INSTRUCTION MANUAL

GREENLEE®
UTILITY
A Textron Company

38569
Open-Center Long-Reach Chain Saw

Serial Codes AJN and AMR

Read and **understand** all of the instructions and safety information in this manual before operating or servicing this tool.

Register this product at www.greenlee.com

52026002 REV 8

4/17

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Description

The Open-Center Long-Reach Chain Saw is a hydraulically powered cutting tool intended for general tree trimming from the ground or from an aerial device.

The dielectric properties of the fiberglass pole reduce the chance of electric shock when the saw is used near energized electrical lines. Other features include an anti-kickback chain, a fully covered sprocket guard, a hand-stop safety collar, a trigger interlock, and a trigger guard.

Safety

Safety is essential in the use and maintenance of Greenlee Utility tools and equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

Purpose of this Manual

This manual is intended to familiarize all personnel with the safe operation and maintenance procedures for the 38569 Open-Center Long-Reach Chain Saw, Serial Codes AJN and AMR.

Keep this manual available to all personnel.

Replacement manuals are available upon request at no charge at www.greenlee.com.

Other Publications

SAE Standard J1273 (Hose and Hose Assemblies): Publication 99930323

KEEP THIS MANUAL

IMPORTANT SAFETY INFORMATION

SAFETY ALERT SYMBOL

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

⚠DANGER

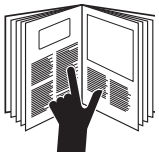
Immediate hazards which, if not avoided, WILL result in severe injury or death.

⚠WARNING

Hazards which, if not avoided, COULD result in severe injury or death.

⚠CAUTION

Hazards or unsafe practices which, if not avoided, MAY result in injury or property damage.



⚠WARNING

Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.

Failure to observe this warning could result in severe injury or death.

⚠WARNING

Electric shock hazard:

- This tool was tested to meet OSHA 1910.269 (dry test) when manufactured. It must be properly cleaned and maintained to ensure continued non-conductive properties. When using this unit near energized electrical lines, use only certified non-conductive hoses and proper personal protective equipment.
- Keep fiberglass extension clean and dry when working around energized electrical lines. Accumulated oil, dirt, and moisture increase the conductive properties of the tool.
- When using this tool near energized electrical lines, observe the instructions provided in DIN EN 50110-1. The significant sections of this standard are provided in the “Operation” section of this manual.

Failure to observe these warnings could result in severe injury or death.

⚠WARNING

Skin injection hazard:

- Do not use hands to check for leaks.
- Do not hold hose or couplers while the hydraulic system is pressurized.
- Depressurize the hydraulic system before servicing.

Oil under pressure easily punctures skin causing serious injury, gangrene or death. If you are injured by escaping oil, seek medical attention immediately.

IMPORTANT SAFETY INFORMATION

⚠WARNING

Before operating the saw, read and understand the following explanations in this manual:

- Pull-In

  Pull-in can occur when the blade at the bottom of the bar contacts a foreign object, such as a nail, or when the blade is pinched in the cut.

  The saw will be suddenly and forcefully pulled away from the operator.

- Push-back

  Push-back can occur when the blade at the top of the bar contacts a foreign object, such as a nail, or when the blade is pinched in the cut.

  The saw will be suddenly and forcefully pushed back toward the operator.

- Kickback

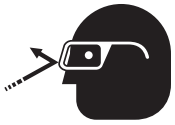
  Kickback can occur when the chain at the guide bar tip contacts anything. The bar of the saw will travel upward and back, toward the operator.

Failure to observe this warning could result in severe injury or death.

⚠WARNING

Wear a hard hat when using this tool.

Failure to observe this warning could result in severe injury or death.



⚠WARNING

Wear eye protection when operating this tool.

Failure to wear eye protection could result in serious eye injury from flying debris.

⚠WARNING

Wear hearing protection when using this tool.

Long-term exposure to high noise levels could result in hearing loss.

⚠WARNING

Wear foot protection when using this tool.

Failure to observe this warning could result in serious injury.

⚠WARNING

Some types of timber can produce hazardous dust when cut. Wear a dust mask to prevent breathing hazardous dust.

Failure to observe this warning could result in temporary breathing difficulty or serious injury.

⚠WARNING

Wear protective gloves when using this tool.

Failure to observe this warning could result in serious injury.

IMPORTANT SAFETY INFORMATION

⚠WARNING

- Do not change accessories, inspect, adjust or clean the tool or sharpen the chain when it is connected to a power source. Accidental start-up could result in serious injury.
- Keep the handles clean, dry and free of hydraulic fluid.
- Maintain a firm grip on tool, using both hands with thumbs and fingers encircling the handles at all times. Serious injury could result if an operator does not control the tool.
- Do not lock the trigger in the Power-ON position. Operator cannot stop tool when trigger is locked.
- Do not remove or modify the tool's safety trigger. Accidental start-up could result in serious injury.
- Wear protective gloves when handling or adjusting the chain. The chain can cut even when stationary.

Failure to observe these warnings could result in severe injury or death.

⚠WARNING

Saw body, bar, blade and other components will be hot during and after use. Use care when handling the saw. Hot surfaces can cause serious burns.

Failure to observe this warning could result in severe injury or death.

⚠WARNING

To transport the chain saw:

- Allow the chain to stop rotating.
- Wait for the chain to cool.
- Use an appropriate guide bar sheath or scabbard.
- Carry the saw with the guide bar toward the rear.

Failure to observe these warnings could result in severe injury or death.

⚠WARNING

Do not disconnect tool, hoses or fittings while the power source is running or if the hydraulic fluid is hot. Hot hydraulic fluid could cause serious burns.

⚠WARNING

Do not reverse hydraulic flow. Operation with hydraulic flow reversed could cause tool malfunction. Connect the pressure hose and tank hose to the proper ports.

⚠WARNING

Do not exceed the following hydraulic power source maximums:

- Hydraulic flow: 30.3 l/min (8 gpm).
- Pressure relief: 138 bar (2000 psi).
- Back pressure: 13.8 bar (200 psi).

Failure to observe this warning could result in severe injury or death.

⚠CAUTION

- Use this tool for trimming or pruning trees only. Any other use may result in injury or property damage.
- Inspect tool before use. Replace any worn, damaged or missing parts. A damaged or improperly assembled tool can malfunction, injuring nearby personnel.
- Inspect hydraulic hoses and couplings every operating day. Repair or replace if leakage, cracking, wear or damage is evident. Damaged hoses or coupling could fail resulting in injury or property damage.
- Ensure that all bystanders and unnecessary personnel are clear of the work area when operating the tool. Nearby personnel may be injured by falling debris.

Failure to observe these precautions may result in injury or property damage.

IMPORTANT SAFETY INFORMATION

⚠CAUTION

Hydraulic oil can cause skin irritation.

- Handle the tool and hoses with care to prevent skin contact with hydraulic oil.
- In case of accidental skin contact with hydraulic oil, wash the affected area immediately to remove the oil.

Failure to observe these precautions may result in injury.

⚠CAUTION

Vibration hazard:

Apply just enough pressure to do the work. Applying excess pressure to the tool can cause operator discomfort or temporary numbness.

Failure to observe this precaution may result in injury.

IMPORTANT

- Check the operation of the automatic oiler frequently. Refer to “Checking and Setting the Automatic Chain Oiler” in this manual.
- Check the chain frequently for proper tension and sharpness. Tension and sharpen as necessary. Refer to the instructions under “Saw Chain and Bar Maintenance.”
- Check the fluid level of the power source reservoir frequently. The automatic oiler uses hydraulic fluid to lubricate the bar and chain, and will cause the fluid level to drop.

IMPORTANT

Procedure for disconnecting hydraulic hoses, fittings or components:

1. Move the flow lever on the hydraulic power source to the OFF position.
2. Stop the power source.
3. Follow the sequence under “Disconnecting Hoses” to prevent pressure buildup. In case some pressure has built up, loosen hoses, fittings or components slowly.

Failure to observe these precautions may result in injury or property damage.

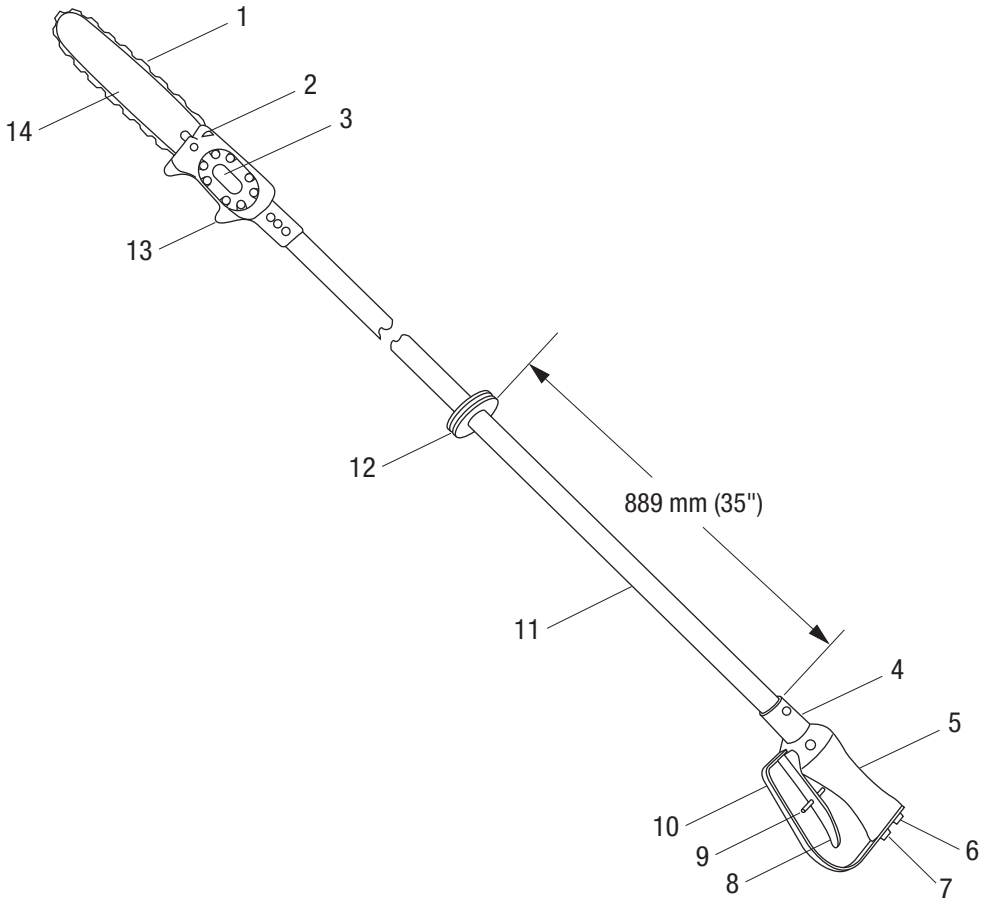
IMPORTANT

Emergency stop procedure:

1. Release the trigger.
2. Shut off the hydraulic power source.

Note: Keep all decals clean and legible, and replace when necessary.

Identification



Open-Center Long-Reach Chain Saws

1. Saw Chain
2. Automatic Oiler
3. Hydraulic Gear Motor
4. Serial Number
5. Handle
6. Return Port
7. Pressure Port
8. Trigger
9. Trigger Interlock Latch
10. Trigger Guard or Trigger Strap
11. Extension
12. Hand Stop
13. Saw Head
14. Guide Bar

Specifications

Open-Center Long-Reach Chain Saw

Type of Hydraulic System.....Open-center
Hydraulic Ports
  Pressure.....9/16–18 SAE O-ring boss
  Return.....3/4–16 SAE O-ring boss
Cutting Capacity..... 330 mm (13")
Chain Speed @
  30 l/min (8 gpm).....1280 m/min (4200 ft/ min)
Sound Power Level .....106 L_{WA}
Vibration .....4.88 m/s^2
Mass/Weight.....3.97 kg (8.75 lb)
Length ..... 1890 mm (74.5")
Width (at motor)..... 108 mm (4.25")
Depth of Body (at handle) ..... 152 mm (6")

Saw Chain

⚠WARNING

When replacement is necessary, select a saw chain that:

- meets applicable industrial safety code specifications
- is rated for 1280 m/min (4200 ft/min)

Failure to observe this warning could result in severe injury or death.

Pitch ..... 8.26 mm (0.325")
Gauge..... 1.47 mm (0.058")

Hydraulic Power Source

⚠WARNING

Do not exceed the following hydraulic power source maximums:

- Hydraulic flow: 30.3 l/min (8 gpm)
- Pressure relief: 138 bar (2000 psi)
- Back pressure: 13.8 bar (200 psi)

Failure to observe this warning could result in severe injury or death.

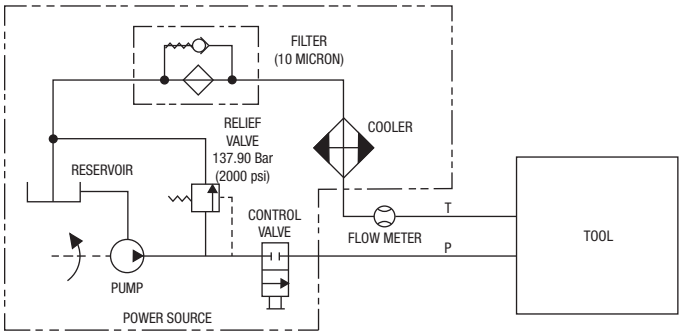
Hydraulic Power Source (cont'd)

Type of Hydraulic System.....Open-center
Flow
  Minimum .....18.9 l/min (5 gpm)
  Recommended .....22.7 l/min (6 gpm)
  Maximum .....30.3 l/min (8 gpm)
Filtration..... 10 micron (nominal)
Pressure Relief Setting .....138 bar (2000 psi)
Back Pressure (maximum)* .....13.8 bar (200 psi)

* 13.8 bar (200 psi) is the maximum agreed standard back pressure for the HTMA (Hydraulic Tool Manufacturers Association). Greenlee Utility tools will operate satisfactorily at this standard.

1. Maximum hydraulic fluid temperature must not exceed 60 °C (140 °F). A sufficient oil cooling capacity is needed to limit the hydraulic fluid temperature.
2. Hydraulic flow must not exceed 26.5 l/min (7 gpm). Install a flow meter in the return line to measure the rate of hydraulic flow before using the tool.
3. Pressure relief valve setting must not exceed 138 bar (2000 psi) at the tool's maximum flow. Locate the pressure relief valve in the supply circuit to limit excessive hydraulic pressure to the tool.

Hydraulic Schematic



Recommended Hydraulic Fluids

Use any non-detergent, petroleum-based hydraulic fluid which meets the following specifications or HTMA specifications.

S.U.S. @
  38 °C (100 °F) .....140 to 225
  99 °C (210 °F) ..... 40 minimum
Flash Point.....170 °C (340 °F) minimum
Pour Point.....–34 °C (–30 °F) minimum

Chain Saw Basics

This section introduces some basic principles of chain saw use: Hazard Prevention, Compression and Tension.

HAZARD PREVENTION

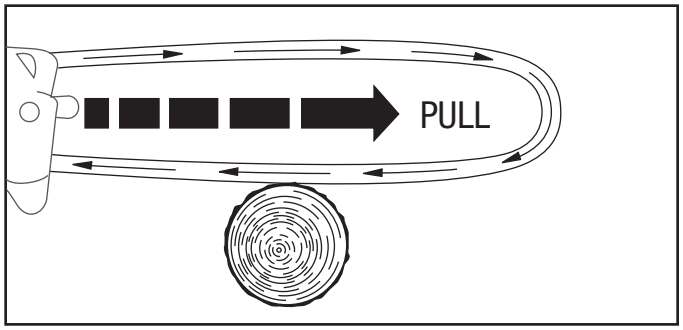
The cutting action of this chain saw is performed by a chain-type blade driven at high speed by a powerful hydraulic motor. When used carefully and properly, the chain saw is a highly effective cutting tool.

When used improperly, or when anything interferes with the normal rotation of the blade, the operator could very suddenly and very quickly lose control of the saw. Such loss of control can result in harm to the operator. The three terms that describe loss of control are pull-in, push-back, and kickback.

Pull-In

Pull-in can occur when the blade at the bottom of the bar is doing the cutting. If the blade is suddenly pinched in the cut, or if it contacts a foreign object such as a nail, the saw may be suddenly and forcefully pulled away from the operator.

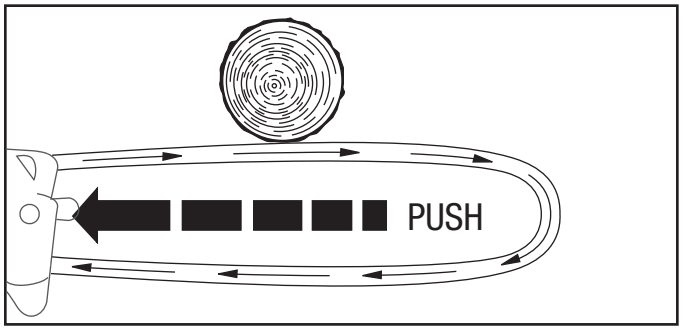
Pull-In



Push-Back

Push-back can occur when the blade at the top of the bar is doing the cutting. If the blade is suddenly pinched in the cut, or if it contacts a foreign object such as a nail, the saw will be suddenly and forcefully pushed back toward the operator.

Push-Back



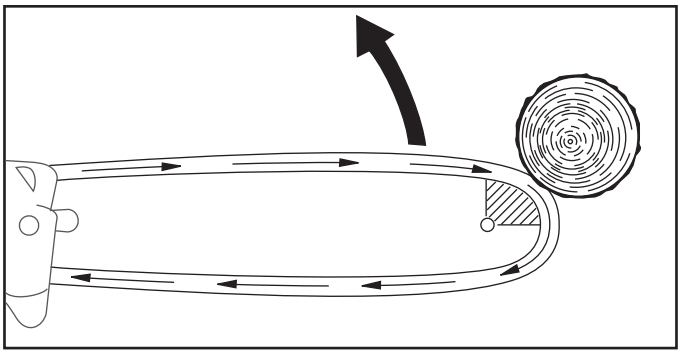
Kickback

Kickback is much more hazardous than pull-in or push-back. When kickback happens, the entire saw may rotate suddenly and forcefully. The bar of the saw may quickly travel upward and back, toward the operator.

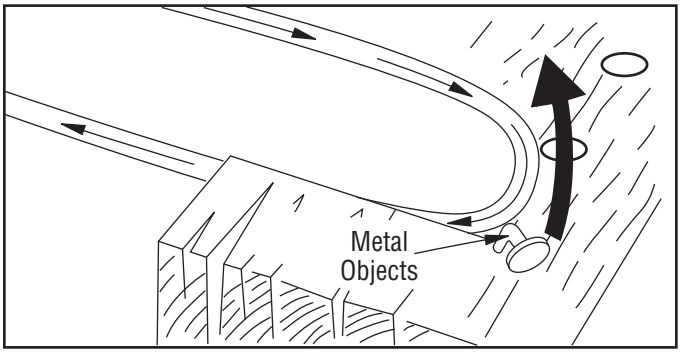
Kickback can occur when the blade at the guide bar tip contacts anything while the chain is rotating. Some causes for kickback are:

- using the guide bar tip for cutting.
- contacting a nail or other metal object when cutting.
- accidental contact when cutting more than one branch at a time.

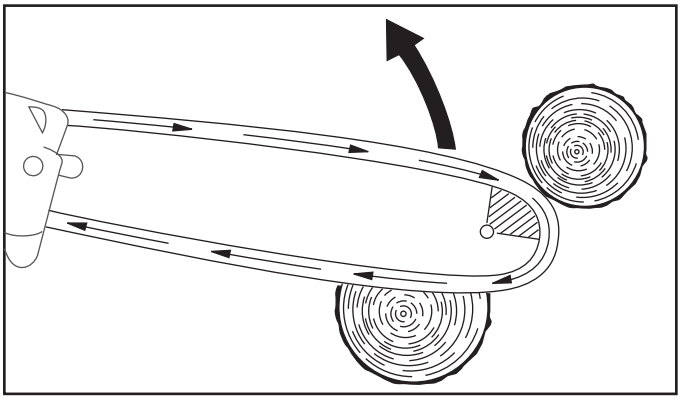
Using Guide Bar Tip for Cutting



Contact with Metal Objects



Cutting More Than One Branch at a Time



Chain Saw Basics (cont'd)

Preventing Pull-In, Push-Back and Kickback

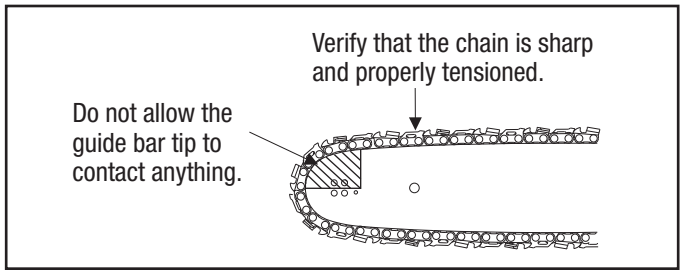
The chain/bar combination and shroud are intended to prevent or reduce the likelihood and severity of kick-back. Verify that these items are in good working order (chain is sharp and properly tensioned, shroud is not damaged, etc.) to get the maximum benefit from these features. If worn or damaged, replace these items with Greenlee Utility replacement parts.

General Tips:

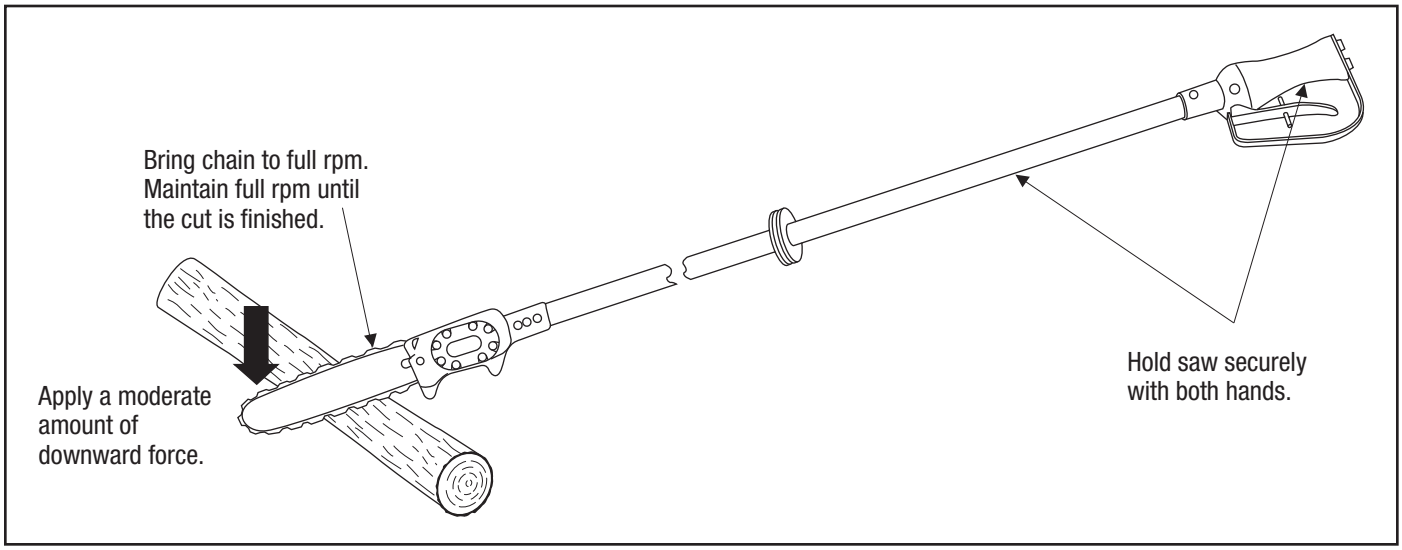
- Maintain the saw properly. Verify that the blade is sharp and has been properly tensioned.
- Do not allow the guide bar tip to contact anything.
- Do not over-reach.
- Do not use the saw above shoulder height.
- Cut only one limb, branch, or log at a time.
- Be aware that small-diameter limbs or branches are more likely to catch the blade, causing pull-in or kickback.

Cutting Procedure:

- Hold the chain saw securely with both hands and maintain a firm, secure grip.
- Bring the chain saw to full rpm before starting the cut. Maintain full rpm until the cut is completely finished.
- Apply a moderate amount of downward force to the saw.
- Cut straight through. Do not twist the saw during the cut.
- Be alert for the limb to shift, which may pinch the saw in the cut.
- Be alert for a limb or branch under tension to spring back when the cut is complete and the tension is released.



Cutting Procedure



Chain Saw Basics (cont'd)

Site Preparation Tips

- Prepare the cutting area by clearing away brush, branches, vines, etc.
- Remove any unnecessary tools and coil up excess hydraulic hose.
- Survey the limb or branch to predict the direction or path of fall. Ensure that no personnel are in that area.
- If working in a municipal area, plan the direction of fall so that a limb doesn't fall into a roadway, strike a nearby building, contact nearby power lines, etc.
- If the tree is on an incline, work uphill from the fall path. A branch might tend to bounce or roll downhill.

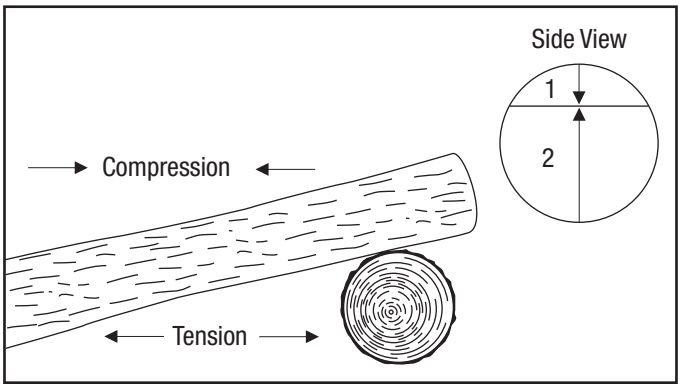
COMPRESSION AND TENSION

Any branch or log will have two forces acting on it—compression and tension. As the branch or log is cut, compression tends to push the two halves toward each other. Tension tends to pull the two halves apart.

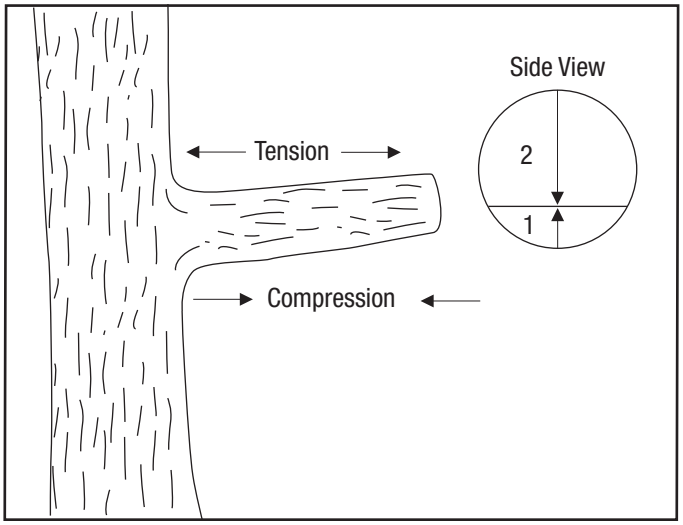
Refer to the illustrations. A log or limb supported at both ends has the compression on the top. A log or limb supported at one end has the compression on the bottom.

Make the first cut on the compression side. Cut through approximately 1/3 of the log's diameter. Make the second cut on the tension side. This will decrease the likelihood that the saw will become pinched in the cut.

Compression on Top



Compression on Bottom



Hoses and Fittings

Installation and Maintenance

Refer to publication 99930323, SAE J1273 (Hose and Hose Assemblies).

Replacement

Refer to a Greenlee Utility catalog or Greenlee Utility publication 99910322, Low Pressure Quick Couplers, Adapters and Hoses.

Hose Connections

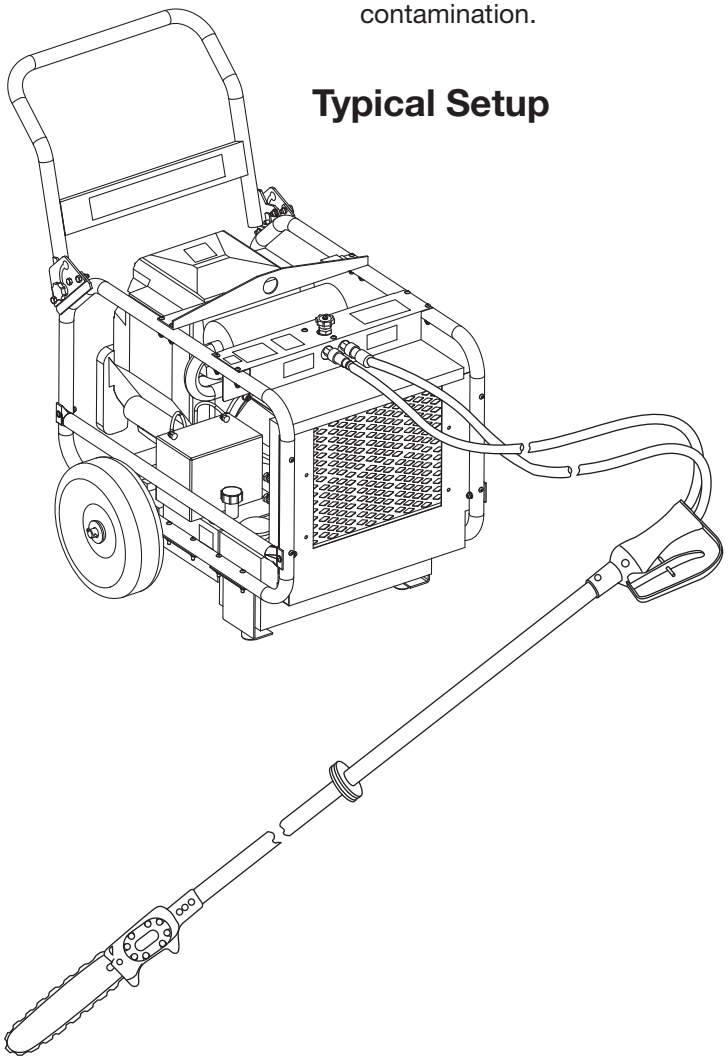
Connecting Hoses

1. Move the flow lever on the hydraulic power source to the OFF position.
2. Stop the hydraulic power source.
3. Connect the tank hose to the tank (or return) port on the power source, and then to the tank port on the tool.
4. Connect the pressure hose to the pressure port or hose coupler on the tool, and then to the pressure port on the power source.

Disconnecting Hoses

1. Move the flow lever on the hydraulic power source to the OFF position.
2. Stop the hydraulic power source.
3. Disconnect the pressure hose from the power source, and then from the tool.
4. Disconnect the tank hose from the tool, and then from the power source.
5. Install dust caps over the ports to prevent contamination.

Typical Setup



Operation

⚠WARNING

Electric shock hazard:

- This tool was tested to meet OSHA 1910.269 (dry test) when manufactured. It must be properly cleaned and maintained to ensure continued non-conductive properties. When using this unit near energized electrical lines, use only certified non-conductive hoses and proper personal protective equipment.
- Keep fiberglass extension clean and dry when working around energized electrical lines. Accumulated oil, dirt, and moisture increase the conductive properties of the tool.

Failure to observe these warnings could result in severe injury or death.

⚠WARNING

Skin injection hazard:

- Do not use hands to check for leaks.
- Do not hold hose or couplers while the hydraulic system is pressurized.
- Depressurize the hydraulic system before servicing.

Oil under pressure easily punctures skin causing serious injury, gangrene or death. If you are injured by escaping oil, seek medical attention immediately.

⚠WARNING

Saw body, bar, blade and other components will be hot during and after use. Use care when handling the saw. Hot surfaces can cause serious burns.

Failure to observe this warning could result in severe injury or death.

⚠WARNING

Wear a hard hat when using this tool.

Failure to observe this warning could result in severe injury or death.

⚠WARNING

Before operating the saw, read and understand the following explanations in this manual:

- Pull-In

  Pull-in can occur when the blade at the bottom of the bar contacts a foreign object, such as a nail, or when the blade is pinched in the cut.

  The saw will be suddenly and forcefully pulled away from the operator.

- Push-back

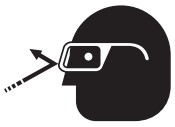
  Push-back can occur when the blade at the top of the bar contacts a foreign object, such as a nail, or when the blade is pinched in the cut.

  The saw will be suddenly and forcefully pushed back toward the operator.

- Kickback

  Kickback can occur when the chain at the guide bar tip contacts anything. The bar of the saw will travel upward and back, toward the operator.

Failure to observe this warning could result in severe injury or death.



⚠WARNING

Wear eye protection when operating this tool.

Failure to wear eye protection could result in serious eye injury from flying debris.

⚠WARNING

Wear hearing protection when using this tool.

Long-term exposure to high noise levels could result in hearing loss.

Operation (cont'd)

⚠WARNING

Wear foot protection when using this tool.

Failure to observe this warning could result in serious injury.

⚠WARNING

Do not disconnect tool, hoses or fittings while the power source is running or if the hydraulic fluid is hot. Hot hydraulic fluid could cause serious burns.

⚠CAUTION

Vibration hazard:

Apply just enough pressure to do the work. Applying excess pressure to the tool can cause operator discomfort or temporary numbness.

Failure to observe this precaution may result in injury.

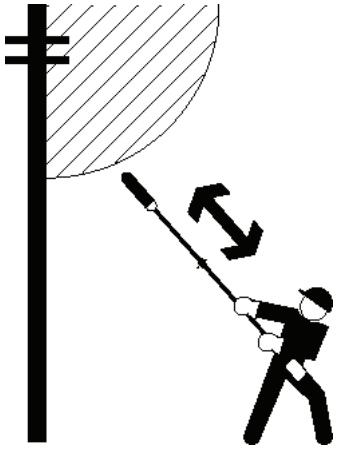
IMPORTANT

- Check the operation of the automatic oiler frequently. Refer to "Checking and Setting the Automatic Chain Oiler" in this manual.
- Check the chain frequently for proper tension and sharpness. Tension and sharpen as necessary. Refer to the instructions under "Saw Chain and Bar Maintenance."
- Check the fluid level of the power source reservoir frequently. The automatic oiler uses hydraulic fluid to lubricate the bar and chain, and will cause the fluid level to drop.

IMPORTANT

Emergency stop procedure:

1. Release the trigger.
2. Shut off the hydraulic power source.



These additional instructions are derived from EN 50110-1:

- To avoid electrical danger and prevent injury or electrocution:
  a) the operator must have the necessary technical knowledge or experience

  or

  b) the operator must work under the direct supervision of another person who has the necessary technical knowledge or experience.
- This tool must not be used under adverse environmental conditions. These include a lightning storm, any sign of an approaching lightning storm (such as thunder), and poor visibility.
- If any electrical lines or other electrical components carry voltages greater than 50 VAC or 120 VDC, ensure that:
  a) live parts cannot be touched — use screens, barriers, an enclosure, or insulating covering

  or

  b) the "live working zone" cannot be reached with either parts of the body, the tool, or any accessories.

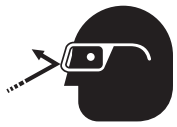
  The live working zone is the distance from any electrically live part, based on the voltage carried by the live part. Refer to EN 50110-1, Annex A for this information.

Note: Maintain proper footing and balance while using the tool. Do not over-reach. Unsuitable footing and balance may not allow counteracting normal or unexpected movement of the power tool.

1. Grasp the front handle with one hand and the trigger handle with the other hand.
2. Move the trigger interlock latch forward and pull the trigger until the saw reaches full rpm.
3. Feed the rotating saw chain using a steady, constant pressure.

   Note: Cut straight through the wood — do not twist the saw in the cut.
4. To stop the saw, release the trigger.
5. When the tool is not in use, stop the power source to reduce heat and wear.

Maintenance



⚠WARNING

Wear eye protection when operating this tool.

Failure to wear eye protection could result in serious eye injury from flying debris.

⚠WARNING

Do not change accessories, inspect, adjust or clean tool when it is connected to a power source. Accidental start-up could result in serious injury.

Failure to observe this warning could result in severe injury or death.

SCHEDULE

Use this schedule to maximize the tool's service life.

Notes:

Keep all decals clean and legible. Replace decals when necessary. Refer to the Parts List for decal part numbers.

When disposing of any components (hydraulic hoses, hydraulic fluid, worn parts, etc.), do so in accordance with federal, state and local laws or ordinances.

Daily

1. Wipe all tool surfaces clean.
2. Inspect the entire chain before use. Tension and sharpen the chain as instructed under "Saw Chain and Bar Maintenance." An improperly sharpened, dull, worn or damaged chain increases the risk of kickback.
3. Check the operation of the automatic oiler before use as instructed under "Checking and Setting the Automatic Chain Oiler." An improperly set oiler can accelerate the wear of the chain and bar.
4. Inspect the hydraulic hoses and fittings for signs of leaks, cracks, wear or damage. Replace if necessary.
5. Install dust caps over the hydraulic ports when the tool is disconnected.

Monthly

1. Perform a thorough inspection of the hydraulic hoses and fittings as described in publication 99930323, SAE J1273 (Hose and Hose Assemblies).
2. Perform the "Bar Service" procedure as described under "Saw Chain and Bar Maintenance."
3. Run the saw at full RPM and release the trigger. Make a note of the time it takes the chain to stop completely (stop time). Compare to the stop times recorded during previous months.

   An increasing stop time indicates that the trigger valve components are dirty or worn. Have the tool cleaned or repaired by a Greenlee Utility Authorized Service Center.

Annually

If required by your organization, have the tool inspected by a Greenlee Utility Authorized Service Center.

CHECKING AND SETTING THE AUTOMATIC CHAIN OILER

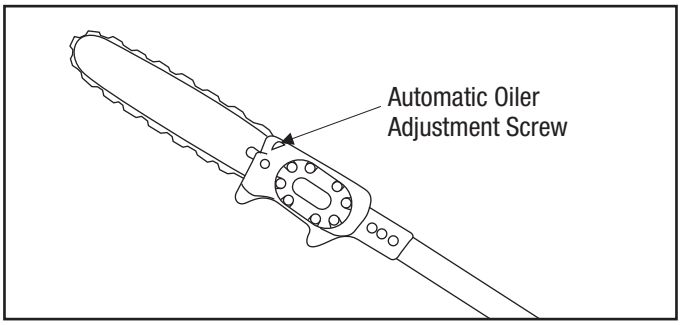
The automatic chain oiler provides a constant supply of oil to lubricate the bar and chain whenever the saw is operating. An adjustment screw controls the amount of oil supplied.

Before adjusting the automatic oiler, clean the oil passage in the base of the guide bar first. Oil dripping off the saw head, sprocket cover or bar indicates that the oil passage is plugged.

1. Run the saw at full rpm.
2. If the tip of the saw gives off a fine spray of oil, the automatic oiler is working properly. If the saw does not give off a spray of oil, adjust the oiler.

   Note: For better results, hold saw so that the tip of the saw blade is pointing toward a clean sheet of paper or cardboard and run the saw at full rpm. If the automatic oiler is working properly, the paper or cardboard should soon show small droplets of oil.
3. Stop the hydraulic power source.
4. Fully tighten the oiler screw until it is seated. Loosen 1/4 turn counterclockwise.

Automatic Oiler Adjustment Screw



5. Start the hydraulic power source.
6. Continue to loosen the oiler screw 1/4 turn at a time until the oiler output is adjusted correctly.

Maintenance (cont'd)

SAW CHAIN AND BAR MAINTENANCE

New Chain Break-In

1. Run the saw at low chain speed without cutting wood for 2 to 3 minutes. Check the output from the automatic oiler.
2. Stop the hydraulic power source. Disconnect the hoses. Allow the bar and chain to cool. Check the tension and adjust if necessary.
3. Connect the hoses. Start the power source. Make a few easy cuts at moderate chain speed.
4. Stop the hydraulic power source. Disconnect the hoses. Allow the bar and chain to cool. Check the tension and adjust if necessary.
5. Connect the hoses. Start the power source. Use the saw for moderate cuts during the next 30 minutes of use.

Checking Chain Tension

1. Stop the hydraulic power source. Disconnect the hoses. Allow the bar and chain to cool.
2. Pull the saw chain around the bar. The chain should rotate around the bar easily. If it does not, refer to "Chain is Difficult to Rotate Manually" in the Troubleshooting table.
3. Check the tension as follows:

   Pull the saw chain away from the bar (refer to the illustration) using approximately 4.4 newtons (2 lb) of force. The clearance between the chain and bar should be approximately 3.2 mm (1/8"). If there is too much or too little clearance, proceed to "Adjusting Chain Tension."

Adjusting Chain Tension

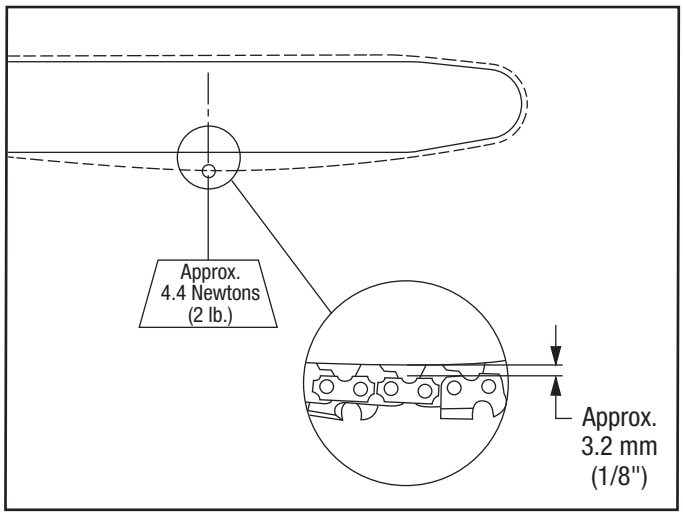
1. Loosen the two guide bar mounting screws.
2. Turn the saw chain tension adjusting screw until the proper tension is achieved, as follows:

   Pull the saw chain away from the bar (refer to the illustration) using approximately 4.4 newtons (2 lb) of force. The clearance between the chain and bar should be approximately 3.2 mm (1/8").
3. Hold the bar nose up and tighten the two bar flange nuts. Torque to 16.9 newton-meters (150 in-lb).
4. Check the chain tension again.
5. Rotate the chain around the bar manually. If you hear a clicking noise, the chain drive links are hitting the bar. Repeat the "Adjusting Chain Tension" procedure.

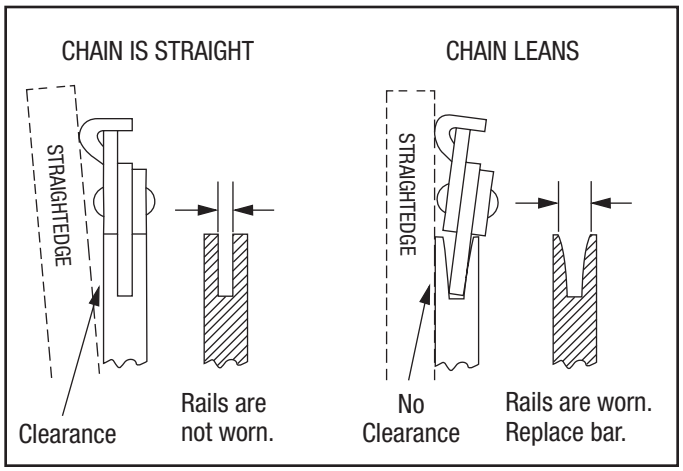
Bar Service

1. Mark the top side of the bar with a grease pencil or marker.
2. Remove the chain and bar. Use a small cleaning brush to remove all residue from the bar groove.
3. Clean the oil passage at the base of the guide bar. Use any instrument small enough to thoroughly clean the passage.
4. Check the bar rails for wear by placing a straight edge against the side of the bar and one cutter.
   - Clearance between the bar and straight edge indicates that the bar rails are not worn.
   - If the chain leans and there is little or no clearance between the bar and straightedge, the bar rails are worn and the bar should be replaced.

Proper Chain Tension



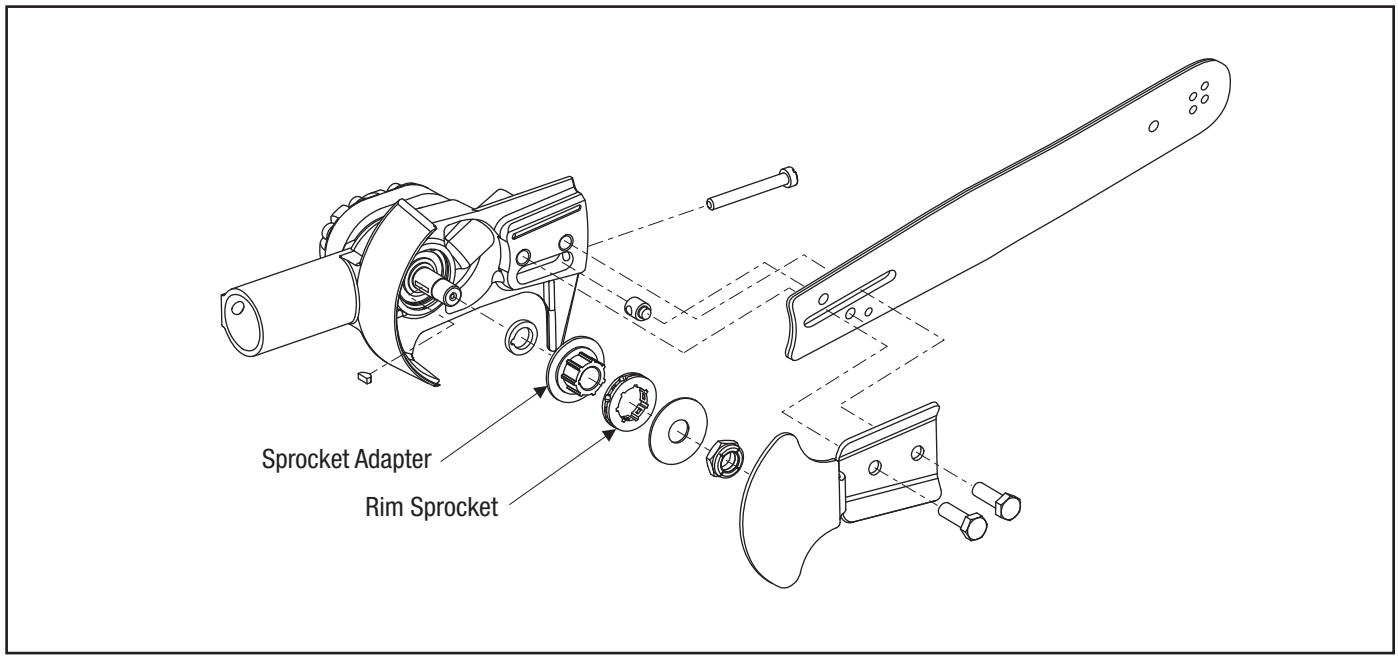
Checking Rails for Wear



Maintenance (cont'd)

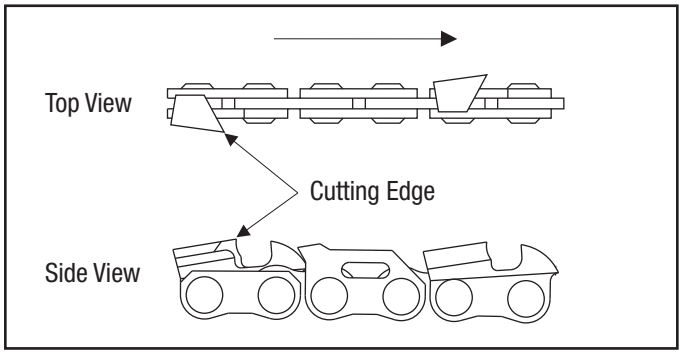
5. Inspect the rim sprocket and sprocket adapter. Replace if worn or damaged.

Rim Sprocket and Sprocket Adapter



6. Use the mark made in Step 1 to install the bar upside down, so that the bar will wear evenly.
7. Install the chain as shown. Adjust the tension of the chain as described under "Adjusting Chain Tension."

Direction of Chain Travel



Maintenance (cont'd)

SHARPENING THE SAW CHAIN

The saw chain must be sharpened to the manufacturer's specifications. If the saw chain is not properly sharpened, the risk of kickback increases.

If using a filing guide or hand-held grinder, refer to the manufacturer's instructions provided with the unit.

All Long-Reach Chain Saws are equipped with the following chain:

Refer to Illustration:	Figure A	Figure B	Figure C	Figure D	Figure E	—	Figure F	—
	Pitch	Gauge	Side Plate Angle	Top Plate Cutting Angle	Top Plate Filing Angle	File Guide Angle	Depth Gauge Setting	Round File Size
	.325"	.058"	75°	60°	30°	10°	.025"	5/32"

Saw Chain Pitch

Refer to Figure A. Pitch refers to the saw chain measurement. A chain's pitch is the distance between any three consecutive rivets divided by two. Example: .65 divided by two equals .325 pitch.

Saw Chain Gauge

Refer to Figure B. Gauge refers to the thickness of that portion of the drive link which fits into the guide bar groove. The guide bar and saw chain gauge must match. Industry standards are .050, .058 and .063.

Figure A
Pitch

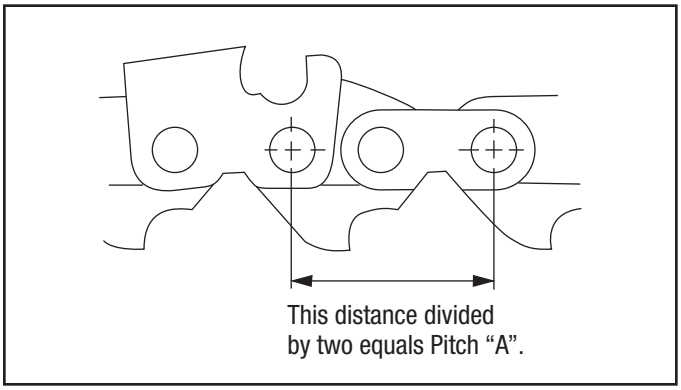


Figure B
Gauge

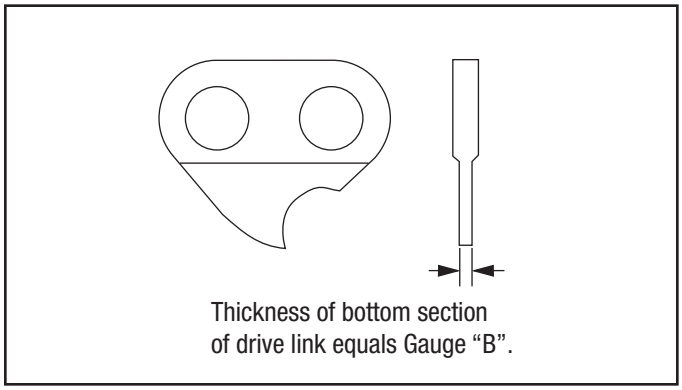


Figure C
Side Plate Angle

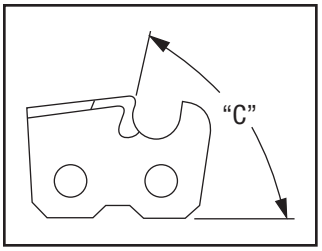


Figure D
Top Plate Cutting Angle

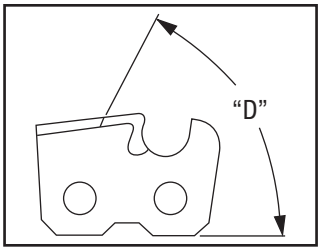


Figure E
Top Plate Filing Angle

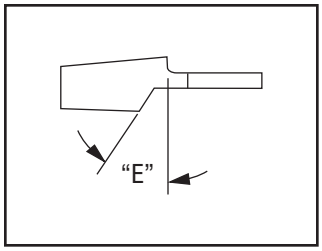
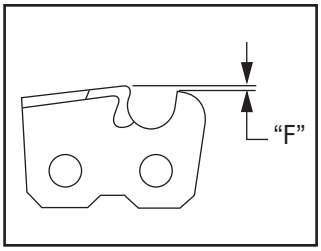


Figure F
Depth Gauge Setting

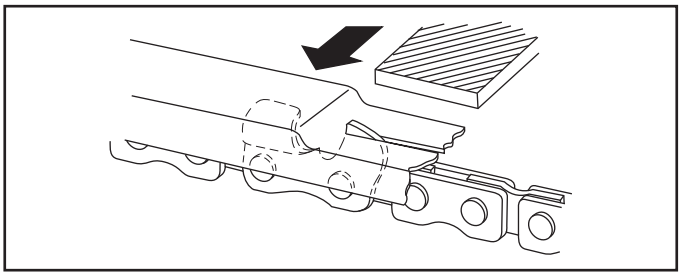


Maintenance (cont'd)

Filing Depth Gauges

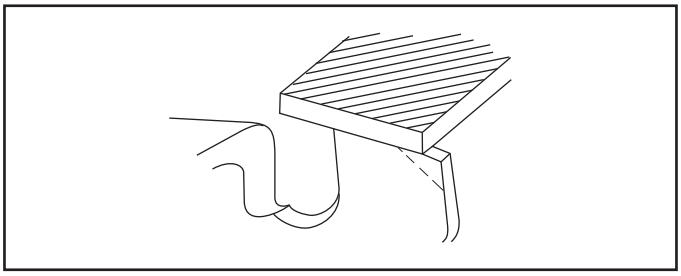
1. If the cutters are sharpened with a file holder, check and lower the depth gauges before sharpening the cutters.
2. Check the depth gauges every third sharpening.
3. Place the depth gauge tool on the cutter. If the depth gauge projects, file it level with the top of the tool. Always file from the inside of the saw chain toward an outside cutter.

Lowering Depth Gauges



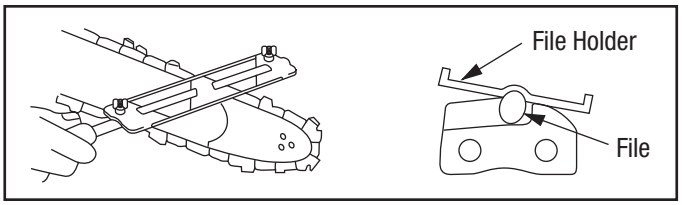
4. Round off the front corner to maintain the original shape of the depth gauge after using the depth gauge tool. Always follow the recommended depth gauge setting of the chain manufacturer. This is important for maximum performance throughout the saw chain's life as well as for protection against kickback.

Rounding Off Depth Gauges

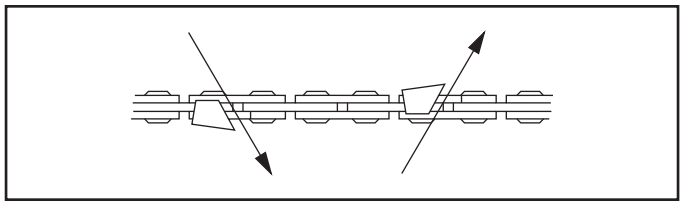


Filing Cutters — General

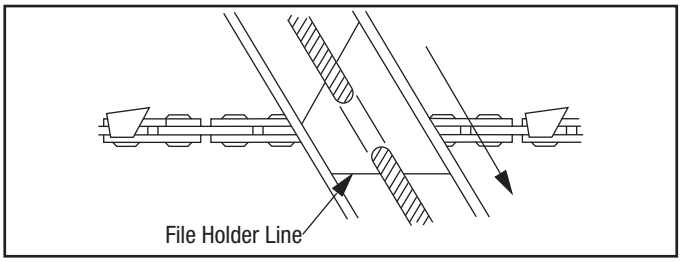
1. Support the file holder on the cutter top plate and depth gauge as shown.



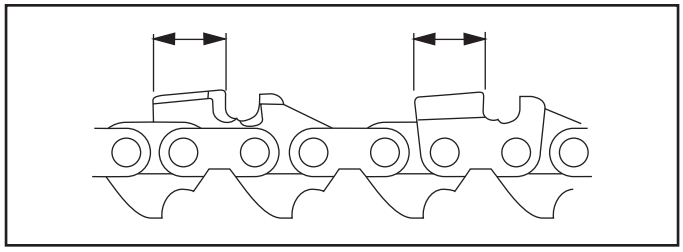
2. File the cutters on one side of the saw chain from the inside out. File on the forward stroke only.



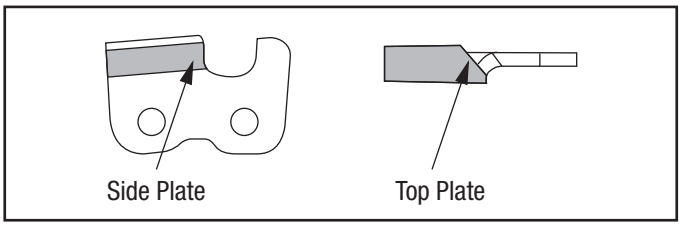
3. Keep the line on the file holder parallel to the center of the saw chain. Reverse the procedure for the other side.



4. Keep all cutters the same length.



5. File enough to remove any damage to the cutting edges (side plate and top plate) of the cutter.



Troubleshooting

Before troubleshooting, determine whether the problem is in the tool, the hoses, or the power source. Substitute a tool, hoses, or power source known to be in good working order to eliminate the item that is not operating.

If the problem is in the tool, refer to the Troubleshooting table in this manual. If the problem is in the power source, refer to the troubleshooting section of the power source instruction manual.

Problem	Probable Cause	Probable Remedy
Tool does not operate.	Improper power source.	Verify that the power source meets the specifications. Refer to the “Specifications” section.
	Hydraulic fluid level low.	Check the fluid level. Check system for leaks.
	Incorrect hydraulic fluid viscosity.	Use hydraulic fluid with the correct viscosity. Refer to the “Specifications” section.
Tool operates slowly or erratically.	Hydraulic fluid cold.	Allow fluid to warm to the operating temperature. Actuate the tool intermittently to reduce the warming time.
	Power source not adjusted correctly.	Refer to the power source operator’s manual. Set the flow and pressure to correspond with the tool.
	Hydraulic fluid level low.	Check the fluid level. Check system for leaks.
	Air in the hydraulic system.	Refer to power source manufacturer’s instructions for removing air from the system.
	Incorrect hydraulic fluid viscosity.	Use hydraulic fluid with the correct viscosity. Refer to the “Specifications” section.
Trigger difficult to operate; trigger sticks when released.	Dirt or gummy deposits on trigger or spool.	Clean and lubricate trigger and trigger spool.
Chain runs in wrong direction.	Hose connections at tool are reversed.	Depressurize hydraulic system. Switch the hose connections.

Troubleshooting (cont'd)

Problem	Probable Cause	Probable Remedy
Chain does not cut.	Chain dull.	Remove chain and sharpen to chain manufacturer's specifications or replace with a sharp chain.
	Too much tension on the chain.	Adjust chain tension. Refer to "Saw Chain and Bar Maintenance."
	Automatic oiler not lubricating chain and bar.	Refer to "Checking and Setting the Automatic Chain Oiler."
	Chain installed backward.	Remove chain and install correctly.
	Guide bar worn.	Inspect guide bar rails for wear. Refer to "Saw Chain and Bar Maintenance." If excessively worn, replace guide bar.
Tool feels hot.	Hydraulic fluid level low.	Check the fluid level. Check system for leaks.
	Incorrect hydraulic fluid viscosity.	Use hydraulic fluid with the correct viscosity. Refer to the "Specifications" section.
	Hydraulic fluid dirty.	Refer to the power source owner's manual for procedure to replace hydraulic oil and filter.
Chain is difficult to rotate manually.	Hydraulic pressure trapped in saw motor.	Release hydraulic pressure by using proper hose disconnection procedure. Refer to "Hose Connections" in this manual.
	Chain and bar improperly adjusted.	Refer to "Adjusting Chain Tension" under "Saw Chain and Bar Maintenance" in this manual.
	Chain drive links damaged.	Remove chain and inspect drive links.
	Bar groove damaged.	Remove chain and inspect bar groove.

Disassembly

Complete disassembly of the tool is not recommended. If a complete overhaul is necessary, return the tool to your nearest Greenlee Utility Authorized Service Center.

The disassembly procedure is divided into sections of the tool. Disassemble only the section(s) necessary to complete the repair.

Disassemble the tool on a flat, clean surface. Take care not to lose or damage any parts that may fall free during disassembly.

Inner and Outer Tubes

1. Remove hex head cap screw (10) and lock washer (11) which secure outer tube (4). Remove inner tubes (2 and 3) from ports of handle assembly (8). Remove handle assembly from outer tube. Plug (5) may fall free.
2. Remove three oval head machine screws (9) which secure outer tube to motor assembly (1). Remove outer tube from motor assembly. Nut carrier (7) may fall free. Remove inner tubes (2 and 3) from ports of motor assembly.
3. Remove outer tube (4) from inner tubes (2 and 3). Clean both outer and inner tubes. Inspect O-rings (22) for signs of cracks or wear. Remove, if necessary.

Handle Assembly

1. Remove two round head machine screws (39) and lock washers (40) from guard (38). Remove guard (38) from handle assembly (27).
2. Remove retaining ring (46) and trigger pivot (45) which secures trigger (41).
3. Remove internal retaining ring (30) from sleeve (28) which will allow spring (33) and washer (32) to be removed.
4. Remove internal retaining ring (50) and washer (37).
5. Remove spool (35) from sleeve (28).
6. Remove external retaining ring (49). Pull sleeve (28) out of handle (27).

Saw Blade and Chain

1. Remove hex head cap screws (15). Remove cover (14). Remove saw chain from sprocket (26). Remove bar (12) from motor assembly (1). Dog and tension bolt may be removed from saw head if necessary.
2. Remove stop nut (19), sprocket adapter (26), rim sprocket (18), sprocket key (17), and sprocket washer (16) from drive shaft.

Motor Assembly

1. Scribe a line across motor cap (55) and saw head assembly (52) to help align parts correctly during reassembly. Remove socket head cap screws (66). Remove motor cap from saw head assembly.
2. Remove idler shaft (58). Remove gear (61) from idler shaft (58). Remove gear (61) and Woodruff key (59) from drive shaft (57). Remove gasket (62) from motor. Remove dowel pins (63), if necessary.
3. Remove retaining ring (65). Drive shaft may be driven out of saw head assembly, threaded end first, using a rubber mallet. Remove ball bearing (64) from drive shaft.
4. Bearings (53 and 56) should be removed from saw head assembly and motor cap only if they are damaged. Bearings are pressed in, and should be removed only if the necessary equipment to replace them is available.
5. Remove metering screw (68), which controls oil flow to automatic chain oiler. Remove O-ring (67).

Inspection

Clean all parts with solvent and dry them thoroughly. Inspect each component as described in this section. Replace any component that shows wear or damage.

1. Saw Head Assembly and Motor Cap Assembly: Inspect mating surfaces, gear cavities, oil passage-ways, etc. for grooves or nicks. If any component shows wear or damage, replace the entire assembly with the bearings already pressed in.
2. Inspect all other disassembled components for cracks, grooves or nicks.

Assembly

Refer to the Illustration(s) and Parts List for correct orientation and placement of parts.

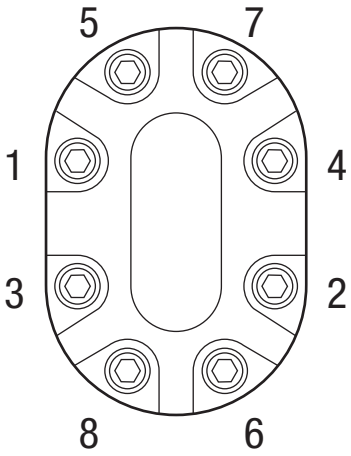
Replace any O-rings, V-rings, seals, and gaskets on parts that have been disassembled. Apply hydraulic fluid or O-ring lubricant to all O-rings and all metal surfaces which they must slide over. When installing an O-ring which must slide over sharp surfaces, use a rolling motion and be careful not to damage the O-ring.

Wherever the assembly results in metal-to-metal contact, coat the surfaces with hydraulic fluid or O-ring lubricant.

Motor Assembly

1. If bearings (53 and 56) have been removed from the motor cap (55) and saw head (52), replace them. Install O-ring (54) in saw head.
2. Install ball bearing (64) over threaded end of drive shaft (57). Install non-threaded end of drive shaft (57) through front of cavity in saw head assembly (52). Secure with retaining ring (65). Install drive pin (60) into idler shaft (58) and install idler shaft into cavity on rear side of saw head assembly (52). Install Woodruff key (59) into drive shaft (57).
3. Install one gear (61) onto idler shaft (58), aligning notch in gear over drive pin (60). Install one gear (61) on drive shaft (57), aligning notch in gear over Woodruff key (59).
4. Install gasket (62) on saw head assembly (52). Install dowel pins (63) in saw head assembly. Install motor cap (55) on saw head assembly, using the line scribed during disassembly to align parts correctly. Secure motor cap (55) to saw head assembly with socket head cap screws (66). Torque to 9 newton-meters (80 in-lb).

Torque Sequence



5. If metering screw has been removed, install O-ring (67) on metering screw (68). Install metering screw, bottoming it out in the cavity, and backing it off about 1/2 turn.

   Note: Metering screw is not adjusted at this point. After assembly is completed, adjust automatic oiler ***before*** *using the tool.*
6. If O-rings (69) have been removed, install a new O-ring inside each port of saw head assembly (52).

Saw Bar and Chain

1. Install sprocket key (17), sprocket washer (16), sprocket (18), sprocket adapter (26), and stop nut (19) on threaded end of drive shaft. Ensure that sprocket adapter is assembled onto shaft with 1.500 dia. face oriented toward stop nut.
2. Set saw head down flat. Install dog (21) with small diameter side facing out. Install adjusting screw (20) into back side of saw head and thread into dog.
3. Place bar with chain wrapped around it onto saw head. Ensure dog is placed in the guide hole around the outer edge of the bar. Place cover (14) with hex head cap screws (15) over bar and secure screws into saw head loosely but enough to hold bar flat onto saw head with dog in guide hole.
4. Place chain around sprocket and bar.

   Note: Lubricate the saw chain (13) well (especially a new chain) before installation. Oil all joints and work oil into rivet holes. The best way to oil a new chain is to soak it in oil before installation.
5. Tighten adjusting screw (20) until proper tension is achieved. (Refer to “Adjusting Chain Tension” in the “Maintenance” section of this manual.)
6. Secure hex head cap screws (15) to 16.9 newton-meters (150 in-lb).

Assembly (cont'd)

Handle Assembly

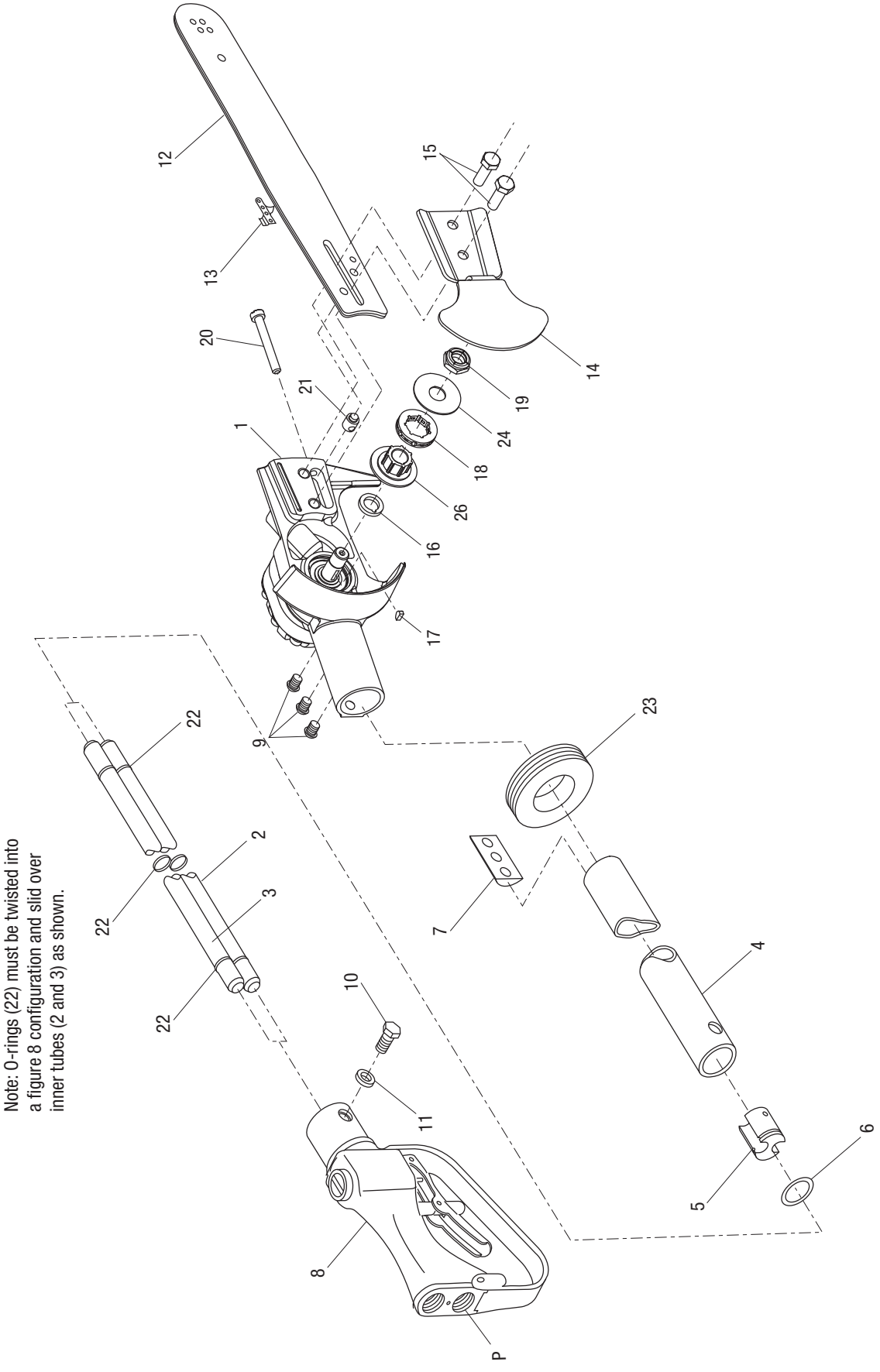
1. Install O-rings (47) in the valve handle (27).
2. Install O-ring (48) in valve handle (27). Install O-rings (34 and 48) in sleeve (28). Install sleeve (28) in valve handle (27). Secure with external retaining ring (49).
3. Install O-ring (36) on spool (35). Install spool (35) through trigger end of valve handle.
4. Install spring (33), and O-ring (32) and secure with retaining ring (30).
5. Install washer (37) and secure with retaining ring (50).
6. Position trigger (41) onto handle assembly. Slide trigger pivot (45) through holes and secure with retaining rings (46).
7. Position guard (38) onto handle assembly. Secure with lock washer (40) and round head machine screws (39).

Inner and Outer Tubes

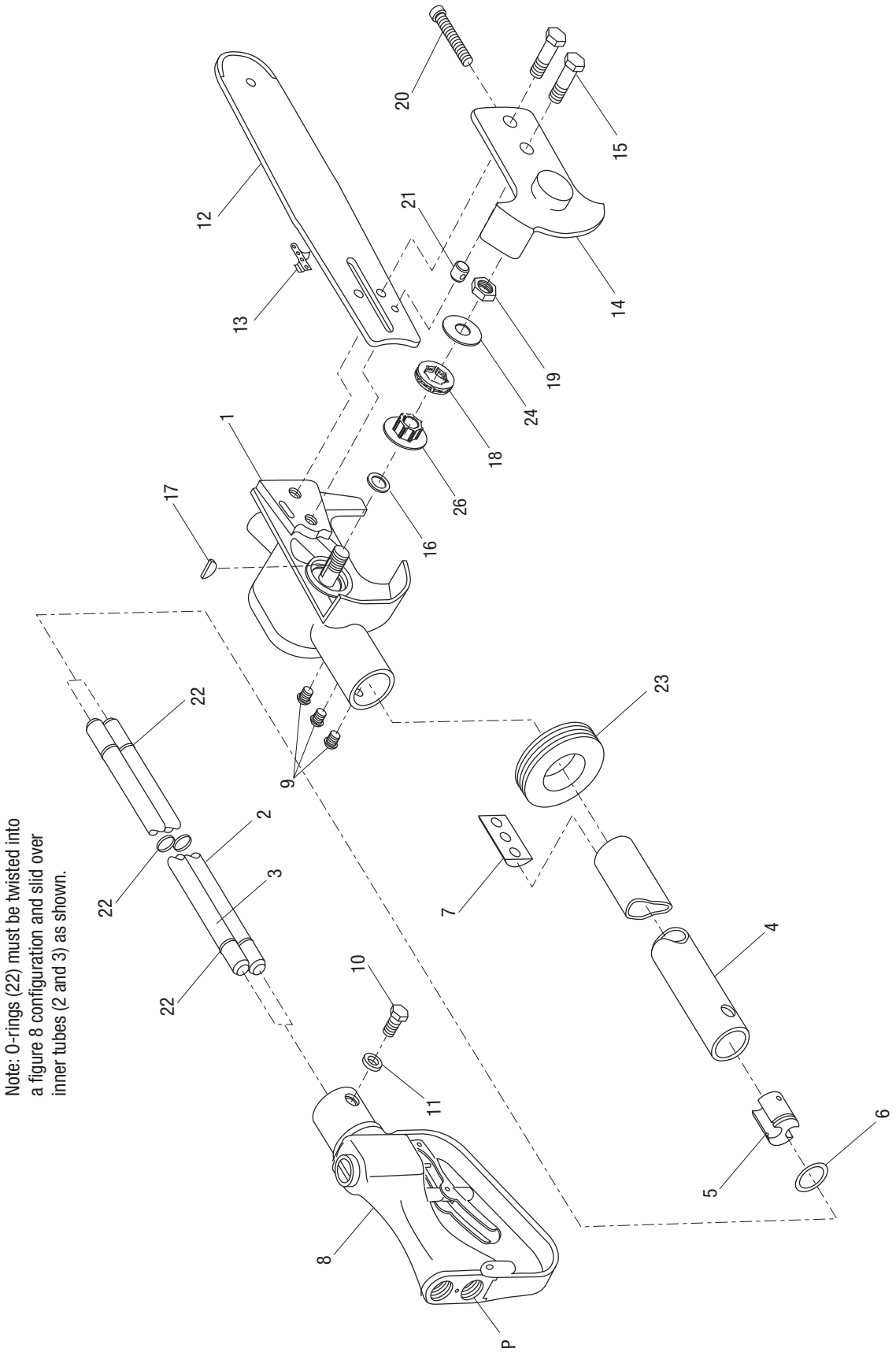
1. Hold the two inner tubes (2 and 3) together, and slide one O-ring (22) over the tubes, halfway down the length of the tubes. Turn one of the tubes end for end, so that the O-ring forms a figure 8 around the tubes. Slide one O-ring (22) in a figure 8 over each end of the tubes, pushing the O-ring down approximately 15.9 cm (6-1/4") from the end of the inner tubes.

   Note: Inner tube (2) is the pressure tube, and should be marked either with marking tape or with dye on both ends. Be careful to install the marked tube in P port of both the motor assembly and the valve assembly. Improper installation of the inner tubes will cause the saw to run backwards.
2. Lubricate tips of inner tubes with hydraulic oil to ease assembly. Press inner tube (3) into the top (return) port of motor assembly (1). Press inner tube (2) into the lower (pressure) port of motor assembly, which is marked P.
3. Press one nut carrier (7) into corresponding holes in end of outer tube (4). Nut carrier may be glued to outer tube to hold it in place during assembly. Slide the outer tube over the inner tubes, with the end of the outer tube which has small holes for securing to the handle assembly (8) away from the motor assembly (1). Place the outer tube into the motor assembly, aligning the nut carrier under the holes in the motor assembly. Apply one drop of thread-locking compound (Loctite 242 or equivalent) to three oval head machine screws (9). Install screws, securing outer tube to motor assembly.
4. For proper tool operation, the same inner tube (2) that was installed in the pressure port of the motor assembly (1) **must** be installed in the pressure port of the handle assembly (8). Lubricate tips of inner tubes with hydraulic oil to ease assembly. Press inner tube (3) into the top (return) port of handle assembly (8). Press inner tube (2) into the lower (pressure) port, which is marked P.
5. Insert plug (5) and O-ring (6) in outer tube (4) and install in valve handle (8). Secure with cap screw (10) and washer (11).

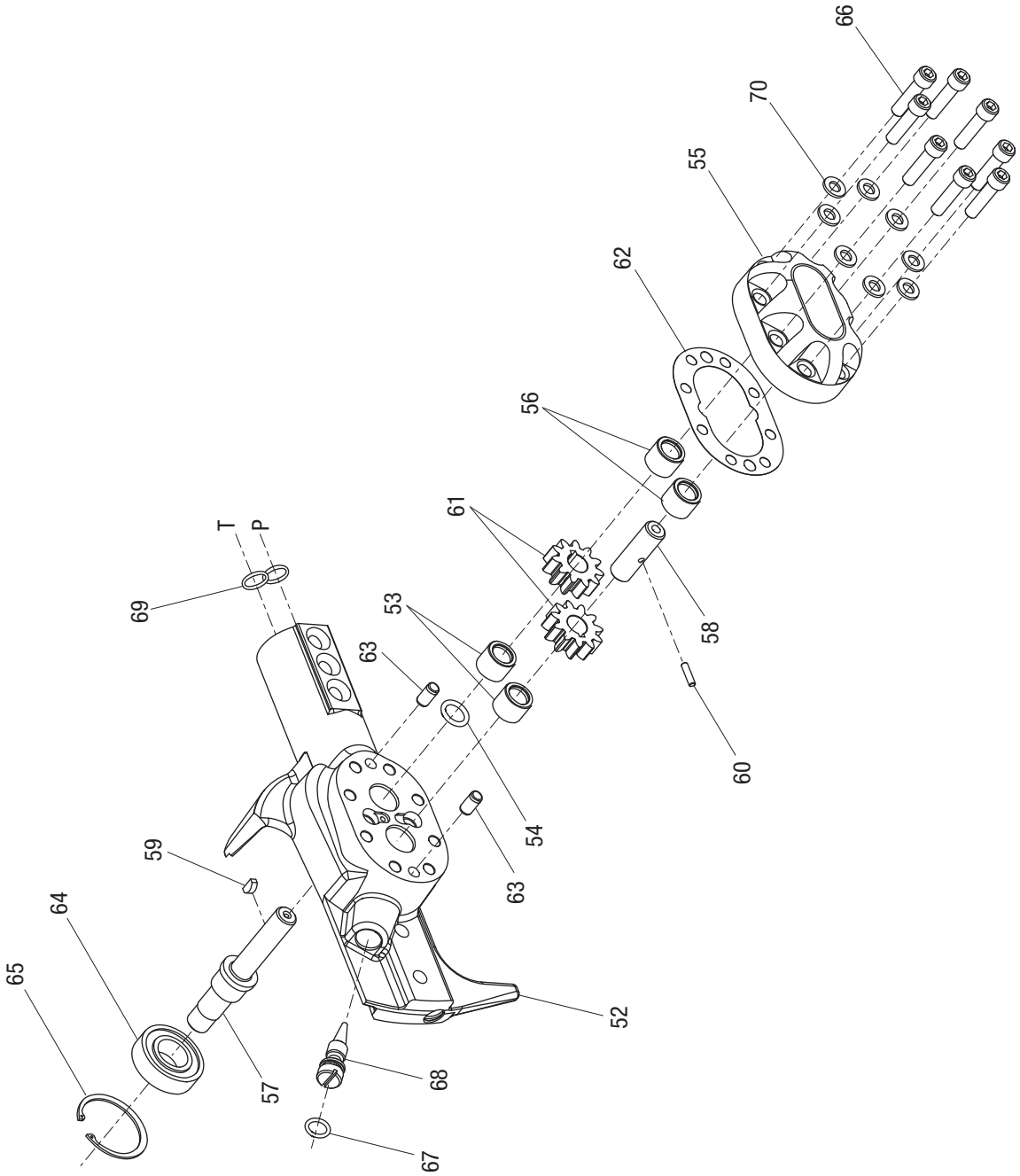
Illustration—Main for Serial Code AMR



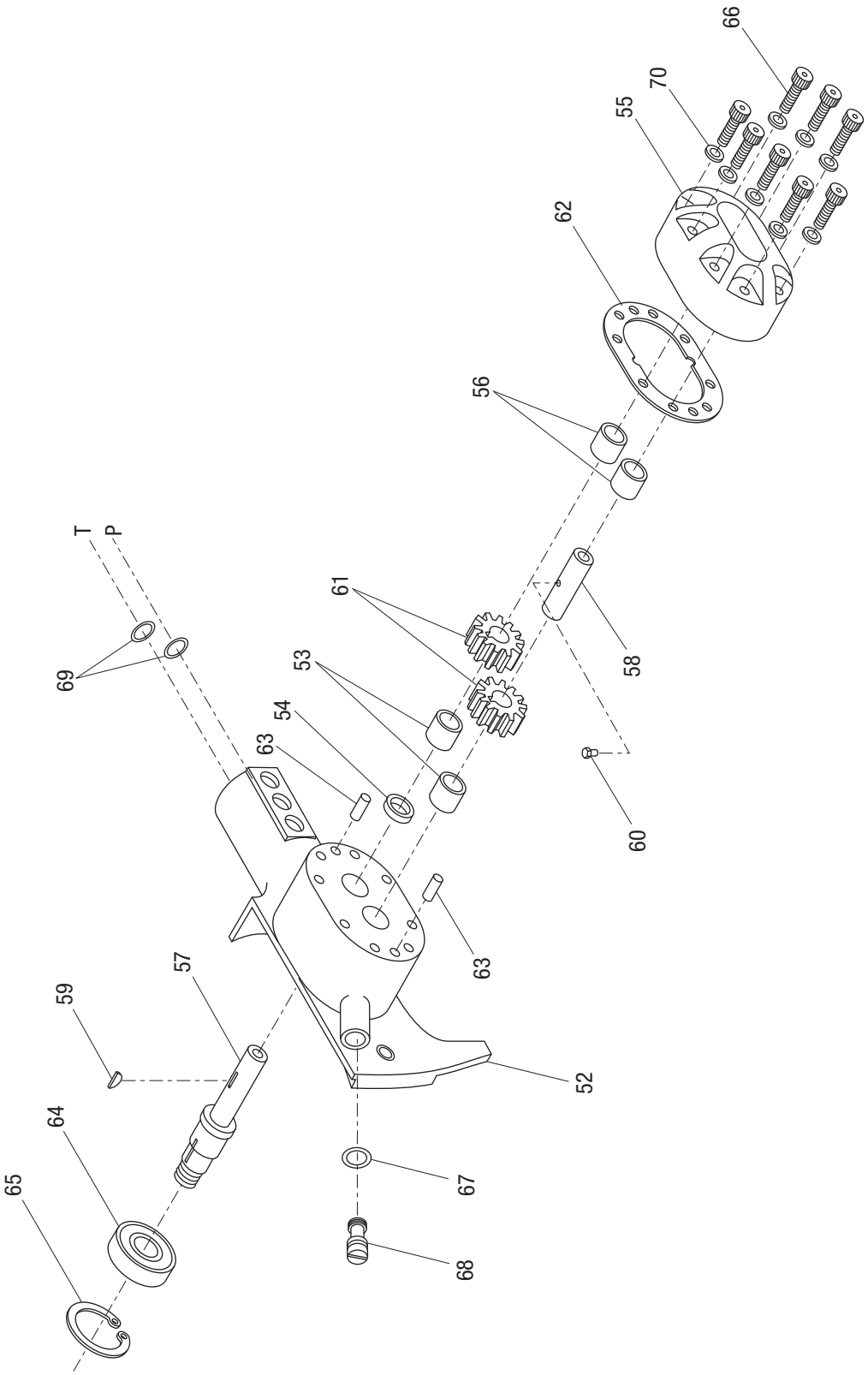
Illustration—Main for Serial Code AJN



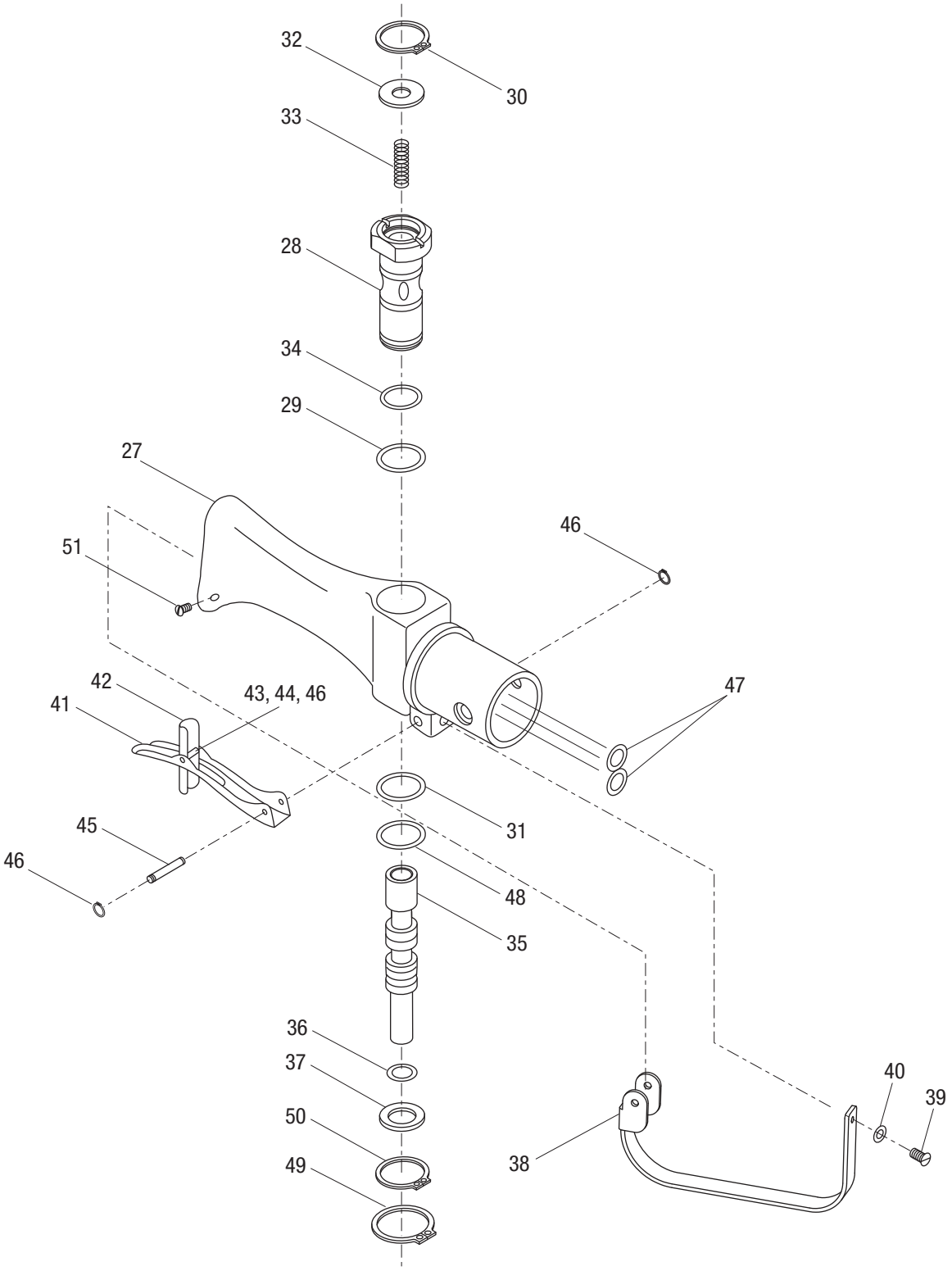
Illustration—Motor Assembly for Serial Code AMR



Illustration—Motor Assembly for Serial Code AJN



Illustration—Handle Assembly for Both Serial Codes



Parts List for Serial Code AMR

Key	UPC No. 78-3310-	Part No.	Description	Qty
1	43558	50435582	Motor assembly (includes items 52–69)	1
2	42491	50424911	Pressure tube	1
3	42492	50424920	Return tube	1
4	43389	50433890	Outer tube	1
5	41121	50411214	Plug	1
6*			O-ring, .937 x 1.062 x .062–90	1
7	40118	50401184	Carrier, nut	1
8	87134	52026008	Handle assembly (includes items 27–51)	1
9			Screw, machine, 1/4–20 x .500 oval head	3
10			Screw, cap, 1/4–20 x .750 hex head, grade 5	2
11			Lock washer, 1/4"	2
12	43369	50433695	Saw bar	1
13	43370	50433709	Saw chain, .325" pitch	1
14	02093	52047938	Cover	1
15 ♦	55360	90553608	Screw, cap, 5/16–18 x 1.00 hex head	2
16 ♦			Spacer	1
17 ♦			Woodruff key, #2	1
18	55101	90551010	Rim sprocket, .325" pitch	1
19 ♦			Nut, hex, 1/2–20	1
20	41662	50416621	Screw, machine, 1/4–20 x 2.00 fillister head	1
21	02094	52054770	Dog	1
22*			O-ring, .875 x 1.00 x .062–70	2
23	42015	50420154	Rubber grommet	1
24 ♦			Washer, flat, .530 x 1.50 x .050	1
26 ♦			Adapter, sprocket	1
27	48815	50488155	Handle	1
28	87135	52025961	Sleeve	1
29*			O-ring, .750 x .875 x .062–90	1
30	41712	50417122	Retaining ring, .750"	1
31*			O-ring, .787 x .889 x .051–70	1
32	41095	50410952	Cap	1
33	42865	50428651	Spring	1
34*			O-ring, .437 x .625 x .093–90	1
35	43421	50434217	Spool	1
36*			O-ring, .312 x .437 x .062–70	1
37	41096	50410962	Washer, .355 x .615 x .030	1
38	48817	50488171	Trigger guard	1
39			Screw, machine, #10-32 x .375 round head	1
40			Lock washer, #10	1
41	04797	50047973	Trigger	1
42	04798	50047981	Latch, trigger interlock	1
43	04799	50047990	Spring, torsion	1
44	04800	50048007	Pin	1
45	42547	50425471	Trigger pivot	1
46	42827	50428270	Retaining ring	4
47*			O-ring, .437 x .562 x .062–90	2
48*			O-ring, .875 x 1.00 x .062–70	1
49	54819	90548191	Retaining ring, .875"	1
50	41297	50412971	Retaining ring, .625"	1
51			Screw, cap, #10-32 x .375 button socket head	2
52	02089	52058055	Saw head assembly (includes items 53, 54 and 69)	1
53	41591	50415911	Needle bearing, .439 x .625 x .500	2
54*			O-ring, .500 x .687 x .093–80	1
55	40405	50404053	Motor cap assembly with bearings (includes items 56, 66, and 70)	1
56	41591	50415911	Needle bearing, .439 x .625 x .500	2
57	43839	50438395	Shaft	1
58	40114	50401144	Idler shaft	1
59	40115	50401154	Woodruff key	1
60	41593	50415930	Pin, drive, .123 x .209 square head	1
61	41594	50415940	Gear, 11-tooth	2
62*			Gasket, 2.09 x 3.09 x .0015	1
63	41596	50415960	Pin, dowel, .250 x .500	2
64	41598	50415981	Ball bearing	1
65	41482	50414821	Retaining ring, 1.375"	1
66			Screw, cap, 1/4–20 x 1.000 socket head	8
67*			O-ring, .375 x .500 x .062–70	1
68	02092	52047936	Screw, metering	1
69*			O-ring, .437 x .562 x .062–90	2
70			Washer, 6 mm, hard	8

Kits

*	48254	50482548	Packing kit (includes items marked with an asterisk)
	02088	52058054	Motor assembly (includes items 14, 15, 20, 21, 52–70)
	87134	52026008	Handle assembly (includes items 27–51)
	02089	52058055	Saw head assembly (includes items 53, 54 and 69)
	40405	50404053	Motor cap assembly (includes items 56, 66, and 70)
	04796	50047965	Safety trigger assembly (includes items 41-46)
♦	12657	52028588	Drive repair kit (includes items marked with ♦)

Decals

	46293	52081516	Decal	1
	41547	50415471	Decal, Greenlee Utility	1

Parts List for Serial Code AJN

Key	UPC No. 78-3310-	Part No.	Description	Qty
1	43558	50435582	Motor assembly (includes items 52–69)	1
2	42491	50424911	Pressure tube	1
3	42492	50424920	Return tube	1
4	43389	50433890	Outer tube	1
5	41121	50411214	Plug	1
6*			O-ring, .937 x 1.062 x .062–90	1
7	40118	50401184	Carrier, nut	1
8	87134	52026008	Handle assembly (includes items 27–51)	1
9			Screw, machine, 1/4–20 x .500 oval head	3
10			Screw, cap, 1/4–20 x .750 hex head, grade 5	2
11			Lock washer, 1/4"	2
12	43369	50433695	Saw bar	1
13	43370	50433709	Saw chain, .325" pitch	1
14†	40846	50408461	Cover	1
15 ♦	55360	9055360	Screw, cap, 5/16–18 x 1.500 hex head	2
16 ♦			Spacer	1
17 ♦			Woodruff key, #2	1
18	55101	90551010	Rim sprocket, .325" pitch	1
19 ♦			Nut, hex, 1/2–20	1
20†	41662	50416621	Screw, machine, 1/4–20 x 2.00 fillister head	1
21†	40197	50401972	Dog	1
22*			O-ring, .875 x 1.00 x .062–70	2
23	42015	50420154	Rubber grommet	1
24 ♦			Washer, flat, .530 x 1.50 x .050	1
26 ♦			Adapter, sprocket	1
27	48815	50488155	Handle	1
28	87135	52025961	Sleeve	1
29*			O-ring, .750 x .875 x .062–90	1
30	41712	50417122	Retaining ring, .750"	1
31*			O-ring, .787 x .889 x .051–70	1
32	41095	50410952	Cap	1
33	42865	50428651	Spring	1
34*			O-ring, .437 x .625 x .093–90	1
35	43421	50434217	Spool	1
36*			O-ring, .312 x .437 x .062–70	1
37	41096	50410962	Washer, .355 x .615 x .030	1
38	48817	50488171	Trigger guard	1
39			Screw, machine, #10-32 x .375 round head	1
40			Lock washer, #10	1
41	04797	50047973	Trigger	1
42	04798	50047981	Latch, trigger interlock	1
43	04799	50047990	Spring, torsion	1
44	04800	50048007	Pin	1
45	42547	50425471	Trigger pivot	1
46	42827	50428270	Retaining ring	4
47*			O-ring, .437 x .562 x .062–90	2
48*			O-ring, .875 x 1.00 x .062–70	1
49	54819	90548191	Retaining ring, .875"	1
50	41297	50412971	Retaining ring, .625"	1
51			Screw, cap, #10-32 x .375 button socket head	2
52†	40595	50405950	Saw head assembly (includes items 53, 54 and 69)	1
53	41591	50415911	Needle bearing, .439 x .625 x .500	2
54*			O-ring, .500 x .687 x .093–80	1
55	40405	50404053	Motor cap assembly with bearings (includes items 56, 66, and 70)	1
56	41591	50415911	Needle bearing, .439 x .625 x .500	2
57	43839	50438395	Shaft	1
58	40114	50401144	Idler shaft	1
59	40115	50401154	Woodruff key	1
60	41593	50415930	Pin, drive, .123 x .209 square head	1
61	41594	50415940	Gear, 11-tooth	2
62*			Gasket, 2.09 x 3.09 x .0015	1
63	41596	50415960	Pin, dowel, .250 x .500	2
64	41598	50415981	Ball bearing	1
65	41482	50414821	Retaining ring, 1.375"	1
66			Screw, cap, 1/4–20 x 1.000 socket head	8
67*†			O-ring, .375 x .500 x .062–70	1
68†	40189	50401891	Screw, metering, 1/8 NPTF	1
69*			O-ring, .437 x .562 x .062–90	2
70			Washer, 6 mm, hard	8

Kits

*	48254	50482548	Packing kit (includes items marked with an asterisk)
	87134	52026008	Handle assembly (includes items 27–51)
	40595	50405950	Saw head assembly (includes items 53, 54 and 69)
	40405	50404053	Motor cap assembly (includes items 56, 66, and 70)
	04796	50047965	Safety trigger assembly (includes items 41-46)
♦	12657	52028588	Drive repair kit (includes items marked with ♦)
†	02090	52058056	Retrofit kit (replaces items marked with †); converts to AMR model
			Note: Motor assembly for serial code AMR is interchangeable as retrofit kit.

Decals

	46293	52081516	Decal
	41547	50415471	Decal, Greenlee Utility

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