

CRAFTSMAN 2,3/14" - 2.3/16" 2.3/16" PS. GASOLINE CHAIN SAWS THIS CHAIN SAW IS FOR OCCASIONAL USE ONLY.

CRAFTSMAN

Record in the space provided below the Model No. and Serial No. of your saw. These numbers are located on the starting instructions decal.

Serial No. ___

CRAFTSMAN

CRAFTSMAN :

Retain these numbers for future reference.

Sears, Roebuck and Co., Chicago, Ill, 60684 U.S.A.

PRINTED IN U.S.A.

FULL ONE YEAR WARRANTY ON GASOLINE CHAIN SAW

(Excluding Bar, Chain, Spark Plug, Air Filter and Starter Rope)

For one year from date of purchase, when you maintain, lubricate, and tune up this chain saw according to the operating and maintenance instructions in the owner's manual, Sears will repair defects in material or workmanship in this gasoline chain saw at no charge.

This warranty excludes the bar, chain, spark plug, air filter, and starter rope which are expendable parts and become worn during normal use.

If this chain saw is used for commercial or rental purposes, this warranty applies for only 30 days from date of purchase. WARRANTY SERVICE IS AVAILABLE BY RETURNING THE CHAIN SAW TO THE NEAREST SEARS STORE OR SERVICE CENTER IN THE UNITED STATES.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Sears, Roebuck and Co., Sears Tower, Dept. 698/731A, Chicago, 1L 60684

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SPECIFICATIONS

MODEL	358.353660 (2.3/14")	358.353670 (2.3/16")	358.353690 (2.3/16"P.S.)			
CU. IN. DISPLACEMENT		2.3 cu. in.				
GUIDE BAR - LO KICK	14" Sprocket Nose	16" Sprocket Nose	16" Sprocket Nose			
CHAIN - GUARD LINK	3/8 Pitch Low-Pro	file Chrome Cutters	3/8 Pitch Low Profile Power Sharp Chrome Cutters			
SPARK PLUG		Champion CJ-8				
SPARK PLUG GAP	······································	.025"				
IGNITION		Solid State				
MODULE AIR GAP	÷ **	.010014	······································			
FUEL MIX		Gasoline/Oil Mixture • 16:1-				
MUFFLER	Spark Arresting					
OILER SYSTEM	Automatic					
FUEL TANK CAPACITY	11.6 02. (343 cc.)					
OIL TANK	6.6 oz (195 cc.)					



SAFETY RULES AND PRECAUTIONS

WARNING!

Failure to observe the following Safety Rules and Precautions could result in serious personal injury.

A. KNOW YOUR SAW

- 1. Read your Owner's Manual carefully until you completely understand and can apply all safety rules and operating instructions before attempting to operate the unit.
- 2. Restrict the use of your saw to users who understand and follow all safety rules, precautions, and operating instructions found in this manual.

B. PLAN AHEAD



Wear personal protective gear. Always use safety footwear: snug-fitting clothing; protective gloves; and appropriate eye, hearing and head protection devices.

- 2. Keep children, bystanders, and pets out of the work area. Do not allow other people to be near the chain saw when starting or operating the chain saw.
- 3. Do not handle or operate a chain saw when you are tired, ill or upset: or if you have taken alcohol or drugs/medication. You must be in good physical condition and mentally alert.
- 4. Do not attempt to use your saw during bad weather conditions such as strong wind, rain, snow, etc., or at night since you would not have good visibility.
- 5. Plan your sawing operation carefully in advance. Do not start cutting until you have a clear work area, secure footing, and a planned retreat path from the falling tree.

C. HANDLE FUEL WITH CAUTION The State and

- 1. Eliminate all sources of sparks or flame in the areas where fuel is mixed, poured, or stored. There should be no smoking, open flames, or work that could cause sparks.
- 2. Mix and store fuel in a well-ventilated area.
- 3. Mix and store fuel in an approved, marked container.
- 4. Move at least 10 feet (3 meters) away from fuel and fueling site before starting the engine.
- 5. Do not smoke while handling fuel or while operating the saw.
- 6. Turn the engine off and let your saw cool before removing the fuel tank cap and refueling the unit.
- 7. Let the saw cool in a non-combustible area, not on dry leaves, straw, paper, etc.
- 8. Wipe up all spills. Wipe off fuel spilled on the saw before using.

D. GUARD AGAINST KICKBACK

Kickback can lead to dangerous loss of control of the chain saw and possibly cause serious personal injury. Kickback is the upward and backward motion of the guide bar that occurs when the saw chain contacts an object at the nose of the guide bar. To reduce the hazard of kickback:

- 1. Hold the chain saw firmly with both hands.
- 2. Do not overreach.
- 3. Do not let the nose of the guide bar contact the ground, a log, a branch, or any other obstruction.
- 4. Cut only with the engine running at full throttle.
- 5. Do not cut above shoulder height.
- 6. Follow manufacturer's sharpening and maintenance instructions for the saw chain.
- 7. Use the Guard Link Chain and Lo Kick Guide Bar designed for your saw to help reduce the possibility of kickback.

E. OPERATE YOUR SAW SAFELY

- 1. Do not operate a chain saw that is damaged. improperly adjusted, or not completely and securely assembled.
- 2. Do not operate the saw from a ladder or in a tree.
- 3. Keep all parts of your body away from the saw chain when the engine is running.
- 4. Cut wood only,
- 5. Make sure the saw chain is not touching anything before you start the engine.
- 6. Use extreme caution when cutting small size brush and saplings. Slender material may catch the saw chain and be whipped toward you or pull you off balance.
- 7. Be alert for springback when cutting a limb that is under tension so you will not be struck by the limb or saw when the tension in the wood fibers is released.
- 8. Shut off the engine before setting the saw down.

F. **MAINTAIN YOUR SAW IN GOOD WORKING ORDER**

- 1. Have all chain saw service performed by your SEARS Service Center other than the service described in the maintenance section of this manual.
- 2. Keep fuel and oil caps, screws and fasteners tight.
- 3. Keep the handles dry, clean, and free of oil or fuel mixture.

- 4. Make certain the saw chain stops moving when the throttle trigger is released. Refer to page 21 for carburetor adjustment instructions if the chain does not stop.
- 5. Stop the saw if the chain strikes a foreign object. Inspect the unit and repair or replace parts as necessary.

G. CARRY AND STORE YOUR SAW SAFELY

- 1. Never carry your saw while climbing. Both hands are needed for safe climbing.
- 2. Carry the unit with the engine stopped, the guide bar and chain to the rear, and the muffler away from your body.

KNOW YOUR CHAIN SAW

INTRODUCTION Å.

The information found in this manual will help you properly prepare your chain saw for use, understand how to operate your saw safely, and perform maintenance required to keep your unit in top working condition.

Your saw has been designed with safety in mind and includes the following safety features as standard equipment:

- Handguard
- Lo Kick Guide Bar
- **Guard Link Chain**

The chain saw should never be operated unless these devices are properly installed on the unit. The Lo Kick Guide Bar and Guard Link Chain have been designed to help reduce the incident of KICKBACK. You should thoroughly read and understand the section, "CONTROLLING KICKBACK" on page 11 before operating the saw.

B. STATE AND LOCAL ORDINANCE REQUIREMENTS

Your saw has been furnished with an approved Spark Arrestor Screen which is required in some areas by law. You are legally responsible for seeing that the Spark Arrestor is properly maintained in these areas. Failure to do so could subiect you to liability or to a fine. See Spark Arrestor maintenance, page 19.

Check with your state conservation or forestry department about regulations concerning operating your saw on forest, brush, or grass covered areas. All U.S. forest land and the states of California, Maine, Washington and Oregon require many internal combustion engines to be equipped with a temperature limiting muffler by law. Such laws require fitting your saw with an additional muffler heat shield.

A shield which meets these requirements can be purchased at your Sears Service Center as an optional accessory kit. Ask for Muffler Heat Shield Kit, Repair Part No. 69037.

- 3. Carry the saw with guide bar and chain covered, preferably with an appropriate scabbard.
 - 4. Allow your saw to cool completely before transporting in any vehicle or storing in any enclosure.
 - 5. Drain oil and fuel tank before storing for more than 30 days.
 - 6. Store in a dry area out of the reach of children and away from where fuel vapors can reach an open flame from hot water heaters, furnaces, etc.

C. CARTON CONTENTS

After you unpack the carton:

- 1. Check the contents against the list below.
- 2. Examine the items for damage.
- 3. Notify your SEARS store immediately if a part is missing or damaged.



CARTON CONTENTS

- Key No. 1 Powerhead
 - 2
 - Guide Bar
 - 3 8 oz. can 2-cycle Engine Oil Loose parts Bag (Not Shown)

LOOSE PARTS BAG CONTENTS Qty.

	Owners' Manual (Not Shown)		1	
4	Handguard	ļ	1	
5	Cap - Handguard	1	1	
6.	Screw - Handguard	1	3	
7	Chain	-	1	
8	Bar Adjusting Tool		1	

A. GETTING READY

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1. READ YOUR OWNER'S MANUAL CARE-FULLY.

Your Owner's Manual has been developed to help you prepare your saw for use and to understand its safe operation. It is important that you read your manual completely to become familiar with the unit *before* you begin assembly.

B. ATTACHING THE HANDGUARD

The Handguard is a protective device designed to help prevent your hand from coming in contact with the cutting chain should your hand slip off the handlebar. It will not eliminate the possibility of injury from kickback or loss of control of the saw.



Figure 1

C. ATTACHING THE BAR AND CHAIN

- Your saw is equipped with a Lo Kick Guide Bar and a Guard Link Chain designed to help reduce kickback.
- Always use the Lo Kick Guide Bar and Guard Link Chain designed for your particular chain saw, when replacing these parts.





- 2. HAVE THE FOLLOWING AVAILABLE:
 - a. Protective gloves
 - b. Approved, marked fuel container
 - c. One gallon leaded or unleaded, regular gasoline
 - d. Bar and Chain Lubricant (see page 9).
 - e. Bar Adjusting Tool provided with your unit. One end of the tool serves as a wrench; the other can be used as a screwdriver. No other tool is necessary for assembly.

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WARNING!

Do not use the saw without the handguard in place.

- Lift and carry the chain saw by the handlebar or rear handle, not by the handguard.
- Keep the handguard securely fastened at all times. Check the handguard screws each time the saw is used.

To install:

- 1. Align the Handguard and Handguard Cap around the handlebar as shown in Figure 1.
- 2. Fit the mounting pin on the Handguard into the hole in the handlebar. Figure 1, (insert).
- 3. Insert the 3 mounting screws into the 3 holes on the Handguard Cap.
- 4. Turn each screw a little at a time clockwise, until the Handguard Cap and Handguard meet and there is no gap between the two parts.

CAUTION: Wear protective gloves when handling or operating your saw. The chain is sharp and can cut you even when it is not moving!

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1. MODEL .353660 (2.3/14")

- a. Remove the following parts as shown in Figure 2, using the Bar Adjusting Tool provided with the unit.
 - 1.) Bar Clamp Nut.
 - 2.) Rear Bar Clamp Screw.
 - 3.) Bar Clamp.
- b. Turn the Adjusting Screw counterclockwise to move the Adjusting Pin almost as far as it will go to the rear. Figure 2.



- c. Hold chain with cutters facing as shown in Figure 3.
- d. Place chain over and behind the clutch drum, onto the sprocket. Figure 3.
- e. Place the Guide Bar on the saw by fitting the long slot in the Guide Bar over the Bar Stud. Figure 4.
 - NOTE: Be sure the Guide Bar is positioned with the adjusting pin hole below the large slot.
- f. Hold the Guide Bar at a 45 degree angle to the saw and fit the chain into the Guide Bar grooves — first, the top groove and then, the bottom groove.
- g. Lower the Guide Bar; fit the adjusting pin into the small hole below the large slot; fit the large slot on the mounts on either side of the Bar Stud. Figure 5.
- h. NOTE: Check to be sure fuel line is in place. Figure 5.
- i. Hold the Guide Bar against the saw frame and install the Bar Clamp.
- j. Secure the Bar Clamp with the Bar Clamp Nut, finger tight *only*.

NOTE: The Bar Clamp Nut must be slightly loose for the chain to be tensioned properly. Securely tighten Bar Clamp Nut after chain is tensioned.

- k. Replace the Rear Bar Clamp Screw and tighten.
- I. Follow "Chain Tension" instructions, page 7.

2. MODELS .353670 (2.3/16") and .353690 (2.3/16" PS)

- a. Remove the following parts as shown in Figure 6, using the Bar Adjusting Tool provided with the unit.
 - 1.) Bar Clamp Nut.
 - 2.) Adjusting Lever.
 - 3.) Rear Bar Clamp Screw.
 - 4.) Bar Clamp.
- b. Hold chain with cutters facing as shown in Figure 7.
- c. Place chain over and behind the clutch drum, onto the sprocket. Figure 7.
- NOTE: For Model .353690 (2.3/16") Power Sharp, fit the chain into the sprocket grooves.
- d. Place the Guide Bar on the saw by fitting the long slot in the Guide Bar over the Bar Stud. Figure 8.

NOTE: Be sure the Guide Bar is positioned with the pin below the large slot.

- e. Hold the Guide Bar at a 45 degree angle to the saw and slip the chain into the Guide Bar grooves - first, the top groove and then, the bottom groove. Figure 8.
- f. Lower the Guide Bar; fit the large slot on the mounts on either side of the Bar Stud; and slide the Guide Bar forward. NOTE: Check to be sure fuel line is in place. Figure 8.
- g. Hold the Guide Bar against the saw frame and install the Bar Clamp.
- h. Place the Adjusting Lever and the Bar Clamp on the Bar Stud. Figure 9.
- NOTE: Be sure the adjusting lever is posi-
- tioned behind the pin in the bar.
- i. Tighten the Bar Clamp Nut, finger tight only.
- NOTE: The Bar Clamp Nut must be left
- slightly loose for the chain to be tensioned
- properly. Tighten Bar Clamp Nut securely
- after chain is tensioned.
- j. Replace the Rear Bar Clamp Screw and tighten securely.
- k. Follow "Chain Tension" instructions below:

D. CHAIN TENSION

- Chain tension is very important:
 - a loose chain will wear the bar and itself.
 - -a loose chain can jump off the bar while you are cutting.
 - -a tight chain can damage the saw and/or break.
 - -a chain, either too loose or too tight, can cause injury.
- Chain tension is correct when the chain:
- -can be lifted about 1/8" from the Guide Bar at a point near the middle of the bar, and ---will move freely around the bar.
- The chain stretches during use, especially when new. Check tension:
 - -Each time the saw is used

-More frequently, when the chain is new



Figure 10





 The Bar Clamp Nut must be slightly loose for the chain to be properly tensioned.

CAUTION: Always wear gloves when handling the chain. The chain is sharp and can cut you even when it is not movina!

- 1. MODEL .353660 (2.3/14")
 - a. Hold the tip of the Guide Bar up and turn the Adjusting Screw clockwise just until the chain does not sag beneath the Guide Bar, Figure 10.
 - b. Check the tension by lifting the chain from the Guide Bar at the center of the bar. Figure 11.
 - c. Continue adjusting the Adjusting Screw until the tension is correct.
 - d. Hold the tip of the Guide Bar up and tighten the Bar Clamp Nut with the Bar Adjusting Tool.
 - e. Check the Rear Bar Clamp Screw to be sure it is secure.
 - f. Recheck chain tension.



Figure 11

- 2. MODEL .353670 (2.3/16") and .353690 (2.3/16" PS)
- a. Hold the Guide tip of the Guide Bar up and push the Adjusting Lever forward just until the chain does not sag below the Guide Bar. Figure 12.
- b. Check the tension by lifting the chain from the Guide Bar at the center of the bar. Figure 11.
- c. Continue moving the Adjusting Lever until the tension is correct.
- d. Hold the Adjusting Lever forward and securely tighten the Bar Clamp Nut with the Bar Adjusting Tool.
- e. Check the Rear Bar Clamp Screw to be sure it is secure.
- f. Recheck chain tension.

E. ENGINE FUEL MIXTURE

- Your chain saw is powered by a two-cycle engine which requires a fuel mixture of regular gasoline, leaded or unleaded, and a high quality engine oil specially made for 2-cycle, air-cooled engines. The internal design of the 2-cycle engine requires lubrication of moving parts. Lubrication is provided when you use the recommended mixture of gasoline and oil.
- Gasoline must be clean and not over two months old. After a short period of time, gasoline begins to chemically break down and will form compounds that can cause hard starting and damage in 2-cycle engines.
- The correct measure of gasoline to oil is very important.
 - -Too much oil in the mixture will foul the spark plug.
 - -Too little oil will cause the engine to overheat and freeze up.
- Mix the fuel thoroughly in a separate container since gasoline and oil do not readily combine.





1. USE THE FOLLOWING FUEL MIXTURES:





Figure 12

2. DO NOT USE THE FOLLOWING IN FUEL MIXTURES:



Does not have proper addtives for 2-cycle engines and could cause damage.

Burns too hot for 2-cycle engines; will shorten spark plug life and can damage your engine.

Alcohol absorbs moisture causing acids to form which will damage metal and rubber parts.

- 3. HOW TO MIX FUEL
 - a. Pour one-half of the gasoline into an approved marked container. Do not try to mix fuel directly in the fuel tank.
 - b. Add entire measure of 2-cycle Engine Oil.
 - c. Mix.
- d. Add remainder of gasoline.
- e. Mix thoroughly for one minute
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4. IMPORTANT POINTS

- a. Eliminate all sources of sparks or flame in the areas where fuel is mixed, poured, or stored. There should be no smoking, open flames or work that could cause sparks.
- b. Mix and store fuel in an approved, marked container.
- c. Mix and pour fuel in a well-ventilated area. Gasoline vapors are harmful to your health and are a serious fire hazard.
- d. Avoid over filling the fuel tank. Allow 3/4 inch for expansion. Tighten Fuel Cap securely. Figure 13
- e. Wipe up all fuel spills. Wipe off fuel spilled on the saw before using.
- f. Move at least 10 feet (3 meters) away from fuel and fueling site before starting the engine.

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F. BAR AND CHAIN OIL

- The guide bar and cutting chain require constant lubrication in order to remain in operating condition. Lubrication is provided by the automatic oiler system when the oil tank is kept filled.
 - -Lack of oil will quickly ruin the bar and chain.
 - —Too little oil will cause overheating shown by smoke coming from the chain and/or discoloration of the guide bar rails.
- Use SEARS Bar and Chain Lubricant #36554 or clean SAE 30W oil.
- In freezing weather oil will thicken, making it necessary to thin bar and chain oil with a small amount of Diesel Fuel #1 or Kerosene. Bar and chain oil must be free flowing for the oil system to pump enough oil for adequate lubrication.
- **1. USE THE FOLLOWING:**



Below 0°F

5% Diesel Fuel #1 or Kerosene. 90% Lubricant to 10% Diesel Fuel #1

2. HOW TO FILL THE OIL TANK

A. Turn saw on its side with oil cap up. Figure 14.

or Kerosene.

- b. Loosen cap slowly; wait for pressure in the tank to be released before removing the cap.
- c. Fill the oil tank.
- d. Replace the oil cap securely.

G. OPTIONAL MUFFLER HEAT SHIELD ASSEMBLY

The following instructions have been included to help you install the optional Muffler Heat Shield Kit, Repair Part No. 69037. This kit will provide, your saw with a temperature limiting muffler which may be required by law in some states. See State and Local Ordinances, page 4 for further information.

- 1. Remove the screw located in the center of the muffler body. Figure 15.
- 2. Remove the muffler cover from the muffler body and discard.

NOTE: Do not remove other muffler parts. If other parts are removed, see muffler assembly in Figure 46, page 19.

- 3. Install the temperature limiting muffler body. Figure 16.
- 4. Replace screw and tighten securely.

CAUTION: Do not use an air wrench to tighten the screw as parts can become overtightened and damage can occur.

- 3. IMPORTANT POINTS
 - a. Fill the oil tank each time you refill the fuel tank to ensure there will be sufficient oil for the chain whenever you start and run the saw.
 - b. It is normal for a small amount of oil to appear under the saw after the engine stops due to oil draining from the bar and chain.



Figure 14





Figure 16

A. PRE-OPERATION CHECKS

Each time before operating your saw, always:

- 1. Check over safety rules and precautions in this manual. Make certain you completely understand and can apply each one.
- Check personal protective gear. Always use appropriate eye, hearing, and head protection devices; safety footwear, protective gloves; and snug-fitting clothing.
- Check the saw for loose bolts, nuts, or fittings. Tighten, repair or replace parts as necessary.
- Check the air filter. Clean the filter before operating the unit.

- 5. Check the saw chain. The chain should be sharp and at the correct tension.
- 6. Check the fuel tank and oil tank. Both tanks should be filled.
- 7. Check the handles. Handles should be dry and free of fuel mixture and oil.
- Check weather conditions. Do not use your saw at night or during bad conditions such as strong wind, rain, snow, etc.
- 9. Check the work area. Keep children, bystanders, and pets a safe distance away from the work area when starting or operating the saw.

B. STARTING INSTRUCTIONS (Refer to "Specifications," page 2, for location of controls.)

1. IMPORTANT POINTS

- a. Hold saw firmly with the saw chain free to turn without contacting any object. Push saw away from you with your right hand while pulling the starter rope with your left hand. Figure 17.
- b. Using no more than 15-18 inches of starter rope per pull. Using the full length of the rope, may cause it to break. Do not let the starter rope snap back. Hold the handle and let the rope rewind slowly.
- c. Pull rope no more than 5-6 times to avoid flooding the engine. 8-10 pulls may be required for a new unit, a saw that has been stored, a refueled unit which has run out of gas.
- d. Release the trigger after engine starts, allowing the engine to idle. The chain must not move when the engine idles, if correction is required, refer to Carburetor Adjustments, page 21.
- e. Stop engine by moving the ignition switch to the "STOP" position Figure 18.



WARNING! Avoid bodily contact with the muffler when starting a warm engine. The muffler can become very hot and can cause serious burns.

2. STARTING PROCEDURE

	n an	Turn Choke to Full Choke	Move Ignition switch to Start	Squeeze trigger	Pull starter rope until engine fires	Turn Choke off	Pull starter rope sharply until engine runs	Release trigger	
a.	Cold Engine	x	x	x	5-6 times	x	×	x	
b.	Warm Engine	(choke off)	×	×			1-2 times	x	1
C.	Refueled Engine after running out of gas	×	×	x	8-10 times	x	x	x	
d.	Flooded Engine	(choke off)	x	x	-		x	x	
e.	Cold Weather starting	x	x	x	5-6 times	half-choke* (out of cut)	x	x	

* Allow engine to warm up on half-choke, then move choke to the "off" position. Do not cut with the choke at the "on" or "half" position. Figure 19.

C. CONTROLLING KICKBACK

Kickback is a dangerous chain saw reaction that can cause serious personal injury. Carefully study this section before you make the first cut with your new saw. You must understand what causes kickback, how you can reduce the chance of kickback, and how you can remain in the best control of the saw if kickback does occur.

1. WHAT CAUSES KICKBACK

Kickback can happen when the moving chain contacts an object at the tip of the guide bar. This contact causes the chain to dig into the object and stops the chain for an instant. The result is a lightning fast, reverse reaction which kicks the saw tip up and back at the operator. The operator can lose control of the saw and the cutting chain can cause serious injury if it contacts any part of the body.



2. HOW YOU CAN REDUCE THE CHANCE OF KICKBACK

- a. Recognize that Kickback can happen. By understanding and knowing about kickback, you can help eliminate the element of surprise.
- b. Avoid letting the moving chain contact any object at the tip of the guide bar. Figure 20.
- c. Keep the working area free from obstructions such as branches, rocks, fences, stumps, etc. Figure 21. Eliminate or avoid any obstruction that the chain could hit while cutting through a particular log or branch.
- d. Keep your saw chain sharp and properly tensioned. A loose or dull chain can increase the chance of kickback.
- e. Operate the engine at full throttle for all cutting. If the chain is moving at a slower speed during cutting, there is greater chance for kickback to occur.
- f. Use the Lo Kick Guide Bar and Guard Link Chain designed for your particular saw. These devices have been designed to reduce the posibility of kickback.
- g. Use extra caution if your saw is equipped with the Power Sharp System. The Power Sharp saw is equipped with a Lo Kick Guide Bar and a Guard Link Chain. However, due to the chain requirements of the built in sharpening mechanism, kickback force from the Power Sharp chain may be greater than that from other Guard Link chains.

3. HOW YOU CAN MAINTAIN THE BEST CONTROL

- a. Keep a good firm grip on the saw with both hands. Figure 22. A firm grip can help neutralize kickback. Keep the fingers of your left hand encircling and your left thumb under the front handlebar. Keep your right hand completely around the rear handle. Keep your left arm straight with the elbow locked.
- b. Position your left hand on the front handlebar so it is in a straight line with your right hand on the rear handle. Figure 22. Never reverse right and left hand positions on the saw handles.
- c. Stand with your weight evenly balanced on both feet.
- d. Stand slightly to the left side of the saw, to keep your body from being in a direct line with the cutting chain. Figure 22.
- e. Do not over reach. You could be drawn off balance and lose control of the saw.
- f. Do not cut above shoulder height. It is difficult to maintain control of the saw if you cut above shoulder height.

USING THE POWER SHARP SYSTEM [MODEL .353690]

Model .353690 is equipped with a Power Sharp System that will perform approximately 80% of the sharpening necessary for the saw chain. The Power Sharp System utilizes a built-in grinding stone to sharpen the cutter top plates and set depth gauges. As the built-in sharpener is used, the cutter side plates gradually will be altered. About every 3rd to 5th time the Power Sharp System is used, hand filing is required to correct the cutter side plates.

- Sharpen the saw chain when:
 - -wood chips become small and powdery. Wood chips made by the chain should be about the size of the teeth of the chain.
 - -saw cuts to one side.
 - -saw has to be forced through the cut.

A. AUTOMATIC SHARPENING

- 1. Stop the engine.
- 2. Place saw on a solid, flat surface; and ensure that the chain will not contact any object.
- 3. Adjust the chain with proper tension. Refer to Chain Tension, page 7.
- 4. Start engine and operate at half throttle.
- Press the Power Sharp Knob down until you feel the sharpening stone lightly contacting the chain. Figure 23.
- 6. Maintain constant, light pressure on the Power Sharp Knob while moving the knob side to side for 5 seconds.
- 7. Release Power Sharp knob and stop engine.
- 8. Inspect chain cutters.

NOTE: A properly sharpened cutter will show grinding marks across its entire width. Figure 24.

B. HAND FILING

Sharpen saw chain side plates by hand after every 3rd to 5th time the Power Sharp system is used.

- 1. Stop the engine.
- 2. Adjust the chain for proper tension, page 7.
- 3. Support the square rod on the file holder (with 5/32" round file) on cutter top plate. Figure 25.



Figure 25

- Replace the sharpening stone when a new Power Sharp chain is installed. See instructions, page 13.
- Remove the sharpening stone if a standard or conventional chain is substituted for the Power Sharp chain. See instructions for removing the sharpening Stone and Carrier Assembly, page 13. Use replacement chain for Model 358.353670 (2.3/16"), Stock No. 36-3629. Follow conventional chain sharpening instructions on page 17.

CAUTION: Always wear gloves when handling the chain. The chain can cut you even though it is too dull to cut wood.



Figure 24

NOTE: Work at the midpoint of the bar, moving the chain forward with a screwdriver as each cutter is filed.

4. Hold the file holder level with the 22° guide mark parallel to guide bar. Figure 26.



Figure 26

5. File from inside toward outside of cutter, straight across, in one direction only. Use 2 or 3 strokes per side plate edge. Figure 26.

NOTE: Avoid hitting the top edge of the cutters when filing the side plate.

- 6. Maintain a 1/32" side plate projection. Figure 27.
- 7. File all side plates on one side of the chain, then move to the other side of bar and file remaining side plates.

C. REPLACE OR REMOVE THE STONE AND CARRIER ASSEMBLY

- 1. Remove bar clamp.
- 2. Remove screw holding Stone and Carrier Assembly. Figure 28.
- 3. Discard old assembly.
- 4. Reverse procedure to install new assembly.
- 5. Tighten screw securely.

NOTE: Be careful to not overtighten. (Torque to 20-25 inch pounds.)

6. Reassemble saw.

TYPES OF CUTTING

A. BASIC CUTTING TECHNIQUE

- **1. IMPORTANT POINTS.**
 - a. Cut wood only. Do not cut metal; plastics; masonry; non-wood, building materials; etc.
- b. Stop the saw if the chain strikes a foreign object. Inspect the unit and repair or replace parts as necessary.
- c. Keep the chain out of dirt and sand. Even a small amount of dirt will quickly dull a chain and thus increase the possibility of kickback.









Figure 28

2. PROCEDURE

Practice cutting a few small logs using the following technique to get the "feel" of using your saw before you begin a major sawing operation.

- a. Accelerate the engine to full throttle just before entering the cut.
- b. Begin cutting with the bottom of the saw frame against the log. Figure 29.
- c. Keep the engine at full throttle the entire time you are cutting.
- d. Allow the chain to cut for you; exert only light downward pressure. If you force the cut, damage to the bar, chain, or engine can result.
- e. Release the trigger as soon as the cut is completed, allowing the engine to idle. If you run the saw at full throttle without a cutting load, unnecessary wear will occur to the chain, bar, and engine.
- f. Stop the engine before setting the saw down after cutting.

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B. TREE FELLING TECHNIQUES

- 1. PLAN YOUR SAWING OPERATION CARE-FULLY IN ADVANCE
 - a. Clear the work area. You need a clear area all around the tree where you can have secure footing.
 - b. Study the natural conditions that can cause the tree to fall in a particular direction. The tree will be likely to fall:
 - 1.) In the direction the WIND is blowing 2.) towards the direction of the LEAN of
 - the tree
 - 3.) on the side that is the HEAVIEST with branches.
 - c. Make sure there is enough room for the tree to fall.
- d. Remove dirt, stones, loose bark, nails, staples, and wire from the tree where cuts are to be made.
- e. Plan a clear retreat path to the rear and diagonat to the line of fall. Figure 30.

WARNING!

DO NOT CUT

-near electrical wires or buildings.

if you do not know the direction of tree fall.
 at night since you will not be able to see well.
 during bad weather—strong wind, snow, rain, etc.

2. FELLING SMALL TREES—LESS THAN 6" DIAMETER

- .a. If you know the direction of fall:
 - 1.) Make a single felling cut on the side away from the direction of fall.
 - 2.) Cut all the way through.
 - 3.) Stop the saw, put it down, and get away quickly on your planned retreat path.
- b. If you are not sure which way the tree will fall, use the notch method described for felling large trees.

3. FELLING LARGE TREES—6" DIAMETER OR MORE

The notch method is used to cut large trees. A notch is cut on the side of the tree in the desired direction of fall. After a felling cut is made on the opposite side of the tree, the tree will tend to fall into the notch.

- a. Make the notch cut. Figure 31.
 - 1.) Cut the bottom of the notch first, about 1/3 of the diameter of the tree.
 - Complete the notch by making the slant cut.
 Remove the notch of wood.
- b. Make the felling cut on the opposite side of the notch about 2" higher than the bottom of the notch.
- c. Leave enough uncut wood between the fell-
- ing cut and the notch to form a hinge. Figure 32.
- **NOTE:** The hinge helps to keep the tree from twisting and falling in the wrong direction.
- d. Use a wedge if there is any chance that the tree will not fall in the desired direction.

NOTE: Stop cutting before the felling cut is complete; use a wedge to open up the cut.

- e. Be alert for signs that the tree is ready to fall:
- 1.) cracking sounds
- 2.) widening of the felling cut
- 3.) movement in the upper branches.
- As the tree starts to fall, stop the saw; put it down, and get away quickly on your planned retreat path.



C. BUCKING

- Bucking is the term used for cutting a fallen tree to the desired log size.
- Two types of cutting are used (Figure 33):
 - Overcutting begin on the top side of the log with the bottom of the saw against the log; exert light pressure downward.
 - -Undercutting begin on the underside of the log with the top of the saw against the log; exert light pressure upward. During undercutting, the saw will tend to push back at you. Be prepared for this reaction and hold the saw firmly to maintain control.

WARNING!

Never turn the saw upside down to undercut. The saw cannot be controlled in this position.

• Make the first bucking cut 1/3 of the way through the log and finish with a 2/3 cut on the opposite side. As the log is being cut, it will tend to bend. The saw can become pinched or hung in the log if you make the first cut deeper.

WARNING!

If saw becomes pinched or hung in a log, don't try to force it out. You could lose control of the saw resulting in serious personal injury and/or damage to the saw. Stop the saw and drive a wedge into the cut until saw can be removed easily. Be careful not to damage the chain with the wedge. Figure 34.

1. BUCKING — WITHOUT A SUPPORT a. Overcut, with a 1/3 diameter cut.

NOTE: Do not allow the chain to cut into the ground. Dirt will quickly dull the chain and can ruin it.

b. Roll log over and finish with an overcut.

WARNING!

Always stand uphill from the log being cut since the cut portion will tend to roll down hill.

2. BUCKING — USING ANOTHER LOG AS A SUPPORT (Figure 35)

a. In area A:

- 1.) Undercut 1/3 of the way through the log.
 - 2.) Finish with an overcut.
- b. In area B:
 - 1.) Overcut, 1/3 of the way through the log.
 - 2.) Finish with an undercut.

- 3. BUCKING USING A STAND (Figure 36)
 - a. In area A:
 - 1.) Undercut 1/3 of the way through the log.
 - 2.) Finish with an overcut.
 - b. In area B:
 - 1.) Over cut 1/3 of the way through the log.
 - 2.) Finish with an undercut.



Figure 33









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D. DEBRANCHING AND PRUNING

- · Work slowly, keeping both hands on the saw with a firm grip. Maintain secure footing and balance.
- Watch out for springpoles. Use extreme caution when cutting small size limbs. Slender material may catch the saw chain and be whipped toward you or pull off balance.
- Be alert for springback. Watch out for branches that are bent or under pressure as you are cutting to avoid being struck by the branch or the saw when the tension in the wood fibers is released.
- Keep a clear work area. Frequently clear branches out of the way to avoid tripping over them. مې د ۲

. به ششم ب		
- Species C. i		
	WARNING!	
Never climb into a not stand on lade tion which might the saw.	a tree to debranch or prune. Do lers, platforms, or in any posi- cause you to loose control of	

1. DEBRANCHING

- a. Limit debranching to limbs shoulder height or below. Always debranch a tree after it is cut down. Only then can debranching be done safely and properly.
- b. Leave the larger lower limbs to support the tree as you work.
- c. Start at the base of the felled tree and work towards the top cutting branches and limbs. Remove small limbs with one cut: Figure 37.
- d. Keep the tree between you and the chain. Cut from the side of the tree opposite the branch you are cutting.
- e. Remove larger, supporting branches with the 1/3, 2/3 cutting technique described in the bucking section.
 - 1.) Start with an overcut
 - 2.) Finish with an undercut



Figure 37

WARNING!

BE ALERT FOR AND GUARD AGAINT KICK-BACK. Do not allow the moving chain to contact any other branches or objects at the nose of the quide bar when debranching or pruning. Allowing such contact could result in serious personal injury.



2. PRUNING

- a. Limit pruning to limbs shoulder height or below. Do not cut if branches are higher than your shoulder. Get a professional to do the job.
- b. Refer to Figure 38 for the pruning technigue.
 - 1.) Undercut 1/3 of the way through the limb near the trunk of the tree.

 - 2.) Finish with an overcut farther out from, the trunk.
 - 3.) Keep out of the way of the falling limb.
 - 4.) Cut the stump flush near the trunk of the tree.



Figure 38

A good maintenance program of regular inspection and care will increase the service life and help to maintain the safety and performance of vour saw.

- Make all adjustments or repairs (except carburetor adjustments) with:
 - -spark plug wire disconnected

mengine cool as opposed to a unit that has just been run.

A. GUIDE BAR AND CHAIN

Increase the service life of your Guide Bar and Chain by:

- -Using the saw properly and as recommended in this manual.
- -Maintaining correct Chain Tension, page 7.
- -Proper lubrication, page 9,
- -Regular maintenance as described in this section.

1. CHAIN MAINTENANCE

- Sharpen the chain when:
 - wood chips are small and powdery. Wood chips made by the saw chain should be about the size of the teeth of the chain.
- saw has to be forced through the cut. - saw cuts to one side.
- a. SHARPENING INSTRUCTIONS-Models .353660 and .353670. Items required:

Gloves Medium file 5/32" file Depth Gauge Tool 6" file holder

- Stop engine.
- 2.) Adjust the chain for proper tension, page 7.
- 3.) Work at the midpoint of the bar, moving the chain forward by hand as each cutter is filed.
- 4.) Sharpen cutters.
 - a.) Position the file holder with the square rod on the top plate of the cutter as shown in Figure 39.
 - b.) Hold the file holder level with the 30° guide mark parallel to the center line of the bar. Figure 40.
 - c.) File from inside toward outside of cutter, straight across in one direction only. Use 2 or 3 strokes per cutting edge. Figure 41.

 Check the saw for loose bolts, screws, nuts and fittings regularly. Loose fasteners can cause an unsafe condition as well as damage to your saw.

WARNING!

All chain saw service other than the maintenance described in this manual should be performed by your SEARS Service Center.

CAUTION: Always wear gloves when handling the chain. The chain is sharp enough to cut you even though it is too dull to cut wood.



Figure 39



Figure 40



Figure 41

- 5.) Correct Depth Gauges.
 - a.) Place depth gauge tool over each cutter depth gauge. Figure 42.
 - b.) File level with the flat file if depth gauge is higher than the depth gauge tool.
 - c.) Maintain rounded front corner of depth gauge with a flat file. Figure 43.

NOTE: The very top of the depth gauge should be flat with the front half rounded off with a flat file.

b. CHAIN REPLACEMENT

- 1.) Replace the chain when cutters or links break.
- 2.) See your Sears Service Center to replace and sharpen individual cutters
- to match your chain. 3.) Always replace the worn sprocket when installing a new chain to avoid excessive wear to the chain.

2. GUIDE BAR MAINTENANCE

- Conditions which can require guide bar maintenance:
 - -saw cuts to one side
 - -saw has to be forced through a cut
 - -inadequate supply of oil to bar and chain.
- Check the condition of the guide bar each time the chain is sharpened. A worn guide bar will damage the chain and make cutting more difficult.
- Replace the guide bar when:
 - the inside groove of the guide bar rails is worn.
 - -the guide bar is bent.
 - a. Remove the guide bar to service.
 - b. Clean oil holes at least once for each five hours of operation.
 - c. Remove sawdust from the guide bar groove periodically with a putty knife or a wire. Figure 44.
 - d. Remove burrs by filing the side edges of the guide bar grooves square with a flat file. Figure 45.
- e. Restore square edges to an uneven rail top by filing with a flat file. Figure 45.



Figure 42



Figure 43



Figure 44





B. IGNITION, COOLING AND EXHAUST SYSTEMS

- Carbon deposits will build up on exhaust ports, spark arrestor, muffler, and spark plug as the saw is used. All of these parts should be cleaned at the same time to prevent engine damage, overheating, loss of power, and hard starting.
- Clean parts:
 - -as required

 at least once for each 25-30 hours of operation



Figure 48

- **1. EXHAUST SYSTEM**
 - Carbon build-up on the exhaust system can cause the engine to loose power in a cut.
 - Keep the spark arrestor clean at all times.
 - Replace the spark arrestor when breaks in the screen are found.

Items required: Wire brush

- 3/8" wrench
- Hardwood stick
- a. Disconnect the spark plug.
- b. Remove the muffler, baffles, and screen Figure 46.
- c. Pull the starter rope until the piston moves far enough to close the exhaust ports.
- d. Scrape the carbon deposits from the exhaust ports and surrounding exhaust chamber using a hardwood stick. Figure 47.
- e. Blow out loosened carbon with compressed air.
- f. Clean the spark arrestor screen with a wire brush or replace if breaks in the screen are found.
- g. Reassemble muffler parts.

2. SPARK PLUG

- Keep the spark plug:
- -clean -properly gapped (.025)
- Maintenance is indicated when the engine is hard to start.

Item required: Small brush, such as a tooth brush, or a pocket knife.

- a. Pull the rubber connector from the spark plug and remove the spark plug from the cylinder.
- Clean deposits from the electrodes of the spark plug with a small brush or a pocket knife.
- **NOTE:** Be careful when removing, cleaning, gapping and replacing the spark plug. If it is damaged, it will not work properly and must be replaced.
- c. Set the gap between the electrodes to .025 using a wire or flat gauge. Figure 48.
- d. Replace the spark plug.

C. STARTER ROPE REPAIR AND REPLACEMENT

- A starter rope that breaks next to the pulley can be repaired.
- Replace a starter rope that breaks more than 2 or 3 inches from the pulley.

WARNING!



Always wear eye protection when servicing the starter rope. The recoil spring beneath the pulley is under tension. If the spring should pop out serious personal injury could result. NOTE: A recoil spring lies beneath the pulley and is under tension. If the recoil spring is disturbed considerable time and effort will be required to reinstall. For this reason, you may want to let your SEARS Service Center handle this repair. If you do try to repair the starter rope and the recoil spring pops out, take the unit to your dealer.

- 1. Drain fuel tank.
- 2. Remove the two screws on the side of the fan housing. Figure 49.
- 3. Remove the large screw at the rear of the control handle and the small screw directly below it. Figure 50.
- 4. Pull the gas line from the fitting going in the saw handle.
- 5. Separate the fan housing from the unit.
- 6. If the starter rope is not broken, release the spring tension by pulling about 10 inches of rope from the pulley and catch the rope in the notch as shown. Figure 51.

NOTE: The tension on the starter spring will be released if the rope has broken.

- 7. Turn the pulley counterclockwise until the spring tension is released.
- 8. Remove the pulley screw in the center of the pulley. Figure 52.
- 9. Lift the pulley carefully while gently twisting it counterclockwise
- 10, Remove the old rope.
- 11. Move away from the fuel tank and burn the end of the rope to be installed.
- 12. Pull the burnt end through a rag while the rope is still hot to obtain a smooth end.
- 13. Feed the rope through the housing and through the round starter hole. Figure 52.
- 14. Put the rope into the pulley groove and up through the hole.
- 15. Tie a knot in the end of the rope and pull it tightly against the pulley.
- 16. Rewind all the rope onto the pulley, turning counterclockwise
- 17. Set the pulley into the housing; push it down and engage the spring.
- 18. Replace and tighten the pulley screw.
- 19. Pull out 10 inches of rope and set the rope in the notch in the pulley. Figure 53.
- 20. Turn the pulley 2 complete turns clockwise winding up the spring.
- 21. Hold the pulley and pull the starter rope to the full extent of length and let the rope rewind slowly.
- 22. Beplace the fuel line in the slot in the fan housing. Be certain fuel line is not pinched.23. Replace fan housing.



Figure 49



Figure 50



Figure 51



Figure 52



D. CARBURETOR ADJUSTMENTS

- The carburetor has been adjusted at the factory for sea level conditions. Adjustment may become necessary if the unit is used at significantly higher altitudes or if you notice any of the following conditions:
 - Chain moves with the engine at idle speed.
 Loss of cutting power which is not corrected by air filter or muffler screen cleaning.
 - -Engine dies or hesitates when it should accelerate.
- Permanent damage will occur to the engine if incorrect carburetor adjustments are made. It is best to let your SEARS Service Center make carburetor adjustments. If you choose to make the adjustment yourself, observe the following procedure very carefully.

WARNING!

The chain may be moving during this procedure. Wear your protective gear and observe all safety precautions.

1. PREPARATION

a. Stop engine.

- b. Use a fresh fuel mixture with proper gasoline/oil ratio.
- c. Place the saw on a solid, flat surface and make sure the chain will not contact any object.
- d. Dust off the carburetor cover and surrounding area to remove debris which might fall into the carburetor chamber.
- e. Remove the carburetor cover screws and carburetor cover. Figure 55.
- f. Find the three (3) carburetor adjusting screws. Figure 54.
- g. Turn the Low Speed Mixture Screw and the High Speed Mixture Screw clockwise just
- until they stop. Do not turn the screws until they are tight as you may damage the needle seats.
- h. Turn the Low Speed Mixture Screw and the High Speed Mixture Screw one full turn counterclockwise



Figure 54

2. IDLE SPEED ADJUSTMENT-I

- a. Start the engine.
- b. Adjust if the engine stops (when the trigger is not squeezed) by turning the Idle Speed Screw 1/2 turn clockwise
 NOTE: To increase idle speed, turn the Idle Speed Screw clockwise

decrease idle speed, turn the Idle Speed Screw counterclockwise

c. Run the engine for a few minutes to bring it up to operating temperature.

NOTE: The engine must be at operating temperature for proper adjustments to be made.

3. LOW SPEED MIXTURE ADJUSTMENT

- a. Turn the Low Speed Mixture Screw slowly clockwise ______ until the RPM starts to drop. Note the position.
- b. Turn the Low Speed Mixture Screw counterclockwise A until the RPM speeds up and starts to drop again. Note the position.
- c. Position the Low Speed Mixture Screw at the mid-point between the two positions.

4. IDLE SPEED ADJUSTMENT-II

- a. Allow engine to idle.
- b. Adjust if the chain is turning by turning the Idle Speed Screw counterclockwise
- c. Squeeze the throttle trigger, the saw should accelerate without hesitating.

NOTE: It may be necessary to recheck the low speed mixture setting after the idle speed has been reduced by repeatingLow Speed Mixture Adjustment Steps.

5. HIGH SPEED MIXTURE ADJUSTMENT

- a. Make a test cut.
 - NOTE: Take special care to keep chips and dirt out of the carburetor.
- b. Adjust if the saw smokes or seems to have low power in the test cut by turning the
- High Speed Mixture Screw 1/16th turn clockwise
- c. Repeat test cut.
- d. Repeat adjustment until the saw runs smoothly.

CAUTION: Never set the High Speed Mixture Screw less than 7/8 turn open. This is too lean a setting and will ruin your engine.

6. IDLE SPEED ADJUSTMENT-III

Recheck for proper idle mixture setting.

NOTE: It may be necessary to repeat according to instructions in Steps 2 and 3, Idle Speed Adjustment—I and Low Speed Mixture Adjustment.

7. CHECK ACCELERATION

Adjust if there is a slight hesitation by turning the Low Speed Mixture Screw 1/16 of a turn at a time counterclockwise _____ until you have smooth acceleration.

NOTE: Check to be sure the chain is not turning when engine is idling. If chain moves at idle speed, repeat Idle Speed Adjustment-II.

E. AIR FILTER

- A dirty air filter:
 - -reduces cutting power
 - -increases fuel consumption
- Clean the Air Filter:
 - -- Frequently, especially under very dusty conditions.
 - Always after 10 tanks of fuel mixture or 5 hours of operation whichever is less.

CAUTION: Never operate the unit without the air filter in place as damage to the engine can occur.



F. STORAGE

When your saw is to be stored for over 30 days, always:

- 1. Drain fuel tank in a safe manner. (See "Important Points," page 8.)
- 2. Start engine and allow to run at an idle speed until the engine stops.
- NOTE: This will remove most of the fuel from the fuel system.
- 3. Drain oil tank.
- 4. Remove, clean, and dry the bar and chain.

8. REASSEMBLE UNIT

- a. Stop the engine.
- b. Clean the mating surfaces of the carburetor housing and cover.
- c. Be careful when replacing the carburetor cover to see that the choke knob operates properly. Refer to steps 9-12, Air -Filter, page 22.
- 1. Clean off the carburetor cover and the area around it to keep dirt and sawdust from falling into the carburetor chamber when the cover is removed.
- Remove the carburetor cover screws and carburetor cover. Figure 55.
- 3. Pull out the air filter.
- 4. Wash the filter in soap and water.

CAUTION: Do not use gasoline or other flammable liquid to clean the filter as this can create a fire hazard which could result in damage to the saw.

- 5. Squeeze the filter dry.
- 6. Add a small amount of oil to coat the filter. NOTE: Avoid soaking the filter with oil.
- 7. Squeeze out excess oil.
- Replace filter by tucking in edges and smoothing it flush with the carburetor housing.

NOTE: Be careful when replacing the carburetor cover as incorrect placement will prevent the choke from working properly.

- 9. Move the choke knob all the way to the right.
- 10. Check the choke shutter to be sure it is closed. Figure 55.
- 11. Reinstall the carburetor cover and tighten the carburetor cover screws.
- 12. Check the operation of the choke.

NOTE: If the choke knob sticks or will not move, remove the cover and repeat steps 9-12 above.

- 5. Store the chain in a container filled with oil to prevent rust.
- Apply a coating of oil to the entire surface of the bar and wrap it in heavy paper, cloth or plastic.
- 7. Clean the outside surfaces of the engine.
- 8. Store the saw in a dry place, out of the reach of children, and away from where fuel vapors can reach open flames from hot water heater, furnaces, etc.

G. MAINTENANCE ACCESSORIES

Available from your nearest SEARS Store, Catalog Sales Office, or Service Center But not furnished with your saw



Key No.	Part No.	Catalog No.	Description
1	STD360946	32-36403	Spark Plug-Champion CJ-8
2	31059		Spark Plug Wrench
3	55004	32-36524	File (5/32" dia.) Twin Pack
-4	55046	32-36565	File Guide
5		32-36557	Depth Gauge
6	·····	32-3617	Guard Link Chain (:353660-2.3/14")
		32-3629	Guard Link Chain (.353670-2.3/16")
	· · · · ·	32-3631	Guard Link Chain (.353690-2.3/16"PS)
	69037		Muffler Heat Shield Kit
	· ······	32-36711	Replacement Recoil Cord
· ·		32-36514	Slide-on Chain Guard (all Models)
		32-36621	Carrying Case
	· · · · · · · · · · · · · · · · · · ·	32-36555	2-Cycle Engine Oil
		32-36554	Bar and Chain Lubricant
	44194	*****	Guide Bar-Lo Kick Replacement (.353660 - 2.3/14")
	44204		Guide Bar-Lo Kick Replacement (.353670 - 2.3/16")
	44204	· · · · · · · · · · · · · · · · · · ·	Guide Bar-Lo Kick Replacement (.353690 - 2.3/16" PS)
		32-36618	Chain Repair Kit

H. TROUBLE SHOOTING CHART

TROUBLE	CAUSE	REMEDY		
ENGINE WILL NOT START	 Ignition Switch off. Fuel tank empty. Spark Plug not firing. Fuel not reaching carburetor. Engine flooded. Compression low. Air flow restricted 	 Move switch to "Start". Fill tank with correct fuel mixture, page 8. Install new plug, page 19. Check for dirty fuel filter; clean. Check for kinked or split fuel line; repair or replace. See Starting Instructions, page 10. Contact Sears Service Center. Check for dirty air filter: clean, page 22. Check for choke shutter working properly, page 22. 		
ENGINE WILL NOT IDLE PROPERLY	 Idling speed set too low. Idle speed set too high. Low speed screw requires adjustment. Crankshaft seals worn. Compression low. 	 Adjust idle speed screw clockwise to in- increase speed, page 21. Adjust idle speed screw counterclockwise to reduce speed, page 21. See Carburetor Adjustments, page 21. Replace seals or contact Sears Service Center. Contact Sears Service Center. 		
ENGINE WILL NOT ACCELERATE, LACKS POWER OR DIES	 Carburetor requires adjustment. Air filter dirty. Spark Plug fouled. Carbon build-up. Low Compression. 	 See Carburetor Adjustments, page 21. Clean or replace air filter, page 22. Clean or replace Spark Plug and regap, page 19. Clean exhaust system including spark arrestor, page 19. Contact Sears Service Center. 		
ENGINE SMOKES EXCESSIVELY	 Choke partially on. High speed needle requires adjustment. Air filter dirty. Oil rich fuel mixture. Crankcase leak. 	 Turn Choke off. See Carburetor Adjustments, page 21. Clean or replace air filter, page 22. Empty fuel tank and refill with correct fuel mixture, page 8. Contact Sears Service Center. 		
ENGINE RUNS HOT	 Fuel Mixture Incorrect. Spark Plug Incorrect. Carbon build-up. High Speed Mixture set too low. 	 See Engine Fuel Mixture, page 8. Replace with correct plug, page 19. Clean exhaust systems including spark arrestor, page 19. See Carburetor Adjustments, page 21. 		
OIL INADEQUATE FOR BAR AND CHAIN LUBRICATION	 Oil tank empty. Oil pump or oil filter clogged. Guide bar oil hole blocked. 	 Fill oil tank, page 9. Contact Sears Service Center. Remove bar and clean. 		
CHAIN MOVES AT IDLE SPEED	 Carburetor requires adjustment. Clutch requires repair. 	1. See Carburetor Adjustments, page 21. 2. Contact Sears Service Center.		
CHAIN DOES NOT MOVE WHEN ENGINE IS ACCELERATED	 Chain tension too tight. Carburetor requires adjustment. Guide bar rails pinched. Clutch slipping. 	 See Chain Tension, page 7-8. See Carburetor Adjustments, page 21. Repair or replace, page 18. Contact Sears Service Center. 		
CHAIN CLATTERS OR CUTS ROUGHLY	 Chain tension incorrect. Cutters dull, improperly sharpened; depth gauges too high. Sprocket worn. Chain wear due to contact with dirt, sand or frozen wood. Cutters damaged after striking foreign material. 	 See Chain Tension, page 7-8. See Chain Sharpening Instructions, page 17 (page 12 for Power Sharp). Replace. Resharpen or replace Chain, page 17 & 18. (page 12 for Power Sharp). Contact Sears Service Center. 		
CHAIN STOPS WITHIN THE CUT	 Chain cutter tops not filed flat. Guide bar burred or bent; rails uneven. Clutch slipping. 	 See Chain Sharpening instructions, page 17. Repair or replace guide bar, page 18. Contact Sears Service Center. 		
CHAIN CUTS AT AN ANGLE	 Cutters damaged on one side. Chain dull on one side. 	 Resharpen until all cutters have equal angles and lengths, page 17 (page 12 for Power Sharp). Resharpen until all cutters have equal angles and lengths, page 17 (page 12 for Power Sharp). 		
	3. Guide bar bent, or worn.	3. Replace guide bar, page 18.		

NOTES

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26

358.353670-2.3/16" 358.353690-2.3/16" PS

Figure 1

Ref				Ref.			
No	Part No.	Qty.	Description	No.	Part No.	Qty.	Description
1	15126	1	Key-Flywheel	31	STD610807	1	Screw - No. 8 x 3/4 Tapping
. 2	39111	1	Flywheel Assembly	32	24967	1	Cover - Handle
3	STD511005	1	Screw - 10-24 x 1/2	33	STD512507	1	Screw 1/4-20 x 3/4
4	15428	1	Washer - Starter Pulley -	34	25233	1	Handle & Carburetor Housing
			# 10 - flat	35	23877	1	Fitting - Fuel Line
5	10373	1	Starter - Pulley (includes #4)	36	21024	1	Line - Fuel Pick-up
6	42023	1	Spring - Starter	37	15252	1	Washer - Fuel Pick-up
7	·	1	Carburetor (Walbro WT-3)			•	(nylon) 15/16 x 1/2
8	19045	1	Gasket - Carburetor	38	23364	1	Filter - Fuel
9.	STD512507	3	Screw - 1/4-20 x 11/16	39	23363	1	Weight - Fuel Pick-up
10	23791	1	Filter - Air	40	23783	1	Rope & Handle-Starter
-11	23817	2	Spring - Starter Dog	41	11869	1	Fan Housing
12	15127	1 (Washer - Flywheel - 7/8	42	15406	1 /	Screw - 10-24 x ½ slotted Pan Hd.
13	STD541131	1	Nut - 5/16-24	.43	i	1. Jac	Decal - Fan Housing
14	25487	1	Baffle - Air Inlet		25536	1 .	.:353660
15	STD600803	2	Screw - Baffle Mounting -		25538	1	.353670 and .353690
			8-32 x 5/16	44	15229	2	Screw - 10-24 x 1-3/8
16	15245	2	Screw - 10-24 x 1-5/8	45	23807	. 1	Choke Knob
17	23865	1	Spacer - Choke Shutter	46	25063	1	Cover - Carburetor
18	15254	1	Wave Washer - 1/2	47	15168	2	Screw - 10-24 x 5/8
19	23805	1	Shutter - Choke	48	15147	1	Wave Washer
20	23804	1	Trigger Throttle	49	23806	1	Lever - Choke
21	19118:	1	Gasket - Carburetor Housing	50	STD600803	1	Screw - 8-32 x 5/16 Tapping
22	23803	1	Wire-Throttle	51	3934	1	Boot - Spark Plug
23	23366	1 .	Reed Valve	52	3933	1	Connector - Spark Plug
24	23367	1	Washer - Reed Valve - #6	53	39087	1 .	Module Ignition
25	STD610603	1	Screw - No. 6-19x 5/16 Tapping	54	STD510807	2	Screw - 8-32 x 3/4 Sems
26	23808	1	Fuel Cap Assy.	55	39082	1	Lead - Spark Plug (includes
27	19093	1	Seal - Fuel Tank Neck				50 & 51)
28	25143	1	Fuel Tank	56	24158	1	Lead - Świtch
29	21025	1	Fuel Line - Carburetor				
30	23373	1	Boot - Throttle Wire				

Carburetor Assembly Part No. 35158

Van	* Dent		Var		· · ·
No.	No.	Description	No.	Part No.	Description
1	35006	Valve Throttle	16	35166	+ *Diaphragm-Fuel Pump
2	35015	Screw-Throttle Valve	17	35172	*Screen-Fuel Inlet
3	35034	Shaft Assembly-Throttle	18	35007	Ring-Throttle Retainer
.4	35024	Spring-Throttle Return	19	35008	*Valve-Inlet Needle
5	35023	Spring-Low Speed Mixture Needle	20	35139	*Spring-Metering Lever
6	35171	Needle-Low Speed Mixture	21	35031	*Lever-Metering
7	35167	Spring-High Speed Mixture Needle	22	35028	*Pin-Metering Lever
8	35169	Needle-High Speed Mixture	23	35016	*Screw-Metering Lever Pin
9	35162	*Plug -5/16 Dia. Welch	24	35165	+ *Gasket-Metering Diaphragm
10	35163	*Plug -1/4 Dia. Welch	25	35014	+ *Diaphragm-Metering
11	35017	Screw-Pump Cover	26	35003	Cover-Metering Diaphragm
12	35159	Cover-Fuel Pump	27	35021	Screw Assembly-Metering Cover
13	35035	Screw-Idle Speed Adjusting		35161	Kit-Repair (includes parts marked *)
14	35168	Spring-Idle Speed Adjusting Screw	-	35173	Kit-Gasket/Diaphragm (includes parts
15	35164	+ *Gasket-Fuel Pump		-	marked +)

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SEARS CHAIN SAW REPAIR PARTS - MODEL NO. 358.353660-2.3/14"

). 358.353660-2.3/14″ 358.353670-2.3/16" 358.353690-2.3/16" PS

Figure 2

Rei No.	. Part No.	Qty.	Description	Ref. No.	Part No.	Qty.	Description
1	23792	1	Pin - Oil Tank Vent	43	23795	1	Cover - Muffler
2	15249	- 1	Stud - Bar Mounting	44	23843	2	Retainer - Piston Ring
3	10469	t.: 1 .:	Crankcase Assembly	45	10474	. 1 .	Connecting Rod Ass'y. (incl. 36, 37 & 38)
			\$ 23)	46	25572	1	Bracket Isolator
4	23824	1	Check Valve - Oil Tank	47	25568	. 1	Pad - Cork
5	19059	2	Pressure Seal - Crankshaft	48	48067	1	Drum & Sprocket- .353690
ñ	19089	1	Gasket - Check Valve	49	51234	1	Chain - 16"- 353690
7	STD541408	. 1	lock Nut - 8-32	50	44204	1	Bar and Pin Ass'v-
.8	23492	i.	Pin - Bar Adjust	00	11201	•	353670 & 353690
ğ	15236	1	Screw Bar Adjust #8-32 v 1-5/8	51	23535	11	Spacer - Muffler Cover
10	11204	1	Hub - Clutch	52	23796	1	Screen - Spark Arrestor
11	69097		Shoe - Chutch (incl. Otv. 2)	53	10471	1	Piston Kit (incl. 44 & 61)
12	1697	1	Garter Spring - Clutch	54	23788	1	Knob Ass'v Switch
13	15173	1	Thrust Machar (outside)	55	23786	1	Bamp - Switch
11	10110	1	Chain	56	STD511007	7	Screw - 10-24 x 11/16
14	51104	-	1/17 959660	50	210011007	5	Cupleólator
	51040	4	14303000	57	20007	- 2	Look Nut - 1/4-20
16	J1242	1	10303070 Dor 147 252600	00 50	010010 CTD511005	2	Sorow - 10.24 x 1/2
10	44194	4	Dal +14	09	10099	4	Gocket Cylinder
10	10100	· •		00	19000		Dictor Dice
4 77	40040	4	(Inci. 10, 11, & 12)	01	20407	l -4	Clomp Switch
17	48049	· 1 ·	Sprocket & Drum353660	62	23/0/	1	Carety Ma. 9 x 9/16 Tapaing
			& .353670 (incl. 18)	63	510610805	1	Screw - No. 6 X 9/10 rapping
19	23519	1	Spacer - Clutch (inside)	64	23/9/	4	Bame - Mullier
20	STD510805	2	Screw -8-32 x 1/2	65	23/94	1.	Body - Munici
21	19091	2	Gasket - Oil Pump	66	22245	7	Handlebar
22	23802	1	Cover - Oil Pump	67	025631		Decal-Handguard
23	32026	2 🗧	Bearing - Crankshaft	68	24091	1	Handguard
24	32065	1	Bearings - Roller (incl. 12 bearings)	69	15231	1	Pin - Bar & Pin Ass'y .353690
25	22172	1	Crankshaft (Solid State)	70	25566	1	Isolator
26	21026	1	Line - Oil Discharge	71	25569	1	Retainer - Screw
27	23887	1	Thrust Washer - Crankshaft	72	15507	2	Screw - 10-24 x 5/8 Hex Head
28	23653	1	Chain - Oil Cap	73	STD360946	1	Spark Plug - CJ-8
29	23656	1	Retainer - Chain	.74	11861	1	Cylinder
30	STD600603	1	Screw - 8-32 x 5/16	.75	15239	2 ·	Screw - 1/4-20 x 3/4 Socket
31	1949	1	O-Ring - Oil Can				Head
32	23874	1	Cap - Oil	76	31063	1	Bar Adjusting Tool
33	10221	1	Oil Cap Ass'v (incl. 28, 29	77	30054	AR*	Sealant - Crankcase (Optional)
	(Vinter)	•	30 31 32 42 43 44 45 8 46)	78	24049	1	Cap - Handguard
34	22801	- -	Filter . Oil	79	15509	ġ.	Screw - Plastite - # 10 x 1
25	10105	4	Rody Assembly - Oil Rump	80	10000	•	Chain Repair Kit
26	15/96	2	Washer Red (Ten)	00			(both kits include 1 Drive link.
00	10400	4	Destines Red (Top)				2 Preset tie straps, 2 Plain tie
57 50	32075		(incl. 21 bearings)		E2044 -		straps, 1 Guard drive link)
50	254/4	1	Connecting Hod		502044 50055	AD+	363600
39	25565	1 .	Spacer		52035		Owner's Manual (not shown)
40	15505	2	Bolt - 1/4-20 x 1-11/32		64/65	AH.	Owner's Wanual (not snown)
			(Handlebar & Isolator)		25612	<u> </u>	Laber warranty - Guide Bar
11	1642	1	Lockwasher - 1/4"				(not snown)
42 3	STD511015	1	Screw - 10-24 x 1-7/16				

*As Required

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SEARS CHAIN SAW REPAIR PARTS LIST

Figure 3



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	Figure 3A						
	MC	DEL	S .353660 2.3/14"				
Key No.	Part No.	Qty.	Description				
1	25535	1	Decal - Bar Clamp				
2	STD541431	1	Nut - Bar Mounting - 5/16 - 18 Flange				
3	25527	1	Decal - Instructions (Left Half)				
4	25525	1	Decal - Instructions (Right Half)				
5	STD511010	1	Screw - 10-24 x 7/8				
6	11871	1	Bar Clamp				

Figure 3B

MODEL .353670 2.3/16"

Key No.	Part No.	Qtv.	Description
1	25537	1	Decal - Bar Clamp
2	STD541031	1	Nut - 5/16 - 18 - Bar Mounting
3	25257	1	Level - Chain Adjust
4	23764	1	Knob - Chain Adjust
5	25528	1	Decal - Instructions (Left Half)
6	25525	1	Decal - Instructions (Right Half)
7	STD511010	1	Screw - 10-24 x 7/8
8	11871	1	Bar Clamp

Figure 3C MODEL .353690 2.3/16" PS

Key No	Part No.	Otv	Description
4	CTD541021	- <u>Gety</u> -	Nut Par Mounting
1	310341031	, , , I .,	- 5/16 - 18
2	25257	1	Lever - Chain Adjust
3	23764	1	Knob - Chain Adjust
4	23759	1	Knob Sharpening
5	23762	1	Spring
6	23761	1	Washer
7	25537	1	Decal - Bar Clamp
8	25529	1	Decal - Instructions (Left Half)
9	25531	1	Decal - Sharpening
10	25525	1	Decal - Instructions (Right Half)
11	STD511010	1	Screw - 10-24 x 7/8
12	11873	1	Bar Clamp
13	69027	1	Arm-Sharpening Stone (Incl. 15)
14	STD511002	1	Screw - 10-20 x 1/4
15	69026	1	Stone & Carrier Ass'y. (Incl. 14)



QUICK REFERENCE PAGE

Read and follow all Safety Rules, Precautions and Operating Instructions. Failure to do so can result in serious personal injury.

		page
SA PB	FETY RULES AND PRECAUTIONS	
1. 2. 3. 4. 5.	Wear personal protective gear — gloves; safety footwear; snug fitting clothing; and app hearing, and head protection. Check saw for worn, loose, or damaged parts and repair or replace if necessary. Check the chain for sharpness and tension. Keep children, bystanders and pets out of the work area. Plan your sawing operation carefully in advance.	propriate eye,
FU	EL AND OIL	
1. 2. 3. 4. 5. 6. 7.	Eliminate all sources of sparks or flame where fuel is mixed, poured, or stored. Use 1 part air-cooled; 2-cycle engine oil to 16 parts leaded or unleaded regular gasoline. Use gasoline not over 2 months old. Mix and store fuel in an approved, marked container. Mix and pour fuel in a well-ventilated area. Move a minimum of 10 feet away from fuel and fueling site before starting engine. Fill the oil tank each time the fuel tank is refueled.	
ST/	ARTING THE ENGINE	10
1. 2. 3. 4. 5.	Hold saw firmly with the saw chain free to turn without making contact with any object. Push saw away from you with your right hand while pulling the starter rope with your lef Use no more than 15-18 inches of rope per pull. Pull rope no more than 5-6 times. Release the trigger after engine starts allowing engine to idle.	t hand.
OP	ERATING THE SAW	
1. 2. 3. 4. 5. 6.	Cut wood only. Accelerate the engine to full throttle before entering the cut. Begin cutting with the saw frame up against the log. Cut only at full throttle. Release the trigger as soon as the cut is completed. Stop the engine before setting the saw down after cutting.	
MA	INTENANCE	
l. 2.	Adjust or have the carburetor adjusted if the chain moves when the engine idles. Check the guide bat for wear each time the chain is sharpened. Clean the air filter frequently and always after 10 tanks of fuel mixture or 5 hours of operat	ion whichever

- the air filter frequently and always after 10 tanks of fuel mixture or 5 hours of operation, whichever is less.
- Clean ignition, cooling and exhaust systems at least once for each 25-30 hours of operation.
 Drain fuel tank in a safe manner after each use.
- Store saw in a dry place out of the reach of children. 6.





MODEL NO. 358.353660-2.3/14" 358.353670-2.3/16" 358.353690-2.3/16" PS

How to Order Repair Parts

SEARS SERVICE

The Model Number will be found under the handle with the Serial Number. Always mention the Model Number when requesting service or repair parts for your Chain Saw.

All parts listed herein may be ordered from any Sears Service Center and most Sears Stores.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST.

- 1. The PART NUMBER
- 3. The PART DESCRIPTION
- 2. The MODEL NUMBER 358.353660-2.3/14" 358.353670-2.3/16" 358.353690-2.3/16" PS
- 4. The NAME OF ITEM Chain Saw

If the parts you need are not stocked locally, your order will be electronically transmitted to a Sears Repair Parts Distribution center for expedited handling.



When you buy merchandise from Sears you get an extra something that nobody else can offer ... Sears Service.

Across town or across the country, Sears Service follows you, providing trustworthy, competent service technicians using only Sears specified factory parts.



Chain Saws bearing this label undergo our toughest testing program ever

- V Parts are inspected to meet rigid quality control standards $\sqrt{2}$ Each saw is started and tuned electronically before it's packed to insure dependability
- $\sqrt{}$ Another quality check: saws are randomly selected and re-inspected
- $\sqrt{\frac{1}{2}}$ Professional woodcutters performance-test our saws under actual working conditions

Sears, Roebuck and Co., Chicago, Ill. 60684 U.S.A.