

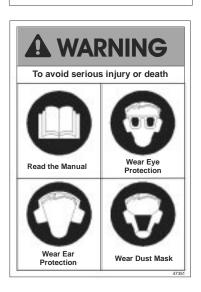
# **DS11**

# HYDRAULIC DIAMOND SAW



SERIOUS INJURY OR DEATH COULD RESULT FROM IM-PROPER REPAIR OR SERVICE OF THIS TOOL.

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





# SAFETY, OPERATION AND MAINTENANCE SERVICE MANUAL

Stanley Hydraulic Tools

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### **TABLE OF CONTENTS**

Sarety Symbols and Precautions 4
Tool Stickers and Tags
Hydraulic Hose Requirements 8
HTMA Requirements
Operation
Equipment Protection and Care
Troubleshooting
Specifications
Accessories
Service
Parts Illustration
Parts List
Chain Applications
Warranty 30

SERVICING THE STANLEY DIAMOND SAW: This manual contains safety, operation, and routine maintenance instructions. Stanley Hydraulic Tools recommends that servicing of hydraulic tools, other than routine maintenance, must be performed by an authorized and certified dealer. Please read the following warning.

### **A WARNING**

SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS TOOL.

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

For the nearest authorized and certified dealer, call Stanley Hydraulic Tools at the number listed on the back of this manual and ask for a Customer Service Representative.

# SAFETY SYMBOLS

Safety symbols and signal words, as shown below, are used to emphasize all operator, maintenance and repair actions which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to equipment.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



This safety alert and signal word indicate an imminently hazardous situation which, if not avoided, will result in death or serious injury.



This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, <u>could</u> result in <u>death or serious injury</u>.



This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, <u>may</u> result in <u>minor or moderate injury</u>.

CAUTION

This signal word indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE

This signal word indicates a situation which, if not avoided, will result in damage to the equipment.



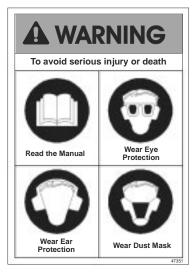
This signal word indicates a situation which, if not avoided, <u>may</u> result in <u>damage to the equipment</u>.

Always observe safety symbols. They are included for your safety and for the protection of the tool.

### LOCAL SAFETY REGULATIONS

nance personnel.	
	_

### SAFETY PRECAUTIONS



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

These safety precautions are given for your safety. Review them carefully before operating the tool and before performing general 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 4.

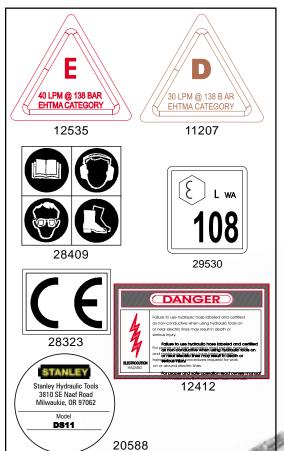
The DS11 Concrete Chain Saw will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual and any stickers and tags attached to the tool and hoses before operation. Failure to do so could result in personal injury or equipment damage.

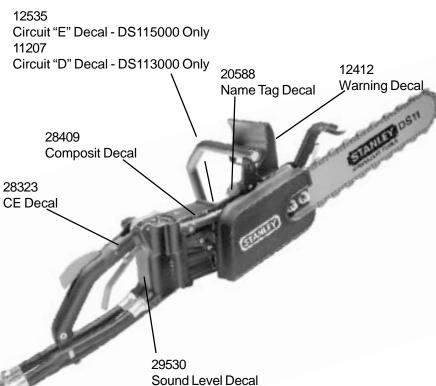
- Establish a training program for all operators to ensure safe operation.
- The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Do not operate the chain saw unless thoroughly trained or under the supervision of an instructor.
- Always wear safety equipment such as goggles, ear, head protection, leg protection, gloves, snug fitting clothing and safety shoes at all times when operating the chain saw.
- Do not overreach. Maintain proper footing and balnace at all times.
- Do not inspect or clean the chain saw while the hydraulic power source is connected. Accidental engagement of the chain saw can cause serious injury.
- Always connect hoses to the chain saw hose couplers before engergizing the hydraulic power source. Make sure all
  hose connections are tight.
- Do not operate the chain saw at fluid temperatures above 140°F/60°C. Operation at higher temperatures can cause higher than normal temperatures at the chain saw which can result in operator discomfort.
- Do not rely exclusively upon the safety devices built into the chain saw. As a chain saw user, several steps must be taken to keep your cutting jobs free from accident or injury:
  - 1. With a basic understanding of kickbacks, you can reduce or eliminate the element of surprise. Sudden surprise contributes to accidents.
  - 2. Keep a good firm grip on the chain saw with both hands, the right hand on the rear handle and the left hand on the front handle when operating the chain saw. Use a firm grip with thumbs and fingers encircling the chain saw handles. A firm grip helps reduce kickbacks and maintains control of the chain saw. Do not let go.
  - 3. Make sure the area in which you are cutting is free of obstructions.
  - 4. Cut at rated operating speeds (gpm).
  - 5. Do not overreach or cut above shoulder height.
  - 6. Only use replacement bars and chains specified by Stanley or the equivalent.
- Make sure the chain guard is in place before operating the chain saw.

# SAFETY PRECAUTIONS

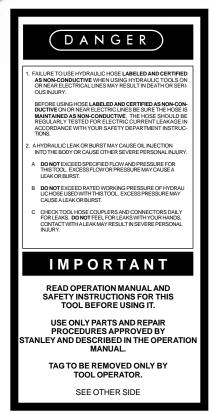
- Remove or control the water slurry to prevent yourself or others from slipping while cutting.
- Provide adequate ventilation in closed areas when operating a gas or diesel hydraulic power source.
- Always be well rested and mentally alert before operating the chain saw.
- Do not allow bystanders near the chain saw when starting or cutting.
- Do not start cutting until you have a clear work area and secure footing.
- Keep all parts of the body away from the chain saw during operation.
- Carry the chain saw with the tool deenergized and the bar and chain to the rear of your body.
- Do not operate a chain saw that is damaged, improperly adjusted, or not completely and securely assembled. Make sure the chain stops moving when the control trigger is released.
- Keep the handle dry, clean and free of hydraulic fluid.
- Do not use the chain saw near energized transmission lines.
- Turn off the power source or move the hydraulic control valve to neutral before setting the chain saw down.
- Use a guide bar scabbard when transporting the chain saw.
- Know the location of buried or covered electrical services before starting work.
- To avoid personal injury or equipment damage, all chain saw repair, maintenance and service must only be performed by authorized and properly trained personnel.
- Make sure the chain breaker and rivet spinner are securely mounted on flat, clean work surfaces. Check the mounting screws/bolts often.
- Check all chain breaker and rivet spinner components regularly for wear and general condition.

# **TOOL STICKERS & TAGS**





The safety tag (p/n 15875) at right is attached to the tool 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 tool when not in use.



DANGER D DO NOT LIFT OR CARRY TOOL BY THE HOSES. DO NOT ABUSE HOSE. DO NOT USE KINKED, TORN OR DAMAGED HOSE. MAKE SURE HYDRAULIC HOSES ARE PROPERLY CONNECTED TO THE TOOL BEFORE PRESSURING SYSTEM. SYSTEM PRESSURENCE HOSE MUST ALWAYS BE CONNECTED TO TOOL "IN PORT. SYSTEM PERINHOPES MUST ALWAYS BE CONNECTED TO TOOL OUT PORT. REVERSING CONNECTED SMAY CAUSE REVERSE TOOL OPERATION WHICH CAN RESULT IN SEVERE PERSONAL INJURY. DO NOT CONNECT OPEN-CENTER TOOLS TO CLOSED-CENTER HYDRAULIC SYSTEMS. THIS MAY RESULT IN LOSS OF OTHER HYDRAULIC FUNCTIONS POWERED BY THE SAME SYSTEM AND/ OR SEVERE PERSONAL INJURY. BYSTANDERS MAY BE INJURED IN YOUR WORK AREA. KEEP BY STANDERS CLEAR OF YOUR WORK AREA. . WEAR HEARING, EYE, FOOT, HAND AND HEAD PROTECTION. . TO AVOID PERSONAL INJURY OR EQUIPMENT DAMAGE, ALL TOO REPAIR MAINTENANCE AND SERVICE MUST ONLY BE PER-FORMED BY AUTHORIZED AND PROPERLY TRAINED PERSON NEI IMPORTANT READ OPERATION MANUAL AND SAFETY INSTRUCTIONS FOR THIS TOOL BEFORE USING IT. USE ONLY PARTS AND REPAIR PROCEDURES APPROVED BY STANLEY AND DESCRIBED IN THE OPERATION MANUAL. TAG TO BE REMOVED ONLY BY TOOL OPERATOR. SEE OTHER SIDE

SAFETY TAG P/N 15875 (shown smaller then actual size)

# **HYDRAULIC HOSE REQUIREMENTS**

### **HOSE TYPES**

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

- 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.

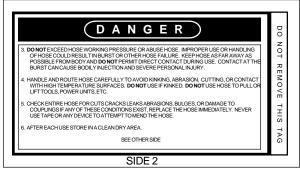
### **HOSE SAFETY TAGS**

To help ensure your safety, the following DANGER tags are attached to all hose 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 may be obtained from your Stanley Distributor.

#### THE TAG SHOWN BELOW IS ATTACHED TO "CERTIFIED NON-CONDUCTIVE" HOSE





(shown smaller than actual size)

### THE TAG SHOWN BELOW IS ATTACHED TO "CONDUCTIVE" HOSE.





(shown smaller than actual size)

### **HOSE PRESSURE RATING**

The rated working pressure of the hydraulic hose **must be equal to or higher than** the relief valve setting on the hydraulic system.

# **HTMA REQUIREMENTS**

### **Tool Category**

Hydraulic System Requirements	Type I	Type II	E ACHEMIA 1 SIGN EHTMA CAYEGORY	Type III
Flow rate Tool Operating Pressure (at the power supply outlet)	4-6gpm	7-9gpm	10.5-11.6 gpm	11-13 gpm
	(15-23 lpm)	(26-34 lpm)	(36-44 lpm)	(42-49 lpm)
	2000 psi	2000 psi	2000 psi	2000 psi
	(138 bar)	(138 bar)	(138 bar)	(138 bar)
System relief valve setting (at the power supply outlet)	2100-2250 psi	2100-2250 psi	2100-2250 psi	2100-2250 psi
	(145-155 bar)	(145-155 bar)	(145-155 bar)	(145-155 bar)
Maximum back pressure (at tool end of the return hose)	200 psi	200 psi	200 psi	200 psi
	(14 bar)	(14 bar)	(14 bar)	(14 bar)
Measured at a max. fluid viscosity of: (at min. operating temperature)	400 ssu*	400 ssu*	400 ssu*	400 ssu*
	(82 centistokes)	(82 centistokes)	(82 centistokes)	(82 centistokes)
Temperature Sufficient heat rejection capacity to limit max. fluid temperature to: (at max. expected ambient temperature)	140° F (60° C)	140° F (60° C)	140° F (60° C)	140° F (60° C)
Min. cooling capacity at a temperature difference of between ambient and fluid temps	3 hp (2.24 kW)	5 hp (3.73 kW)	6 hp (4.47 kW)	7 hp (5.22 kW)
	40° F (22° C)	40° F (22° C)	40° F (22° C)	40° F (22° C)
NOTE: Do not operate the tool at oil temperatures above 140F (60° C). Operation at higher temperatures can cause operator discomfort at the tool.				
Filter Min. full-flow filtration Sized for flow of at least: (For cold temp. startup and max. dirt-holding capacity)	25 microns	25 microns	25 microns	25 microns
	18 gpm (68 lpm)	30 gpm (114 lpm)	35 gpm (132 lpm)	40 gpm (151 lpm)
Hydraulic fluid Petroleum based (premium grade, anti-wear, non-conductive) Viscosity (at min. and max. operating temps)  NOTE: When choosing hydraulic fluid, the expected oil temperature extremes that will be experienced in service determine the most suitable temperature viscosity characteristics. Hydraulic fluids with a viscosit index over 140 will meet the requirements over a wide range of operating temperatures.	у	100-400 ssu* (20-82 centistokes)	100-400 ssu* (20-82 centistokes)	100-400 ssu* (20-82 centistokes)

NOTE: These are general hydraulic system requirements. See tool Specification page for tool specific requirements.

### **OPERATION**

### PREOPERTION PROCEDURES

### CHECK THE POWER SOURCE

- 1. Using a calibrated flow meter and pressure gauge, make sure the hydraulic power source develops a flow of 7-9 gpm/26-34 lpm at 2000 psi/140 bar.
- 2. Make certain that the power source is equipped with a relief valve set to open at 2100-2250 psi/145-155 bar.
- 3. Make certain that the power source return pressure does not exceed 250 psi/17 bar.

### **CONNECT HYDRAULIC HOSES**

- 1. Wipe all hose couplers with a clean lint-free cloth before making connections. If necessary, use a light-weight penetrating oil in a spray can to clean the hose couplers before each connection.
- 2. Connect the hoses from the hydraulic power source to the chain saw fittings or quick disconnects. It is a good practice to connect return hoes first and disconnect them last to minimize or avoid trapped pressure within the chain saw.
- 3. Observe the arrow on the couplers to ensure that the flow is in the proper direction. the female coupler on the chain saw is the inlet (pressure) coupler.
- 4. Move the hydraulic circuit control valve to the "ON" position to operate the chain saw.

#### NOTE:

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

### CONNECTING TO A WATER SUPPLY

- 1. Using a standard garden hose, connect the DS11 to a city or auxiliary water supply.
- 2. Holding the saw away from your body, turn the saw on and read the water pressure at the water gauge. Water pressure must be at least 35 psi/2.4 bar to avoid damage to the saw bar and chain.
- 3. If you plan on operating the chain saw in freezing weather, make sure you purge all the water from the system after each use.

4. If the water pressure is below 35 psi/2.4 bar, make the required adjustments to the water supply. If the required pressure cannot be achieved, you must use the Stanley Electric Water Pump Kit (Part Number 26020 or the Power Unit Water Pump Kit Part Number 29361).

### CHECK CHAIN AND BAR ADJUSTMENT

- 1. Check the chain tension often during operation, expecially during the first 1/2 hour when using a new chan. Adjust the chain accordingly when it becomes loose. Follow the prcedures contained in the Mainenance and Adjustements section of this manual.
- 2. Make sure the chain does not exceed a clearance of 1/4 in./6 mm from the bar (see figure 2). Exceeding the maximum clearance increases the chance of the chain being dislodged from the bar groove.

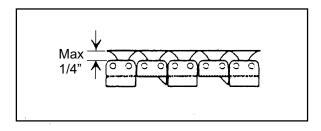


Figure 2. Maximum Chain Clearance

3. Make sure the bar attaching nuts are fully tightened and the chain guard is in place.

### **CHECK CHAIN SEGMENT WEAR**

1. Using adjustable calipers, measure several chain segments as illustrated in Figure 3.

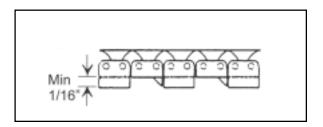


Figure 3. Chain Segment Wear

### **OPERATION**

2. If the average measurement is less than 1/16-inch/1.6 mm, then the chainmust be replaced. Refer to your Service Manual for chain replacement procedures.

### CHECK THE WATER SUPPLY

# **IMPORTANT**

Chain and bar damage will occur if the chain saw operates without the proper water supply.

- 1. Always have water running before starting the chain saw.
- 2. Water flow must be 4 gpm/15 lpm at 50 psi/3.5 bar minimum.

### **OPERATING PROCEDURES**

### **NEW SAW CHAIN BREAK-IN**

- 1. Always make sure the bar and sprocket are in good condition.
- 2. Turn on the water supply.
- 3. Operate the chain saw for two minutes (away from the intended cut) and then check the chain tension.
- 4. Adjust accordingly using the procedures contained in the Maintanence and Adjustments section of this manual.

### NOTE:

The chain is designed to only operate in one direction. Make sure the chain is installed so the bumper guard proceeds each diamond segment. (See figure 4).

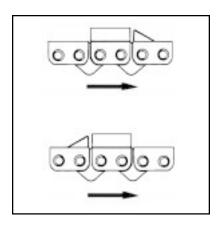


Figure 4. Chain Direction

### **CUTTING TIPS**

### NOTICE

The following are general cutting procedures and techniques. Differences in the terrain and the type of material being cut will make this information more or less valid for particular areas. For advice on specific cutting problems or techniques, consult your local Lynx Representative. He/she can often provide information that will make your work safter and more productive.

### PLAN THE CUT

- 1. Plan your cuts to prevent injury to yourself and to keep from pinching the saw bar and chain as a result of falling pieces of concrete, brick, etc.
- 2. Make your cuts in the order shown in Figure 5, starting with cut 1 (base horizontal cut) and proceeding with the remaining three cuts.

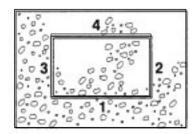


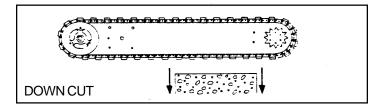
Figure 5. Making Cuts

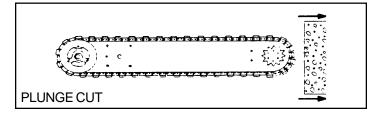
- 3. Outline the concrete area with a permanent marker for a visual guide.
- 4. Know what kind of material and how much reinforcing you are going to cut.

### **TYPES OF CUTS**

The LCC31 can be operated using the types of cuts shown in Figure 6. When making cuts:

# **OPERATION**





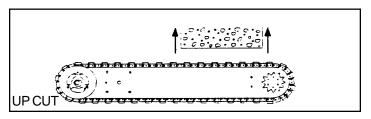


Figure 6. Types of Cuts (chain guard removed for clarity)

- 1. Do not use a cutting force in excess of 45 lbs/20 kg. Excessive force causes the chain to slow down or stall and causes premature wear of the saw bar and chain.
- 2. Always maintain a high chain speed. High chain speeds produce the best results.
- 3. Avoid aggressive/heavy plunge forces. Aggressive plunge force creates spalling of the concrete when the saw bar and chain exits and causes premature bar and chain wear.

### **COLD WEATHER OPERATION**

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

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

### **GENERAL MAINTENANCE TIPS**

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

If any chain saw disassembly is required, refer to the Service Manual.

### **SAW BAR RAIL**

A quick check can be made to determine if saw bar rail or chain segment wear exists. Figure 7 shows a worn saw bar rail.

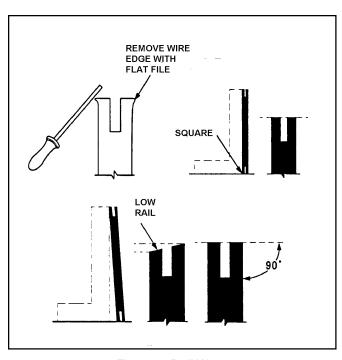


Figure 7. Rail Wear

If the saw bar rails are worn, use a flat file and dress each one until it is flat and square with the side of the saw bar (Figure 7).

Also make sure the saw bar is perfectly straight. If bows or bends are present in the saw bar, it must be replaced before dressing any rail.

### **ROTATING THE SAW BAR**

Maximum saw bar life can be achieved by occasionally turning the bar over so the top and bottom bar surfaces wear

evenly. Refer to the saw bar disassembly procedures in the Service Manual for further details.

### **CHAIN TENSION ADJUSTMENT**

Correct chain tension is very important throughout the life of the chain. Check the chain tension often during use (when the chain saw is stopped and the saw bar and chain have cooled off). The chain should move easily around the saw bar when pulled by hand. To adjust the chain tension:

- 1. Turn off the water and power supplies.
- 2. Loosen the two saw bar attachment nuts (Item 62, Parts Illustration).
- 3. Using the saw bar adjustment screw (Item 65, Parts Illustration), tighten the chain until you are still able to rotate it one full revolution by hand (Figure 9).

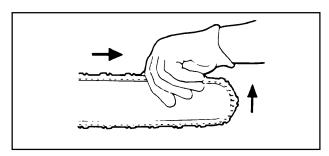


Figure 9. Pulling the Chain

- 4. Pull the chain around the saw bar to make sure it properly fits the sprocket and saw bar. The chain should be easily pulled.
- 5. Fully tighten the two saw bar attachment nuts.

### NOTE:

Adjust the chain tension each time the drive link tang hangs fully exposed from the groove at the bottom of the saw bar (Figure 10).

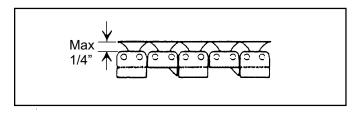


Figure 10. Exposed Drive Link Tang

### SERVICING THE CHAIN

The following procedures explain how to break a chain using Stanley's bench mounted chain breaker (part number 20858) to remove a worn or damaged segment.

1. Mount the chain breaker flush with the side or front of a flat, clean work surface (Figure 11).

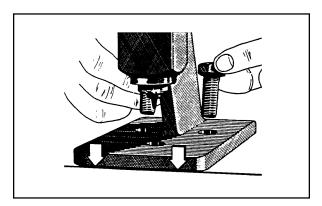


Figure 11. Chain Breaker Mounting

#### NOTE:

The Stanley chain breaker is only designed to remove rivet heads from the connecting links, not from a chain segment. The rivet heads shown in the shaded areas of Figure 12 are the only ones that can be removed.

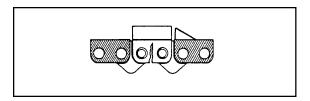
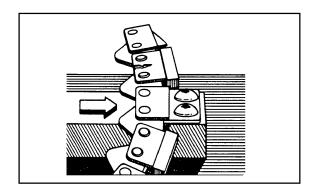


Figure 12. Removable Rivet Heads

2. Place the chain (the portion that you want broken) into the slot of the anvil pushing it forward until the bottom connecting link is flush with the far side of the slot (Figure 13).



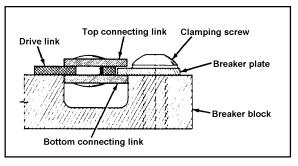


Figure 13. Inserting the Chain

3. Position the rivet head you want removed directly under the chainbreaker punch and then pull the handle down far enough to remove the rivet (Figure 14). Do not use excessive force.

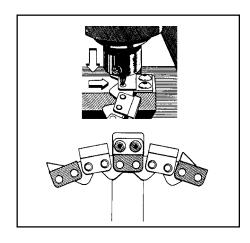


Figure 14. Removing a Rivet

# REPLACING THE CHAIN BREAKER PUNCH

If the chain breaker punch (part number 22801) becomes worn or damaged, use the following prcedures for replacement.

1. Remove the punch by loosening the set screw (Figure 15).

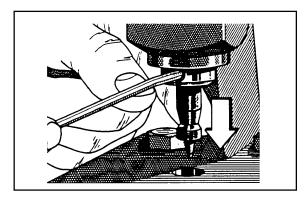


Figure 15. Removing the Punch

2. Insert a new punch into the holder and push it up until it is fully seated (Figure 16). Secure the punch to the chain breaker holder by fully tightening the set screw.

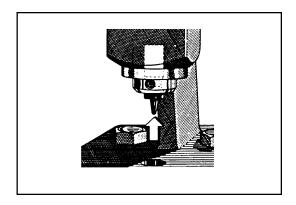


Figure 16. Replacing the Punch

### **SPINNING RIVETS**

The following procedures explain how to spin rivets using Stanley's bench-mounted rivet spinner (part number 20857) to assembly the chain.

1. Mount the rivet spinner flush with the side or front of a flat, clean work surface (Figure 17).

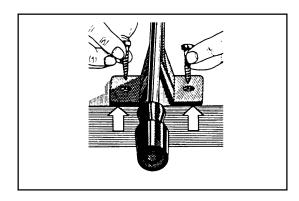


Figure 17. Rivet Spinner Mounting

2. Lay the chain across the plastic chain supports and then rotate the supports so the rivet head is centered between the take-up handle pocket and the spinner anvil (Figure 18).

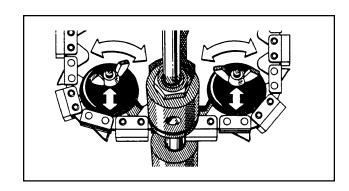


Figure 18. Positioning the Chain

3. Turn the take-up handle until the chain is tight against the spinner anvil (Figure 19).

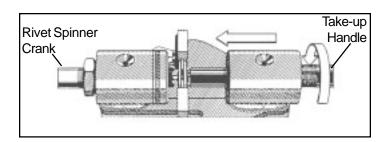


Figure 19. Securing the Chain

4. turn the rivet spinner crank a few times to center the rivet hub in the spinner anvil (Figure 20).

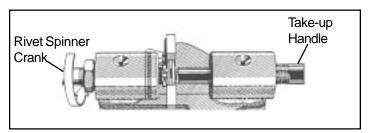


Figure 20. Centering the Rivet Hub

5. Apply a few drops of oil to the rivet hub (Figure 21).

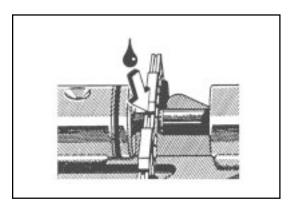


Figure 21. Applying the Oil

6. Turn the spinner crank while slowly running the take-up handle inward (approximately one full revolution) until the rivet head is formed (Figure 22).

### NOTE:

The take-up handle provides pressure while the spinner anvil forms the rivet head.

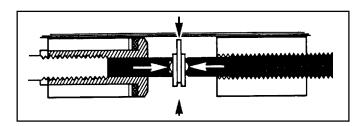


Figure 22. Forming a Rivet Head

### NOTE:

the rivet spinner is equipped with oiling chambers and should be maintained periodically with a light-weight oil (Figure 23).

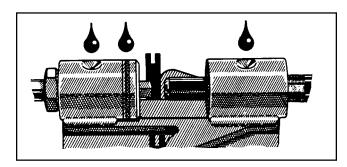


Figure 23. Spinner Oiling Chambers

# **TOOL EQUIPMENT & CARE**

### NOTICE

In addition to the Safety Precautions on page in this manual, observe the following for equipment protection and care.

- Make sure all couplers are wiped clean before connection.
- 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 couples and cause overheating of the hydraulic system.
- Always store the tool in a clean dry space, safe from damage or pilferage.
- Make sure the circuit PRESSURE hose (with male quick disconnect) is connected to the "IN" port.
  The circuit RETURN hose (with female quick disconnect) is connected to the opposite port. Do not
  reverse circuit flow. This can cause damage to internal seals.
- 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/172 bar.
- Do not exceed the rated flow (see Specifications) page in this manual for correct flow rate and model number. Rapid failure of the internal seals may result.
- Always keep critical tool markings, such as warning stickers and tags legible.
- Tool repair should be performed by experienced personnel only.
- Make certain that the recommended relief valves are installed in the pressure side of the system.
- Do not use the tool for applications for which it was not intended.

# **TROUBLESHOOTING**

### **CHAIN SAW TROUBLESHOOTING**

Excessive vibration and cuts rough.	Loose chain tension.	Retension the chainl.
	Excessive feed force.	Reduce feed force.
Chain saw will not cut straight.	Operator feed force not applied directly over centerline of saw. Accumulated saw bar wear and uneven chain segment profile wear.	move left hand closer to centerline of saw bar. Turn the saw bar over and dress rails square. Replace the saw bar and chain.
Loss of power.	Drive sprocket slipping on Trantorque® adapter.	Adjust and tighten Trantorque® adapter, (35 ft lbs/47 Nm).
Chain saw does not run.	Power source not functioning.	Check power source for proper flow and pressure (7-9 gpm/26-34 lpm @ 2000 psi/140 bar).
	Coupler or hoses are blocked.	Remove obstruction.
	Mechanical failure.	Disassemble the chain saw and inspect for damage.
Chain saw runs backwards.	Pressure and return hoses reversed.	Connect for proper flow direction.  Motor shaft must rotate clockwise.
Trigger is hard to press.	Pressure and return hoses reversed.  Back pressure too high.	Connect to proper flow direction.  Motor shaft must rotate clockwise.  Should not exceed 250 psi/17 bar @ 9 gpm/34 lpm measured at the end of the chain saw's operating hoses.
Fluid leakage around drive sprocket.	Motor shaft seal failure.	Replace as required.
Fluid leakage between the rear gear housing and the chain saw adaptor.	Motor face seal failure.	Replace as required.
Fluid leakage between the valve handle and the extension housing.	Oil tube seal failure.	Replace as required.
Fluid leakage between the ext- ension housing assembly and the chain saw adaptor.	Oil tube seal failure.	Replace as required.
Chain saw cuts slow.	Insufficient hydraulic fluid flow or low relief valve setting.	Adjust proper hydraulic fluid flow to proper gpm. For optimum performance, adjust relief valve to 2100-2250 psi/145-155 bar.

# **TROUBLESHOOTING**

### **CHAIN SAW TROUBLESHOOTING CONTINUED**

Chain saw cuts slow.	Back pressure too high.	Should not exceed 250 psi/17 bar @ 9 gpm/34 lpm measured at the end of the chain saw's operating hoses.
	Loss of diamond segment side clearance.	Replace the chain.
	Hydraulic fluid mixed in water supply.	Check motor for leaks.
	Chain segment dulled because of continuous use in hard material or rebar.	Redress segment by cutting in abrasive material (i.e., concrete, build-block, etc.). NOTE: This indicates that the wrong chain is being used.
	Wrong chain for application.	Scale down to a lower numbered chain.
	Wire edged bar rails.	Dress rails square.
Excessive vibration and cuts rough.	Segment(s) broken or missing from chain.	Remove and repair broken segment or replace chain.

# **SPECIFICATIONS**

Cutting Depths	
Input Flow Range	
DS113000	
DS115000	12 gpm/45 lpm
Input Pressure	2000 psi / 140 bar
Chain Type	
Weight (with bar)	26 lbs / 11.8 kg
Length	35 or 38 inches / 89 or 97 cm
Width	9 inches / 23 cm
Lubrication / Cooling	Internal Water Channels in Bar
Porting	-8 SAE O-Rina
Connection	3/8 inch Flush-Face Quick Disconnect Coupler

# **ACCESSORIES**

Chain Repair Spinner	20857
Diamond Chain Repair Breaker	
Diamond Chain Repair Kit (inludes p/n 20857 & 20858)	
Diamond Chain Service Kit	(sub p/n 20857 or 20858)
Wall Walker (Standard Equipment on Newer Models)	
Drive Sprocket	
Replacement Nose Sprocket	
Carrying Case	
Sprocket Wrench	23517
Replacement Punch	
Water Pump Kit (115/230 Volt / 60 Hz)	
Water Pump Kit (220/380/440 Volt /50 Hz)	
HP1 Power Unit Water Pump Kit	
3/8 inch Flush-Face Coupler Set	
1/2 inch Flush-Face Coupler Set	
25 feet, 1/2 inch Dual Hose with Flush-Face Couplers	
50 feet, 1/2 inch Dual Hose with Flush-Face Couplers	
15 inch Bar, Sprocket Nose	
18 inch Bar, Sprocket Nose	
Ultra-32, Sealed Chain for 15 inch Bar	
Pinnacle-32, Sealed Chain for 15 inch Bar	
Ultra-37, Sealed Chain for 18 inch Bar	
Pinnacle-32, Sealed Chain for 18 inch Bar	58632
Speed Hook Kit	39496

### INTRODUCTION

Good maintenance practice keeps the chain saw on the job and increases its service life.

the most important maintenance practice is to keep the hydraulic fluid clean at all times. Contaminated hydraulic fluid causes rapid wear and/or failure of internal parts.

Follow the procedure contained in the Hydraulic System Requirements section of this manual to ensure peak performance from the chain saw.

Never disassemble the chain saw unless proper troubleshooting procedures have isolated the problem to an internal part. Then, disassemble the chain saw only to the extent necessary to replace the defective part.

#### NOTE:

Keep contaminants such as dirt and grit away from internal parts at all times.

Always determine and correct the cause of the problem prior to assembly. Further wear and chain saw failure can result if the original cause is not corrected.

### PRIOR TO DISASSEMBLY

- 1. Clean the exterior of the chain saw.
- 2. Obtain Seal Kit (part number 22798) to replace all seals exposed during disassembly. Note the orientation of the seals before removing them. Install new seals the same way they were removed.

### PRIOR TO ASSEMBLY

- 1. Clean all parts with a degreasing solvent.
- 2. Make sure all seals that were exposed have been replaced with new parts.
- 3. Apply clean grease or o-ring lubricant to all parts during assembly.

### MOTOR REMOVAL, DISASSEMBLY, INSPECTION, CLEANING, REPLACEMENT & ASSEMBLY

### **REMOVAL**

- 1. Remove the two 3/8-inch nuts and plain washers securing the chain guard to the chain saw adaptor. Remove the guard.
- 2. Remove the chain and saw bar.
- 3. Clamp the drive sprocket (a chain type locking wrench works best) and then loosen the Trantorque® adaptor securing the drive sprocket to the motor shaft.
- 4. Remove the drive sprocket and the Trantorque® adaptor.
- 5. Remove the four capscrews securing the chain saw adaptor, valve handle and extension housing together. Seperate these assemblies.
- 6. Insert a hooked instrument through the oil tubes in the chain saw adaptor and valve handle (if necessary) and then pull them out. Take care to avoid damaging the oil tube bores in the chain saw adaptor and valve handle.
- 7. Remove the two oval head machine screws to allow the motor to be withdrawn from the chain saw adaptor.

### MOTOR DISASSEMBLY

- 1. Place the motor in a vise (with soft jaws or v-blocks) around the bearing end. Make sure the output shaft faces down.
- 2. Remove the eight 1/4-20 x 1-3/4-inch / 44 mm capscrews securing the rear gear housing to the chain saw adaptor.
- 3. Using a flat-bladed screwdriver or similar tool, gently and evenly pry all around the groove between the front bearing housing and the rear gear housing. DO NOT tilt the rear gear housing or pry on the flat surface inside the surrounding groove. Damage to the sealing surfaces can result.

#### NOTE:

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

4. Carefully lift the rear gear housing from the front bearing housing.

- 5. Remove the two gears, idler shaft and needle roller.
- 6. Remove the large face seal o-ring being careful not to damage the o-ring grooves or surrounding surfaces.
- 7. To remove the motor shaft from the front bearing housing, remove the large retaining ring securing the ball bearing/ keeper. Place the housing on a flat surface with clearance for bearing removal. Push on the small end of the motor shaft until the shaft and bearing slides free. Be careful not to bend the motor shaft.
- 8. The ball bearing should be removed from the motor shaft only if it must be replaced because damage can occur during removal. To remove the bearing from the motor shaft, remove the small retaining ring securing the seal race spacer the large retaining ring covering the bearing and then press on the end of the motor shaft while supporting the outer race of the bearing. Discard the bearing.
- 9. Remove the retaining ring at the bottom of the ball bearing bore to service the motor shaft seal.
- 10. To remove the seal liner and associated parts, insert the small end of the motor shaft through the seal liner. Place a rag across the gear face of the front bearing retainer and blow air though the small diameter motor shaft bearing. Use a shop air nozzle to force the seal liner onto the motor shaft for removal.
- 11. Remove the bushings using Collet (part number 11930) and Actuator Pin (part number 05067) along with Slide Hammer (part number 11931).

### **CLEANING & INSPECTION**

Inspect and clean all parts as follows:

- 1. Clean all parts with a degreasing solvent.
- 2. Blow dry all parts with compressed air and wipe clean. Use only lint-free cloths.

### **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 the motor shaft corresponding wear and replace as required.

#### 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 the groove in the drive gear bore.

### **Front Bearing Housing**

The surface near the gears hould show two overlapping polished circles without a step and should not be rough or grooved. The bore for the seal and bearing keeper should be smooth and free from nicks and scratches or leakage might occur.

### **Motor Shaft**

The shaft diameter at the bearing and seal locations must be smooth. Grooves, roughness or a reduced diameter indicate fluid contamination. Grit particles may have been imbedded in the bushings grinding into the hardened shaft. If abnormal shaft wear as a bove occurs (in excess of normal polishing), both the seal and associated bearings/bushings must be replaced.

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

- 1. Assemble the seal gland assembly by installing the outside diameter o-ring and quad ring as shown on the parts illustration. Place idler shaft through the seal gland, then loosely position the assembly in the seal bore of the front bearing housing (quad ring side down). Then carefully push the seal gland into place. Install the retaining ring. Remove the idler shaft.
- 2. To install the ball bearing on the motor shaft, support the ball bearing inner race and press the motor shaft through the bearing inner race. Place a new o-ring on the motor shaft, adjacent to the bearing inner race, slide the seal race over

the shaft, chamfered end first and secure with the retaining ring. It may be necessary to slide a deep socket or tube over the motor shaft to depress the o-ring and retaining ring so that the retaining ring end engages its groove.

#### NOTE:

Some motor shafts may have two retaining ring grooves. The inner most groove is to be used.

- 3. Install the bushings using Bearing Pusher (part number 11918).
- 4. Place the front bearing housing assembly on a smooth clean arbor press surface (protected from damage) with the large bearing bore facing up. Position the part so a clearance hole exists for inserting the motor shaft.
- 5. Apply grease to the motor shaft and keyway, then insert it through the shaft seal. Using Bearing Pusher (part number 00850), or a sleeve/socket with a diameter slightly smaller than the outside diameter of the ball bearing, press the bearing assembly into place. Press only on the outer race. Place the o-ring in the housing bore adjacent to the bearing outer race. Fill the bearing cavity with lubricating oil. Install the keeper using the bearing pusher as above and secure the assembly with the retaining ring.
- 6. Install the needle roller in the keyway of the motor shaft. Use a small amount of grease to keep the needle roller in place. Slide the drive gear over the needle roller and motor shaft. Install the idler shaft and gear.
- 7. Apply grease to the face seal o-ring groove and then install the o-ring.

### NOTE:

Make sure the dowel pins and shafts are aligned during installation.



Do not force parts together.

- 8. Note the screw hole pattern on the front and rear housings. They will only assembly one way. With all parts aligned, carefully slide the rear gear housing over the gears until it contacts the front bearing housing assembly.
- 9. Turn the motor shaft manually to check for free rotation. Install the eight  $1/4-20 \times 1-3/4$  inch / 44 mm capscrews. then recheck rotation.

10. When the new parts are installed, it might be necessary to "break-in" the motor. After the chain saw has been assembled without the guard, bar and chain, the motor can be broken-in as follows:



The following procedures can be hazardous. Failure to heed the instructions could result in serious injury.

- 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 chain saw firmly in a bench vise and place the correct size wrench on the Trantorque® adaptor.
- c. Connect the hydraulic power source to the chain saw and then turn the power source valve to the "ON" position.
- d. With a firm grip on the chain saw and wrench, SLOWLY squeeze the trigger to activate the chain 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 chain saw to determine that the motor starts and runs freely.
- h. If the motor is not starting or running freely, carefully repeat the break-in procedures until the motor performs satisfactorily.

### REPLACEMENT

- 1. Push the motor into the chain saw adaptor assembly.
- 2. Align the motor mounting holes and then secure it using two 5/16-18 x 3/4 inch / 18 mm screws and 242 Loctite.
- 3. Install new o-rings on the oil tubes and then install them in the chain saw adaptor and valve handle. Align with the extension housing and press together. Secure all parts using the four capscrews.

#### NOTE:

DO NOT lubricate or clean the drive sprocket or Trantorque® adaptor.

- 4. Place the drive sprocket on the Trantorque® adaptor and install the assembly on the shaft so the shaft extends completely through the bore.
- 5. Properly position the drive sprocket and then hand tighten the Trantorque® adaptor until the drive sprocket begins to snug up.
- 6. Make any fine adjustments and then fully tighten the Trantorque® adaptor to a torque value of 200 inch lbs / 22.6 Nm. Use chain-type vise grip pliers to keep the sprocket from rotating as you tighten the Trantorque® nut.
- 7. Replace the chain guard and then secure it to the chain saw adaptor using two 3/8 inch nuts and plain washers.
- 8. Perform the Chain Tension Adjustment procedure.

# VALVE SPOOL DISASSEMBLY & ASSEMBLY

### DISASSEMBLY

1. Drive out the 1/4-inch roll pin securing the trigger to the valve handle assembly. Depress the safety catach and remove the triggers through the top of the valve handle.

### NOTE:

It is not always necessary to drive the roll pins completely out of the 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 with a 3/16-inch / 5 mm diameter punch. It is not necessary to remove the safety catch to service the On/Off valve.

- 2. Remove the valve cap from the top of the handle. Remove the quad ring from the valve cap bore.
- 3. Pull the On/Off valve out through the top of the valve handle.
- 4. Remove the port plug from the bottom of the valve handle. The coil spring will drop out in your hand.
- 5. Carefully clean and inspect the valve spool and its bore in the valve handle. The valve spool and bore should have a polished appearance without scoring or deep scratches. Excessive wear indicates contaminated fluid in the hydraulic system.

### **ASSEMBLY**

- 1. Lubricate and install the quad ring in the valve cap bore.
- 2. Push the valve cap onto the valve stem, then thread the assembly into the top of the valve handle assembly.
- 3. Install the coil spring and the port plug into the bottom of the valve handle.
- 4. Line up the trigger and spacer with the pivot by inserting a 1/4-inch / 6 mm diameter punch into the valve handle (to maintain alignment while driving the roll pin into the handle.). Install the 1/4-inch roll pin in the trigger pivot hole.
- 5. Replace the safety catch (if previously removed). Place the torsion spring on the boss of the safety catch with the spring tab on the top of and facing the back of the catch as shown in the parts list illustration.
- 6. Place the safety catch in the valve handle and align the holes using a 3/16-inch / 5 mm diameter punch.
- 7. Install the 3/16 x 1-3/8-inch roll pin.
- 8. Push down on the spring tab until it snaps in place under the safety catch.
- 9. Check the safety catch and trigger mechanism for proper operation. The trigger must not activate the chain saw without the operator first depressing the safety catch.

# EXTENSION HOUSING DISASSEMBLY & ASSEMBLY

### **DISASSEMBLY**

- 1. Remove the four hex socket head capscrews the chain saw adaptor and valve handle to the extension housing.
- 2. Carefully remove the o-ring plug to release the spring and water valve.
- 3. Remove the spring and water valve.
- 4. Remove the two seals from inside the extension housing valve bore.
- 5. Carefully clean and inspect the water valve and its bore in the extension housing. The water valve and bore should have a polished appearance without scoring or deep scratches.

Excessive wear indicates contaminated water.

### **ASSEMBLY**

1. Lubricate and insert two new seals into the extension housing.

### NOTE:

Make sure the innermost seal (quad ring) is not twisted within its groove.

- 2. Insert the water valve into the extension housing.
- 3. Insert the spring into the valve counterbore.
- 4. Complete the assembly by installing the o-ring plug.
- 5. Secure the extension housing to the valve handle and chain saw adaptor using the four hex socket head capscrews.

### NOTE:

Before proceeding to the Nose Sprocket Disassembly, order a new Stanley Nose Sprocket, part number 22800.

# NOSE SPROCKET DISASSEMBLY & ASSEMBLY

#### DISASSEMBLY

1. Using Stanley's bench mounted chain breaker, line up the 1/4-inch hole in the side of the chainbreaker anvil with the chain breaker punch. Punch out the six nose sprocket rivets (Figure 24).



Figure 24. Punching out Nose Sprocket Rivets

2. Insert a straight blade screwdriver to spread the bar nose rails just enough to remove the old nose sprocket. Use a rag or paper towel to clean the nose sprocket area (Figure 25).

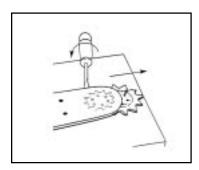


Figure 25. Removing the Old Nose Sprocket

3. Remove the new nose sprocket clips and fold back the top portion of the insertion card being careful not to remove or disturb the components (Figure 26).

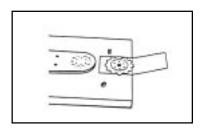


Figure 26. Preparing the New Nose Sprocket

4. With a flat blade screwdriver in the bar nose rails, slide the nose sprocket assembly into position aligning the six holes in the bar nose with the six holes in the nose sprocket assembly without removing the components from the card (Figure 27).

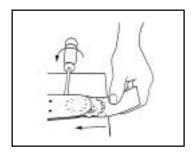


Figure 27. Installing the New Nose Sprocket

5. Insert six nose rivets into theholes and then hold them with your thumb. Remove the screwdriver and slide out the insertion card.

#### NOTE:

On used bars the nose rails might tend to spread apart. Use a small clamp if necessary to hold the rails together.

6. With the bar and rivets solidly supported on a strong flat steel surface, carefully peen the rivet heads down with the flat end of a hammer. Be careful to only hit the rivet head. Do not hit the bar body (this will pinch the nose sprocket). Rivet heads must completely fill the countersinks in the bar body and be snug and secure while still allowing the sprocket to freely turn (Figure 28).

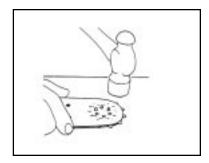


Figure 28. Replacing the Rivets

7. using a flat file, shave the rivet heads to a uniform height that is as close to the bar body as possible (Figure 29).

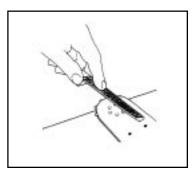
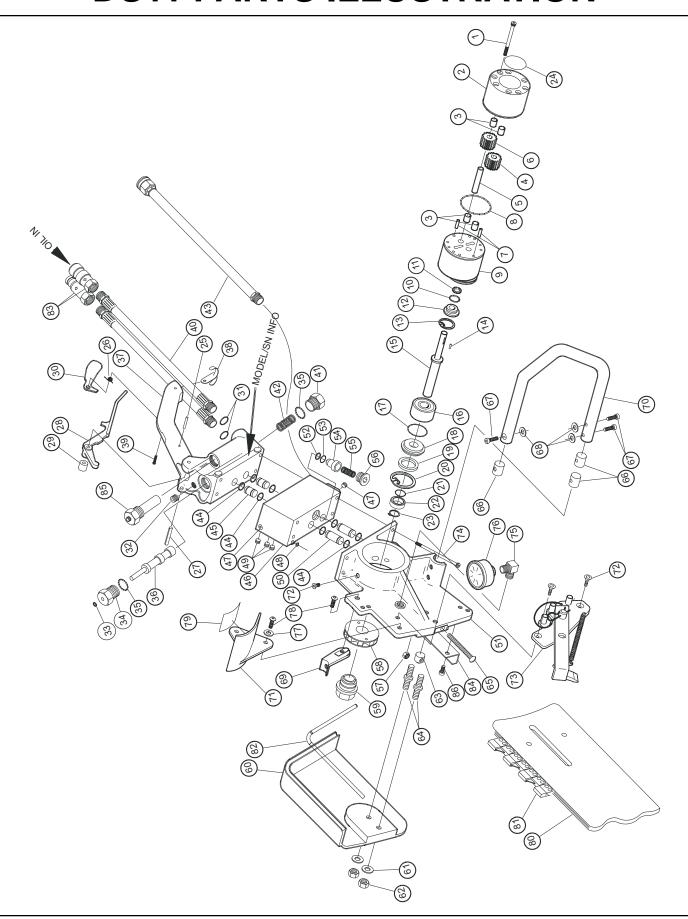


Figure 29. Filing the Rivets

# **DS11 PARTS ILLUSTRATION**



# **DS11 PARTS LIST**

	P/N	QTY	DESCRIPTION
	25688	1	Motor Assy - Land Model DS113000
	23756	1	Motor Assy - U/W Model DS115000
1	00208	8	Capscrew, 1/4-20 x 1-3/4
2	06835	1	Rear Gear Housing
3	06316	4	Bushing
4	06838	1	Drive Gear
5	06840	1	Idler Shaft
6	06839	1	Idler Gear
7	00713	2	Dowel Pin
8	00178	1	O-Ring*
9	21417	1	Front Bearing Housing
10	350771	1	O-Ring* (DS113000)
	00171	1	O-Ring* (DS115000)
l 11	00669	1	Quad Ring*
12	19884	1	Seal Gland
13	00170	1	Retaining Ring
14	03227	1	Needle Roller (DS113000)
'	06881	1	Needle Roller (DS115000)
15	20466	1	Motor Shaft (DS113000)
.	23752	1	Motor Shaft (DS115000)
16	12119	1	Bearing
17	02905	1	O-Ring*
18	02903	1	Keeper Seal & Bearing
19	03104	1	Teflon Seal*
20	00633	1	
1		-	Retaining Ring
21	01211	1	O-Ring, 2-016 R16*
22	03280	1	Spacer, Seal Race
23	20472	1	Retaining Ring
24	20588	1	Name Tag
25	03278	1	Roll Pin
26	22701	1	Torsion Spring
27	31804	1	Roll Pin, 1/4 x 2 Stainless
28	22707	1	Trigger
29	02920	1	On/Off Valve Spacer
30	22704	1	Safety Catch
31	01605	2	O-Ring
32	01219	1	Pipe Plug (Before 2003)
	340045	1	SAE Plug (2003 and Later)
33	00112	1	Quad Ring*
34	02931	1	Valve Cap
35	01604	2	O-Ring, 3-910 R17*
36	02925	1	Valve Spool
37	28552	1	Valve Handle Assy (incl. 32 & 41)
38	20459	1	Hose Clip
39	00787	1	Capscrew, 1/4-20 x 1-1/4 (DS113000)
	35963	1	Capscrew, 1/4-20 x 1-1/4 (DS115000)
40	07226	2	Hose Assy, 18 inch (DS113000)
	06830	2	Hose Assy, 18 inch (DS115000)
41	09437	1	Plug (DS113000)
	03010	1	Plug (DS115000)
42	02916	1	Comp. Coil Spring
43	20497	1	Water Hose Assy (DS113000)
	23755	1	Water Hose Assy (DS15000)
44	00175	8	O-Ring, 2-014 R17*
45	00174	2	Oil Tube
46	20453	1	Extension Housing
47	00961	2	Pipe Plug
"		-	1

ITEM	P/N	QTY	DESCRIPTION
48	00018	1	O-Ring, 2-013 R17*
49	22717	3	Pipe Plug, 1/16-27
50	02912	2	Oil Tube
51	22713	1	Chain Saw Adaptor
52	25260	1	Quad Ring*
53	01211	1	O-Ring, 2-016 R16*
54	20463	1	Water Valve
55	20458	1	Spring
56	350237	1	Hollow Hex Plug
57	22752	1	Hex Nut, 5/16-18 ESNA
58	20470	1	Drive Sprocket
59	20471	1	Trantorque® Adaptor
60	22711	1	Chain Guard
61	02766	2	Plain Washer
62	03276	2	Nut
63	22702	1	Bar Adjustment Nut
64	20465	2	Stud
65	22714	1	Screw, 5/16-18 x 2-3/4
66	02649	3	Handle Bar Retainer
67	02764	3	Screw, 5/16 x 3/4
68	02643	3	Neoprene Washer
69	20461	1	Handle Strut Assy
70	02936	1	Handle Bar (DS113000)
	23754	1	Handle Bar (DS115000)
71	07473	1	Hand Guard
72	03006	4	Capscrew, 5/16-18 x 3/4
73	23176	1	Wall Waker™
74	01758	4	Screw
75	22716	1	Street Elbow
76	21550	1	Gauge (DS113000 Only)
77	12175	2	Washer, 5/16
78	22715	3	Capscrew, 5/16-18 x .625
79	12412	1	Warning Sticker
80			Bar (See Accessories)
81	00704		Chain (See Chain Applications)
82	20721	1	Cord Stock
83	24069	1	Coupler Set
84	22945		Chain Cover
85 86	25635	1 2	Flow Regulator
86	23196 23517	1	Capscrew, 5/16-18 UNC x 3 Sprocket Wrench (Not Shown)
	23317	ľ	Sprocker Wiench (Not Shown)

SEAL KIT PART NUMBER 22798					
00178	O-Ring	1			
350771	O-Ring	1			
00669	Quad Ring	1			
02905	O-Ring	1			
03110	Teflon Seal	1			
01211	O-Ring 2				
00112	Quad Ring	2			
01604	O-Ring	2			
03847	Hose Washer	1			
00175	O-Ring	8			
00018	O-Ring	1			
25260	Quad Ring	1			
01605	O-Ring	3			

\* Part of Seal Kit

# **DIAMOND CHAIN APPLICATIONS**

Model	Bar Length	P/N	Correct Applications
Pinnacle-32	15 inch	56803	Very hard aggregate concretes (flint, chert, granite, etc). Heavy steel reinforcing, 5/8 inch/16 mm diameter and larger. Medium/hard aggregate concretes (granite, quartz, river rock, etc). Moderate steel reinforcing (wire mesh 3/8-1/2 inch/10-12 mm diameter). Soft aggregate concrete, concrete block, masonry, "green" concrete, highly abrasive conditions.
Pinnacle-37	18 inch	58632	
Ultra-32	15 inch	56801	Medium/hard aggregate concretes (granite, quartz, river rock, etc).  Moderate steel reinforcing (wire mesh 3/8-1/2 inch/10-12 mm diameter).  Soft aggregate concrete, concrete block, masonry, "green" concrete, highly abrasive conditions.
Ultra-37	18 inch	56802	

### WARRANTY

Stanley Hydraulic Tools (hereinafter called "Stanley"), subject to the exceptions contained below, warrants new hydraulic tools for a period of one year from the date of sale to the first retail purchaser, or for a period of 2 years from the shipping date from Stanley, whichever period expires first, to be free of defects in material and/or workmanship at the time of delivery, and will, at its option, repair or replace any tool or part of a tool, or new part, which is found upon examination by a Stanley authorized service outlet or by Stanley's factory in Milwaukie, Oregon to be DEFECTIVE IN MATERIAL AND/OR WORKMANSHIP.

#### **EXCEPTIONS FROM WARRANTY**

**FREIGHT COSTS:** Freight costs to return parts to Stanley, if requested by Stanley for the purpose of evaluating a warranty claim for warranty credit, are covered under this policy if the claimed part or parts are approved for warranty credit. Freight costs for any part or parts which are not approved for warranty credit will be the responsibility of the individual.

**SEALS & DIAPHRAGMS:** Seals and diaphragms installed in new tools are warranted to be free of defects in material and/or workmanship for a period of 6 months after the date of first usage, or for a period of 2 years from the shipping date from Stanley, whichever period expires first.

**CUTTING ACCESSORIES:** Cutting accessories such as breaker tool bits are warranted to be free of defects in material and or workmanship at the time of delivery only.

**ITEMS PRODUCED BY OTHER MANUFACTURERS:** Components which are not manufactured by Stanley and are warranted by their respective manufacturers.

a. Costs incurred to remove a Stanley manufactured component in order to service an item manufactured by other manufacturers

**ALTERATIONS & MODIFICATIONS:** Alterations or modifications to any tool or part. All obligations under this warranty shall be terminated if the new tool or part is altered or modified in any way.

**NORMAL WEAR:** any failure or performance deficiency attributable to normal wear and tear such as tool bushings, retaining pins, wear plates, bumpers, retaining rings and plugs, rubber bushings, recoil springs, etc.

**INCIDENTAL/CONSEQUENTIAL DAMAGES:** To the fullest extent permitted by applicable law, in no event will STANLEY be liable for any incidental, consequential or special damages and/or expenses.

FREIGHT DAMAGE: Damage caused by improper storage or freight handling.

LOSS TIME: Loss of operating time to the user while the tool(s) is out of service.

**IMPROPER OPERATION:** Any failure or performance deficiency attributable to a failure to follow the guidelines and/or procedures as outlined in the tool's operation and maintenance manual.

**MAINTENANCE:** Any failure or performance deficiency attributable to not maintaining the tool(s) in good operating condition as outlined in the Operation and Maintenance Manual.

HYDRAULIC PRESSURE & FLOW: Any failure or performance deficiency attributable to excess hydraulic pressure, excess hydraulic back-pressure, or excess hydraulic flow.

**REPAIRS OR ALTERATIONS:** Any failure or performance deficiency attributable to repairs by anyone which in Stanley's sole judgement caused or contributed to the failure or deficiency.

**MIS-APPLICATION:** Any failure or performance deficiency attributable to mis-application. "Mis-application" is defined as usage of products for which they were not originally intended or usage of products in such a matter which exposes them to abuse or accident, without first obtaining the written consent of Stanley.

WARRANTY REGISTRATION: STANLEY ASSUMES NO LIABILITY FOR WARRANTY CLAIMS SUBMITTED FOR WHICH NO TOOL REGISTRATION IS ON RECORD. In the event a warranty claim is submitted and no tool registration is on record, no warranty credit will be issued without first receiving documentation which proves the sale of the tool or the tools' first date of usage. The term "DOCUMENTATION" as used in this paragraph is defined as a bill of sale, or letter of intent from the first retail customer. A WARRANTY REGISTRATION FORM THAT IS NOT ALSO ON RECORD WITH STANLEY WILL NOT BE ACCEPTED AS "DOCUMENTATION".

### NO ADDITIONAL WARRANTIES OR REPRESENTATIONS

This limited warranty and the obligation of Stanley thereunder is in lieu of all other warranties, expressed or implied including merchantability or fitness for a particular purpose except for that provided herein. There is no other warranty. This warranty gives the purchaser specific legal rights and other rights may be available which might vary depending upon applicable law.



### **Stanley Hydraulic Tools**

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