

CS05/06 HYDRAULIC CHAIN SAW

Safety, Operation and Maintenance Manual



⚠ DANGER

SERIOUS INJURY OR DEATH
COULD RESULT FROM THE
IMPROPER REPAIR OR SER-
VICE OF THIS TOOL.

REPAIRS AND / OR SERVICE
TO THIS TOOL MUST ONLY BE
DONE BY AN AUTHORIZED
AND CERTIFIED DEALER.

Focused on performance™

STANLEY®

*Hydraulic
Tools*

SAFETY PRECAUTIONS

Tool operators and maintenance personnel must always comply with the safety precautions given in this manual and on the nameplate and decals attached to the tool and hose.

These safety precautions are given for your safety. Review them carefully before operating the tool and before performing maintenance or repairs.

Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided on page 5.

GENERAL SAFETY PRECAUTIONS

The CS05/06 Chain Saw will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual and any stickers and tags attached to the saw and hose before operation. Failure to do so could result in personal injury or equipment damage.

- Establish a training program for all operators to ensure safe operation.
- The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Do not operate the tool unless thoroughly trained or under the supervision of an instructor.
- Always wear safety equipment such as goggles, ear and head protection, leg protection, gloves, snug fitting clothing, and safety shoes at all times when operating the saw.
- Do not overreach. Maintain proper footing and balance at all times.
- Do not inspect or clean the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.
- Always connect hoses to the tool hose couplers before energizing the hydraulic power source. Be sure all hose connections are tight.
- Do not operate the tool at oil temperatures above 140°F/60°C. Operation at higher temperatures can cause higher than normal temperatures at the tool which can result in operator discomfort.
- Do not rely exclusively upon the safety devices built into the saw. As a chain saw user, several steps must be taken to keep your cutting jobs free from accident or injury:
 1. With basic understanding of kickback, you can reduce or eliminate the element of surprise. Sudden surprise contributes to accidents.
 2. Keep a good firm grip on the saw with both hands, the right hand on the rear handle and the left hand on the front handle when operating the saw. Use a firm grip with thumbs and fingers encircling the chain saw handles. A firm grip will help reduce kickback and maintain control of the saw. Do not let go.
 3. Make sure that the area in which you are cutting is free of obstructions. Never allow the nose of the guide bar to contact the log, branch, or any obstruction that can be accidentally hit while operating the saw.
 4. Cut at rated operating speeds (gpm).
 5. Do not overreach or cut above shoulder height.

6. Follow the manufacturer's sharpening and maintenance instructions for the saw chain.
 7. Only use replacement bars and chains specified by Stanley or the equivalent.
- Always be well rested and mentally alert before operating the chain saw.
 - Do not allow bystanders near the chain saw when starting or cutting. Flying debris can cause serious injury.
 - Do not start cutting until you have a clear work area, secure footing and a planned escape path from a falling tree.
 - Keep all parts of the body away from the saw chain during operation.
 - Carry the saw with the unit deenergized and the bar and chain to the rear of your body.
 - Do not operate a chain saw that is damaged, is improperly adjusted, or is not completely and securely assembled. Be sure that the chain stops moving when the control trigger is released.
 - Use extreme caution when cutting small size brush and saplings. Twigs may catch the saw chain and be whipped toward the operator or pull the operator off balance.
 - When cutting a limb that is under tension, be alert for springback so that you will not be struck when the tension on the limb is released.
 - Keep the handles dry, clean and free of oil.
 - Do not operate a chain saw while in a tree unless you have been specially trained to do so.
 - When using tools near energized transmission lines, be sure to use only hoses labeled and certified nonconductive.
 - Turn off the power unit or move the hydraulic control valve to neutral before setting the saw down.
 - Use a guide bar scabbard when transporting the saw.
 - Know the location of buried or covered electrical services before starting work.
 - To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.

**CERTIFICATE OF CONFORMITY
 ÜBEREINSTIMMUNGS-ZERTIFIKAT
 CERTIFICAT DE CONFORMITE CEE
 D'UN MARTEAU-PIQUEUR OU D'UN BRISE-BETON EXAMINE
 CERTIFICADO DE CONFORMIDAD
 CERTIFICATO DI CONFORMITA**



**Hydraulic
 Tools**

I, the undersigned:
 Ich, der Unterzeichnende:
 Je soussigné:
 El abajo firmante:
 Io sottoscritto:

Schultz, Theodore J.

Surname and First names/Familiennamen und Vornamen/Nom et prénoms/Nombre y apellido/Cognome e nome

**hereby certify that the construction plant or equipment specified hereunder:
 bestätigt hiermit, daß die Konstruktion und Ausrüstung wie folgt spezifiziert ist:
 atteste que le brise-béton:
 por el presente certifico que la fabrica o el equipo especificado a continuacion:
 certifico che l'impianto o l'attrezzatura sotto specificata:**

1. Category: Chain Saws (Hydraulic)
 Kategorie:
 Catégorie:
 Categoria:
 Categoria:
2. Make/Ausführung/Marque/Marca/Fabbricazione Stanley
3. Type/Typ/Type/Tipo/Tipo: CS0661001, CS0662001, CS0692001, CS0693001
4. Type serial number of equipment:
 Typ und Serien - Nr. der Ausrüstung:
 Numéro dans la série du type de matériel:
 Numero de serie tipo del equipo:
 Matricola dell'attrezzatura:

All
5. Year of manufacture/Baujahr/année de fabrication/Año de fabricacion/Anno di fabbricazione 1998

**Has been manufactured in conformity with - EEC Type examination as shown.
 wurde hergestellt in Übereinstimmung mit - EEC Typ-Prüfung nach.
 est fabriqué conformément - au(x) type(s) examiné(s) comme indiqué dans le tableau di-après.
 ha sido fabricado de acuerdo con - tipo examen EEC como dice.
 è stata costruita in conformità con - le norme CEE come illustrato.**

Examen CEE de type				
Directive Richtlinie Directives particulières Directriz Direttiva	No. Nr Numéro No n.	Date Datum Date Fecha Data	Approved body Prüfung durch Organisme agréé Aprobado Collaudato	Date of expiry Ablauf datum Date d'expiration Fecha de caducidad Data di scadenza
Certificate	0466/896/32	25 June 1998	AEA Technology	N/A

- | | |
|---|--|
| 6. Special Provisions: None
Spezielle Bestimmungen:
Dispositions particulières:
Provisiones especiales:
Misure special: | 7. Measurements Sound Power Level (dBA 1m) 106.6
Weighted Vibration Level (m/s ²) 3.1 |
|---|--|

Done at/Ort/Fait à/Dado en/Fatto a Stanley Hydraulic Tools, Milwaukie, Oregon USA Date/Datum/le/Fecha/Data 1998

Signature/Unterschrift/Signature/Firma/Firma

Position/Position/Fonction/Puesto/Posizione Engineering Manager

TOOL STICKERS AND TAGS

THE STICKERS ON THIS PAGE CAN BE FOUND ON THE FOLLOWING MODELS
CS0661001, CS0662001, CS0692001, & CS0693001.

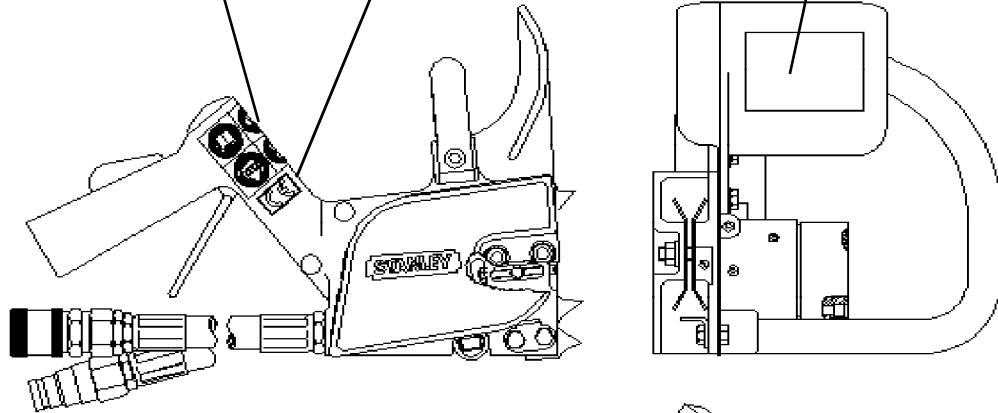


COMPOSITE STICKER p/n 28409



"CE" STICKER p/n 28323

WARNING STICKER p/n 13907
(KICKBACK)



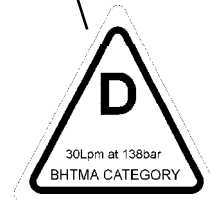
GPM STICKER p/n 03786

WARNING STICKER
ELECTRICAL p/n 12412

NAME TAG p/n 07636



SOUND LEVEL STICKER
p/n 17784



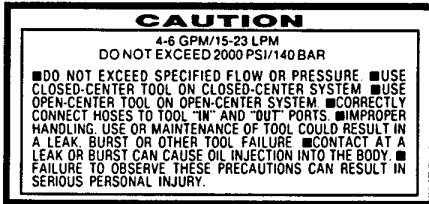
CIRCUIT "D" STICKER p/n 11207

TOOL STICKERS AND TAGS

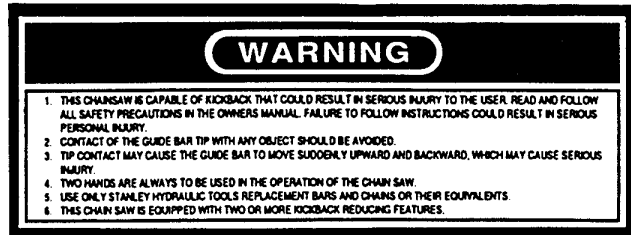
The safety related stickers attached to the chain saw prior to shipment from the factory are shown below.

The pressure and flow rates specified must never be exceeded. All stickers must be read and understood prior to operation of the tool.

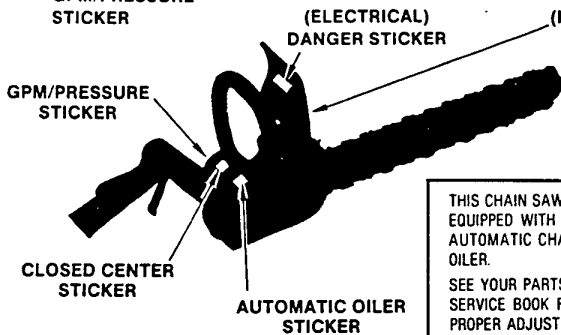
CS05: MODELS



GPM/PRESSURE STICKER



(KICKBACK) WARNING STICKER



THIS CHAIN SAW IS EQUIPPED WITH AN AUTOMATIC CHAIN OILER. SEE YOUR PARTS & SERVICE BOOK FOR PROPER ADJUSTING PROCEDURE.

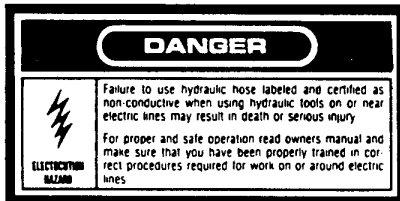
AUTOMATIC OILER STICKER

CS06: MODELS

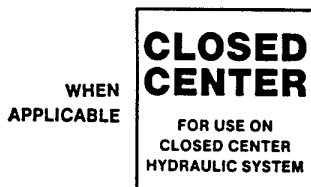


GPM/PRESSURE STICKER

The information listed on each sticker must be legible at all times. Always replace stickers that have become worn or damaged. They are available from your local Stanley distributor.

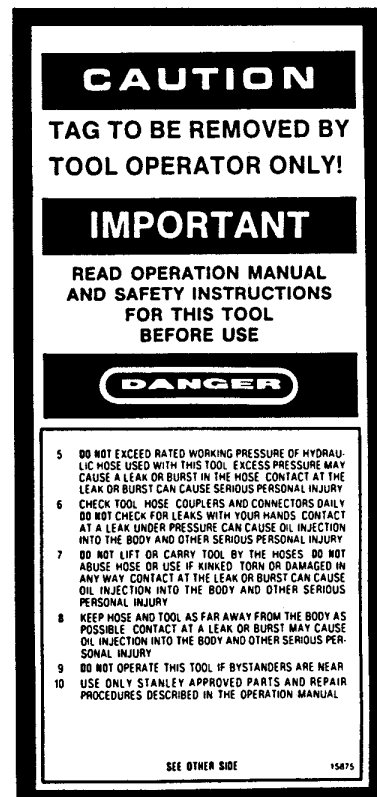
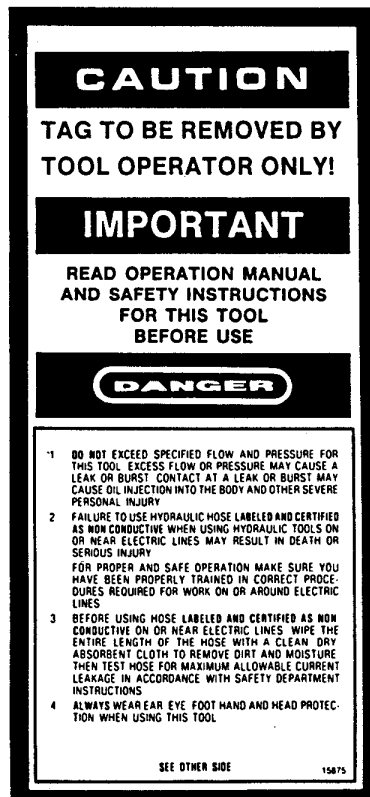


(ELECTRICAL) DANGER STICKER



CLOSED CENTER STICKER

The safety tag at right is attached to the saw when shipped from the factory. Read and understand the safety instructions listed on this tag before removal. We suggest you retain this tag and attach it to the saw when not in use.



HYDRAULIC HOSE REQUIREMENTS

HOSE TYPES

Hydraulic hose types authorized for use with Stanley Hydraulic Tools are as follows:

- 1 Labeled and certified non-conductive
- 2 Wire braided (conductive)
- 3 Fabric braided (not certified or labeled non-conductive)

Hose 1 listed above is the only hose authorized for use near electrical conductors.

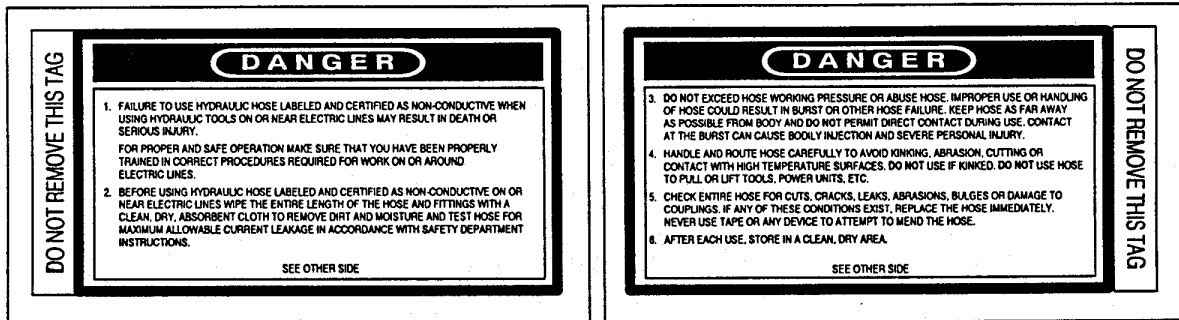
Hoses 2 and 3 listed above are **conductive** and **must never** be used near electrical conductors.

To help ensure your safety, the following DANGER tags are attached to all hoses purchased from Stanley Hydraulic Tools. **DO NOT REMOVE THESE TAGS.**

If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag can be obtained at no charge from your Stanley distributor.

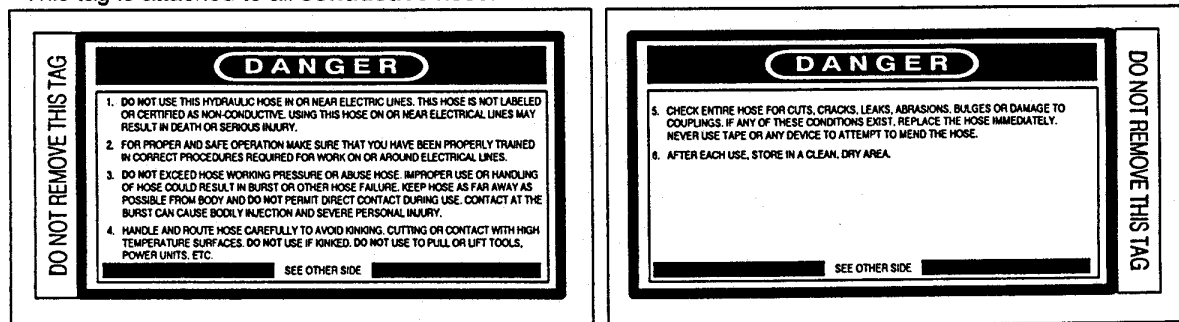
1 CERTIFIED NON-CONDUCTIVE HOSE

This tag is attached to all certified and labeled non-conductive hose.



2 AND 3 WIRE- AND FABRIC-BRAIDED (NOT CERTIFIED OR LABELED NON-CONDUCTIVE) HOSE

This tag is attached to all **conductive** hose.



HOSE PRESSURE RATING

The rated working pressure of the hydraulic hose **must be equal to or higher than** the relief valve setting of the hydraulic system used to power the pole chain saw.

OPERATION

IMPORTANT

In addition to the Safety Precautions listed on pages 1 thru 5 of this manual, observe the following for equipment protection and care.

- Always store an idle saw in a clean dry space, safe from damage or pilferage.
- Keep chain sharp for maximum tool performance.
- Always keep critical tool markings, such as labels and warning stickers legible.
- Always replace hoses, couplings and other parts with replacement parts recommended by Stanley Hydraulic Tools. Supply hoses must have a minimum working pressure rating of 2500 psi/175 bar.
- All hoses must have an oil resistant inner surface and an abrasive resistant outer surface. Whenever near electrical conductors, use **clean**, labeled and certified non-conductive hoses.
- Tool repair should be performed by trained service personnel only.
- Make certain that the recommended relief valves are installed in the pressure side of the system.
- Make sure all couplers are wiped clean before connection. Use only lint-free cloths.
- The hydraulic circuit control valve must be in the "OFF" position when coupling or uncoupling hydraulic tools. Failure to do so may result in damage to the quick couplers and cause overheating of the hydraulic system.
- Do not use the tool for applications it was not designed. The saw chain is only designed to cut wood. Immediate cutter dulling occurs when the chain is allowed to penetrate dirt, sand, roots, or other foreign material.

HYDRAULIC SYSTEM REQUIREMENTS

- For the CS05, the hydraulic system should provide a flow of 4-6 gpm/15-23 lpm at an operating pressure of 1500-2000 psi/105-140 bar. For the CS06, the hydraulic system should provide a flow of 7-9 gpm/26-34 lpm at an operating pressure of 1000-2000 psi/70-140 bar. Recommended relief valve settings are 2100-2250 psi/145-155 bar.
- The system should have no more than 250 psi/17 bar backpressure measured at the tool end of the operating hoses. The system conditions for measurement are at maximum fluid viscosity or 400 ssu/82 centistokes (minimum operating temperatures).
- The hydraulic system should have sufficient heat rejection capacity to limit the maximum oil temperature to 140°F/60°C at the maximum expected ambient temperature. The recommended minimum cooling capacity is 5 hp/3.73 kW at a 40°F/22°C difference between ambient temperature and oil temperature.
- The hydraulic system should have a minimum of 25 micron full-flow filtration. It is recommended that filter elements be sized for a flow of at least 30 gpm/114 lpm for cold temperature startup and maximum dirt holding capacity.
- The hydraulic fluid used should have a viscosity between 100 and 400 ssu/20 and 82 centistokes at the maximum and minimum expected operating temperatures. Petroleum base hydraulic fluids with antiwear and non-conductive properties and a viscosity index over 140 will meet the recommended requirements over a wide range of operating temperatures.
- The recommended hose size for the CS05 is .375-inch/10 mm I.D. up to 30 ft/9 m long and .500-inch/12 mm I.D. minimum up to 100 ft/30 m long.
- The recommended hose size for the CS06 is .500-inch/12 mm I.D. up to 50 ft/15 m long and .625-inch/16 mm I.D. minimum up to 100 ft/30 m long.

PREOPERATION PROCEDURES

SYSTEM SELECTION (OC/CC)

Saws configured with the system selector option require setup for the system, closed- or open-center, in which it will operate. The selector screw is located in the bottom end of the valve spool.

1. Determine the system type.
2. For operation in a closed-center system, turn the selector screw fully clockwise. When the selector screw bottoms, closed-center operation is selected.
3. For operation in an open-center system, turn the selector screw counterclockwise until meeting resistance (from the retaining ring). Turn the selector screw clockwise and then counterclockwise to be sure that you are sensing the resistance of the retaining ring. Do not force the selector screw.

IMPORTANT

To prevent damage to the retaining ring, do not attempt to force the selector screw counterclockwise beyond the point of initial resistance.

CHECK POWER SOURCE

1. Using a calibrated flowmeter and pressure gauge, check that the hydraulic power source develops a flow of 4-6 gpm/15-23 lpm at 1500-2000 psi/105-140 bar for the CS05 or a flow of 7-9 gpm/26-34 lpm at 1000-2000 psi/70-140 bar for the CS06.
2. Make certain that the power source is equipped with a relief valve set to open at 2100-2250 psi/145-155 bar.

CONNECT HOSES

1. Wipe all hose couplers with a clean lint-free cloth before making connections.
2. Connect the hoses from the hydraulic power source to the tool fittings or quick disconnects. It is a good practice to connect return hoses first and disconnect them last to minimize or avoid trapped pressure within the tool.

3. Observe the arrow on the couplers to ensure that the flow is in the proper direction. The female coupler on the tool is the inlet (pressure) coupler.

4. Move the hydraulic circuit control valve to the "ON" position to operate the tool.

Note: If uncoupled hoses are left in the sun, pressure increase inside the hoses may make them difficult to connect. Whenever possible, connect the free ends of the hoses together.

OPERATING PROCEDURES

WARNING

The following are general woodcutting procedures and techniques. Differences in the terrain, vegetation, and type of wood will make this information more or less valid for particular areas. For advice on specific woodcutting problems or techniques for your area, consult your local Stanley representative or your county agent. They can often provide information that will make your work safer and more productive.

CUTTING TIPS

1. Check the lean of the tree. Tie a weight to a piece of string about 2-feet long. Hang the weight in your line of sight. The string is a good vertical line to help you judge the lean of the tree. The tree should fall the way it is leaning. Trees that are straight (leaning no more than 5 degrees) generally can be felled in any direction.
2. Avoid felling across another tree, log, rocks, gully, or ridge. Do not fell straight uphill or downhill; fell the tree diagonally to the hill. Consider the wind direction and velocity. Do not attempt cutting in strong winds.
3. Check the weight distribution. A tree is heavier on the side with the most limbs. It will try to fall on its heavy side. Trim a few limbs to "balance" the tree.

4. Clear the work area. You need a clean area all around the tree for good footing. Get everything out of the area where the tree will fall. Do not cut trees near structures. Because of the danger of electrocution, use extreme care when cutting trees near power lines.

5. Before starting the cut, prepare your escape path. Make sure the escape path is clear of brush and branches. The escape path should be at an angle away from the direction of fall.

6. The chain saw should cut with very little pressure applied to the handle. If you have to force the saw to cut or if the cut is not straight, cease cutting immediately to prevent further saw chain and bar damage. See the Maintenance and adjustments section of this manual for chain replacement, sharpening or adjustment procedures.

7. Underwater models require daily preventive maintenance. See the Maintenance and Adjustments section of this manual for these maintenance procedures.

FELLING

(CUTTING DOWN A TREE)

(Figure 1)

1. Observe all safety precautions.

Notching or Undercutting

2. The notching or undercutting cut is made on the side you want the tree to fall. Place the saw so the hand guard is close to the tree trunk and the bucking cleat is dug in.

3. Start the cut horizontally. Pivot the nose of the bar in last. Cut to about one-quarter of the tree's diameter.



4. Make a diagonal cut down to meet the horizontal cut and remove the wood from the notch.

Felling or Back Cut

5. The felling or back cut is made on the side opposite and at least 2-inches above the horizontal undercut (the felling cut is made higher as the size of the tree increases). Place the saw so the hand guard is close to the tree trunk and the bucking cleat is dug in.

6. Start the cut horizontally. Pivot the bar in until the cut is being made parallel to the notch cut. Cut until the saw is about 1- or 2-inches from the notch. **Do not cut through the notch.**

Note: The uncut wood between the felling and notch cuts is called the hinge. The hinge controls the fall of the tree and should be of uniform thickness.

7. As the saw nears the back cut, watch the treetop and the cut for signs of movement. Be alert as soon as the tree starts to move, turn off the saw, pull it from the tree and move away quickly on your escape route.

8. For trees larger than bar length, make two felling cuts. Cut in as far as the bar will go, move to the other side and start the second cut in the same manner as the first while pivoting the saw to complete the felling cut.

BUCKING

Bucking is the sawing of a log or fallen tree into smaller pieces.

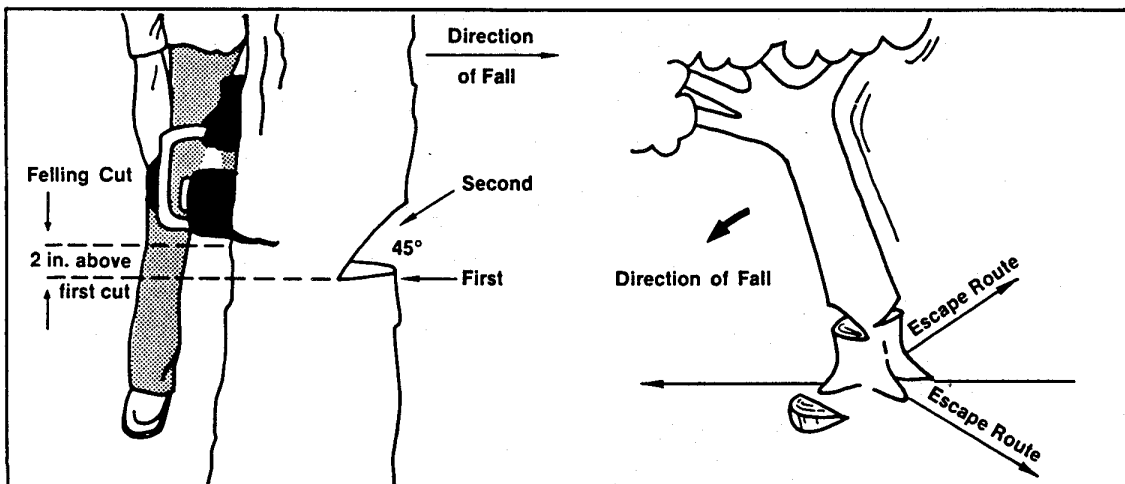


Figure 1. Felling a Tree.

1. Observe all safety precautions.
2. Use both hands. Grip the saw firmly.
3. Stand uphill. A log that is cut loose may roll downhill.
4. Keep the chain out of the dirt. Dirt will dull the chain. A dull chain is unsafe.
5. Stand to the left of the saw.

CROSSCUTTING

Note: Before starting to cut through a log try to imagine what is going to happen. Look out for stresses in the log and cut through the log in such a manner that the guide bar will not get pinched.

Logs with Pressure on Top (Figure 2)

1. Observe all safety precautions.
2. Begin with an upper cut, down from the top. **Do not cut too deeply.** A cut of about one-third of the log diameter is enough.
3. Finish with a bottom cut. The saw cuts should meet.

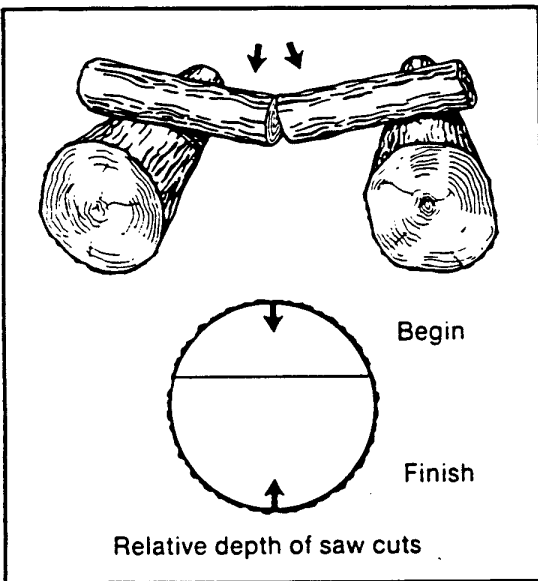


Figure 2. Crosscutting Logs with Pressure on Top.

Thick Logs Larger than Bar Length with Pressure on Top (Figure 3)

1. Observe all safety precautions.
2. Begin by cutting on the opposite side of the log.

3. Pull the saw towards you and cut from the top.
4. Cut from the bottom. Make a boring cut if the log is close to the ground.
5. Finish with a bottom cut.

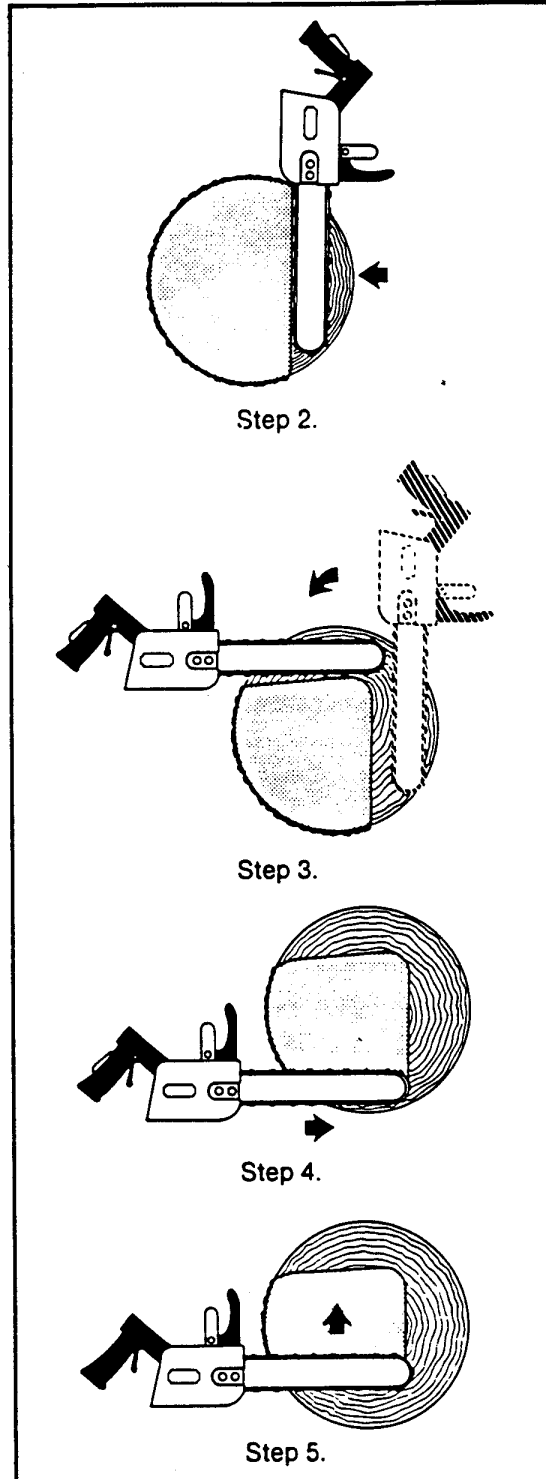


Figure 3. Crosscutting Logs Larger than Bar Length with Pressure on Top.

Logs/Limbs with Pressure on Bottom (Figure 4)

1. Observe all safety precautions.
2. Begin with a bottom cut. The depth of the cut should be about one-third of the log diameter.
3. Finish with an upper cut, down from the top. The saw cuts should meet.

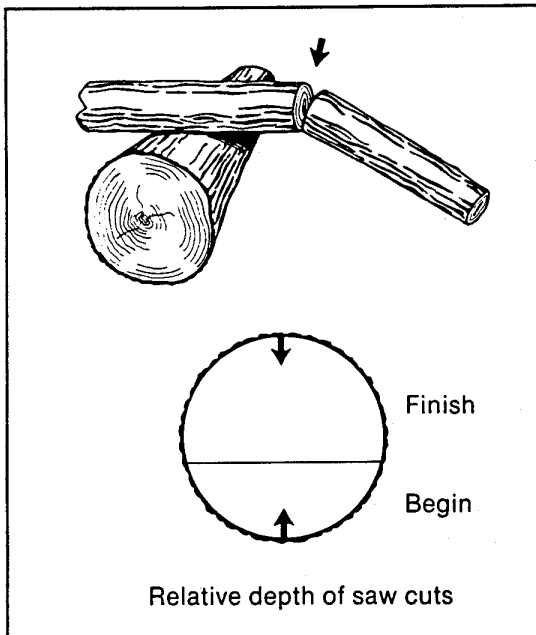


Figure 4. Crosscutting Logs/Limbs with Pressure on Bottom.

Thick Logs Larger than Bar Length With Pressure on the Bottom (Figure 5)

1. Observe all safety precautions.
2. Begin by cutting on the opposite side of the log.
3. Pull the saw towards you and cut from the top.
4. Cut from the bottom. Make a boring cut if the log is close to the ground.
5. Finish with a top cut.

PRUNING AND DEBRANCHING

1. Observe all safety precautions.
2. Use both hands. Keep a firm grip.
3. Be alert for kickback. Do not allow the tip of the bar to touch anything while the chain is in motion.

4. Do not cut overhead. Keep the saw below chest level. The chain is too close to your face in this position.

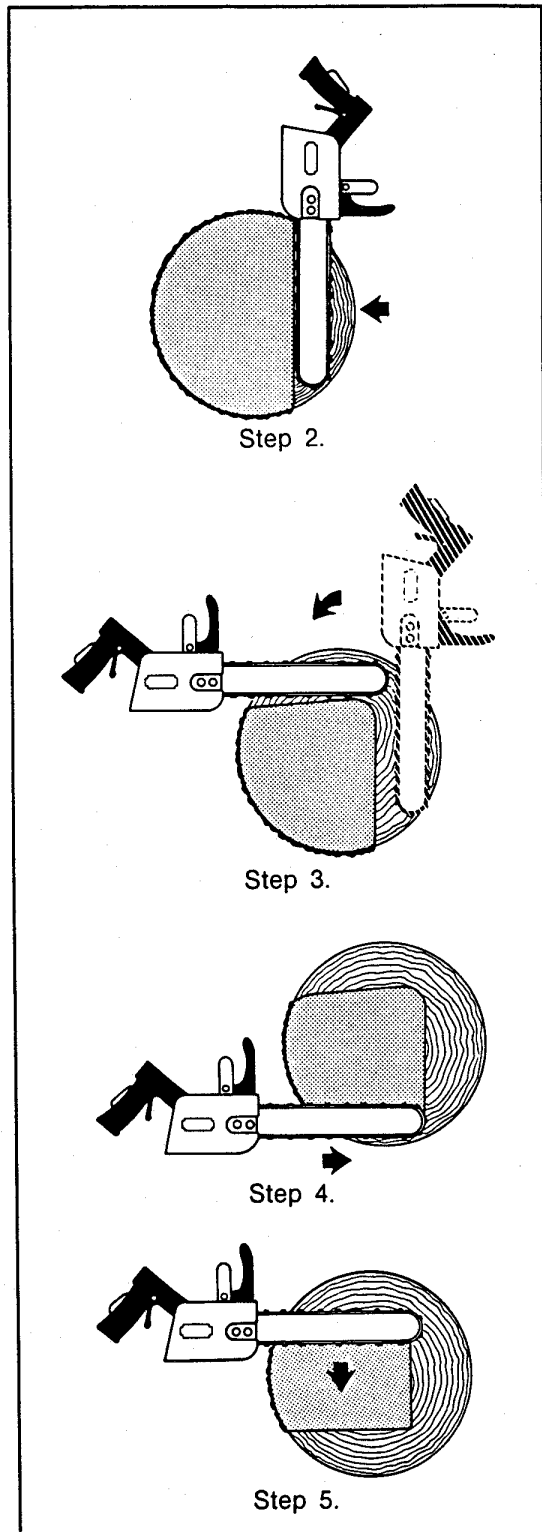


Figure 5. Crosscutting Logs Larger than Bar Length with Pressure on Bottom.

COLD WEATHER OPERATION

- If the saw is to be used during cold weather, preheat the hydraulic oil at low engine speed. When using the normally recommended oils, oil should be at or above 50°F/10°C (400 ssu/ 82 centistokes) before use.

Damage to the hydraulic system or saw can result from use with oil that is too viscous or thick.

- Cutting frozen wood causes the cutters to wear, crack and break at the back rivet hole unless proper precautions are taken. To extend chain life when cutting in cold weather:

- a. Be sure the oiler is working.
- b. Keep the chain tensioned and check often.
- c. Keep the cutters properly sharpened. Touch up at least every hour. Never force a dull chain to cut.
- d. Clean out the bar groove and keep the oil hole open. Turn the bar over to equalize wear on the rails.
- e. Always install a new sprocket with a new chain.

SERVICE INSTRUCTIONS



WARNING

Failure to properly maintain the hand guard, bar and chain or to replace with original parts specified by the manufacturer or the equivalent could result in serious personal injury.

Note: For orientation of the parts identified in the following procedures, refer to the parts location illustration at the rear of this manual.

PRIOR TO DISASSEMBLY

- Clean exterior of the tool.
- Obtain Seal Kit, part number 07830, to replace all seals exposed during disassembly. Note orientation of seals before removing them. Install new seals in the same way.

PRIOR TO REASSEMBLY

- Clean all parts with a degreasing solvent.
- Ensure that all seals that were exposed have been replaced with new parts.
- Apply clean grease or o-ring lubricant to all parts during reassembly.

ON-OFF VALVE DISASSEMBLY AND REASSEMBLY

DISASSEMBLY

1. Remove the plug button from the top of the handle. Pry under the edge and pull it from the handle.
2. Drive out the 3/16-inch roll pins securing the trigger to the valve handle assembly. De-

press the safety catch and remove the trigger through the bottom of the valve handle.

Note: It is not always necessary to drive the roll pins completely out of valve handle to allow removal of parts.

The safety catch can be removed at this time by driving out the 3/16-inch roll pin, but this is not necessary for servicing the on-off valve.

3. Push the on-off valve out through top of the valve handle.
4. On o.c./c.c. valves, drive out the 5/32-inch roll pin to remove the keeper, spring, and washers. Remove the o-ring securing the selector screw to service its o-ring.
5. On o.c. or c.c. valves, use snap-ring pliers to remove the retaining ring and slide off the spring and spring washers.
6. Clean and inspect the valve and its bore in the handle carefully. The valve and bore should have a polished appearance without scoring or deep scratches. Excessive wear indicates contaminated oil in the system.

REASSEMBLY

1. Lubricate and install the o-ring in the bottom of the valve bore.
2. Lubricate and install the o-ring on the valve.
3. Install one spring washer in each end of the spring and secure to the valve with the retaining ring or the 5/32-inch roll pin and keeper.
4. Lubricate the valve and o-rings. Install the valve in the bore from the top.
5. Replace the safety catch (if removed previously). Drive in the 3/16-inch roll pin. Make sure the spring is properly located in the recess of the handle.
6. Depress the safety catch and slide the trigger through the bottom of the handle. Depress the trigger and safety catch so the roll pin directly over the valve center line can be installed. Drive in the 3/16-inch roll pin.

7. Line up the trigger with its pivot by inserting a 3/16-inch punch to maintain alignment while driving the roll pin into the handle. Install the 3/16-inch roll pin in the trigger pivot hole.
8. Replace the plug button.
9. Check the safety catch/trigger mechanism for proper operation. The trigger must not activate the tool without the operator first depressing the safety catch.

MOTOR DISASSEMBLY, CLEANING AND INSPECTION, AND REASSEMBLY

DISASSEMBLY

1. Remove the two 5/16 nuts and flatwashers securing the chain guard to the valve handle assembly. Remove the guard.
2. Loosen the chain tension screw and remove the chain and bar from the valve handle assembly.
3. Clamp the rim sprocket (a chain type locking wrench works best) and remove the 1/2-20 L.H. threaded nut securing the rim sprocket and sprocket adapter to the motor drive shaft.
4. Remove the washer, rim sprocket, and sprocket adapter.
5. Remove the large internal retaining ring securing the output shaft ball bearing.
6. Remove the eight 10-24 capscrews securing the rear gear housing to the valve handle assembly.
7. Using a flat-bladed screwdriver or similar tool, gently and evenly pry **all around** the groove between the rear gear housing and the valve handle assembly. Lift the rear gear housing straight up. **Do not** tilt the rear gear housing or pry on the flat surface inside the surrounding groove. Damage to the sealing surfaces could result.

Note: The gears and idler shaft may remain in the rear gear housing. Do not drop or damage them.

8. Remove the gears, idler shaft and drive key and support the valve handle assembly so the drive shaft and bearing can be removed. Use a soft faced hammer and tap on the small end of the drive shaft.
9. Remove the internal retaining ring securing the seal back-up washer and seal. Remove the seal back-up washer and seal. Note their orientation.
10. To remove the drive shaft ball bearing, support the bearing and push out the drive shaft from the threaded end. Do not damage the threads.

CLEANING AND INSPECTION

Inspect and clean all parts as follows:

Bushings

- The inside of the bushings should be gray with some bronze showing through. If a significant amount of yellow-bronze shows, bushing replacement is required. Inspect drive shaft for corresponding wear and replace as required.

Note: Remove bushings as required using a 3/8-inch collet and slide hammer from Bearing Puller Kit, part number 05064.

Gear Chamber

- The chamber bores and bottoms around the shaft bushings should be polished and smooth. The flat surface surrounding the gear chambers and bolt holes should be flat and free of nicks which could cause misalignment or leaks.

Gears

- The gears should have straight tips without nicks, square tooth ends and smooth even polish on the teeth and end surfaces. Check for cracks at groove in the drive gear bore.

Valve Handle Assembly

- The surface near the gears should show two overlapping polished circles without a step. The bottom of the o-ring groove should be smooth as should the rest of the flat surface. The bore for the shaft seal should be smooth or leakage may occur.

Drive Shaft

- The diameter should be smooth on each side of the v-groove keyway; signs of polishing

are normal. Grooves, roughness or a reduced diameter are indications of fluid contamination. Replace the bushings and seals if the drive shaft requires replacement.

- Check the hydraulic system for excess contamination in the fluid and for filter condition. Operating conditions may require changing from a 25 micron filter to an oversized 10 micron filter.

REASSEMBLY

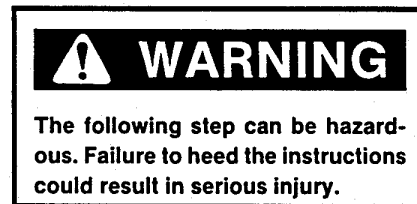
1. Support the inner race of the ball bearing and install the ball bearing on the drive shaft.
2. Using an arbor press, install motor bushings using Installation Tool, part number 11916. Install with the split lines in adjacent bushings facing each other.
3. Protect the gear face of the valve handle assembly and install the drive shaft seal with the lip facing the gear face. Install the seal back-up washer and retaining ring.
4. Place the valve handle assembly in the arbor press (large bearing bore up). Allow clearance for insertion of the drive shaft. Grease the motor shaft keyway and insert the drive shaft and ball bearing assembly (threaded end up) into the valve handle assembly until the press is required for further insertion.
5. Using a sleeve with a diameter only slightly smaller than the outer race of the bearing, press the bearing and drive shaft into the valve handle assembly with the arbor press. **Do not** press on the end of the drive shaft, only the bearing outer race. Install the internal retaining ring to secure the bearing.
6. Install the needle roller key in the v-groove of the drive shaft. Apply a small amount of grease for retention of the key. Install the drive gear over the key and drive shaft.
7. Install the idler shaft and gear.
8. Grease the face seal o-ring and install in its groove in the valve handle assembly.
9. Align the screw holes in the rear gear housing with those in the valve handle assembly. Carefully slide the rear gear housing straight over the gears and shafts. Do not force together. The assembly is a close fit but does not require force if the parts are correctly aligned.

Note: The screw holes will only match one way.

10. Check that the rear gear housing is fully seated on the valve handle assembly. Rotate

11. Install and tighten the eight 10-24 socket head capscrews securing the rear gear housing to the valve handle assembly. Check for freedom of rotation.

12. Place the sprocket adapter (flanged end first), rim sprocket, and washer on the drive shaft and secure with the 1/2-20 L.H. threaded nut. Clamp the rim sprocket (a chain type locking wrench works best) and tighten the nut securely.



13. Connect the saw to a hydraulic power source and check for proper operation. When new parts are installed it may be necessary to perform a break-in procedure on the motor. **READ THE FOLLOWING CAREFULLY BEFORE PROCEEDING.**

- a. Make sure the hydraulic power source is running at the lowest gpm/lpm rate it can while still producing full pressure.
- b. Grasp the saw firmly in a bench vise and place the correct size wrench on the 1/2-20 nut securing the sprocket adapter.
- c. Connect the hydraulic power source to the saw and turn the power source valve to the "ON" position.
- d. With a firm grip on the saw and wrench, **SLOWLY** squeeze the trigger to activate the saw.
- e. Turn the motor shaft both against and with the direction of rotation.



- f. Release the trigger and remove the wrench.
- g. Activate the saw to determine that the motor starts and runs freely.
- h. If the motor is not starting or running freely, carefully repeat this procedure until the motor performs satisfactorily.

MAINTENANCE AND ADJUSTMENTS

GENERAL MAINTENANCE TIPS

There are many simple maintenance tasks which, if performed, can keep a chain saw operating at a high level of efficiency. Routine maintenance will also keep replacement costs down on the parts of the chain saw, which occasionally wear out.

Bar Groove Wear

The wear pattern of the bottoms of the chain cutters, tie straps, and drive lengths is a good indication of the condition of the bar.

1. If the bottoms of the drive links are worn flat, the groove is too shallow in the tail or flat section of the bar. The groove must be ground deeper by an authorized chain saw dealer or the bar replaced.
2. If the drive links are worn concave, the groove is shallow in the bar nose. It is possible that the armor-tip of the bar nose has worn off. The groove should be rebuilt, reground or the bar replaced.

In summary, the groove width should not allow the chain to wobble from side to side when moved with fingers. Groove depth should range between 5/16-inch/8 mm to a maximum of 7/16-inch/11 mm.

Bar Rail Wear

A quick check can be made to determine rail wear. Put a straight edge against the bar and the cutting edge (figure 6). Force the cutter sideways as far as it will go with the straight edge. There should be 1/16- to 1/8-inch/1.5 to 3 mm gap between the straight edge and the side of the bar. The chain should be supported

squarely by the bar rails. If not, the bar is worn and the groove is sloppy. Authorized chain saw dealers have equipment to close the rails.

If the chain saw is used frequently, check the bar for flat and even rails. Rails must be flat and square with side of bar and the bar itself must be perfectly straight. If bows or bends are present in the bar, a dealer should attempt to remove them.

If the bar rails are uneven (stepped), the chain is leading off the cutter. The rails should be reground by an authorized dealer.

Chain Lubrication

Soak a new chain overnight in SAE 30 oil.

Before cutting, check to make sure that oil is being thrown from the nose of the bar.

Chain Tension

Correct chain tension is very important throughout the life of the chain. Check chain tension often during use (when the saw is stopped and the bar and chain are cool). The chain should move easily around the bar when pulled by hand. Watch tension and lubrication during prolonged cutting periods.

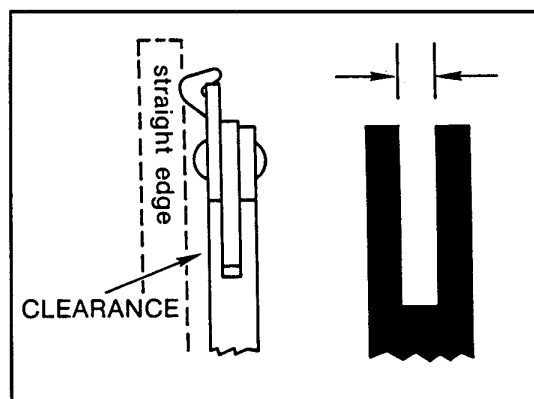


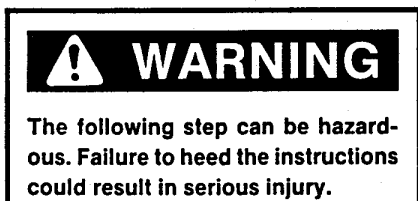
Figure 6. Rail Wear.

AUTOMATIC OILER ADJUSTMENT

1. Observe all safety precautions.
2. The automatic oiler adjustment plug is located in the top-forward portion of the valve handle assembly. The oil volume can be adjusted with a 3/16-inch allen wrench by turning the plug counterclockwise to increase output and turning clockwise to decrease output.

Note: Oil output will vary proportionally to load and operating pressure. It should be adequate for most operations as adjusted at the factory.

3. Initial oiler adjustment is made with the bar, chain, and chain guard removed.



4. Connect the saw to a hydraulic power source and check for proper operation. **READ THE FOLLOWING CAREFULLY BEFORE PROCEEDING.**

- a. Make sure the hydraulic power source is running at the lowest gpm/lpm rate it can while still producing full pressure.
- b. Grasp the saw firmly in a bench vise and place the correct size wrench on the 1/2-20 nut securing the sprocket adapter.
- c. Connect the hydraulic power source to the saw and turn the circuit control valve to the "ON" position.
- d. With a firm grip on the saw and wrench, **SLOWLY** squeeze the trigger to activate the saw.
- e. Adjust the oiler for a flow of approximately one drop every one to two seconds.
- f. Release the trigger and remove the wrench.

CHAIN TENSION ADJUSTMENT

1. Observe all safety precautions.
2. When the chain appears loose, lubricate it well and let it cool for a few minutes to allow for contraction of the chain. Disconnect the saw from its hydraulic power source.

Note: Perform steps 3 through 6 while holding the top end of the bar upward.

3. Loosen the two 5/16-24 bar stud nuts slightly.
4. Tighten the chain tension screw until the bottoms of the tie straps and cutters just touch

the bar rails of the bottom of the bar. On sprocket nose and roller nose bars the chain must be slightly tighter.

5. Pull the chain around the bar by hand to be sure it fits the sprocket and bar properly. The chain should move easily.

6. Hold the bar tip up as you tighten the two 5/16-24 bar stud nuts.

7. Connect the saw to an hydraulic power source. Operate the chain at low speed (gpm) for a minute or two while pumping extra oil on the chain.

8. Stop the saw and check the tension. If it has loosened, disconnect the saw from the hydraulic power source and perform steps 3 through 6 again to tighten the chain to the correct tension.

9. Reconnect the saw to the hydraulic power source. Operate the saw and make a few easy cuts. Check chain tension and readjust if necessary (disconnect the saw from the hydraulic power source and perform steps 3 through 6).

Note: Never break in a new saw chain under a heavy cutting load.

10. Watch saw chain tension carefully for the first half-hour of cutting.

CHAIN SHARPENING (FIGURE 7)

OREGON 21AP (.325 PITCH) CHAIN
OREGON 34SL/CARLTON K2L-GL
(.325 PITCH) CHAIN
OREGON 72LG/72LP (3/8 PITCH)
CHAIN

Note: Chain type stamped on drive link.

1. Observe all safety precautions.
2. Use OREGON file holder and the proper round file for the chain to be sharpened (see ACCESSORIES). Press the file holder so it rides on both the cutter top plate and depth gauge with the guide marks in line with the length of the chain.
3. File all of the cutters on the side of the chain opposite yourself in the direction shown.
4. Hold the file handle at the appropriate angle as you make a few firm strokes away from yourself while applying pressure against the cutting edge.

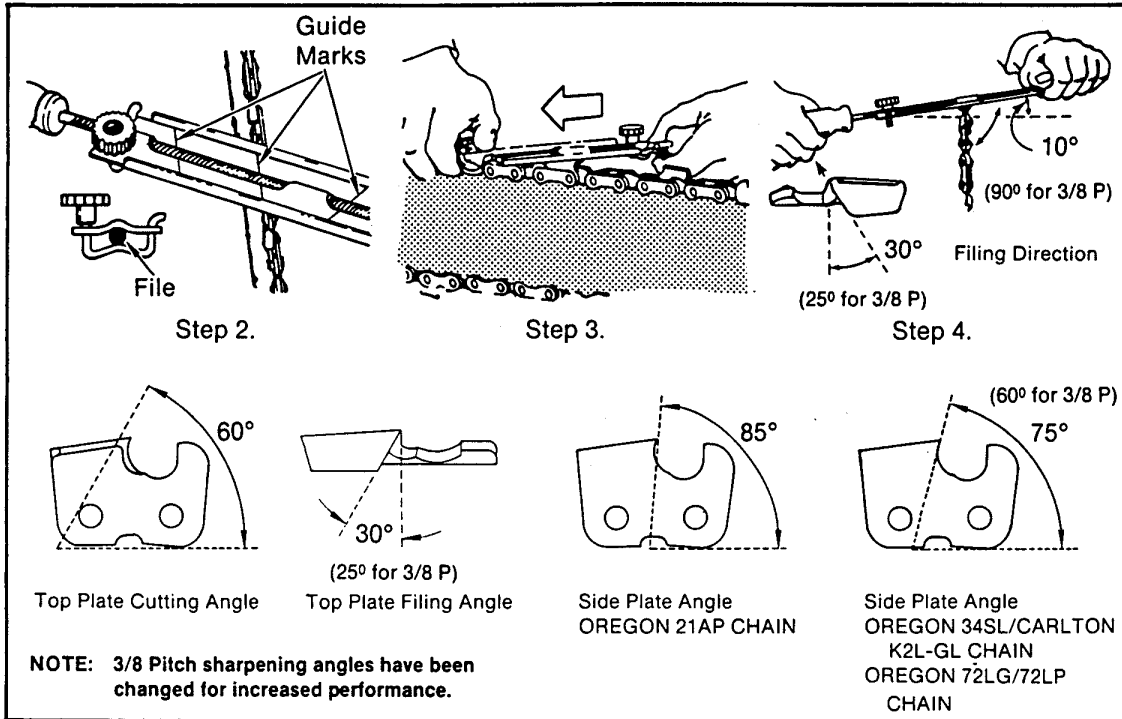


Figure 7. Chain Sharpening.

5. Move to the other side of the chain and file all of the cutters opposite to complete chain sharpening. File all of the cutters uniformly.

SETTING THE DEPTH GAUGES (FIGURE 8)

1. Observe all safety precautions.
2. Place the OREGON Gaugit, OREGON part number 22290, on the chain after every third or fourth sharpening. If the depth gauges extend above the slot, file them level with a flat file. Depth gauge setting is .025-inch.
3. After lowering, round off the front edge to its original shape.

UNDERWATER MODEL PREVENTIVE MAINTENANCE

1. After each use, dip or spray the entire tool with a water displacing oil such as WD40. Pay particular attention to the on-off valve and trigger area of the valve handle (under the plug button), the drive sprocket, the chain, and the bar.
2. Purge the motor shaft bearing by pumping a **marine** type of grease (Stanley part number 03201) into the grease fitting at the front of the motor housing before storing the tool.

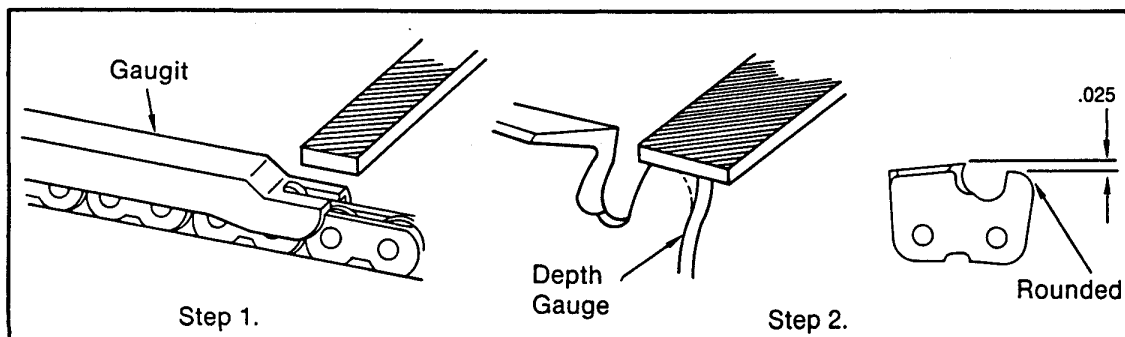


Figure 8. Setting Depth Gauge.

TROUBLESHOOTING

If symptoms of poor performance develop, the following chart can be used as a guide to correct the problem.

When diagnosing faults in operation of the saw, always check that the hydraulic power

source is supplying the correct hydraulic flow and pressure to the saw as listed in the table. Use a flowmeter known to be accurate. Check the flow with the hydraulic oil temperature at least 80° F/27° C.

PROBLEM	CAUSE	REMEDY
Cuts slow.	Insufficient oil flow or low relief valve setting.	Adjust oil flow to proper gpm. For optimum performance adjust relief valve to 2250 psi/155 bar.
	Chain dull.	Sharpen per instructions or replace.
	Backpressure too high.	Should not exceed 250 psi/17 bar at 8 gpm/30 lpm measured at the end of the tool operating hoses.
Bar turns color.	Insufficient oiler flow.	Adjust oiler per service instructions.
Tool does not run.	Power unit not functioning.	Check power unit for proper flow and pressure (4 gpm/15 lpm at 1500 psi/104 bar minimum for CS05, 7 gpm/26 lpm at 1000 psi/70 bar minimum for CS06).
	Coupler or hoses blocked.	Remove obstruction.
	Mechanical failure.	Disassemble tool and inspect for damage.
Tool runs backwards.	Pressure and return reversed.	Connect for proper flow direction. Motor shaft rotates clockwise.
On-off trigger is hard to press.	Pressure and return reversed.	Correct for proper flow direction.
	Backpressure too high.	Should not exceed 250 psi/17 bar at 8 gpm/30 lpm measured at the end of the tool operating hoses.
Oil leakage around drive sprocket.	Motor shaft seal failure.	Replace as required. Make sure that oil present is not the result of excess oiler flow.
Oil leakage between rear gear housing and valve handle assembly.	Motor face seal failure.	Replace as required.

SPECIFICATIONS

Capacity	CS05 12- and 15-inch/30 and 38 cm cut lengths
	CS06 12-, 15-, and 20-inch/30, 38, and 51 cm cut lengths
Weight	6 1/4 lbs/2.8 kg (without bar)
Length	14-inches/36 cm (without bar)
Width	9-inches/23 cm
Pressure	CS05 1500-2000 psi/105-140 bar
	CS06 1000-2000 psi/70-140 bar
Flow Range	CS05 4-6 gpm/15-23 lpm
	CS06 7-9 gpm/26-34 lpm
Optimum Flow	CS05 5 gpm/19 lpm
	CS06 8 gpm/30 lpm
Porting	8 SAE o-ring
Connect Size and Type	3/8-inch NPT Male Adapter
Hose Whips	No
Motor	Integral
Kickback Reduction Features	Low kickback saw chain, small radius saw bar, front hand guard, low inertia motor/drive system

NOTE

Weights, dimensions and operating specifications listed are subject to change without notice. Where specifications are critical to your application, please consult the factory.

ACCESSORIES

PART NUMBER	DESCRIPTION
04643	Saw Chain for 20-inch/51 cm Cut Saw Bar (3/8 Pitch)
05096	Saw Holster
05132	Grease Gun for Sprocket Nose Bars
05144	Chain/Bar Guard
07629	Rim Sprocket, 7 Tooth, 0.325 Pitch
07638	15-inch/38 cm Cut Saw Bar (0.325 Pitch)
07639	20-inch/51 cm Cut Saw Bar (0.325 Pitch)
07641	Saw Chain for 15-inch/38 cm Cut Saw Bar (0.325 Pitch)
07642	Saw Chain for 20-inch/51 cm Cut Saw Bar (0.325 Pitch)
07935	File Guide with 3/16-in. File — 21AP Chain (0.325 Pitch)
08347	12-inch/30 cm Cut Saw Bar (0.325 Pitch)
08348	Saw Chain for 12-inch/30 cm Cut Saw Bar (0.325 Pitch)
09097	20-inch/51 cm Cut Saw Bar (3/8 Pitch)
09098	Rim Sprocket, 7 Tooth, 3/8 Pitch
11299	File Guide with 7/32-in. File — 72LG/72LP Chain (3/8 Pitch)
11464	Scrench (combination screwdriver — bar nut wrench)
12363	File Guide with 4.5 mm File — 34SL/K2L-GL Chain (0.325 Pitch)

SERVICE TOOLS

PART NUMBER	DESCRIPTION
04337	O-Ring Tool Kit
05064	Bearing Puller Kit
07830	Seal Kit
11916	Motor Bushing Installation Tool

WARRANTY

Hand held tools and their parts are warranted against defects in materials and workmanship for a period of 12 months from the date of purchase. Exceptions are cutting parts, steels, and other parts not manufactured by Stanley (such as impact mechanisms, alternators, regulators, and hoses), and parts subject to normal wear and tear (such as o-rings, saw blades, and other parts that become worn through normal use of the tool).

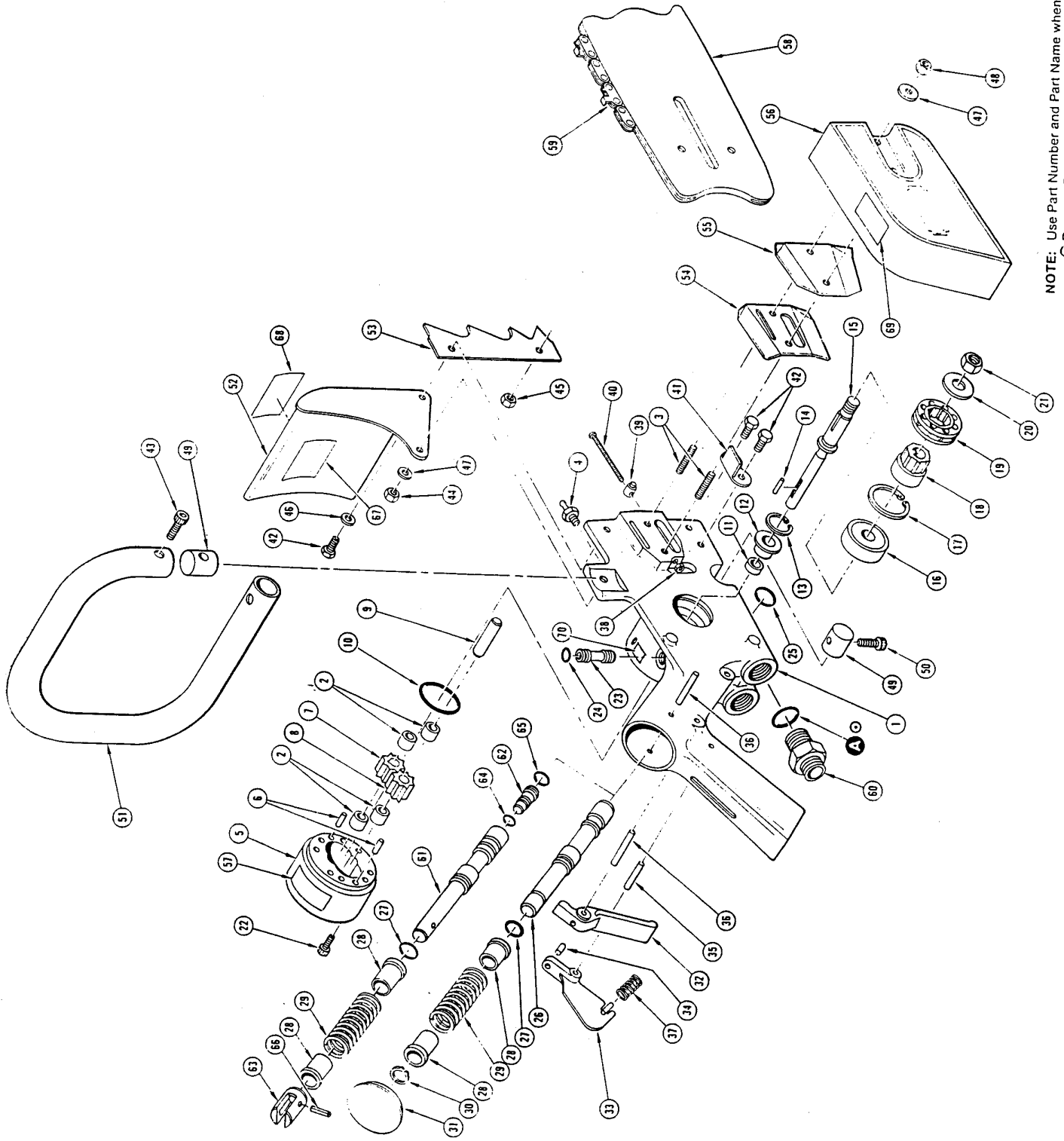
The Warranty Registration Card packed with the tool must be filled out and returned to Stanley upon receipt of the tool.

Stanley reserves the right to replace or repair only those parts which under our examination prove to have been defective at the time of purchase.

Shipping charges are prepaid by the customer unless otherwise authorized by Stanley.

The warranty is void if maximum flow and pressure ratings are exceeded.

There is no other warranty expressed or implied.



NOTE: Use Part Number and Part Name when order
 Ⓞ Denotes Part in Seal Kit
 ⓐ Supplied As Part Of (60)

PARTS LIST

Item No.	Part No.	Qty.	Description
1	07693	1	Valve Handle Assy. (Incl. Items 2 & 3)
	07713	1	Valve Handle Assy. — U/W Model (Incl. Items 2, 3, & 4)
2	04041	4	Bushing — Garlock 06DU06
3	07630	2	Stud
	07712	2	Stud — U/W Model
4	06767	1	Grease Fitting 1/4-28 — U/W Model
5	07652	1	Rear Gear Housing Assy. — CS06 (Incl. Items 2 & 6)
	07834	1	Rear Gear Housing Assy. — CS05 (Incl. Items 2 & 6)
6	00289	2	Dowel Pin 3/16 x 3/4
7	04106	1	Drive Gear — CS06
	07832	1	Drive Gear — CS05
8	04105	1	Idler Gear — CS06
	07831	1	Idler Gear — CS05

SEAL KIT DATA

Part No.	Qty.	Description
Seal Kit Part No. 07830		
00020	1	O-Ring
00026	1	O-Ring
00055	1	O-Ring
01362	1	O-Ring
01605	2	O-Ring
04037	1	Seal
07626	1	O-Ring
07627	1	O-Ring

PARTS LIST

Item No.	Part No.	Qty.	Description
9	07612	1	Idler Shaft
10	00020	1	O-Ring 1.670 x 1.810 x .070 ⊙
11	04037	1	Seal — Omniseal AR10400-110 WC ⊙
12	07615	1	Seal Back-Up Washer
13	04856	1	Retaining Ring — 7/8 Int.
14	04044	1	Needle Roller .0938 x .380 Lg. Torrington Q-8290
15	07613	1	Drive Shaft
	07710	1	Drive Shaft — U/W Model
16	00335	1	Ball Bearing SKF 6202-RS
	07720	1	Ball Bearing — U/W Model SKF 6202-RS
17	06635	1	Retaining Ring 1-3/8 Int.
	07721	1	Retaining Ring 1-3/8 Int. STNLS — U/W Model
18	07616	1	Sprocket Adapter
19	07629	1	Rim Sprocket — Oregon 11892 .325P x 7 Tooth
20	07617	1	Washer
21	00453	1	Nut 1/2-20 L.H.
	00808	1	Nut 1/2-20 L.H. — U/W Model
22	00753	8	Capscrew 10-24 x 1-1/4 Hex Soc Hd
	09622	8	Capscrew 10-24 x 1-1/4 HSH STNLS — U/W Model
23	02921	1	Automatic Oiler
24	01362	1	O-Ring 5/16 x 7/16 x 1/16 ⊙
25	07627	1	O-Ring 5/8 x 3/4 x 1/16 ⊙
26	07607	1	On/Off Valve, o.c.
	07608	1	On/Off Valve, c.c.
	07717	1	On/Off Valve, o.c. — U/W Model
	10533	1	On/Off Valve, o.c./c.c. (Incl. Items 61-66)
27	07626	1	O-Ring 1/2 x 5/8 x 1/16 ⊙
28	07609	2	Spring Washer
29	07610	1	Spring
30	04512	1	Retaining Ring 1/2 Ext.
	07719	1	Retaining Ring 1/2 Ext. STNLS — U/W Model
31	07625	1	Plug Button
32	07605	1	Trigger
33	07603	1	Safety Catch
34	00072	1	Roll Pin 1/8 x 3/8
	00875	1	Roll Pin 1/8 x 3/8 STNLS — U/W Model
35	07624	1	Roll Pin 3/16 x 1
	07718	1	Roll Pin 3/16 x 1 STNLS — U/W Model
36	03009	2	Roll Pin 3/16 x 1-3/8
	03278	2	Roll Pin 3/16 x 1-3/8 STNLS — U/W Model
37	07602	1	Spring
	07715	1	Spring — U/W Model
38	06971	1	Lock Nut 10-24
	07724	1	Lock Nut 10-24 STNLS — U/W Model
39	07620	1	Bar Adjustment Nut
	07714	1	Bar Adjustment Nut — U/W Model
40	07632	1	Screw 10-24 x 2 Fil. Hd
	07723	1	Screw 10-24 x 2 Fil. Hd STNLS — U/W Model
41	07623	1	Chain Catcher
42	07628	3	Capscrew 1/4-20 x 5/8 Hex Hd
	07545	3	Capscrew 1/4-20 x 5/8 HSH STNLS — U/W Model
43	00144	1	Capscrew 5/16-18 x 1-1/4 Hex Soc Hd
	00230	1	Capscrew 5/16-18 x 1-1/4 STNLS Hex Soc Hd — U/W Model
44	00429	1	Nut 5/16-18
45	00038	1	Nut 1/4-20
	00788	1	Nut 1/4-20 STNLS — U/W Model
46	04539	1	Washer 1/4
47	02634	3	Washer 5/16
48	07351	2	Nut 5/16-24
	07722	2	Nut 5/16-24 STNLS — U/W Model
49	02649	2	Handle Bar Retainer
50	02688	1	Capscrew 5/16-18 x 3/4 Hex Soc Hd
	02764	1	Capscrew 5/16-18 x 3/4 STNLS Hex Soc Hd — U/W Model
51	07611	1	Handle Bar
52	07473	1	Hand Guard
53	01116	1	Bucking Cleat
	01045	1	Bucking Cleat — U/W Model
54	07621	1	Chain Guide Plate — Inside
55	07622	1	Chain Guide Plate — Outside
56	07618	1	Chain Guard
57	03786	1	GPM Sticker — CS06
	03782	1	GPM Sticker — CS05
58	08347	1	Saw Bar — 12" Cut
	07638	1	Saw Bar — 15" Cut
	07639	1	Saw Bar — 20" Cut
59	06348	1	Saw Chain — 12" Cut Oregon 56 Drive Links
	07641	1	Saw Chain — 15" Cut Oregon 64 Drive Links
	07642	1	Saw Chain — 20" Cut Oregon 78 Drive Links
60	00936	2	Fitting 1/2 SAE to 3/8 NPTF Male
61	10535	1	Valve Spool o.c./c.c.
62	10536	1	Selector Screw
63	10537	1	Keeper
64	00026	1	O-Ring ⊙
65	16070	1	Retainer Ring ⊙
66	00190	1	Roll Pin
67	12412	1	Danger Sticker — Electrical
68	13907	1	Warning Sticker — Kickback
69	04746	1	Automatic Oiler Sticker
70	03693	1	Closed Center Sticker

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