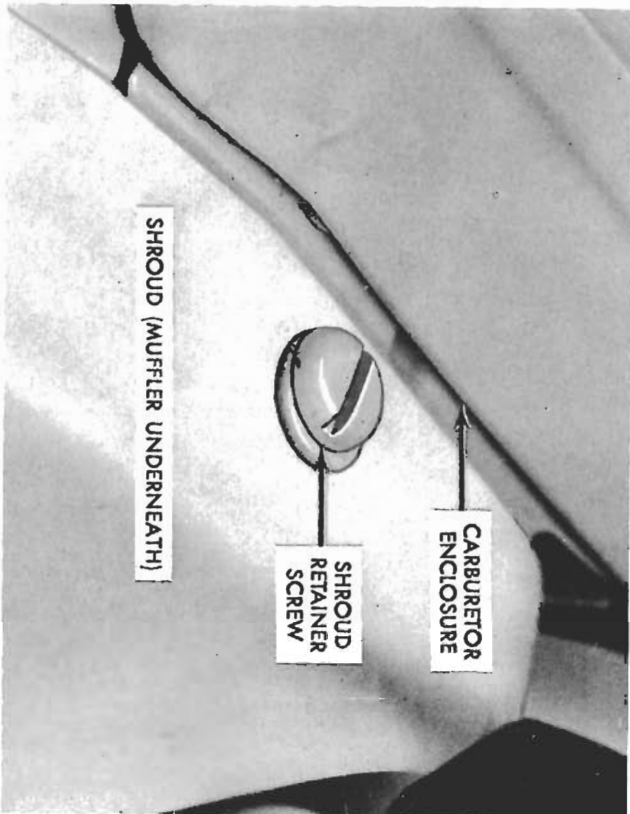
Your chain saw engine was equipped with a 14mm, Champion J8J spark plug at the factory. This spark plug is suitable for all average cutting conditions. But during extremely hot or cold weather, a plug of a different heat range may be more efficient. Check with your McCulloch Dealer for the plug of the correct heat range for your area.

The spark plug should be cleaned and have its air gap adjusted regularly.

1. Remove the screw attaching the cylinder head shroud to the muffler (figure 9) and slide the shroud to the right so that you can pull it back from the cylinder head.

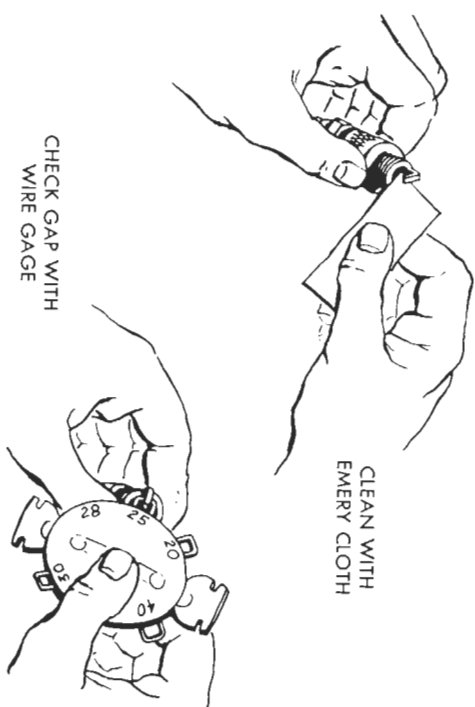


2. Remove the spark plug with the spark plug wrench (figure 2).
3. Clean the electrodes with emery cloth or very fine sandpaper. Blow all the dust and grit away from the electrodes and interior of the spark plug.
4. Measure the air gap or distance between the electrodes with a wire gauge (figure 10). The gap should be 0.025 inch. Adjust the gap by bending the side electrode only. Do not try to bend the center electrode or you will break the insulator and will have to buy a new spark plug.
5. When reinstalling the spark plug or when installing a new spark plug, make sure the spark plug gasket is undamaged and in place. Tighten the spark plug securely.
6. Reinstall the shroud. Tighten the screw attaching the shroud to the muffler securely.



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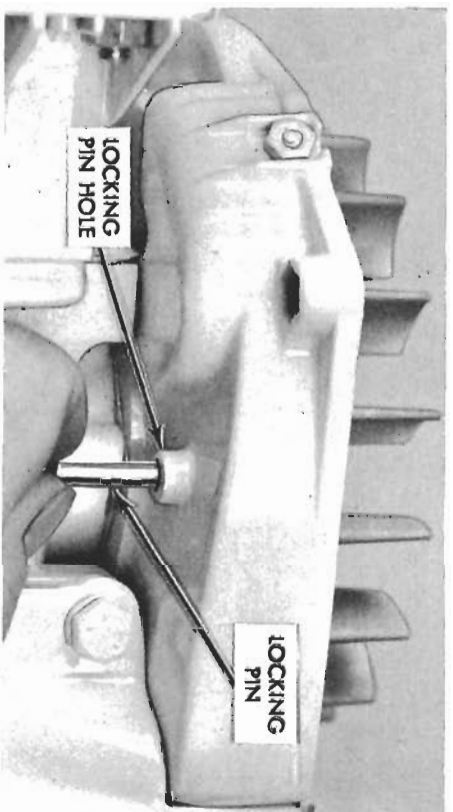
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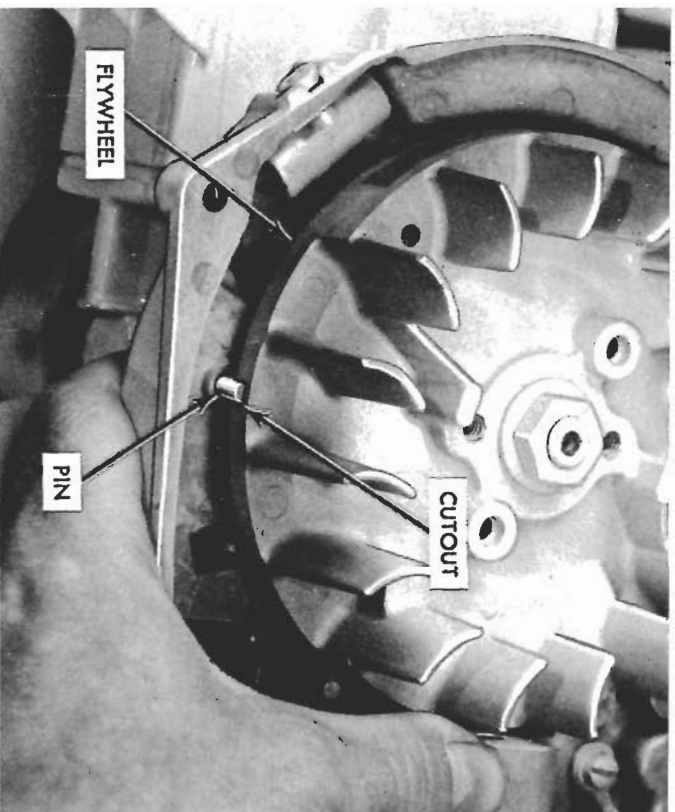
SPROCKET AND DRUM ASSEMBLY

It is advisable to install a new sprocket and drum assembly every time you install a new chain since a worn sprocket can reduce the service life of your chain.

1. Lock the crankshaft by inserting a pin or screw through the locking hole (figure 11) beneath the crankcase. Slowly pull the starter handle until you can slide the pin or screw into the locking hole in the flywheel. Figure 12 shows how the pin or screw fits into the flywheel.
2. Remove the bar mounting nuts and lift the starter assembly off the chain saw.



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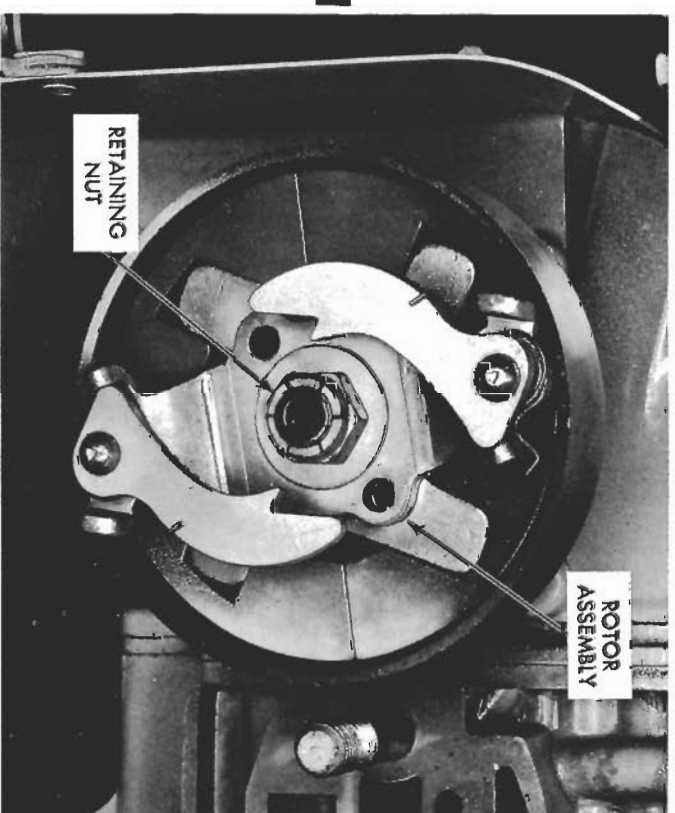
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3. Remove the retaining nut (figure 13) which holds the clutch assembly on the crankshaft and lift the rotor assembly from the crankshaft.

4. Remove the key from the shaft and take the special thrust washer and clutch drum and sprocket assembly off the shaft (figure 14).

5. Remove the sprocket shroud (figure 8) and check the condition of the felt sprocket seal. Clean away all sawdust and dirt. If the seal is hard and dry or obviously damaged or worn, replace it with a new felt sprocket seal. Liberally oil the seal with SAE 30 motor oil before replacing the sprocket shroud.

6. Slide the new sprocket and drum assembly and the special thrust washer onto the shaft. The pressure fingers of the thrust washer face toward the starter end of the crankshaft.



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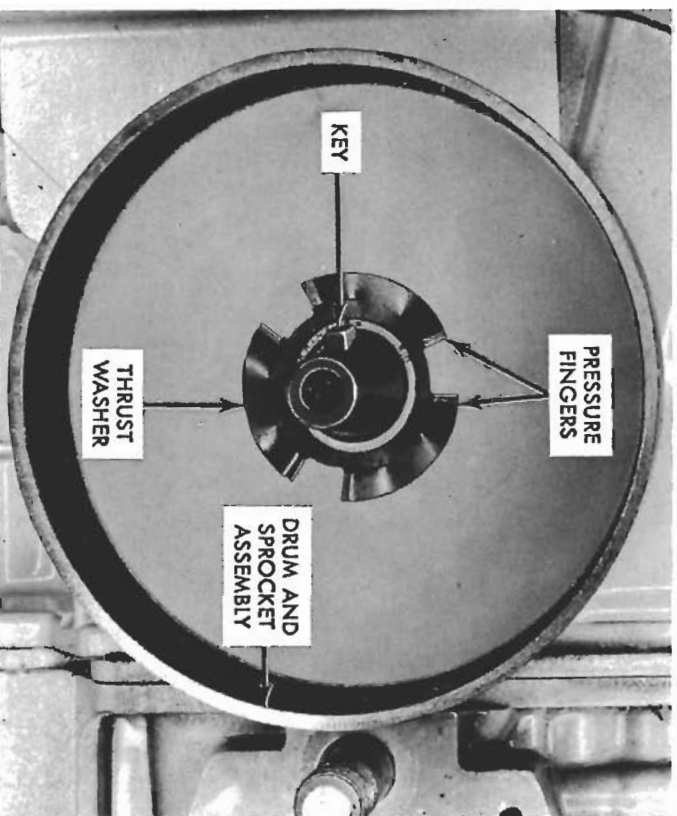
7. Install the key in the crankshaft. Slide the rotor assembly onto the shaft and install the retaining nut. The crankshaft will have to be locked in order to tighten the nut securely.

8. Remove the locking pin or screw.

9. Replace the starter assembly on the crankshaft. You may have to gently pull the starter handle and release it so the starter can engage the shaft before you can tighten the bar mounting nuts.

CARBURETOR ADJUSTMENT

The carburetor of your chain saw engine was adjusted at the factory for maximum performance under average cutting conditions. Should it be necessary to readjust the carburetor, follow these instructions carefully, for careless adjustment can seriously damage the carburetor and the chain saw engine.



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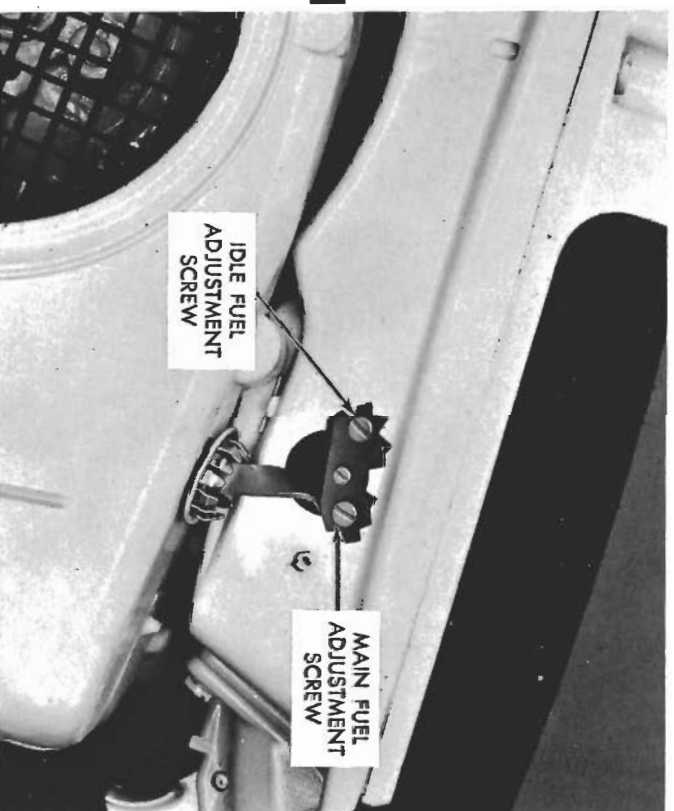
1. Start and run the engine until it is thoroughly warmed up. Then stop the engine.

2. Remove the air filter cover and filter element from the carburetor enclosure.

3. Slowly turn the main and idle fuel adjustment needles (figure 15) clockwise with a thin screw driver until the needles seat.

Caution

Do not attempt to twist the needles beyond the point of resistance. This will result in jamming the needles into their seats and will damage the carburetor.



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4. Open (turn counter-clockwise) the main fuel adjustment needle 1-1/4 turns.
5. Open (turn counter-clockwise) the idle fuel adjustment needle 3/4 turn.
6. Start the engine and turn the idle speed adjustment screw (figure 16) until engine speed is just below the point at which the sprocket stops turning (the point at which the clutch is no longer engaged).
7. Slowly adjust the idle speed adjustment needle to obtain an even engine speed without "coughing" or "missing". If the engine coughs, the needle has been turned too far counter-clockwise. If the engine falters or misses, the needle has been turned too far clockwise.



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8. Pull the throttle trigger full back to accelerate the engine several times. If the engine falters or does not accelerate rapidly and smoothly each time, turn the idle speed adjustment needle counter-clockwise in very gradual steps, checking the acceleration after each step, until correct acceleration is obtained.

NOTE

If the sprocket starts to turn during idle, turn the idle speed regulating screw counter-clockwise until the sprocket stops turning.

9. Reinstall the air filter element and the air filter cover on the carburetor enclosure.

10. With the chain saw running under a cutting load, slowly turn the main fuel adjustment needle until the engine runs smoothly and evenly at cutting speeds. This setting will be between 1 and 1-1/2 turns open.

Caution

Do not set the main fuel adjustment needle too "lean", that is, with the needle turned too far clockwise. Although the exhaust may be sharp and barking and sound powerful, costly damage can be done to the engine by too lean a setting.

FUEL TANK VENT SYSTEM

The fuel tank of your chain saw is equipped with a fuel tank vent system to prevent the build-up of tank pressure or tank suction. Should either of these develop, take your chain saw to your McCulloch Dealer for servicing. Tank pressure will prevent the engine from idling properly. Tank suction will prevent the engine from developing full power. Both conditions can be caused by putting dirty fuel into the fuel tank.

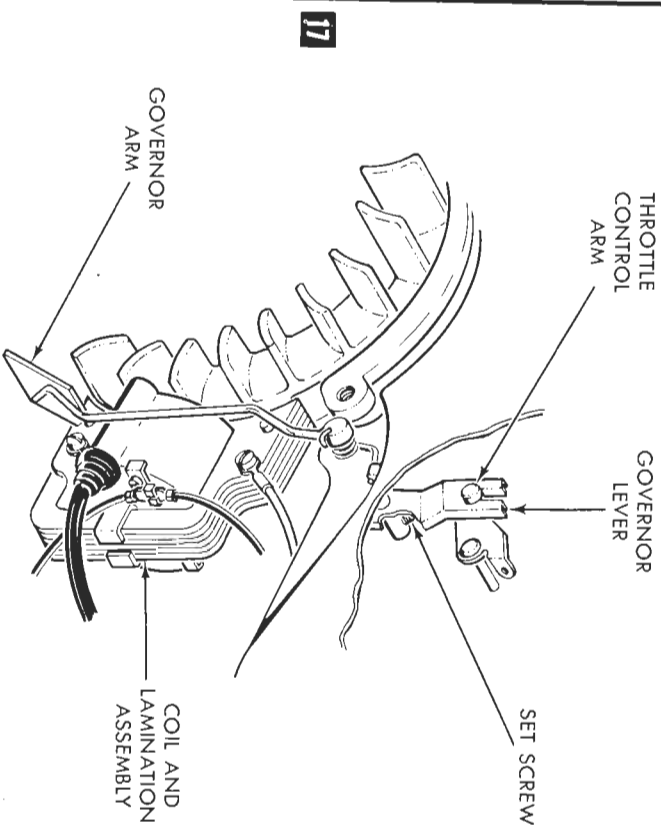
FUEL TANK FILTER

The fuel tank of your chain saw is equipped with a felt, wick type filter. If the filter becomes soaked with water through condensation, or becomes dirty because of using dirty fuel, it should be removed, cleaned and dried in the open air. The filter is held in place by a spring-loaded wick clamp which can be seen after removing the fuel tank cap.

1. Release the spring holding the wick clamp against the filter, by pressing it down with the point of a screwdriver until it slips off the pin on the underside of the tank top. Withdraw the spring and wick clamp.
2. Work the filter out of the tank by drawing out one corner and rolling the filter to make it smaller.
3. Wash the filter in gasoline or solvent. Rub its surfaces together to break up the crust of dirt.
4. After the filter is dry, roll its two sides in toward the middle in as tight rolls as possible.
5. Insert the rolled-up filter into the tank. Use a screwdriver to work it over the wick clamp mounting in the bottom of the fuel tank. Spread the filter in the tank so that the corners of the filter fit into the corners of the tank.
6. Put the wick clamp over the filter and clamp mounting. Insert the spring. Put the large end over the clamp and the small end on the pin on the underside of the fuel tank top.

GOVERNOR

The governor must not be removed from your engine or your engine will be severely damaged by the excessively high speeds at which your engine can operate. Adjust the governor by loosening the set screw on the governor lever. Hold the vane on the governor arm against the coil and lamination assembly. Put the throttle control arm in the closed position and retighten the set screw. (figure 17).



COOLING FINS AND SAWDUST GUARD

The cooling fins and sawdust guard (figure 1) must be kept clean or the chain saw engine will run too hot and may be severely damaged.

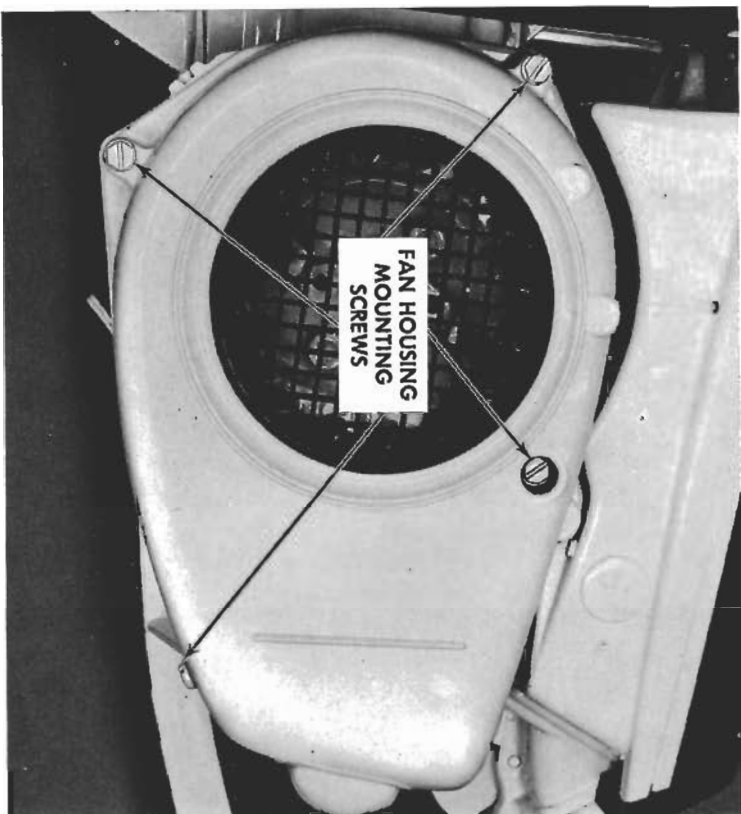
1. Remove the fan housing (figure 18, page 18).
2. Remove the screw attaching the cylinder head shroud to the muffler and slide the shroud to the right so you can pull it back from the cylinder head.

3. Clean the sawdust guard with a soft bristle brush and gasoline or solvent.

4. Scrape all dirt, sawdust and bits of grass and wood from the cooling fins on the cylinder head (figure 19). Use a thin brush (with bristles like a bottle brush) soaked in gasoline or solvent to scrub the fins clean.

NOTE

It's a good idea to check the condition of the exhaust ports and muffler before replacing the cylinder head shroud.



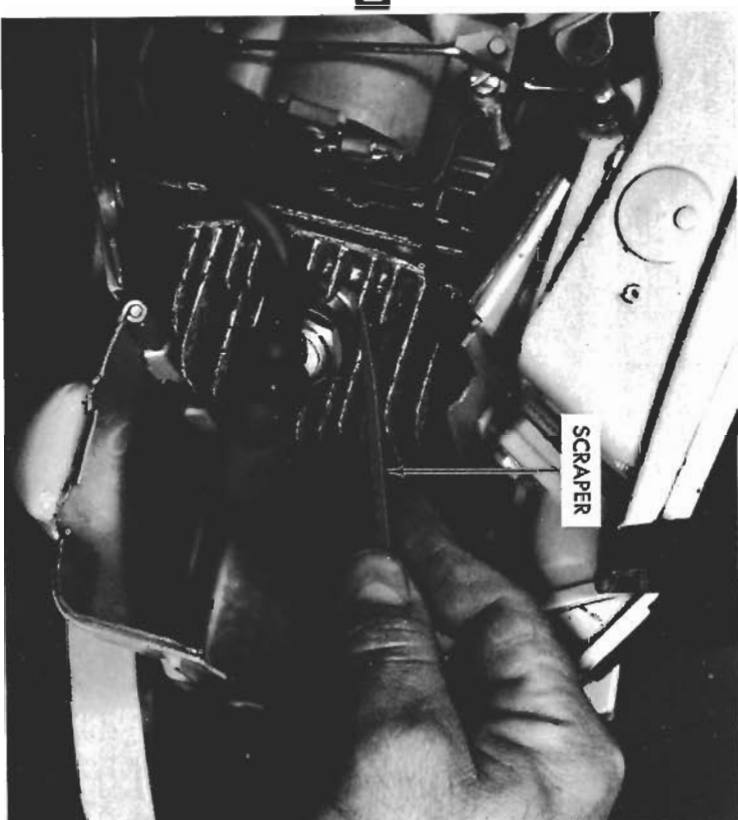
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5. Replace the cylinder head shroud and reinstall the screw attaching the cylinder head shroud to the muffler. Reinstall the fan housing and tighten all screws securely.

EXHAUST PORTS AND MUFFLER

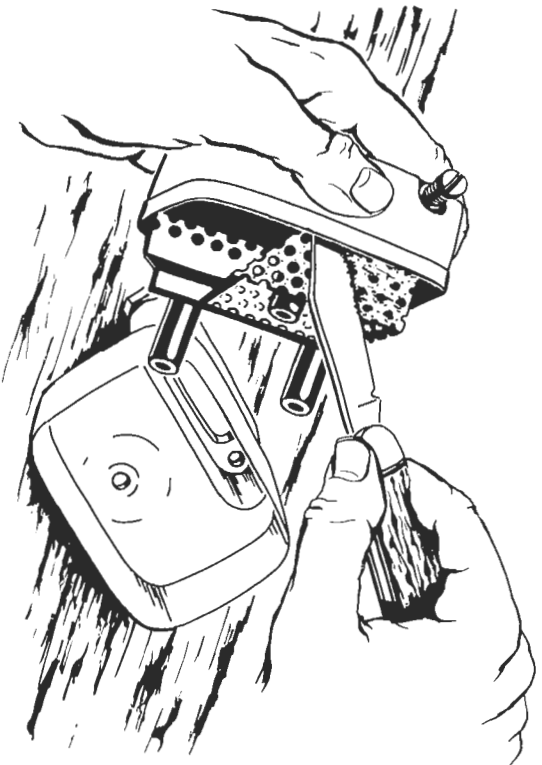
Clogged exhaust ports or muffler openings will cause loss of power. If the engine begins to lack power, examine the exhaust ports and muffler to see if they need cleaning.

1. Remove the screw attaching the cylinder head shroud to the muffler and slide the retainer and shroud to the right so you can pull the cylinder head shroud back from the cylinder head.

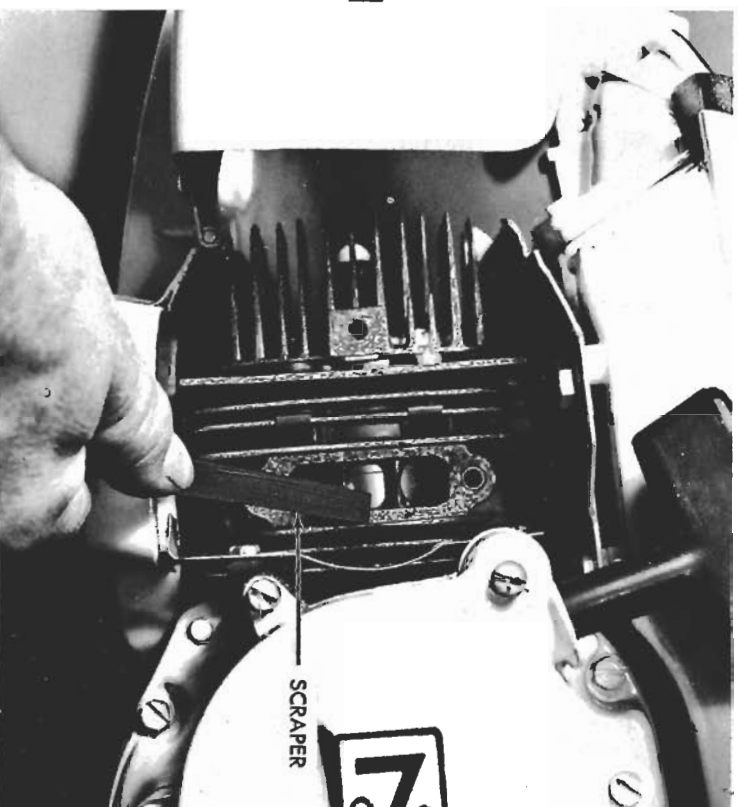


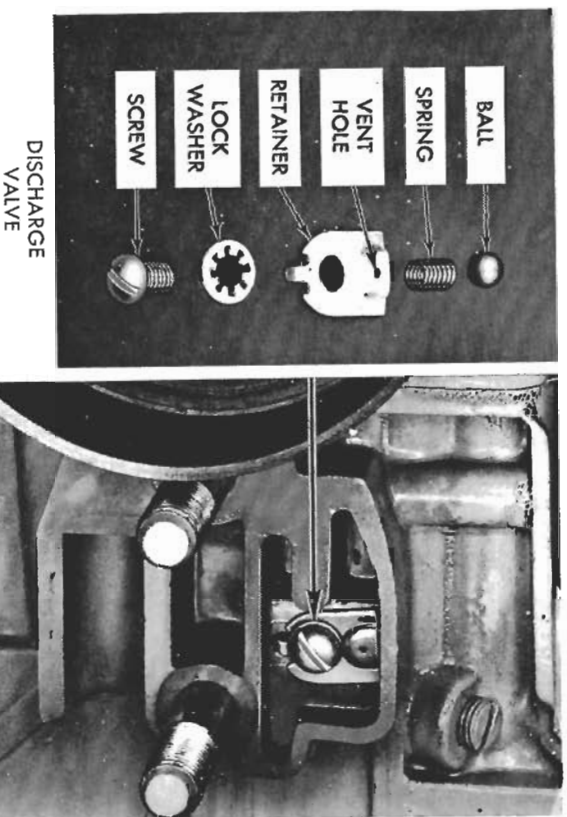
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2. Remove the three screws attaching the muffler to the engine. The muffler should come apart easily after the screws are removed.
3. Clean the openings in the muffler base, top and gate. If the gate operates stiffly, squirt gasoline or solvent into the hinged parts and work the gate back and forth until it operates freely.
4. Before cleaning the exhaust ports, pull the starter handle slowly until the piston covers the exhaust ports.
5. Scrape the carbon from the exhaust ports with a wooden scraper (figure 20). Do not use a metal scraper of any kind around the



- exhaust ports for if the metal scraper slips, it can scratch the piston and rings.
6. Blow away the loose carbon or turn the chain saw, muffler side down, and shake the carbon particles from the exhaust ports.
7. Reassemble the muffler. If the muffler gasket is damaged, install a new one as you reinstall the muffler. Tighten the three muffler attaching screws securely.
8. Replace the cylinder head shroud and reinstall the screw attaching the cylinder head shroud to the muffler.





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CHAIN OILER DISCHARGE VALVE

The chain oiler discharge valve is located in the upper section of the bar mounting pad. Should it become plugged by dirt entering the chain oiler tank during filling of the tank, the valve must be removed and cleaned.

Caution

Never operate your chain saw if the chain oiler doesn't work because you can ruin your chain very quickly.

1. Remove the bar mounting nuts and starter assembly base.
2. Remove the screw, lockwasher, retainer, spring and ball that make up the chain oiler discharge valve (figure 21) from the bar mounting pad.

3. Clean the small oil discharge hole in the retainer. Clean the spring and ball of any dirt. Do not stretch or deform the spring in any way.

4. Push the chain oiler button several times. If oil does not come out of the oiler valve hole, the internal pump is damaged and will have to be repaired by your McCulloch Dealer.

5. Replace the ball, the spring, the retainer, the lockwasher and the screw in that order. Tighten the screw securely.

6. If the oiler tank contains dirt, rinse the dirt out with gasoline or solvent before adding more oil.

LAMINATION GAP ADJUSTMENT

The coil and lamination is mounted on the cylinder beneath the fan housing. Under normal conditions this unit will not require any maintenance other than being kept clean. The gap between the two outer legs of the lamination and the flywheel should be 0.010 inch.

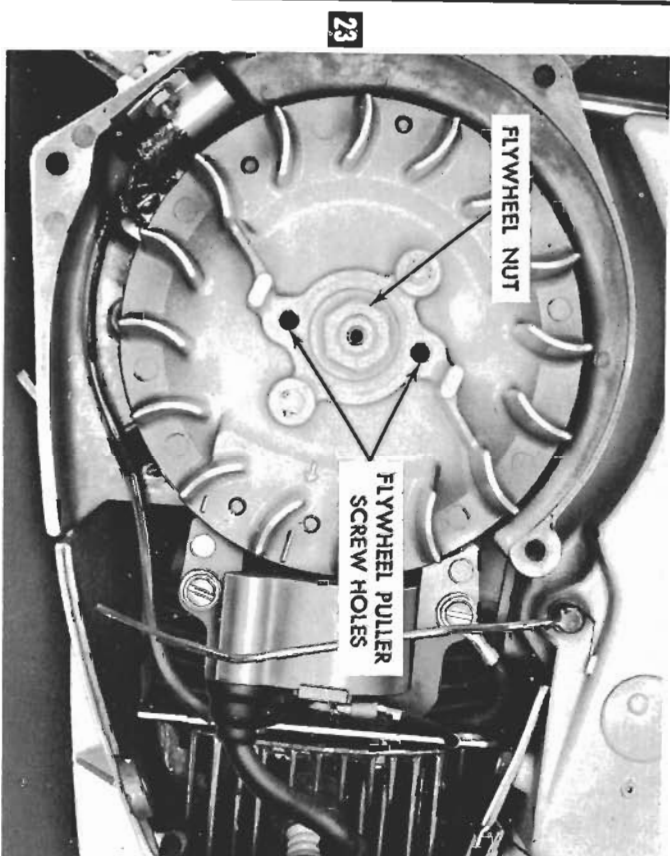
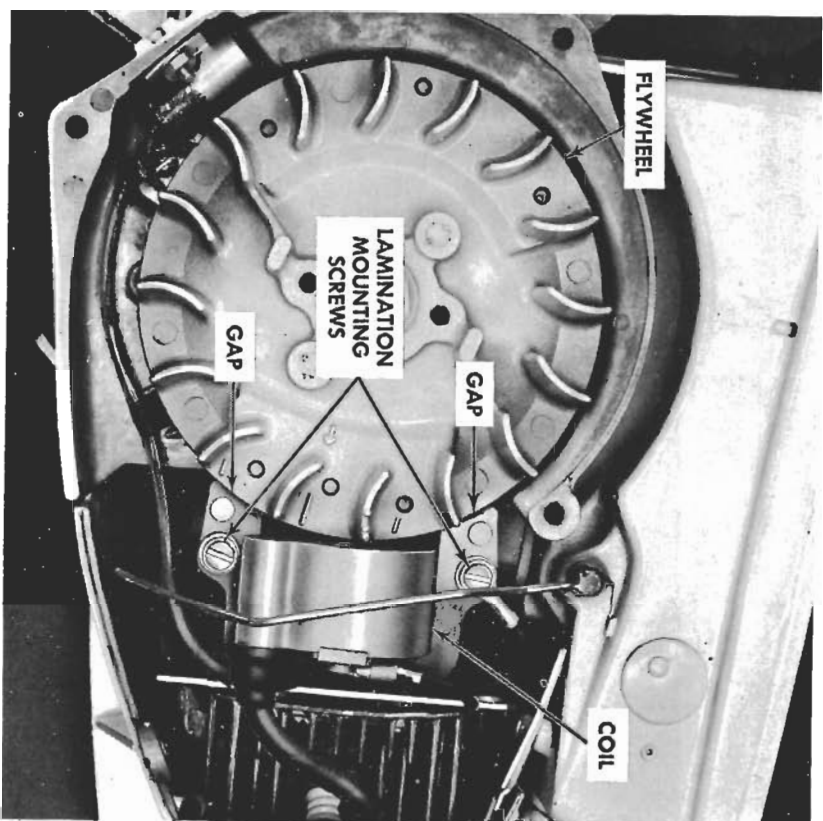
1. Remove the screws attaching the fan housing to the engine and remove the fan housing.
2. Measure the gap with a 0.010-inch feeler gauge at points marked "gap" in figure 22.

3. Adjust the gap by turning the flywheel until the magnet, set in the outer rim of the flywheel, is directly beneath the coil. Insert two 0.010-inch feeler gauges between the two outer lamination legs and the flywheel. Loosen the lamination mounting screws so the magnet can pull the lamination onto the feeler gauges. Tighten the lamination mounting screws, remove the gauges and turn the flywheel several times to make sure that no part of the flywheel touches the lamination legs.

NOTE

If the lamination and flywheel are so close together that you cannot insert the 0.010-inch feeler gauges, as directed immediately above, loosen the lamination mounting screws and move the lamination away from the flywheel. Insert the gauges and then let the magnet pull the lamination down tight against the gauges. Tighten the lamination mounting screws and then rotate the flywheel and check for clearance.

4. Replace the fan housing and tighten the attaching screws securely.



BREAKER POINTS AND CONDENSER

The breaker points are located in a box immediately behind the flywheel and operate from a camway on the crankshaft. Because it is necessary to remove the flywheel in order to adjust the points or to change the condenser, most chain saw users will find it easier to have their McCulloch Dealer check and adjust or change the breaker points and condenser whenever it becomes necessary. The adjustment of the breaker point gap follows standard automotive practices.

1. Remove the fan housing attaching screws and the fan housing.
2. Lock the flywheel by inserting a pin or screw through the locking hole (figure 11) beneath the crankcase. Pull the starter handle slowly until you can slide the pin or screw into the locking pin hole in the flywheel.

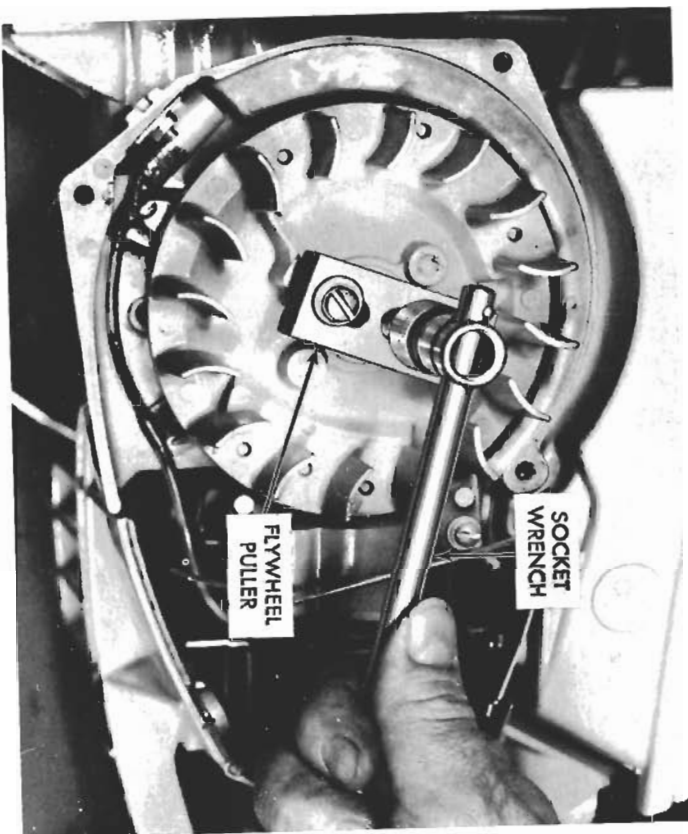
3. Remove the flywheel nut (figure 23) with a 3/4-inch socket wrench.

4. Install a flywheel puller on the flywheel (figure 24). The puller screws must be threaded 1/4-20 and be long enough to screw into the flywheel to a depth of 3/4 inch.

Caution

Do not attempt to remove the flywheel unless the puller screws go into the flywheel for a full 3/4 inch or the threads of the screw holes will be pulled out when pressure is applied by the puller.

5. Remove the flywheel with the puller. Apply pressure on the



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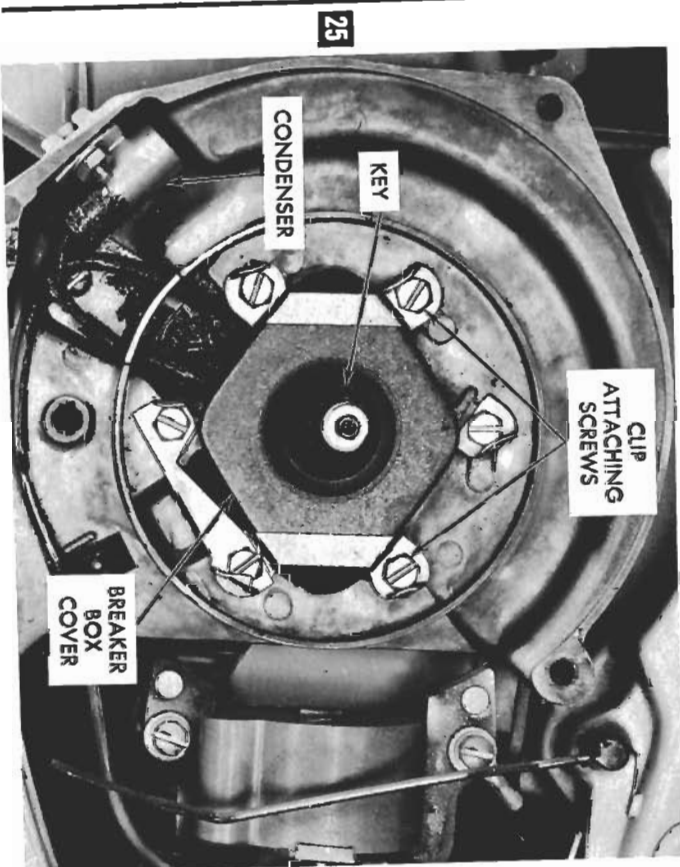
wrench gradually. When the flywheel comes free from the crankshaft, lift it off the shaft.

6. Remove the key (the flat-topped piece of metal projecting from the shaft). If necessary, place a screwdriver under the curved part and tap it gently with a hammer to loosen it.

7. Remove the retaining clip attaching screws (figure 25), the clips and the breaker box cover.

8. Clean the breaker points (figure 26) with fine emery cloth or a point dresser and remove any pitted areas.

9. Turn the crankshaft until the breaker points are at their widest gap. The gap should be 0.018 inch. Adjust the gap by loosening the mounting screw and moving the mounting plate. Retighten the screw and recheck the gap.

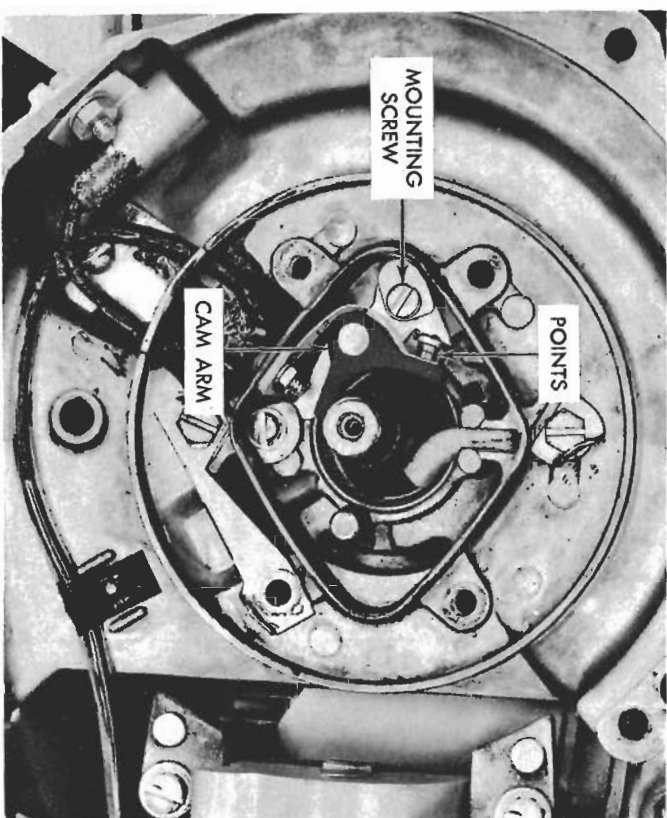


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NOTE

Do not force the cam arm away from the crankshaft when you insert the feeler gauge or your measurement will not be correct.

10. Replace the breaker box cover on the box. Install the retaining clips and the retaining clip attaching screws.
11. Replace the key in the crankshaft. Gently tap it into place with the hammer.
12. Mount the flywheel on the crankshaft. Make sure the washer goes under the nut and tighten the nut securely.
13. When replacing the fan housing, tighten the attaching screws securely.



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FUEL, IGNITION AND SPARK PLUG CHECK

Failure of the engine to start may be caused by a poor ignition spark or by lack of fuel. If the engine will not start after you have pulled the starter handle at least ten times and have looked and found the fuel tank full, remove the spark plug and check as follows:

If the spark plug electrodes are dry, you aren't getting fuel into the cylinder and your trouble is probably caused by the fuel system. Check out the "Fuel Troubles" in the Trouble Shooting Chart or let your McCulloch Dealer find the trouble for you.

If the spark plug electrodes are wet with oil and gasoline, your trouble is probably caused by the ignition system. Clean and dry the electrodes. Ground the metal side of the spark plug against the paint-free metal surface of the engine. Do not have the electrodes directly over the spark plug hole. Pull the starter rope briskly to spin the flywheel and watch to see if a spark jumps the gap between the electrodes while the flywheel is turning. If no spark can be seen, install a new spark plug (Champion J8J or similar plug) and recheck. If there's still no spark, refer to the Trouble Shooting Chart for probable causes or take your chain saw to your McCulloch Dealer for service.

TROUBLE SHOOTING CHART

The following chart lists the more common troubles with their probable causes and remedies.

TROUBLE	PROBABLE CAUSE	REMEDY
Engine fails to start.	(FUEL TROUBLES) * Empty fuel tank.	Fill fuel tank with correct fuel mixture.
	Engine flooded.	Follow procedure in Operating Instructions, page 7.
	Water or dirt in fuel. Dirty fuel tank filter.	Drain fuel tank. Remove and clean or replace fuel tank filter, page 17.
	Main fuel adjustment needle closed or set too lean.	Correct adjustment needle setting as described on page 15.
	(NO SPARK) * Spark wire grounding on engine.	Tape bare part of wire. Tape wire to hold away from engine.
	* Ignition switch in "STOP" position.	Move ignition switch to "ON" position.
	Dirty or defective spark plug.	Clean or replace spark plug. Adjust spark plug gap, page 12.
	Breaker point gap too wide, points not opening, or points burned or pitted.	Adjust breaker point gap, page 20, or take chain saw to your McCulloch Dealer.
	* Bad coil.	Have your McCulloch Dealer replace it.
	* Bad condenser.	Have your McCulloch Dealer replace it.
	Connections loose or wire grounding on engine.	Tape connections tight. Tape bare parts of wires.
	All above causes. Those preceded by an asterisk (*) will prevent any starting at all.	
Engine hard to start.		

TROUBLE	PROBABLE CAUSE	REMEDY
Engine flooding.	Dirty or defective fuel tank vent valve.	Have your McCulloch Dealer clean the fuel tank vent system.
	Carburetor inlet valve not seating properly.	Have your McCulloch Dealer overhaul the carburetor.
	Fuel pump diaphragm torn or cracked causing leakage.	Have your McCulloch Dealer replace the diaphragm.
	Dirty or defective spark plug.	Clean or replace spark plug. Adjust spark plug gap, page 12.
Engine cuts out.	Breaker point gap incorrect.	Adjust breaker point gap, page 20, or have your McCulloch Dealer do it.
	Short circuit in ignition system.	Tape bare parts of wire or have your McCulloch Dealer check system.
	Breaker points sticking or burned.	Clean and adjust, page 20, or have your McCulloch Dealer do it.
	Coil failure.	Take chain saw to your McCulloch Dealer.
	Idle speed too fast.	Adjust idle speed regulating screw, page 15.
Chain moves at engine idling speed.	Wrong fuel mixture.	See Fuel Mixture Chart, page 6.
	Main fuel adjustment needle set too lean (turned too far clockwise).	Readjust main fuel adjustment needle, page 15.
	Loose muffler; missing or damaged muffler gasket.	Tighten muffler attaching screws; install new muffler gasket.
	Cooling air restricted.	Clean cylinder fins and sawdust guard, page 17. Make sure there are no broken vanes on flywheel.
CAUTION Any of these conditions can cause piston and cylinder scoring and ruin your engine.		
Engine overheats and lacks power.		

TROUBLE	PROBABLE CAUSE	REMEDY
Engine lacks power.	Wrong fuel mixture.	See Fuel Mixture Chart, page 6.
	Main fuel adjustment needle set too rich (turned too far counter-clockwise).	Readjust main fuel adjustment needle, page 15.
	Muffler and exhaust ports clogged or dirty.	Clean muffler and exhaust ports, page 18.
	Dirty air filter element.	Remove and clean filter element, page 11.
Engine starves on acceleration or idles too fast.	Poor compression or piston and cylinder scored.	Take your chain saw to your McCulloch Dealer for overhaul.
	Idle fuel adjustment needle set too lean (turned too far clockwise).	Readjust idle fuel adjustment needle, page 15.
	Idle speed regulating screw set too high.	Readjust idle speed regulating screw, page 15.
	Loose muffler; missing or damaged muffler gasket.	Tighten muffler attaching screws; install new muffler gasket.
Chain oiler fails to deliver oil to bar and chain.	Worn or damaged crankshaft seals, air leaking into engine.	Take your chain saw to your McCulloch Dealer for overhaul.
	Oiler tank empty.	Fill tank with correct grade of clean oil.
	Wrong weight oil. Oil congealed from cold.	Use lighter weight oil, see page 6.
	Dirt in oil plugging valve system.	Have your McCulloch Dealer clean the oiler system.
	Oiler not working; leaking seals or valve assembly.	Have your McCulloch Dealer overhaul the oiler system.

1-72 CHAIN SAW SPECIFICATIONS

Weight	21 pounds	Fuel Induction	Crankcase compression
Type	Two-cycle	Clutch	4-shoe centrifugal
Cooling	Air	Clutch Lining	None
Numbers of Cylinders	1	Engine Speed Clutch Engagement	Approx. 2600 R.P.M.
Bore	2-1/8 inches	Ignition	Flywheel magneto
Stroke	1-1/2 inches	Spark Plug	J8J champion
Displacement	5.3 cubic inches	Spark Plug Gap	0.025 inch
Compression Ratio	6.25:1	Breaker Point Setting	0.018 inch
Main Bearings	2 ball	Coil	McCulloch waterproof
Connecting Rod Bearing	Roller	Transmission	None, direct drive
Upper Rod Bearings	2 needle	Starter	Rewind
Piston	Permanent mold aluminum	Fuel Tank Capacity	3.2 pints
Number of Rings	2, Thin chrome plated steel	Fuel	70 octane or higher gasoline mixed with McCulloch chain saw oil at the ratio of one pint to two and one-half gallons of gasoline
Valve Type	Reed and third port		
Carburetor	Diaphragm		
Fuel Supply	Pulse pressure	Oiler Tank Capacity	1 pint

YOUR McCULLOCH DEALER AND SERVICE

We believe that the sale of a McCulloch chain saw is not the end of the transaction between the Dealer and the Buyer. Because of this belief, the Servicing Dealers have been carefully chosen for their ability to provide prompt and efficient service to the owners of McCulloch chain saws. McCulloch Dealers carry a complete stock of service parts. Each dealer is visited periodically by field men who show him the latest and best methods of servicing our chain saws. So whenever you need service--take your saw to the man who knows it best--your McCulloch Dealer.



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