



Safety, Operation & Maintenance Manual

Universal Processors SV Series/Jaw options

Part Numbers T020205, T050205, T069605, T099605, T059605

STANLEY



INTELLECTUAL PROPERTY – PATENT INFORMATION

This product is covered by one or more of the following patents.

U.S. PATENT NUMBERS:

5,474,242	7,240,869
5,531,007	7,487,930
5,992,023	7,578,461
7,322,273	7,832,130
8,146,256	8,104,384

EPO Patent Numbers

435,702
737,107
1,682,299
1,789,225

PREFACE

This manual contains information for the safe and proper operation and maintenance of the universal processor and its jawset options. Read the entire manual before the initial start-up of the attachment. It is important to know the correct operating procedures of the attachment and all safety precautions to prevent the possibility of property damage and personal injury.

The LaBounty attachment has been designed and manufactured with high quality materials and care in workmanship. The instructions in this manual have been prepared to ensure that, when followed properly, the attachment will provide efficient and reliable service. Continuing product development and improvement may have caused changes in the attachment that are not reflected in this manual. If a question arises regarding the operation or maintenance of the attachment, contact a LaBounty dealer for the most current information available.

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INTRODUCTION

Your safety and the safety of others is a direct result of how you operate and maintain your equipment. Read and understand this manual and other safety information provided with the base machine and be sure that you understand all controls and operating instructions before attempting to operate this equipment. Failure to follow the safety precautions can result in personal injury, death or property damage.

Carefully read all safety messages in this manual and on your equipment safety signs. Keep safety signs in good condition; replace missing or damaged safety signs.

Because LaBounty cannot foresee all hazardous circumstances, the precautions listed in this manual and on the equipment are not all-inclusive. If a procedure, method, tool or part is not specifically recommended by LaBounty, determine whether it is safe for you and others, and that the equipment will not be damaged or made unsafe as a result of your decision to implement it.

The basic rules are summarized in this section of the manual. They also appear throughout the manual along with additional specific rules for safety and operation.

UNDERSTAND SIGNAL WORDS

When you see the following symbols and signal words on your equipment or in the manual, be alert to the potential for personal injury or equipment or property damage. Follow recommended precautions and safe operating practices.

 **DANGER**

*Indicates immediate hazards that **WILL** result in severe personal injury or death.*

 **WARNING**

*Indicates hazards or unsafe practices that **CAN** result in severe personal injury or death.*

 **CAUTION**

Indicates hazards or unsafe practices that could result in personal injury.

 **NOTICE**

Indicates notes of importance to a procedure or part.

SAFETY SUMMARY

⚠ DANGER

If the attachment is not functioning properly, you must shut the machine down and follow proper lockout, tag, and repair procedures.

⚠ DANGER

NEVER operate equipment without the original equipment safety guards in place.

⚠ DANGER

Ensure that the cab is equipped with the proper safety guards for LaBounty applications. In addition, it is required that the cab be equipped with an approved Falling Object Protection Structure (FOPS) when processing materials. The FOPS must meet the requirements of SAE standard J1356. A transparent shatter-resistant shield covering the front of the cab is also required. Contact your base machine equipment dealer or manufacturer for more information on the availability of FOPS. **Lack of proper FOPS may result in injury or death.**

⚠ DANGER

DO NOT process material with the attachment over the operator's cab. Doing so will result in severe personal injury or death from falling debris.

⚠ DANGER

DO NOT attempt to process brittle materials such as axles and railroad rail. **DO NOT** process any material in any position that may propel it toward the operator, other workers, buildings or equipment.

⚠ DANGER

Clear all persons and equipment from the area of operation and machine movement. **NEVER** move loads over people or equipment. When viewing the operation of the attachment, maintain a safe distance of at least 75 feet (23 meters).

⚠ DANGER

NEVER approach power lines with any part of the machine. Keep clear at a minimum of 15 feet (5 meters).

⚠ DANGER

DO NOT close the attachment on a structure and reverse the excavator in an attempt to pull down material.

⚠ DANGER

Avoid tipping. The attachment will alter the lift capacities of the base machine. **DO NOT** overload the excavator or serious injury could result. Lift capacities will vary if the base machine is not on level ground. Lifting incorrectly can cause severe injury or machine damage. Carry loads in recommended positions for maximum stability. Use the recommended excavator counterweight. Use short slings and lift the load only as high as necessary.

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WARNING

Disassembly of any pin-connected attachment can be hazardous. **NEVER** remove any pins unless the attachment is on the ground and blocked up or serious injury or death could result. Metal chips or debris may fly when a connecting pin is struck. Use a brass drift when striking pins and always wear protective clothing and proper eye protection. Pins may fly when struck with force to drive them in or out; always keep people clear when removing or installing pins.

WARNING

DO NOT allow riders on the machine. Riders are subject to serious injuries such as being struck by foreign objects or being thrown off the machine. Riders also distract and obstruct the operator, resulting in the machine being operated in an unsafe manner. **NEVER** use the attachment as a work platform or personnel carrier.

WARNING

Under no circumstances should any modifications be made to LaBounty equipment without factory authorization. This equipment was designed to do a specific job and alterations to it could result in injury to operator or machine.

WARNING

ALWAYS lower the boom to the ground before leaving the cab. If it is necessary to work on an attachment off the ground, securely support the machine and attachment. **DO NOT** support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. **DO NOT** rely on a cylinder to hold the attachment in the air. If a control is moved or hydraulic pressure is otherwise released, the attachment may drop. **DO NOT** work under a machine that is supported only by a jack.

WARNING

Hydraulic oil becomes hot during operation. **DO NOT** let hot hydraulic oil get in contact with the skin as it could cause severe burns. Wear adequate protective clothing and safety equipment. **DO NOT** tamper with any hydraulic line or component while it is pressurized. Escaping fluid under pressure can penetrate the skin, causing serious injury. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard to search for leaks. If **ANY** fluid is injected into the skin, seek immediate medical assistance.

CAUTION

DO NOT weld on any structural member unless specifically authorized by LaBounty.

CAUTION

ALWAYS wear close-fitting clothing and safety equipment appropriate to the job. Safety equipment should be worn at all times when viewing, operating, or maintaining the attachment to prevent injury. Safety equipment includes eye protection, hard hat, steel toe shoes, gloves, and hearing protection.

CAUTION

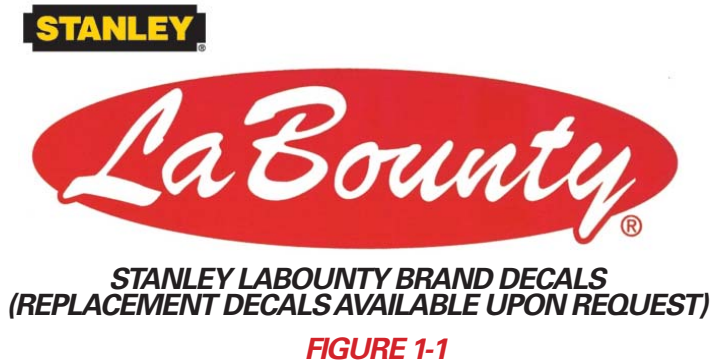
Keep clear of all potential pinch points, including the moving upper jaw, cylinder connections, bucket linkages or other moving parts.

DECAL MAINTENANCE

Be sure that all safety decals are installed and visible. Keep decals clean and promptly replace any decals that are damaged or worn. Replacement decals and decal kits are available through your Stanley LaBounty Service Department. Always place replacement decals in the same position as the original decals.

⚠ WARNING

Replace all safety decals promptly if they become damaged or worn. Operating the attachment with safety decals in poor condition can result in severe injury or death.



SAFETY FIRST

Read the Safety, Operation and Maintenance Manual before operating or servicing the equipment.

Keep the manual with the attachment so it is available for reference.

**SAFETY FIRST DECAL PART NUMBER 503590
(INCLUDED WITH MANUALS)
ITEM 7**

FIGURE 1-2



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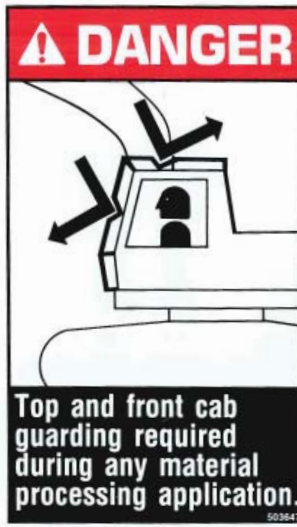
**GREASE DECAL
PART NUMBER 116338**

FIGURE 1-3



**SAFE VIEWING DISTANCE DECAL
PART NUMBER 116389**

FIGURE 1-4



**SAFETY DECAL
PART NUMBER 503647**

FIGURE 1-5

	1538 Highway 2 Two Harbors, MN 55616 tel: 1-800-522-5059 fax: 218-834-3879 www.stanleyhydraulic.com
	Made in the U.S.A. with Global Materials
Attachment Model:	
Serial Number:	
Year of Manufacture:	
Weight:	

**MODEL/SERIAL NUMBER PLATE
PART NUMBER 511045**

FIGURE 1-6

U.S. PATENT NUMBERS		EPO PATENT NUMBERS
5,474,242	7,240,869	435,702
5,531,007	7,487,930	737,107
5,992,023	7,578,461	1,682,299
7,322,273	7,832,130	1,789,225
8,146,256	8,104,384	

STANLEY LABOUNTY
 1538 Highway 2
 Two Harbors, MN 55616
 FOREIGN PATENTS AND OTHER PATENTS PENDING

1-800-522-5059
 www.stanleyhydraulic.com

116404

**PATENT PLATE
PART NUMBER 116404**

FIGURE 1-7

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MODEL DESCRIPTION

Product refinements like 360° continuous rotation and high performance cylinders have altered the look and performance of LaBounty Universal Processors. Models are available for excavators ranging in size from 15 metric tons (30,000 pound class) to 75 metric tons (170,000 pound class). Standard 360° continuous rotation provides easy, accurate processing at all angles.

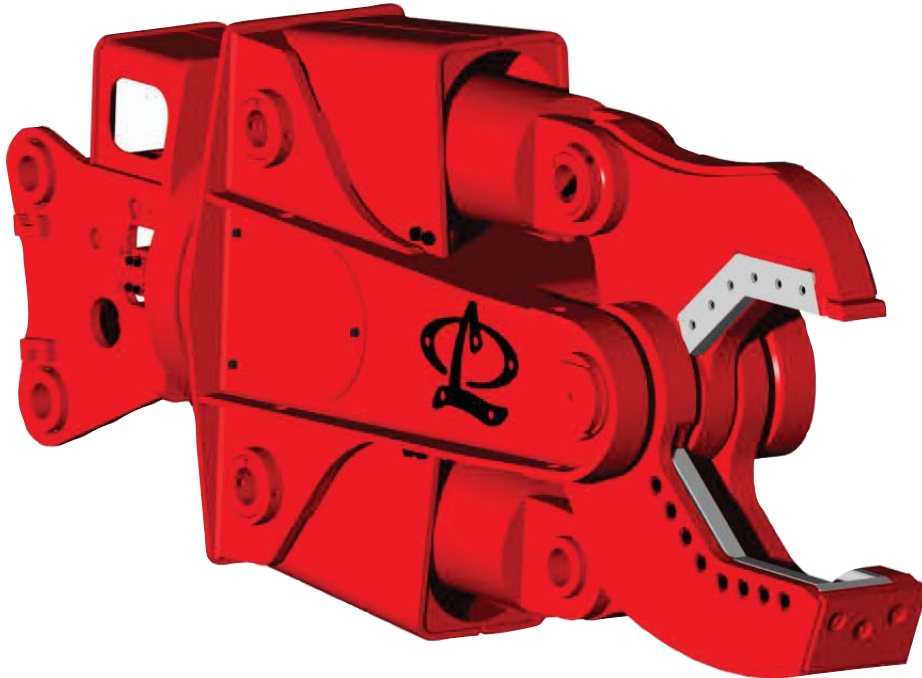
High-tensile, high-alloy, abrasion-resistant steel construction assures long, uninterrupted service—even in the harshest conditions. An improved main pivot designed specifically to each jaw application provides long life and higher productivity.

Multiple interchangeable jaw options provide true multitasking capability. This means an immediate payback in recyclable concrete, rebar and scrap steel. It also means a reduction in tipping fees, transportation costs and work force.

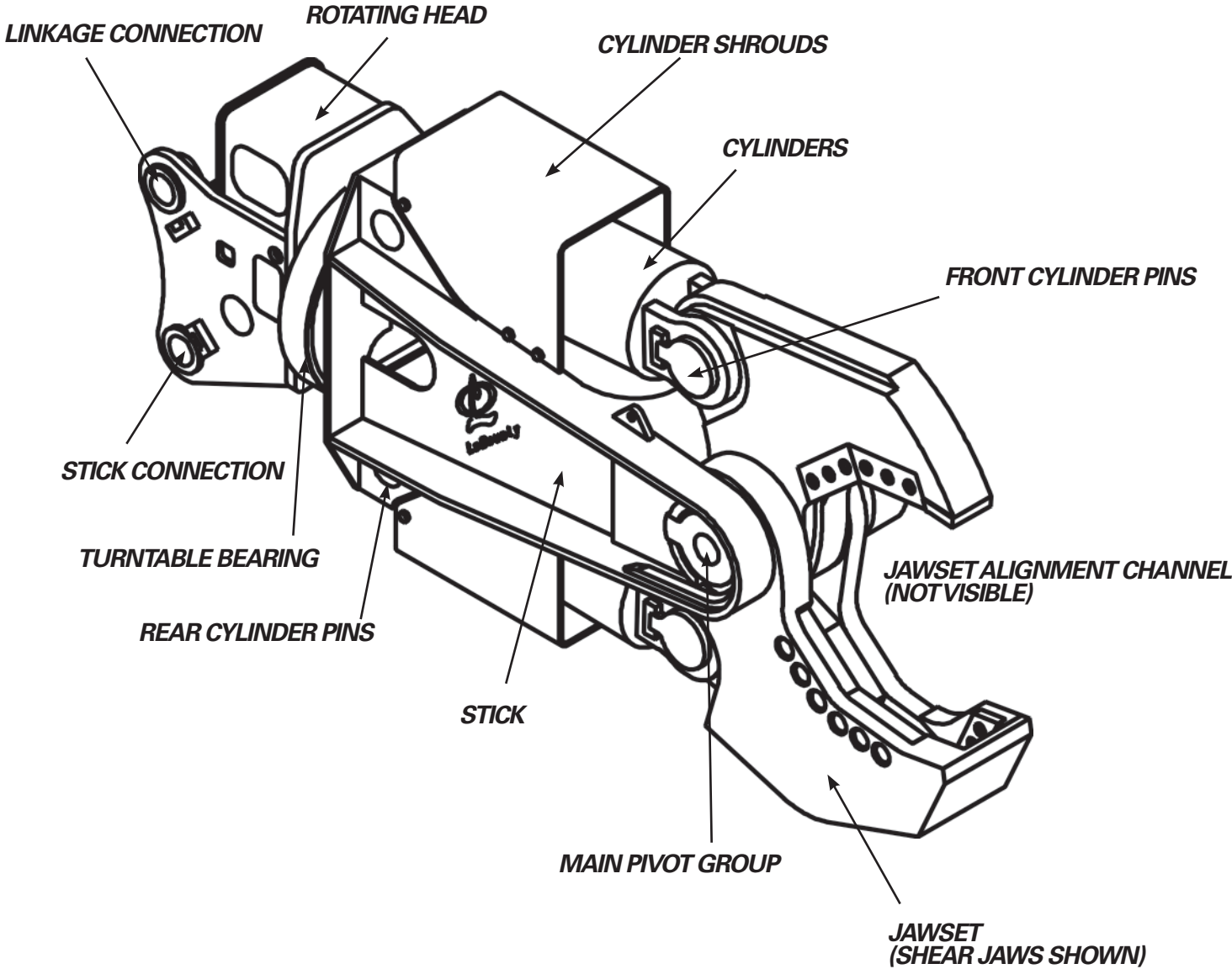
The Universal Processor is the ideal solution for contractors in demolition, reconstruction, and concrete processing applications.

FEATURES

- Speed valve generates fast cycle times resulting in increased productivity
- Made with high-strength, abrasion-resistant steel for durability
- Added reach reduces machine movement and wear and greatly reduces the need for arm mounting—safety is increased
- Pin-on replaceable wear parts for easy maintenance
- On-site material processing means immediate payback in recyclable products
- Installs in as little as two hours
- At-factory upgrading and rebuilding services available for extended life



ATTACHMENT TERMS



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JAW OPTIONS

Stanley LaBounty offers four standard jaw options for the Universal Processor SV. Find more information about each of them in Section 7 of this manual.

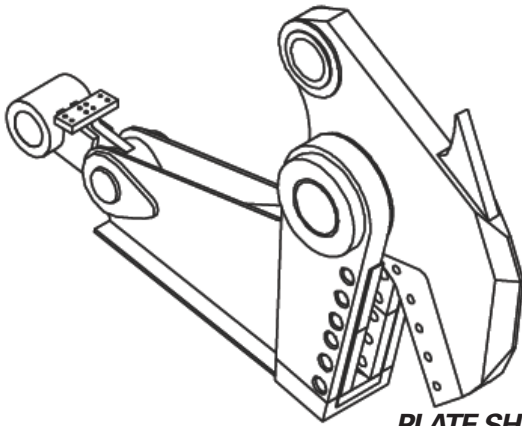
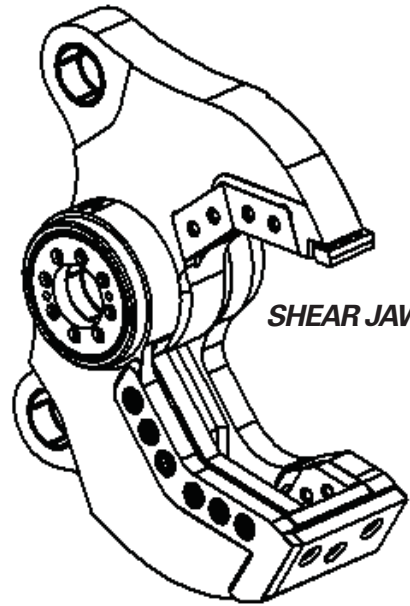
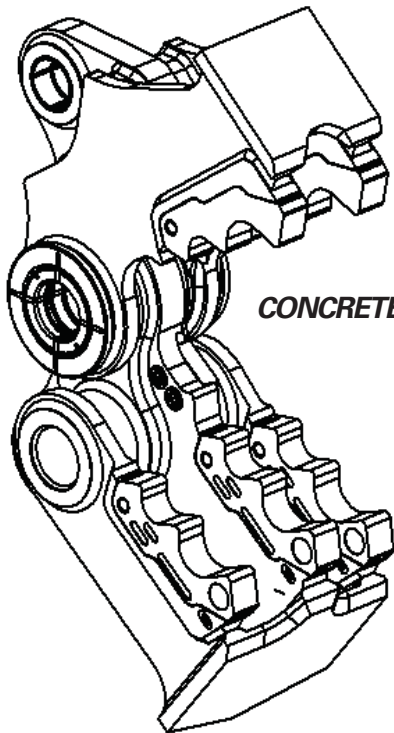


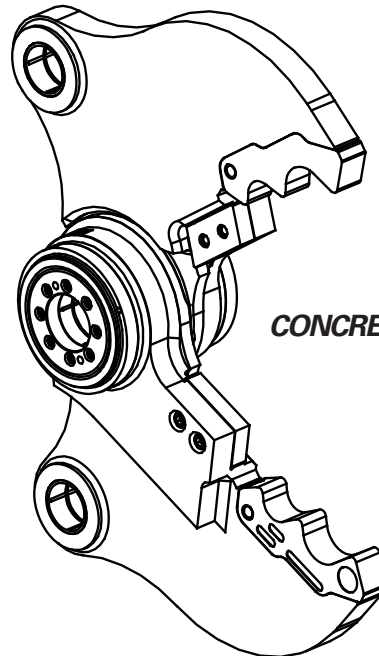
PLATE SHEAR JAWS



SHEAR JAWS



CONCRETE PULVERIZER JAWS



CONCRETE CRACKERS JAWS

ATTACHMENT GLOSSARY

Accumulator	Used in a hydraulic rotation kit to store hydraulic fluid to drive the rotation motor.
Accumulator Line	Hydraulic hose that directs flow from the control valve assembly to the accumulator and back.
Backdriving	A condition that occurs when a force (such as a heavy, unbalanced load in the jaws) overpowers the rotation system and drives the attachment to rotate even though the rotation function is not being operated. Excessive backdriving is hard on the rotation system and can lead to premature wear of the rotation components or even component failure and downtime.
Boom Pivot	Part of the Universal Processor mounting bracket that attaches to the excavator's boom tip (second member mounts).
Case Drain Conduit	Hydraulic hose that drains fluid from the rotation motor case.
Junction Box	Where the wiring for the directional valve and unloading valve is connected to the electrical cable from the foot switch (if equipped with a rotation control kit).
Control Valve Assembly	Used in the rotation control kit to direct flow to the accumulator and the hydraulic motor.
Cross Pattern Technique	A method of torquing a circular pattern of bolts to achieve proper seating. Based on a clock face, the technique pattern would follow the order of 12, 6, 11, 5, 10, 4, 9, 3, 8, 2, 7, 1.
Crossover Relief Valve	A hydraulic component used in a rotating attachment that limits the amount of hydraulic pressure sent to the rotation assembly. The crossover is preset at the factory and must not be tampered with.
Cylinder	Hydraulic component that actuates the jaw set. LaBounty cylinders are designed to withstand an extreme-duty life.
Cylinder Pivot	The excavator stick cylinder attaches to this part of the Universal Processor mounting bracket to articulate the tip-up function of the attachment when mounted second member.
Directional Valve	Valve that directs fluid from the accumulator to the rotation motor (if equipped with a rotation control kit).
Electrical Plug	Plug located in the side of the attachment mounting bracket that connects the foot pedal to the solenoid on the control valve assembly (if equipped with a rotation control kit).
End Cap	Main pivot group component that fastens to the end of the main pin.
External Rotation Control Kit	An optional kit that provides a medium-pressure, low-flow hydraulic source to rotate the attachment. The kit taps the hydraulic system of the base machine and draws only enough fluid to charge an accumulator. When the rotation function is used, this pressurized fluid is released to the rotation motor to rotate the attachment. The external kit is mounted on the excavator with hydraulic lines running up the boom.
Flow Control Valve	A hydraulic component used in the rotation group of a rotating attachment that meters out the hydraulic fluid to the rotation motor of the attachment.
Foot Switch	Electrical switch to be installed in the cab of the base machine used to operate the rotation function of the attachment (if equipped with a rotation control kit).
Front Cylinder Pins	The pins that connect the attachment cylinders to the jaws.
Hydraulic Manifold Block	Machined block located in the attachment mounting bracket that directs hydraulic flow from the base machine to the attachment cylinders. The port that feeds the Internal Rotation Control Kit is located in this manifold (if equipped).
Internal Rotation Control Kit	An optional kit that provides a medium-pressure, low-flow hydraulic source to rotate the attachment. The kit taps the hydraulic system of the attachment jaws and draws only enough fluid to charge an accumulator. When the rotation function is used, this pressurized fluid is released to the rotation motor to rotate the attachment. The internal kit is mounted inside the attachment upper head. (Option not available on UP 15SV.)
Linkage Connection	Part of the Universal Processor mounting bracket that attaches to the base machine's bucket linkage when mounting third member (in place of the bucket).
Main Pivot Group	Area where the jawset is pinned into the main body of the attachment. The main pivot group contains a main pin, end cap, thrust washers and main bearings.



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ATTACHMENT GLOSSARY continued

Main Bearings	Bushings pressed into the main pivot bores of the upper and lower jaw halves. The main pin passes through these bearings.
Main Pin	Pin that connects the jawset to the main body of the attachment. The jaws rotate on this pin when opening and closing.
Manual Override Motion Control Valve	Override button on the directional valve to allow for manually operating the valve in the event of electrical failure (if equipped with a rotation control kit). A manifold including two crossover relief valves and two brake valves that provides overload protection and a load control system for the rotator.
Motor	Hydraulic rotation component that drives the turntable bearing either directly or through a planetary gear box on rotating attachments.
Planetary Gear Box	Hydraulic rotation component on larger rotating attachments. The planetary gear box rotates the body of the attachment with the aid of the hydraulic motor. The output shaft of the component directly drives the turntable bearing of the rotating attachment.
Pressure Reducing Valve	Valve that regulates the system pressure in the accumulator circuit. Reduces base machine pressure to meet rotation requirements (if equipped with a rotation control kit).
Rear Cylinder Pins	The pins that connect the attachment cylinder ends to the cylinder lugs at the rear of the attachment stick. The rear cylinder pins have a grease fitting and must be greased according to the required maintenance.
Relief Valve	Valve used to protect the rotation motor from excessive pressure.
Return Line	A customer- provided hydraulic hose that needs to be installed to return flow from the Internal Rotation Control System to the base machine's reservoir (see the Installation section of this manual).
Rotation Assembly	Hydraulic assembly that allows full 360° continuous rotation of the attachment for greater positioning capabilities when processing with the attachment.
Second Member Mount	When the attachment is mounted in place of the excavator stick at the end of the boom.
Solenoid Speed Valve	Electrical coil on the directional valve that activates the valve (if equipped with a rotation control kit). Regenerative hydraulic valve in Series SV Universal Processors that increases the jaw closing speed (cylinder extend function) when the jaws are not under a load, thereby reducing cycle times and increasing efficiency. Stanley LaBounty uses a spool-type speed valve design for better durability over cartridge-type regenerative valves.
Stick	The main body of the attachment. The stick must be regularly inspected for any damage.
Stick Connection Swivel Manifold	Part of the Universal Processor mounting bracket that attaches to the base machine stick tip when mounting third member (in place of the bucket). Allows continuous rotation of attachment and fluid supply to attachment cylinders without twisting hoses.
Third Member	When the attachment is mounted in place of the excavator bucket at the end of the stick.
Thrust Washers	Main pivot group component located between the jawset and the stick and also located between the two halves of the jawset. The thrust washer acts as a wear part between adjoining surfaces.
Turntable Bearing	Large rotation bearing used in rotating attachments. The turntable bearing is mounted to the attachment stick and is driven by hydraulic components in the upper head of the attachment. Sometimes called the slewing ring.
Unloading Valve	Valve in the control valve assembly that drains the fluid from the accumulator when the base machine is shut off.

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LIFTING THE ATTACHMENT

Hooking points are integrated into the stick for safe lifting of the attachment (see figure 3-1). The smaller diameter eye in the lug prevents the use of hooks without shackles, threading the lugs with slings, and the use of the lug as a lifting eye for lifting other objects during operation.

⚠ WARNING

Hooking points are for installing, transporting and moving the attachment only. Do not use them for lifting other objects or processing with the attachment in a cable-hung application. Contact the LaBounty Customer Service department for approval and evaluation before operating the attachment in a cable-hung application.

1. Before lifting the attachment, check its weight.
2. Lift the attachment using all four hooking points with rigging lengths that keep the attachment level.

⚠ WARNING

Use only approved rigging and hardware rated for loads greater than the weight of the attachment.

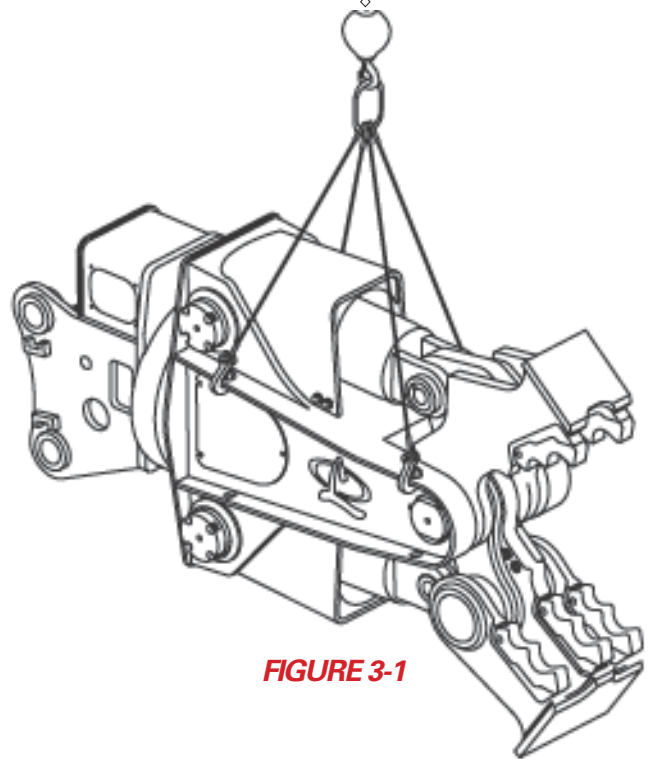


FIGURE 3-1

THIRD MEMBER ATTACHMENT MOUNTING PROCEDURE

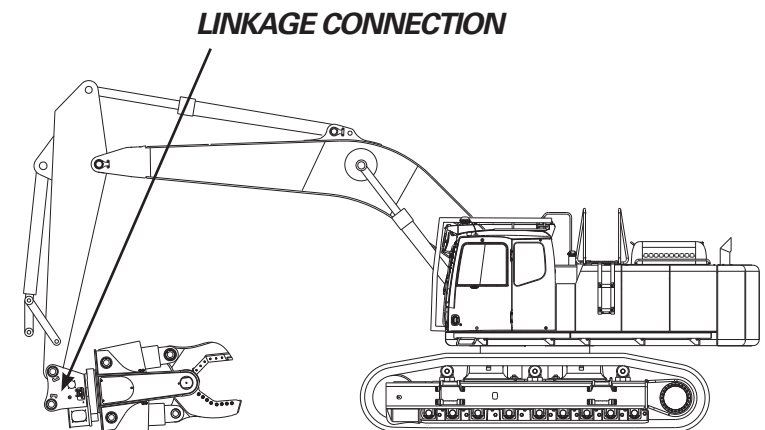
1. Locate flat, hard ground (e.g., concrete floor) for installation. Place the attachment on the ground and use blocking if necessary.
2. Remove the bucket or other attachment from the end of the excavator stick following the manufacturer's recommended procedure.
3. Take care to properly plug any hydraulic hoses when disconnected to prevent contamination from entering the hydraulic system.
4. With the jaws of the attachment facing the excavator, bring the excavator into position, carefully lining up the stick tip with the proper connection on the attachment mounting bracket.
5. Pin the excavator stick tip to the mounting bracket stick connection using the pin provided.
6. Carefully extend the bucket cylinder to move the bucket linkage forward far enough to position the link into the mounting bracket linkage connection (see figure 3-3). It may be necessary to use a lifting device (overhead hoist, forklift, etc.) to correctly position the link.
7. Pin the link to the linkage connection using the pin provided.

NOTICE

On third member mounting brackets, the stick and linkage connections can be difficult to tell apart, because they often have the same dimensions. In nearly all cases, the linkage connection is the one closest to the rotation components (see figure 3-2).

WARNING

Never move or operate the attachment without all collars and hardware installed on the connecting pins.



ROTATION COMPONENTS

FIGURE 3-2

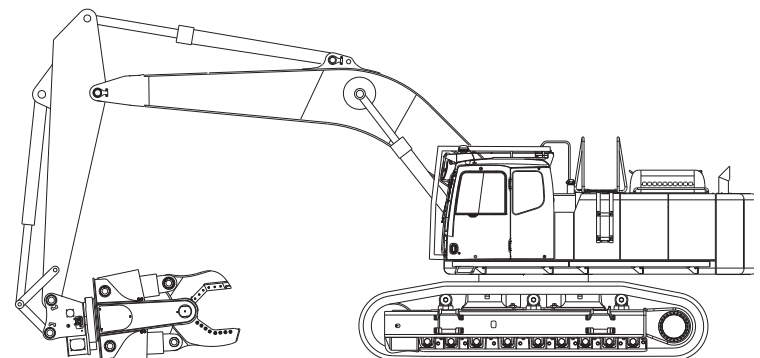


FIGURE 3-3

UNIVERSAL PROCESSORS

SECOND MEMBER ATTACHMENT MOUNTING PROCEDURE

1. Locate flat, hard ground for installation. Place the attachment on the ground with blocking.
2. Remove the excavator stick following manufacturer's recommended procedure.
3. Take care to properly plug any hydraulic hoses when disconnected to prevent contamination from entering the hydraulic system.
4. With the jaws of the attachment facing the excavator, bring the excavator into position, carefully lining up the excavator boom tip with the boom pivot connection on the attachment mounting bracket (figure 3-4).

NOTICE

On a second member mount, it may be necessary to block the rear of the attachment in a position to allow boom pivot pin installation.

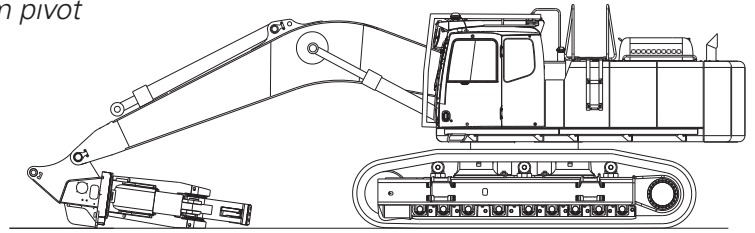


FIGURE 3-4

5. Pin the excavator's boom and attachment boom pivot together using the same pin that was used for pinning on the stick.
6. Have all personnel stand clear and instruct the operator to slowly lift the attachment into a position where there will be enough clearance to pin the excavator cylinder to the cylinder connection on the mounting bracket (figure 3-5).

WARNING

Never move or operate the attachment without all collars and hardware installed on the connecting pins.

7. Extend the cylinder rod and position as necessary to connect to the cylinder connection of the attachment. Install the pin provided with the mounting bracket. It may be necessary to use a lifting device (overhead hoist, forklift, etc.) to position the cylinder correctly.

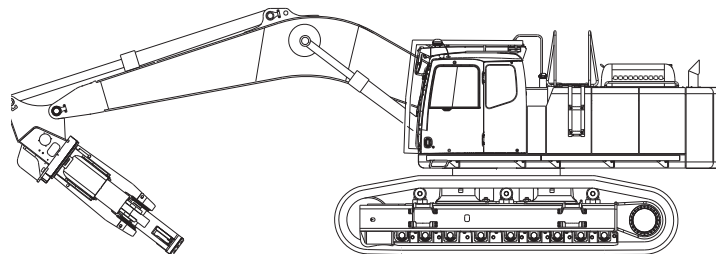


FIGURE 3-5

THIRD MEMBER ATTACHMENT REMOVAL PROCEDURE

1. Curl the attachment under until it is horizontal and lower the attachment to the ground (figure 2-6).
2. Use blocking to support the bucket cylinder and linkage from the excavator stick.
3. Remove the linkage connection pin from the attachment mounting bracket.
4. Fully retract the bucket cylinder and linkage after it is detached from the attachment mounting bracket.
5. CAREFULLY remove the jumplines at the attachment manifold.

⚠ WARNING

Disassembly of any pin connected attachment can be hazardous. Never remove any pins unless the attachment is on the ground (and blocked up if necessary) or serious injury could result.

6. Plug the open manifold ports and hose ends with pressure plugs to prevent contamination of the hydraulic system.
7. Ensure that the attachment is stable before unpinning the stick pivot pin and releasing the weight of the attachment.
8. Remove the stick pivot pin from the attachment.

⚠ WARNING

Trapped hydraulic pressure may be present after the base machine is shut off. Extreme caution must be taken when removing attachment hydraulic hoses or possible injury or death could result.

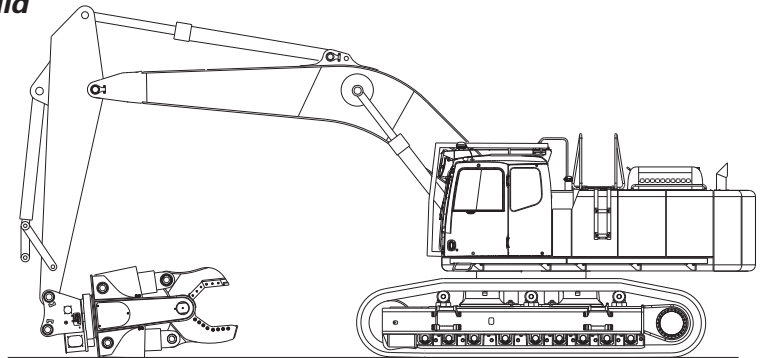


FIGURE 3-6

UNIVERSAL PROCESSORS

SECOND MEMBER ATTACHMENT REMOVAL PROCEDURE

1. Curl the attachment under the boom of the excavator as far as the stick cylinder will extend and lower shear to the ground (see figure 3-7).
2. Use blocking to support the stick cylinder from the excavator boom.
3. Remove the stick cylinder pin from the attachment mounting bracket.
4. Fully retract the stick cylinder as it is unattached from the attachment mounting bracket.
5. CAREFULLY remove the jump-lines at the attachment manifold.
6. Plug the open manifold ports and hose ends with pressure plugs to prevent contamination of the hydraulic system.
7. Make sure that the attachment is stable before unpinning the boom pivot pin and releasing the weight of the attachment.
8. Remove the boom pivot pin from the attachment.

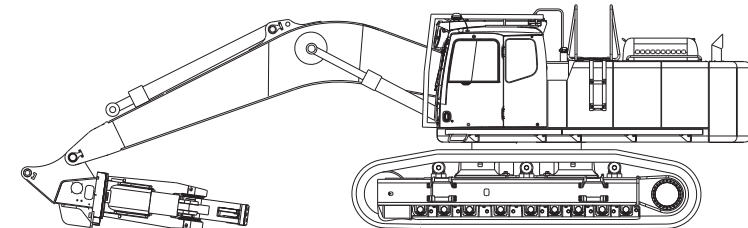


FIGURE 3-7

WARNING

Disassembly of any pin connected attachment can be hazardous. Never remove any pins unless the attachment is on the ground (and blocked up if necessary) or serious injury could result.

WARNING

Trapped hydraulic pressure may be present after the base machine is shut off. Extreme caution must be taken when removing attachment hydraulic hoses or possible injury or death could result.

NOTICE

Watch the boom to attachment pivot for any interference. If interference is present, DO NOT force the attachment under any further. Block the attachment up before it interferes with the boom, or stop.

ATTACHMENT STORAGE

1. Block the attachment up off the ground using wood blocking.
2. Plug all open hydraulic ports.
3. Grease the pins and machined bores of the mounting bracket of the attachment (refer to the attachment lubrication section of the maintenance section of the manual). Then apply a generous amount of grease to shear blades, cylinder rods and all other exposed/unpainted surfaces.

EXCHANGING JAWS

Changing out the jaws on a LaBounty Series SV Universal Processor is easier than ever. The SV Series is designed to make this process faster and safer, as well. The yoke of the attachment stick features a jaw alignment channel that helps to line up the stick with the jawset for easier main pin installation.

JAW REMOVAL

1. Park the excavator on solid level ground.
2. Extend the cylinders to close the jaws and lower the attachment until the jaws are placed solidly on the ground or on appropriate blocking (see figure 3-8).
3. Secure the jaws to prevent them from tipping or falling when the pins are removed. Be sure that the jaws are secure before removing any pins.
4. Remove both of the front cylinder pins and retract the cylinders.
5. Remove the main pin. Again, be sure the jaws are secure.
6. Slowly and carefully raise the attachment allowing the jaws to remain on the ground.

WARNING

Removal of the attachment pin can be hazardous. Never release the weight of the attachment jawset unless it is fully secured or serious injury could result.

WARNING

Avoid all potential pinching points when exchanging jaw sets or serious injury could result.

NOTICE

For maximum efficiency when exchanging jaws, design a cradle or rack to securely hold the jaws in the proper position for storage and installation.

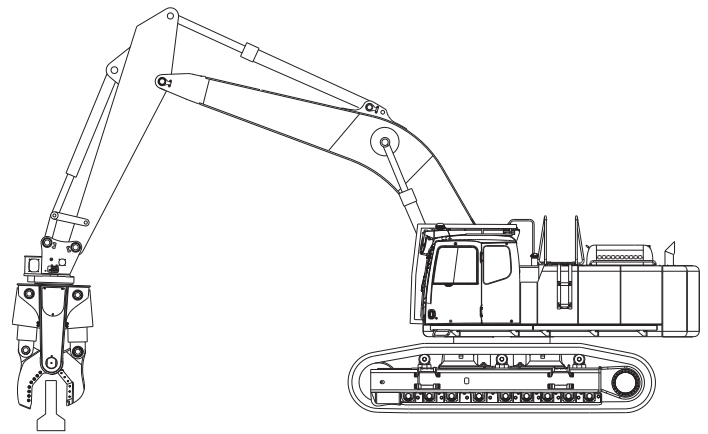


FIGURE 3-8

UNIVERSAL PROCESSORS

JAW INSTALLATION

1. Remove the existing jawset using the previous directions.
2. Place the jawset to be installed in a secure position with the pin connections at the top (see figures 3-9 and 3-10).
3. Slowly and carefully walk the excavator into position so that the attachment stick can be placed onto the jawset. The attachment cylinders should be fully retracted for now.
4. Use the excavator to slide the attachment stick onto the jaws, using the jaw alignment channel to properly locate the jaws in the yoke of the stick.

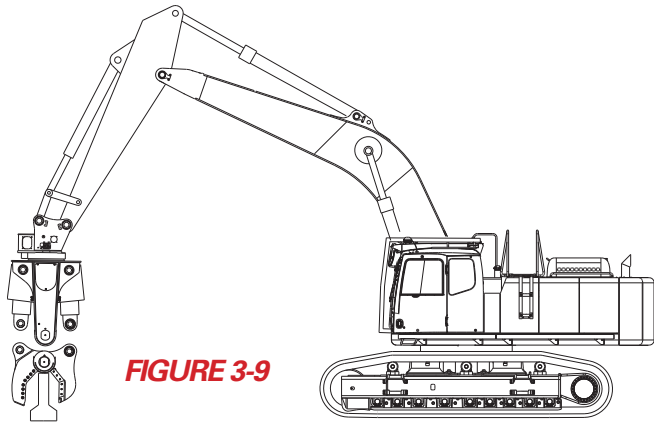


FIGURE 3-9

WARNING

Avoid all potential pinching points when exchanging jaw sets or serious injury could result.

NOTICE

For maximum efficiency and safety, some operators of Universal Processors have successfully used a concrete parapet or specially designed cradle to hold the jaws during storage and installation (see figure 3-10 for an example). Whatever method is used, be sure that the jaws are secure during removal, installation and storage.

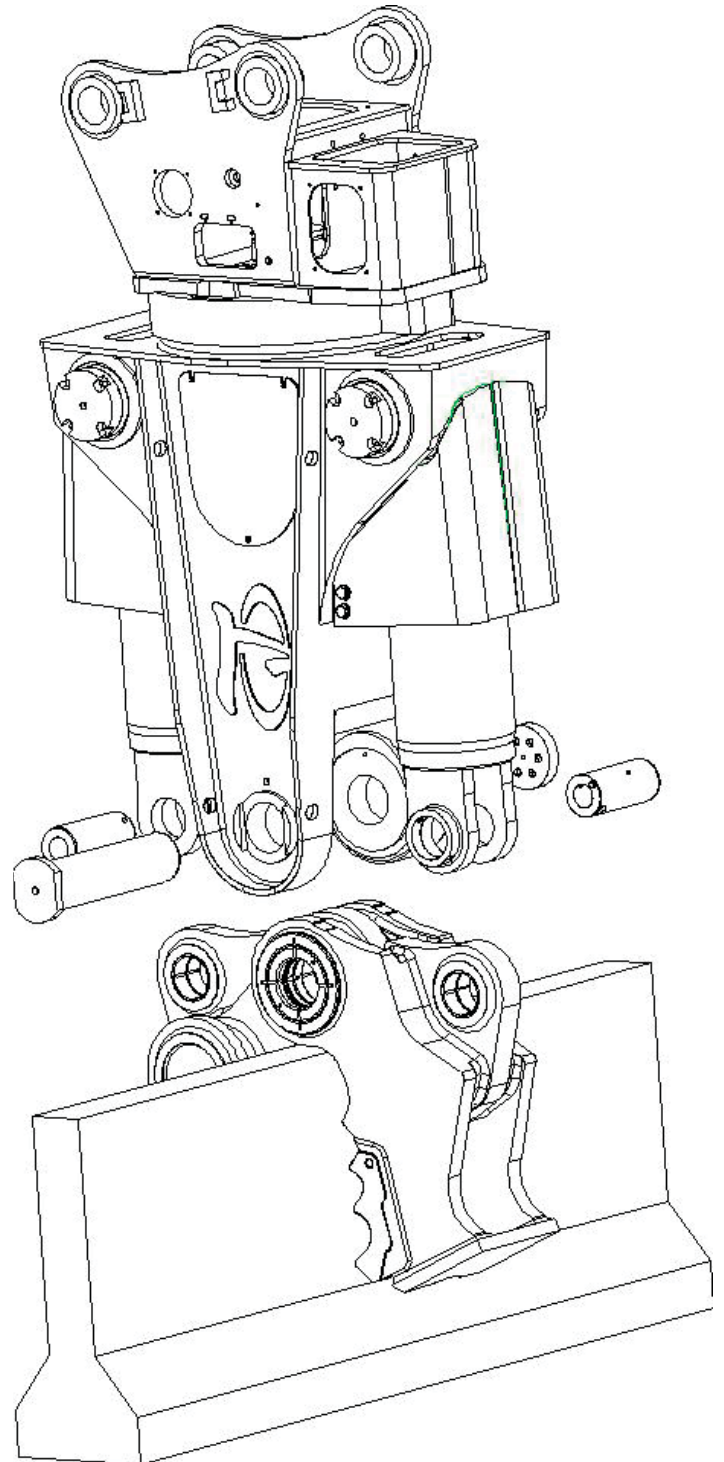


FIGURE 3-10

HYDRAULIC INSTALLATION

Prior to hydraulic installation, read the hydraulic letter provided by LaBounty before the arrival of the attachment. This letter states the hydraulic requirements for the specific attachment being installed. Also, read the manual for the base machine for specific information on attachment hydraulics.

1. Connect the hydraulic hoses to the hydraulic connections located on each side of the upper head. Remember to cap all hydraulic hoses and fittings immediately to prevent contamination of the hydraulic systems.
2. After installing the hydraulic circuit on the base machine, install additional hydraulic lines up the boom—these will include two " (10 mm) diameter feed lines and one ½" (13 mm) diameter case drain line; these will terminate at the end of the boom.
3. Install jump lines from the above hydraulic lines to the attachment bulkhead or manifold fittings.
4. Check to make sure all bolts and nuts are properly installed and torqued.
5. Lift the attachment and slowly try the rotate function and open and close functions (see page 4-5). Watch for any hydraulic oil leaks and interference.
6. Follow the hydraulic start-up procedure as described in this manual.

NOTICE

When installation is complete, slowly extend and retract the excavator cylinder to its limits to curl the attachment. Check for interference between the attachment and the excavator boom or stick. Check the hydraulic lines that connect to the attachment hydraulic connections to make sure they are not rubbing or getting damaged in any way. Contact your dealer immediately if any interference occurs.

HYDRAULIC START-UP PROCEDURE

Air must be bled out of the cylinders prior to operation of the attachment. Entrained air in the system leads to cavitation, oxidation of the oil and excessive heat. These conditions promote hydraulic oil break-down, contamination, noise, sluggish operation, reduced component life and potential cylinder damage. This procedure needs to be followed upon installation, after hydraulic maintenance, or when the attachment has been stored or idled for an extended period of time.

Start with the attachment cylinders either fully retracted or extended. Shut off the excavator and operate the attachment jaw controls in order to relieve any existing hydraulic pressure to the attachment cylinders.

Position the attachment so the cylinders are as horizontal as possible. Set the excavator at idle speed or slightly above idle speed.

UNIVERSAL PROCESSORS

HYDRAULIC START-UP PROCEDURE continued

WITH CYLINDERS FULLY RETRACTED

1. Slowly fill the rod end of the cylinders (open the jaws) until a noticeable change in tone of the excavator is heard, indicating full cylinders. Release the controls and do not continue to apply full operating pressure to the cylinders.
2. Change direction of oil flow; slowly fill the bore end of the cylinders (close the jaws) until the rods are extended approximately $\frac{1}{4}$ of stroke.
3. Retract the cylinder rods all the way.
4. Repeat steps 2 and 3, extending rod to approximately $\frac{1}{2}$ stroke, then $\frac{3}{4}$ stroke, then full stroke.
5. When cylinders are full of oil, slowly cycle back and forth at least five times through full stroke. Be careful not to apply full operating pressure to the cylinders at this time.

WITH CYLINDERS FULLY EXTENDED

1. Slowly fill the bore end of the cylinders (close the jaws) until there is a noticeable change in the tone of the excavator, indicating full cylinders. Release the controls and do not continue to apply full operating pressure to the cylinders.
2. Change direction of oil flow; slowly fill the rod end of the cylinders (open jaws) until the rod is retracted approximately $\frac{1}{4}$ stroke.
3. Extend the cylinders all the way.
4. Repeat steps 2 and 3, retracting rods to approximately $\frac{1}{2}$ stroke, then $\frac{3}{4}$ stroke, then full stroke.
5. When cylinders are full of oil, slowly cycle back and forth at least five times through full stroke. Be careful not to apply full operating pressure to the cylinders at this time.
6. Slowly cycle the cylinder five or more times reaching machine's normal operating pressure at end of each stroke, open or close. Listen for unusual noise and check for any hydraulic leaks.

NOTICE

After the cylinders have been bled, check the base machine for proper hydraulic fluid level.

SPEED VALVE ADJUSTMENT

The speed valve on LaBounty Universal Processors is factory adjusted by Stanley LaBounty technicians prior to shipment. Field adjustments of the valve should only be necessary if the operator senses that the valve is not functioning properly. Some indicators of a poorly functioning valve are:

- The attachment does not consistently shift into speed mode when closing the jaws
- The jaws continue to close after the operator has let go of the controls
- The attachment shifts into speed mode, but seems to lack power

For instructions on testing and adjusting the speed valve, refer to page 5-23 of this manual.

INTERNAL ROTATION CONTROL SYSTEM INSTALLATION

if equipped

BEFORE GETTING STARTED

1. Have the Parts Catalog for the attachment on hand for reference. The parts information for the Internal Rotation Control System is included in it.
2. Check if the following items exist on the base machine:
 - a. A preferred switch other than the foot switch provided (see Foot Pedal Switch Installation).
 - b. One-8 (½" SAE JIC type) adapter to tap into the base machine reservoir or return line.
 - c. One-8 (½" SAE) hydraulic line plumbed from the base machine's hydraulic return to the end of the boom (if the attachment is mounted in place of the stick) or the stick (if the attachment is mounted in place of the bucket).
 - d. One 15-amp circuit breaker or fuse.

NOTICE

Make sure to complete all installation procedures described in this section before starting the machine. Operating the attachment before installation is complete may cause damage to the base machine or attachment.

ELECTRICAL INSTALLATION

1. Place the foot switch inside the cab in a convenient location for operating.
2. Route the electrical cord with the plug up the boom (and stick if the attachment replaces the bucket). Secure the cord to an existing hydraulic line using tie straps. Attach the green wire of this cord to the base machine chassis to ground the system.
3. Run a 14-gauge wire from the base machine's DC voltage power supply and connect it to a 15-amp circuit breaker or fuse. The power source should be accessory side or a similar source that provides voltage only when the starter key switch is in the "ON" position, and should have a 5-amp minimum rating.
4. Connect a 14-gauge wire from the circuit breaker or fuse to the red wire of the electrical cord running up the boom to the electrical plug. Connect another 14-gauge wire from the circuit breaker or fuse to the red wire of the electrical cord coming from the foot switch. The red wire from the electrical plug and the red wire from the foot switch can be connected.
5. Connect the black wire from the boom cord to the black wire from the foot switch cord. Connect the white wires in the same way. The green wire from the foot switch cord will not be used.

CAUTION

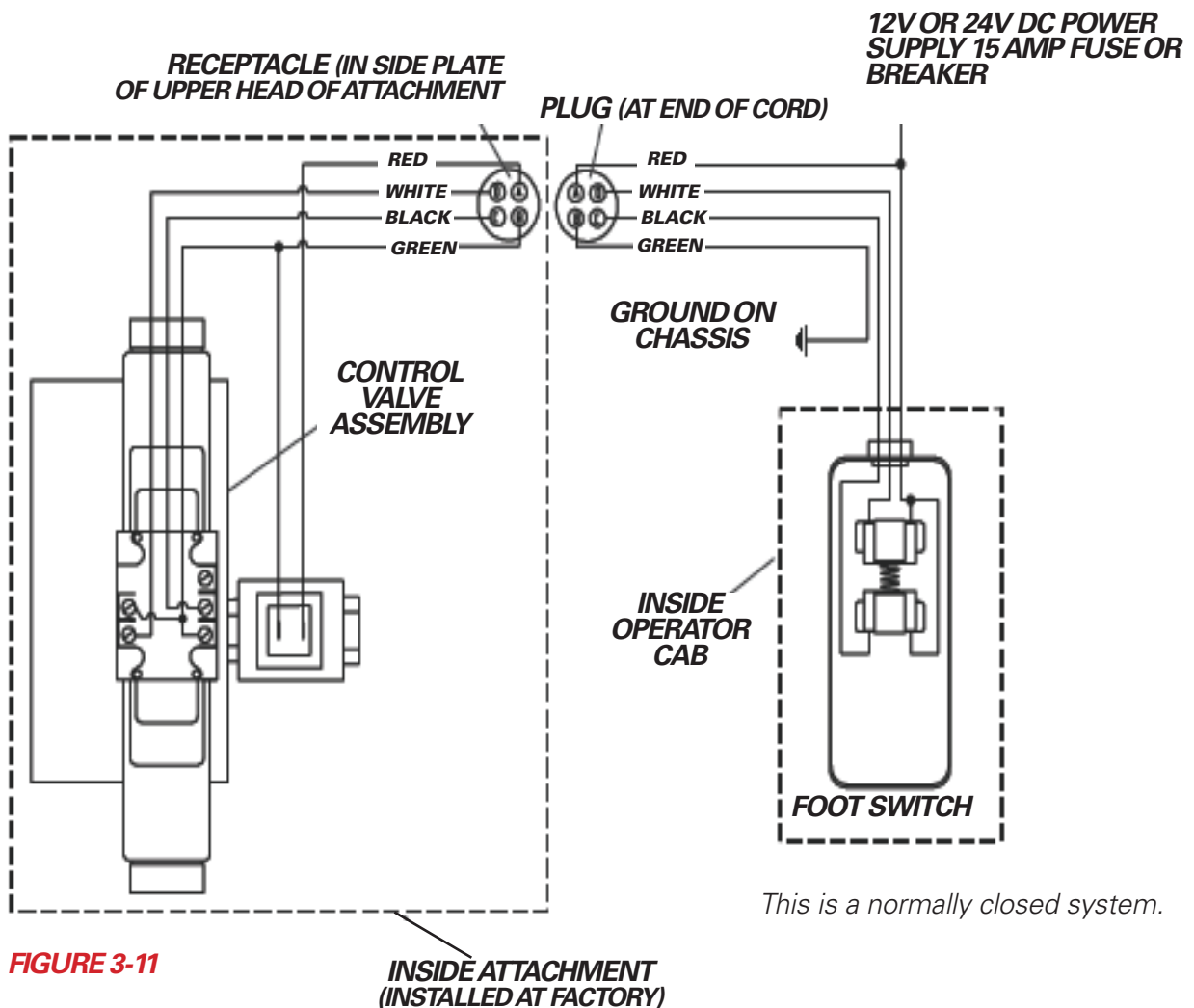
To prevent electrical shock, short, or accidental start-up, do not connect to the power source until the entire system is installed.

UNIVERSAL PROCESSORS

INTERNAL ROTATION CONTROL SYSTEM ELECTRICAL INSTALLATION *continued*

If an alternative type of switch is preferred to the provided foot switch, contact your LaBounty dealer for information on operating the control valve. If an alternative switch is used, it must be provided by the customer. Any of the following can be used: a. Joystick handle equipped with a single-pole/double-throw momentary three (3) position rocker switch; b. Two joystick handles each equipped with a single-pole/single-throw momentary rocker switch or push button switch; c. A single-pole/double-throw three (3) position momentary toggle switch mounted to the control lever with a fabricated bracket.

ELECTRICAL SCHEMATIC



INTERNAL ROTATION CONTROL SYSTEM

HYDRAULIC RETURN LINE INSTALLATION INSTRUCTIONS

1. Always relieve all hydraulic pressure of the base machine before attempting to work on any hydraulic component. *Relieve all hydraulic pressure before working on the machine* by working the controls in all directions with the engine off.
2. Shut off the base machine and check the hydraulic system pressure. It should be 0 PSI.
3. Hydraulic oil becomes hot during operation. **DO NOT** let hot hydraulic oil get in contact with the skin as it will cause severe burns.

⚠ WARNING

Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic lines. Tighten all connections before applying pressure. Keep hands and body away from pin holes and nozzles that may eject fluids under high pressure. Use a piece of cardboard to search for leaks. If ANY fluid is injected into the skin, seek immediate medical attention.

4. Whenever hydraulic lines are disconnected, hoses must be capped and ports must be plugged to prevent contamination of the hydraulic system.
5. Install a ½" diameter hydraulic line (customer supplied) from the attachment's return fitting, located in the right-hand hydraulic manifold, to the base machine's hydraulic reservoir or return line. Secure the line properly to the excavator boom and stick.

UNIVERSAL PROCESSORS

THIRD MEMBER TO SECOND MEMBER ADAPTER BRACKET INSTALLATION

if equipped

The third member to second member adapter bracket option makes it possible for a Universal Processor to be mounted as a third member on one carrier and as a second member on another, smaller carrier (see figure 3-12). Keep in mind that not all combinations will work and that the use of an adapter bracket must be approved by the Stanley LaBounty Applications Department for your specific combination of machines.

CAUTION

Safety equipment should be worn at all times when viewing, operating or maintaining the attachment to prevent injury.

INSTALLATION INSTRUCTIONS

1. Remove the attachment from the excavator where it is mounted 3rd member according to the instructions in this chapter. Position the attachment upside-down on a firm and level surface as shown in figure 3-13.
2. Use an overhead crane with a lifting strap through the stick cylinder connection to lower the adapter bracket into place so the stick connection pin can be installed. Use the existing 3rd member bracket pin (figure 3-13).

WARNING

Be sure that the crane and the lifting strap are rated to safely lift the adapter bracket.

3. Apply a thin coating of grease to the inside and outside diameters of the linkage connection sleeves and slide the sleeves into the bores in each side of the adapter bracket.

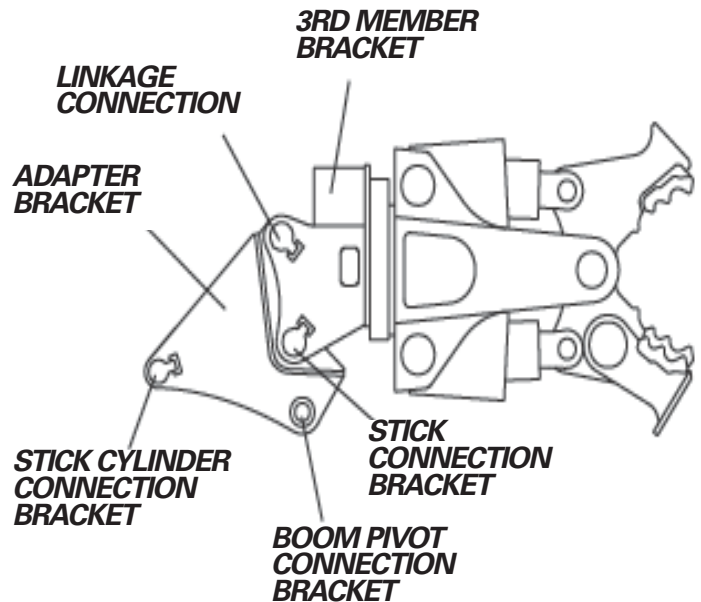


FIGURE 3-12

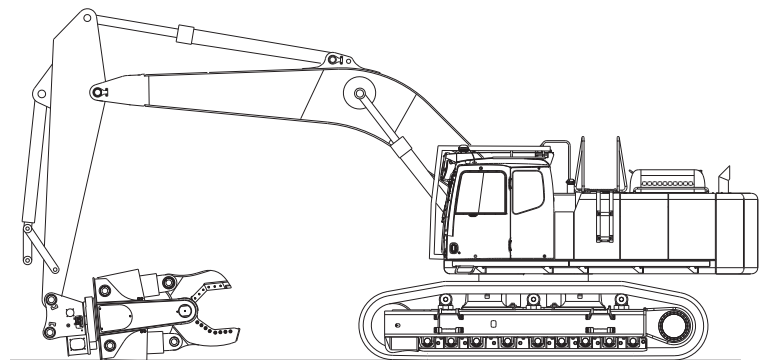


FIGURE 3-13

THIRD MEMBER TO SECOND MEMBER ADAPTER BRACKET INSTALLATION

continued

4. Use the crane to lower the bracket so the linkage connection bores line up closely. If the bores line up closely, it may be possible to install the pin at this time.

NOTICE

The linkage connection sleeves are designed so the inside diameter is off-center from the outside diameter. This allows for the bores on the adapter bracket to be aligned with the bores on the third member bracket by rotating the sleeves.

5. If the bores need to be aligned, rotate each sleeve in its bore. This can be done by pounding against the notches in the head of the sleeve (see figure 3-15).
6. Once the bores are aligned, the linkage connection pin may be installed (figure 3-16).
7. Secure the pins by installing the collars. Use the second member installation instructions in this chapter to mount the attachment to the larger excavator.

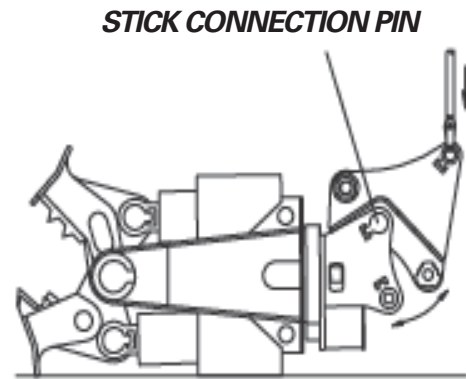


FIGURE 3-14

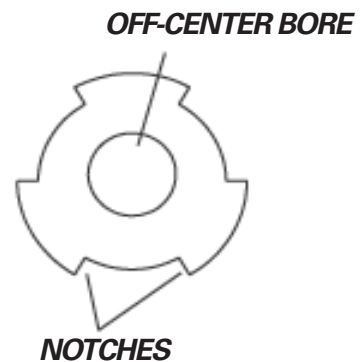


FIGURE 3-15

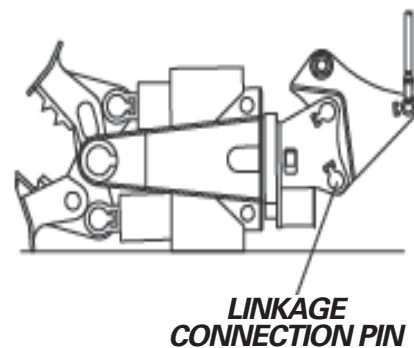


FIGURE 3-16

SECTION 4 OPERATION

Before You Start 4-2
What You'll Need 4-2
First Things First 4-3
General Rules for Safe Operation 4-3
Attachment Controls 4-5
Speed Valve Operating Characteristics 4-6
Operating the Internal Rotation Control System 4-6
Recharging the Accumulator with Fluid 4-5
Getting the Feel of the Attachment 4-7
Feathering the Controls 4-7
Operating Tips 4-8



UNIVERSAL PROCESSORS

BEFORE YOU START

KNOW YOUR SAFETY PROGRAM

1. Read and understand the safety section of this manual and the base machine manual.
2. Know the employer's safety rules for your job. Consult your foreman for specific instructions and safety equipment required.
3. Learn the traffic rules at the work site.
4. Know the hand signals used on the job and who is responsible for signaling. Take signals from only ONE person.



KNOW YOUR EQUIPMENT

- Learn the location and function of all controls. Test all controls to ensure proper operation. If any malfunctions are found, shut the machine down and report the malfunction for repair.
- Be familiar with the safety devices on the machine, indicators, warning devices and caution instructions. They will alert you to conditions that may make it hazardous to continue operating.
- Wear proper protective clothing including hard hat, safety shoes, ear protectors, reflective clothing, safety goggles and work gloves. Loose clothing can get caught in machinery and cause injury. Wrist watches, rings and other accessories can be dangerous, as well.
- Know the clearances in the work area.

FIRST THINGS FIRST

1. Ensure all safe viewing distance decals are installed and legible; contact LaBounty for replacements as required.
2. Have a **DAILY** Safety Dialog with all those with whom you work. Inform them of any out-of-the-ordinary work that may be planned for the day. Remind them of the safe working distance.
3. Clear the area; inspect. **ALWAYS** look out for others. In any work area, people constitute a serious safety hazard. Before operating, walk completely around the machine to be sure there are no workers next to, under or on it. Warn nearby workers that you are starting up; **DO NOT** start up until they are out of danger.
4. Each day before starting, visually inspect the machine by walking around it entirely; check the location of cables, gas lines, and water mains before any operations. Make sure work site footing has sufficient strength to firmly support the machine. When working close to an excavation, position machine with the propel motors at the rear.
5. Once started, keep bystanders clear, especially before moving the boom, swinging the upper structure, or traveling. **ALWAYS** be alert for bystanders in or near the operating area.

SAFETY DEVICES YOU'LL NEED

Seat belts

Canopies

Falling Objects Protective Structures (FOPS)

Shields and guards

Safety decals

Visual or audible warning devices

Flags and flares

Barricades

Signs and other markings

Warning lights

GENERAL RULES FOR SAFE OPERATION

1. Read the Operator's Manual for the base machine on which the shear is mounted.

2. **KNOW** the capacity of the excavator and its attachments. **DO NOT** overload the machine or serious injury could result. The attachment may have altered the base machine's lift capabilities.

3. It is required that a Falling Objects Protection Structure be installed surrounding the excavator cab for all material handling applications.

4. The shear is for processing materials. **DO NOT** use the attachment for unapproved purposes or warranty may be voided.

5. **DO NOT continuously** process oversized materials by forcing them into the shear throat with the downward force of the excavator. This practice is detrimental to the life of the shear and is strongly discouraged.

6. If the shear stalls during processing, scale back the amount of material being processed at one time. Continuously overloading the shear and cycling the excavator to full system pressure can cause overheating and have adverse effects on the shear and the excavator hydraulic system.

7. Whenever possible, cycle the shear cylinder completely during processing. Fully opening and closing the shear allows more hydraulic fluid to circulate through the system to help prevent overheating.

8. Inspect and lubricate the shear daily. Tighten any loose bolts or fittings to the proper torque as specified in this manual.

9. Maintain a safe distance and avoid contact between the excavator and the shear or any material held by the shear jaws.

10. **NEVER** leave the shear suspended or pass it over people, occupied vehicles, or buildings.

11. When working in confined spaces, keep a watchful eye on exposed parts, such as cylinder rods and hoses, to avoid damage.

12. Maintain at least 15 feet (5 meters) between the shear and any nearby power lines.

13. **ALWAYS** lower the shear to the ground and turn the base machine off when leaving the machine unattended.

14. **DO NOT** close the shear on a structure and reverse the excavator in an attempt to pull down material. This is not only dangerous, but will likely damage the excavator and shear.

15. Avoid collision of the boom or shear, especially when working with limited visibility or inside buildings. Know the height and reach of the shear during operation, transport, and when swinging the excavator.

16. Use machine swing for positioning only. **DO NOT** use the shear as a jack hammer or wrecking ball.

17. Avoid contact between boom arm or shear stick and overhead obstacles when you operate, move, or haul the machine.

18. **DO NOT** alter factory preset hydraulics of the shear or vary from the excavator manufacturer specifications. This may void the warranty.

19. **DO NOT** shear high tensile steel such as railroad rail, spring steel, axles and some types of wire as blade, Saber Tip, and/or upper damage will result. This type of material breaks when processed and can become a projectile which could cause injury or death.

20. To prevent bending the upper shear, **DO NOT** attempt to shear material stuck through the lower jaw.

21. Before attempting to shear thin material, make sure that the shear blades are sharp and properly adjusted. Otherwise, such material may become jammed in the shear blades.

22. The lifting lugs are to be used for shipping and installation. They are not for use in cable-hung applications.

23. The shear rotation function is for positioning only. **DO NOT** use it for bending, breaking or prying.

24. **DO NOT** use the force of the excavator to force the shear into a pile.

25. **DO NOT** apply excavator force or weight at either end of the upper shear in an attempt to un-jam the shear or to cut materials that are too large for the shear.



UNIVERSAL PROCESSORS

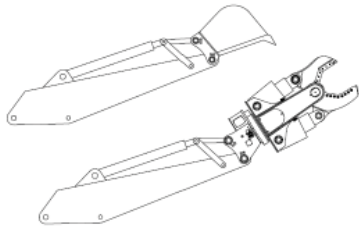
ATTACHMENT CONTROLS

There are four movements of the Universal Processor plus rotation. The attachment controls will vary depending on the base machine on which it is mounted and whether it is mounted as a second or third member. The typical functions of the attachment are illustrated below (see figure 4-1). The Universal Processor jaw and rotation systems are customized to each machine. Review these functions with your authorized dealer or installation technician before operating the attachment.

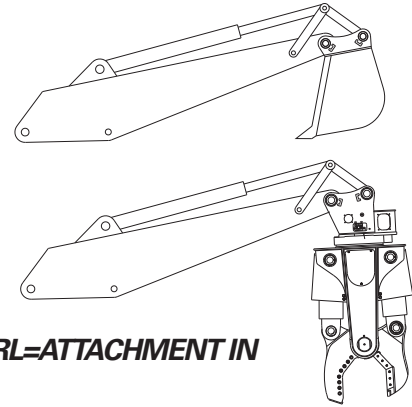
WARNING

Determine the control for each movement of the attachment before attempting to operate. Practice the machine movements as described in *Getting the Feel of the Attachment* section of this manual.

THIRD MEMBER INSTALLATION

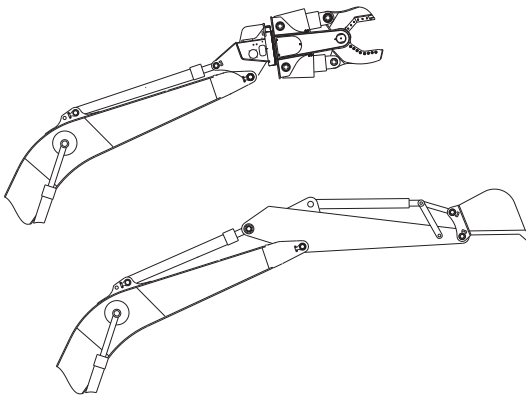


BUCKET DUMP=ATTACHMENT OUT

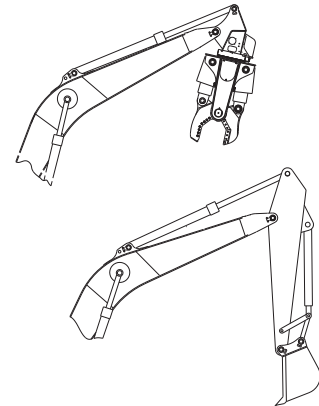


BUCKET CURL=ATTACHMENT IN

SECOND MEMBER INSTALLATION



BUCKET DUMP=JAWS OPEN



STICK IN=ATTACHMENT IN

FIGURE 4-1

SPEED VALVE OPERATING CHARACTERISTICS

The function of the speed valve is to increase the jaw closing speed (cylinder extend function) when the jaws are not under a load, thereby reducing cycle times and increasing efficiency. The speed valve directs return flow from the rod side of the cylinders to the bore side as the cylinders extend. This function occurs only when the cylinders are extending in a "low to medium load" condition, which occurs as the jaws are moving toward the material to be processed. As the jaws close down on the material, the cylinders meet resistance and require more operating pressure. The pilot valve on the speed valve senses this increased pressure and shifts the valve spool out of the speed mode. The rod side fluid is now directed back to the base machine reservoir and full system operating pressure can now be directed to the bore side of the attachment cylinders, allowing the jaws to process the material with maximum force.

OPERATING THE INTERNAL ROTATION CONTROL SYSTEM (IF EQUIPPED - NOT AVAILABLE ON UP 15SV)

The foot switch installed in the operator's cab is used to operate the Internal Rotation Control System, assuming an alternative customer provided switch is not used. The foot switch provided by LaBounty has three positions- center, front (toe), and back (heel). The switch will automatically move to the neutral center position when it is not being used. No rotation occurs in this position. The other two positions will cause the attachment to rotate. One position will cause clockwise rotation and the other position will cause counterclockwise rotation.

RECHARGING THE ACCUMULATOR WITH FLUID

When using the Internal Rotation Control System, the shear will typically rotate between 180° and 360° each time the accumulator is charged with fluid.

When the accumulator runs out of fluid charge, it is necessary to recharge the system before rotating the attachment again. To recharge the system, simply open or close the jaws. The system draws hydraulic fluid from the jaw circuit when the jaws are operated.

NOTICE

The amount of rotation your shear will achieve per fluid charge depends on the attachment model. The accumulator needs to be charged with fluid when the base machine is first started up. The unloading valve drains the accumulator whenever the base machine is shut off.

UNIVERSAL PROCESSORS

GETTING THE FEEL OF THE ATTACHMENT

Every operating part of any machine has a slightly different “operating feel”—an individual machine response to the movement of the controls. Before starting the first job with a new machine, it is suggested that the operator find an open spot on firm, level ground that’s free of people, trees, buildings and other equipment. Move the machine to this area – and spend some time just getting to know the “operating feel” of the machine and the attachment.

This “get acquainted” time will allow the operator to become familiar with the control levers and attachment before beginning work.

The Universal Processor is exceedingly powerful. Do not operate carelessly; there is potential for personal injury and equipment damage. Be concerned about safety when preparing to operate the new machine. Ensure safe operation by inspecting the machine as explained in the Getting Started Safely section earlier in this chapter. This inspection amounts to a common sense visual check of the machine at the beginning of every operation. Follow a preventive maintenance program to reduce the possibility of costly downtime.

FEATHERING THE CONTROLS

The “fluid” nature of hydraulic power requires a special operating approach to the attachment that can be described as a smooth, even technique. The control levers should be moved in a gradual, deliberate way rather than with jerky, abrupt movements. Jerky operation can cause damage and early wear to various parts on the machine, and can also overheat the hydraulic system. For example, as each control lever is moved forward or backward from the center (or neutral) position, the oil flows to the cylinder or motor controlling a function. The component (boom, attachment, etc.) starts to move. The component moves faster as the control lever is moved further forward or backward. Holding the lever in the forward or backward position will hold that movement at a given rate of speed. To slow the movement down, gradually move the lever toward the neutral position. Movement is stopped at the neutral position. The position is maintained until the control lever is moved again.

Feathering the controls is a technique that will increase output and make operating the attachment easier. When starting any motion of the machine, move the control slightly from neutral until it starts to move then smoothly move the control to increase motion to desired speed. Do the same when stopping a motion.

OPERATING TIPS

As an operator gains experience processing material with the Universal Processor, he or she will learn what the machine's capabilities and limitations are, along with the different techniques for processing various types and sizes of materials. We strongly suggest that these techniques be shared among operators to help achieve the greatest efficiency possible. The following operating tips are offered to help you to get the most production and best service from your Universal Processor.

- Start processing smaller materials and work up to larger materials. This will help you to learn the limitations of the machine and will allow the machine to warm up properly.
- Understand that the attachment does have limits. Sometimes it may be necessary to downsize very large material by another method before the attachment can process it effectively.
- When processing oversized concrete, make partial bites to start the breakage and then back off before making the next partial bite. This will allow the broken material to fall away between bites.
- When shearing larger steel members such as I-beams or tubing, try doing it in two cuts rather than one. Pierce the material about halfway through with the first cut, and then finish it off with the second cut.
- Keep the attachment properly maintained. Jaws with excessive blade gaps or dull teeth are much less effective; lack of maintenance can lead to greater problems and potential downtime.
- If possible, sort your scrap to get the highest capacity from the attachment. The shear jaws are best capable of processing light, thinner gauge materials immediately after performing blade maintenance. When processing larger materials, the condition of the blades and the blade gap are not as critical.
- Avoid handling or processing long, heavy materials off center. Excessive weight held out to one side can force the attachment to rotate. This is known as "backdriving" the rotation system. Backdriving puts increased strain on the rotation system and, if done continually, can lead to rotation component problems. Remember, the rotator is intended for positioning the attachment only.
- When handling materials, keep the load as close to the base machine as safely possible. This will provide the greatest machine stability.

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MAINTENANCE SAFETY PROCEDURES

Before attempting any maintenance procedure, read this entire Safety Manual carefully. If any question arises regarding a safety or maintenance procedure, contact your LaBounty dealer. For the nearest LaBounty dealer, see the Contact Information at the front of this manual.

- Inspect the attachment daily. **DO NOT** operate a poorly maintained or damaged attachment or major structural damage could result.
- **ALWAYS** lower the boom to the ground before leaving the cab. If it is necessary to work on an attachment off the ground, securely support the base machine and attachment. **DO NOT** support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. **DO NOT** rely on the cylinder to hold the attachment in the air. If a control is moved or hydraulic pressure is otherwise released, the attachment will drop. **DO NOT** work under a machine that is supported solely by a jack.
- **DO NOT** attempt to alter or change the physical, mechanical or hydraulic operation of the attachment during the warranty period without first consulting Stanley LaBounty as this could invalidate the Manufacturer's Warranty.
- **NEVER** operate the machine if an unsafe condition exists. Attach a "DO NOT OPERATE" tag to the machine.
- If more than one person is working on a machine, each must be familiar with the controls and aware of what the others are doing. Before working on a machine, **BE SURE TO TAG THE CONTROLS SO NO ONE ELSE WILL START IT.**
- **ALWAYS** use two people when making checks with the engine running – the operator at the controls must be able to see the person doing the checking.
- Keep hands away from moving parts. **NEVER** lubricate or work on a machine while it is moving.
- **ALWAYS** wear proper safety equipment when maintaining the attachment including safety glasses with side shields, hard hat, steel toe shoes, gloves, and hearing protection.
- Be sure you understand a service procedure before working on the machine. **DO NOT ATTEMPT REPAIRS YOU DO NOT UNDERSTAND.**

⚠ CAUTION

Refer to the proper maintenance procedure in this manual before servicing the machine to prevent injury or damage to the equipment.

⚠ WARNING

During maintenance of the shear, it is imperative that the excavator is turned OFF to prevent injury.

GENERAL RULES FOR MAINTENANCE

1. Read the maintenance manual. Be sure all maintenance personnel read and understand all maintenance procedures before they are attempted.
2. Use factory approved parts. Use of parts that are not factory approved may cause damage or unnecessary downtime and may void the attachment warranty.
3. Lubricate daily; follow the lubrications schedule as outlined on page 5-6.
4. Use the included Inspection Checklists during inspections to make sure all maintenance is complete.
5. In extremely cold temperatures, work the attachment on lighter materials first before working up to heavier materials. This allows the attachment and jaws to warm up and makes them less susceptible to damage.
6. Do not weld on the excavator boom or stick without first consulting your dealer.
7. Properly torque bolted connections as prescribed in this manual. Refer to the charts on pages 5-8 and 5-9 of this manual for complete information on proper torque values.
8. **DO NOT** disconnect any hydraulic hoses or fittings without first relieving machine hydraulic pressure.
9. **DO NOT** exert the weight of the excavator on the shear in order to free the upper shear if it becomes jammed. Please consult the factory. **Jamming is the result of poor maintenance or improper operational techniques.**
10. **DO NOT** let hot hydraulic fluid get in contact with the skin as it could cause severe burns.
11. **DO NOT** operate a rotating attachment without a case drain line connected back to the tank or return line filter or the rotation component will be damaged.

PERIODIC SERVICE SCHEDULE

SERVICE THE ATTACHMENT AT SPECIFIED INTERVALS

Inspect, lubricate, make service checks and adjustments according to the 8-hour Inspection Checklist reproduced from this manual. A program of regular service should be established, using the machine hour meter to determine when the attachment should be serviced. Use the intervals on the Service Schedule when operating in normal conditions. Service the attachment at shorter intervals when operating in extreme environmental or abrasive conditions. Use correct lubricants and bolt torques. Refer to the lubrication and bolt torque instructions in this manual when performing maintenance on the attachment.

8-HOUR SERVICE RECOMMENDED

Inspect Safety Devices: Make sure all decals are installed and legible. Inspect the condition of the cab protection and make sure visual and audible warning devices are working properly.

Grease Fittings: Lubricate according to the Lubrication section (page 5-6). Replace broken fittings.

Connecting Pins: Inspect the mounting bracket pins and shear cylinder pins for looseness or damage. Check pinheads and pin keepers.

Bolts: Visually check all bolts. If any are loose or damaged, replace them with the same grade bolt. Tighten to the proper torque using the bolt torque charts in this manual. Bolts should not be retorqued more than once before they are replaced.

Hoses, Connections, Cylinders: Inspect for leaks, wear and damage. Tighten, repair or replace.

Cylinder Shrouds: Check the shrouds for dents that could come into contact with the cylinder when the jaws are cycled. Check the cylinder shroud bolts to ensure the shrouds are secure.

UNIVERSAL PROCESSORS

8-HOUR INSPECTION CHECKLIST

Attachment Model _____ Excavator Hour Meter _____

Attachment Serial Number _____ Date _____

- _____ 1. Inspect safety devices
 - _____ a. All safety decals in place and legible—see decal and label maintenance section
 - _____ b. All cab protection in good condition
 - _____ c. All excavator warning systems working
 - _____ 2. Visually inspect attachment for any damage
 - _____ 3. Lubricate all points. Refer to attachment lubrication in this section
 - _____ a. Rear cylinder connections (2 each side)
 - _____ b. Front cylinder connections (2)
 - _____ c. Main pivot area (2 each side)
 - _____ d. Mounting bracket- stick connections (if necessary)
 - _____ e. Mounting bracket- link connection (if necessary)
 - _____ 4. Inspect connecting pins and pin retaining hardware
 - _____ a. Stick connection or boom pivot pin
 - _____ b. Link connection or cylinder connection pin
 - _____ c. Front cylinder pins (upper and lower cylinders)
 - _____ d. Rear cylinder pins (upper and lower cylinders)
 - _____ e. Main pin
 - _____ 5. Inspect all bolts
 - _____ a. Visually inspect all bolts and replace any that are loose or damaged
 - _____ 6. Check hydraulic system
 - _____ a. Inspect hoses for wear and potential failure
 - _____ b. Inspect hose connections for leaks
 - _____ c. Inspect cylinders for leaks
 - _____ d. Inspect speed valve connections for leaks
 - _____ 7. Inspect cylinder shrouds
 - _____ a. Inspect shrouds for dents that may come in contact with cylinders
 - _____ c. Inspect shroud bolts for looseness or damage
- Rotator:**
- _____ 1. Visually check all turntable bearing bolts and replace any that are loose or damaged
 - _____ 2. Grease the turntable bearing. Refer to Rotator Maintenance section for procedure.
 - _____ 3. Inspect hydraulic system
 - _____ a. Inspect hoses for wear and potential failure
 - _____ b. Inspect hose connections for leaks
 - _____ 4. Remove covers and inspect rotation component mounting bolts

Inspected by: _____

RECOMMENDED SPARE PARTS LIST

The following is a description of the parts Stanley LaBounty recommends to have on hand for these benefits:

- Less downtime for lack of a part.
- Original equipment manufacturer parts are inspected to Stanley LaBounty standards for proper fit and function.
- Eliminate the possibility of a part being unavailable for immediate delivery.
- Eliminate overnight air freight costs.
- The accessibility of replacement parts assures the proper shear maintenance will be followed and therefore increase the efficiency of the attachment.

HYDRAULIC ASSEMBLY

All hydraulic hoses
Speed valve
Speed valve seal kit

CYLINDER ASSEMBLY

Cylinder seal kit (ordered by cylinder part number and serial number)

ROTATION ASSEMBLY (IF EQUIPPED)

Crossover relief or motion control valve (one is applicable to each rotation assembly)

MANIFOLD ASSEMBLY (IF EQUIPPED)

O-ring seals
Crown seals

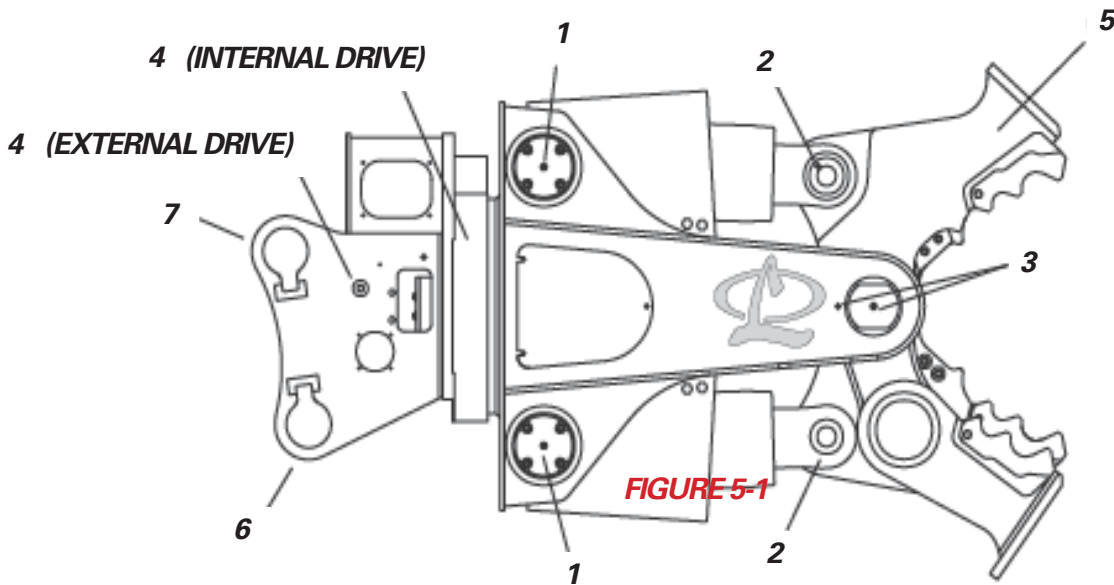
JAWSET ASSEMBLY

Please refer to the manual for the specific jawset for its recommended spare parts list.

UNIVERSAL PROCESSORS

ATTACHMENT LUBRICATION

Grease **all** points every **8 hours** of attachment operation. Use premium grease No. 2EP or equivalent. Grease fitting locations are indicated on the illustration (see figure 5-1, below) and by yellow GREASE decals on the attachment. Grease locations may vary slightly depending on the attachment model.



LOCATION ON ATTACHMENT

- 1. Rear cylinder connections
- 2. Front cylinder connections
- 3. Main jaw pivot
- 4. Turntable bearing
- 5. Jawset- see jawset manual for specific grease locations

NUMBER OF SHOTS

- 6
- 6
- 6
- 6
- 6

LOCATION ON BRACKET

- 6. Stick connection (3rd member mount) or boom pivot connection (2nd member mount)
- 7. Linkage connection (3rd member mount) or cylinder pivot connection (2nd member mount)

BOLT TORQUE SPECIFICATIONS

1. All bolts should be visually checked for looseness or damage every 8 hours of operation.
2. After installation, a new bolt should not be retorqued more than once before it is replaced. Always replace with the same grade of bolt.
3. Check all attachment connecting pins and pin retaining bolts daily to ensure that they are in place and properly secured. Pins that must be checked are:
 - a. Stick connection or boom pivot connection
 - b. Linkage connection or arm cylinder connection
 - c. Front cylinder pins
 - d. Rear cylinder pins
 - e. Main pivot pin (refer to jaw option)
4. All bolts and their respective tapped holes must be free of grease and contaminants before installing to ensure a proper seat for a bolt torque.

⚠ WARNING

Disassembly of any pin-connected attachment can be hazardous. Never remove any pins unless the attachment is on the ground (and blocked up if necessary) or serious injury or death could result.

NOTICE

If replacement of any bolt or nut is necessary, it MUST be replaced with the same grade fastener.

BOLT TORQUE GUIDELINES

Proper bolt installation is critical to ensure the safe and efficient operation of the attachment. Carefully follow the steps below to properly install bolts.

1. Always replace bolts and nuts with the same size and class of fastener. Replacement fasteners can be ordered from the Stanley LaBounty Parts Department to ensure the correct part is used (refer to figure 5-2). Unless otherwise specified, use class 10.9 metric hex head capscrews, class 10.9 metric flat head capscrews, and class 12.9 metric socket head capscrews.
2. Make sure bolts, nuts and bolt holes are free of dirt, oil, grease and other contaminants.
3. Use the Capscrew Size Guide on this page to help determine the size of the bolt being installed.
4. The torque values in this manual are for use with non-plated fasteners with clean, dry threads. These values are suitable for use with or without thread adhesives, such as Loctite products. **Please note that proper torque values may vary depending on the specific area of the attachment. Refer to page 5-19 for details.**

METRIC CAPSCREW SIZE GUIDE

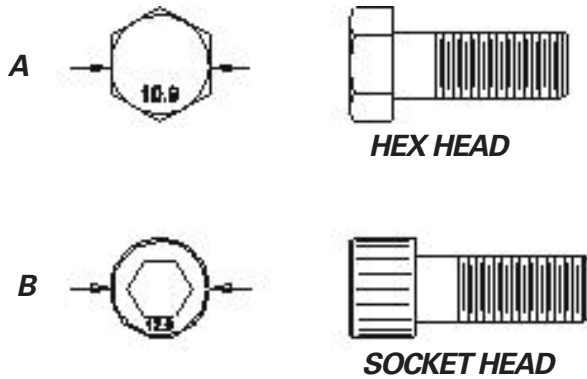


FIGURE 5-2

CAP-SCREW SIZE	A HEX HEAD	B SOCKET HEAD
M10	0.63" (16mm)	0.63" (16mm)
M12	0.71" (18mm)	0.71" (18mm)
M14	0.83" (21mm)	0.83" (21mm)
M16	0.94" (24mm)	0.94" (24mm)
M20	1.18" (30mm)	1.18" (30mm)
M24	1.42" (36mm)	1.42" (36mm)
M30	1.81" (46mm)	1.77" (45mm)

WARNING

Always replace bolts and nuts with the same size and class of fastener. Inferior fasteners can fail and cause injury or death and damage to the equipment.

TORQUE VALUES FOR METRIC FASTENERS

IMPORTANT

Please note that some parts of the attachment require special torque values; these parts are listed below with the page number where the proper torque values for that area can be found.

- Hydraulic Connection Bolts (split flange connections) Page 5-11
- Speed Valve Bolts Page 5-25
- Turntable Bearing Bolts Page 5-14
- Rotation Assembly Bolts Page 5-14

For all other Universal Processor bolts, use the Generic Torque Table, below.

	CLASS 10.9		CLASS 12.9	
SIZE	FT-LBS	N-M	FT-LBS	N-M
M10	41	55	49	67
M12	71	96	85	116
M16	173	235	207	281
M20	335	454	403	547
M24	579	785	693	939
M30	1164	1579	1391	1887

WARNING

Always replace bolts and nuts with the same size and class of fastener. Inferior fasteners can fail and cause injury or death and damage to the equipment.

NOTICE

- Apply torque to the nut rather than the bolt head wherever possible.
- Be sure to use the proper torque values for the class of bolt being torqued. If unsure of what torque value to use contact your dealer or the Stanley LaBounty Customer Service Department.

UNIVERSAL PROCESSORS

HYDRAULIC SYSTEM MAINTENANCE

Use the following instructions to safely perform hydraulic checks and maintenance on the attachment.

1. Always relieve all hydraulic pressure of the excavator before attempting to work on any hydraulic component. **Relieve hydraulic pressure before working on machine** by working controls in both directions with the engine off and the ignition switch in the off position. Also, relieve the hydraulic reservoir air pressure.
2. Shut off the base machine and check the hydraulic system pressure. It should be zero (0) PSI. There is a diagnostic port on the attachment manifold to check the pressure, the 1/4" NPT (1/4- 18) plug will need to be replaced with an adapter fitting for your test gauge.
3. Hydraulic oil becomes hot during operation. **DO NOT** let hot hydraulic oil get in contact with the skin as it could cause severe burns.
4. Check all hydraulic components (split flanges, hoses, fittings, mounting hardware, etc.) every 80 hours.
5. The hydraulic manifold is equipped with a diagnostic nipple to check the pressure coming from the base machine. Maintaining proper operating pressure will result in optimum cutting performance; also as a quick check to see if the base machine is performing up to manufacturer's recommendations.
6. Whenever hydraulic lines are disconnected, hoses must be capped and ports must be plugged to prevent contamination of the hydraulic system.

⚠ WARNING

Relieve pressure before disconnecting hydraulic lines. Tighten all connections before applying pressure. Keep hands and body away from pin holes and nozzles, which can eject fluids under high pressure. Use a piece of cardboard to search for leaks. Escaping fluid under pressure can penetrate the skin and cause serious injury. If ANY fluid is injected into the skin, seek immediate medical attention.

NOTICE

NEVER adjust pressure relief valves to get higher operating pressures. The manufacturer's recommended pressures give the safest performance with the longest life.

FLANGE TYPE HOSE FITTINGS

Check flange fittings for smooth, tight fit of matching surfaces. If any capscrews are loose or matching surfaces are not tight, tighten the loose capscrew then tighten the diagonally opposite capscrew. Tighten the two remaining capscrews then torque all four screws as specified in the Torque Chart in this manual.

Tolerance is $\pm 10\%$. The torques given are enough for the given size connection with the recommended working pressure. Torques can be increased to the maximum shown for each screw size if desired. **DO NOT** use these values if a different torque value or tightening procedure is listed for a specific application. Torque values listed are for general use only. Check tightness of capscrews periodically.

Attachment bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade. To prevent them from failing when tightening, ensure fastener threads are clean and properly engaged.

TORQUE VALUES FOR FOUR-BOLT FLANGE FITTINGS- CODE 62 FLANGES

NOMINAL FLANGE SIZE	SIZE	FT-LBS	N-M
1"	M12x1.75	70	95
1 ¼"	M12x1.75	70	95
1 ¼"	M14x2.00	112	152
1 ½"	M16x2.00	224	304
2"	M20x2.50	435	590

NOTICE

Use only metric tools on metric hardware. Other tools may not fit properly. They may slip and cause injury.

TORQUE VALUES FOR FOUR-BOLT FLANGE FITTINGS- CODE 61 FLANGES

NOMINAL FLANGE SIZE	CAPSCREW SIZE (CLASS 10.9)	TORQUE FT-LBS	TORQUE N-M
¾"	M10x1.50	42	57
1"	M10x1.50	42	57
1 ¼"	M12x1.75	70	95
1 ½"	M12x1.75	70	95
2"	M12x1.75	70	95

NOTICE

Do not use air wrenches. Tighten each bolt equally in an alternating pattern. Do not over tighten.

UNIVERSAL PROCESSORS

THE ROTATOR

The rotator gives the attachment 360° of continuous rotation in both directions for easy, accurate processing at all angles. The hydraulic rotation circuit consists of a hydraulic motor driving a turntable bearing, either directly or through a planetary gearbox. It is necessary to regularly maintain this system to ensure long life and good performance. The maintenance requirements of the rotator are outlined in the following pages. The rotator requires special attention when operating the attachment. The rotator is to be used only to position the attachment, not as a means of bending, twisting, or breaking material. Use of the rotation feature for any other purpose may damage the rotation components and may compromise the attachment's warranty.

BACKDRIVING THE ROTATOR

It is possible to force the attachment to rotate even when the rotation circuit is not operated. This is known as backdriving the rotation system. Backdriving puts undue stress on the rotation system and, if done excessively, can lead to rotation component problems. Backdriving occurs when an excessive force is applied to the attachment jaws and the force is off-center. Examples of this are closing the jaws on a rigid member without the jaws being square to the member or handling a heavy load off-center in the jaws (see figure 5-3). Follow the tips below to minimize backdriving as much as possible.

1. When handling a load in the jaws, try to grip it as close to its center of gravity as possible.
2. When processing a long member that is suspended (i.e. a horizontal beam in a structure), make several shorter cuts rather than one long cut where the member can come loose and backdrive the attachment.
3. When processing any rigid member, use the rotator to square the jaws to the cut. If the jaws are not square, the rotator will backdrive to adjust to the cut.

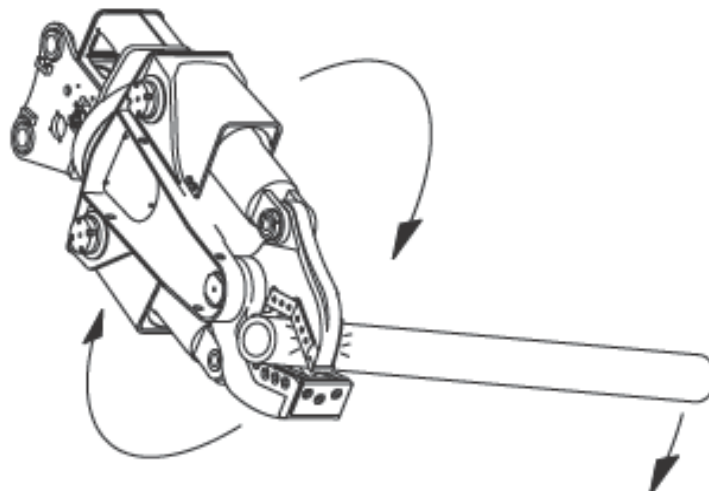
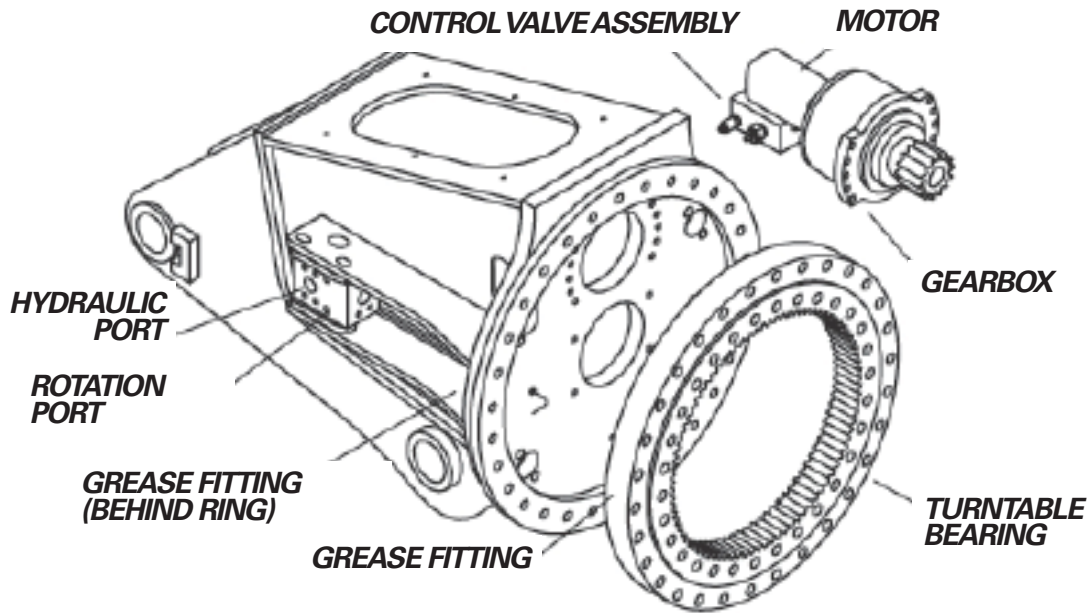


FIGURE 5-3

MAJOR COMPONENTS OF TYPICAL ROTATION SYSTEMS

Second member upper head with an internal drive rotator, gearbox and standard rotation.



Third member upper head with an external direct-drive rotator (no gearbox) and optional internal rotation control system.

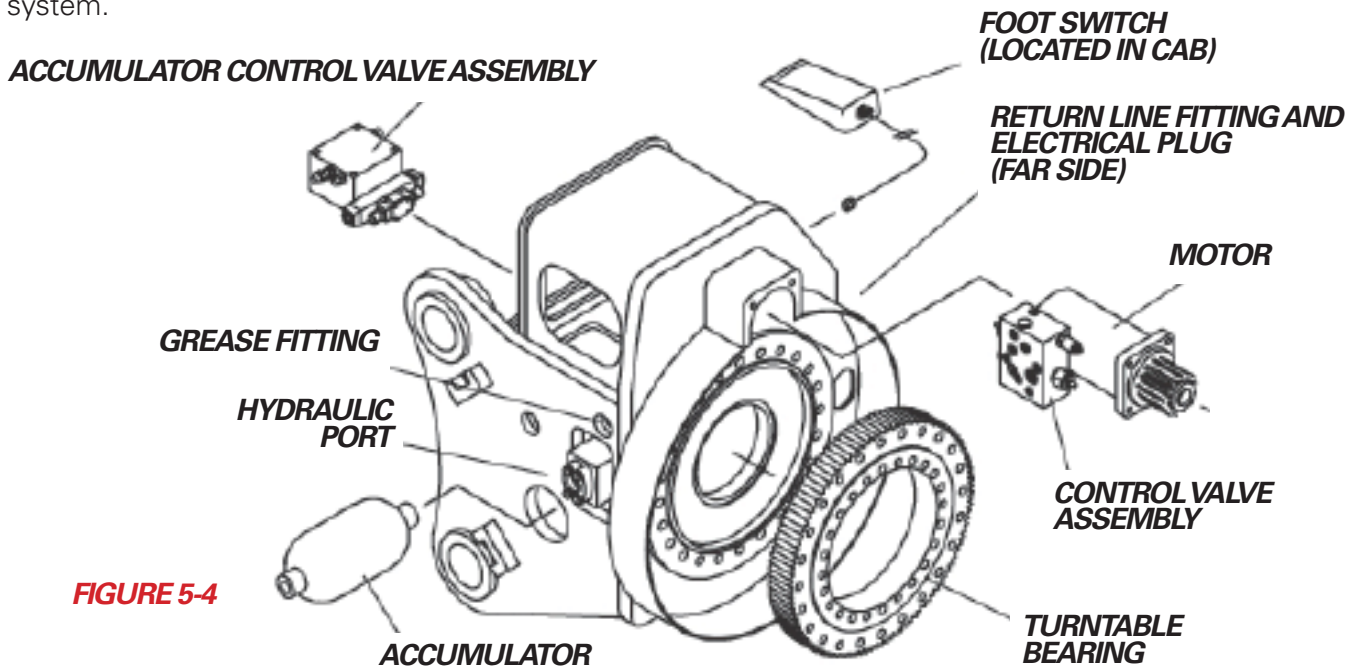


FIGURE 5-4

UNIVERSAL PROCESSORS

BOLT TORQUING

The bolts connecting the turntable bearing are an important part of attachment maintenance. These bolts must be inspected each 8 hours of operation. Damaged fasteners must always be replaced with the same size and grade of fastener. If bolts are found to be loose after operation, they should never be retorqued more than once before they are replaced. Fasteners retorqued more than once will fatigue due to stretching.

These bolts should be inspected daily and replaced after 1500 hours or 12 months.

TORQUE VALUES FOR TURNTABLE BOLTS

SIZE	CLASS	FT-LBS	NM
M24	10.9	752	1020
M30	10.9	1511	2049
1.00"	L9	900	1220
1.50"	ZN-L9	2600	3525

TORQUE VALUES FOR ROTATION ASSEMBLY BOLTS

SIZE	CLASS	FT-LBS	NM
M10	12.9	64	87
M12	10.9	92	125
M16	10.9	224	304
M20	10.9	435	590
.38"	Gr 8	63	85
.50"	Gr 8	154	209
.75"	Gr 8	380	515

WARNING

Always replace bolts and nuts with the same size and class of fastener. Inferior fasteners can fail and cause injury or death and damage to the equipment.

NOTICE

Use of the rotation feature for any other purpose may damage the rotation components and may void the attachment warranty.

NOTICE

- *It may be necessary to rotate the attachment to access all the bolts connecting the attachment, turntable bearing and rotating head.*
- *Make sure to use the proper torque value for the size, class, and type of bolt.*

PLANETARY GEARBOX LUBRICATION if equipped

The planetary gearbox is used if changes in gear ratios are required between the hydraulic motor and turntable bearing to rotate the attachment. Correct lubricant and change-out procedures are critical to maintain dependable gearbox operation. The Planetary Gearbox Lubricants chart on the following page (4-16) specifies correct lubricants for various operating temperatures.

NOTICE

The gearbox lubricant must be changed after the first 50 hours of operation to remove metal filings from the gearbox break-in period. Thereafter, refer to the following change-out schedule.

GRADE	TIME
SAE 80W-90	500 hours or one year
Synthetic ISO 150 @ 104°F	1000 hours or two years
Synthetic ISO 460 @ 104°F	1000 hours or two years

Recommended inspection of the gearbox fluid level is every 250 hours or 6 months. Cold weather lubrication is critical. If the temperature is below 5°F (-14° C), change out lubricant to synthetic specification. Slow rotation of the attachment is recommended with all grades of lubricant at temperatures below 20° F (-7° C) prior to working the attachment. All rotating attachments leaving the factory have synthetic ISO 150 @ 104°F grade lubricant installed.

LUBRICANT CHANGE-OUT PROCEDURE

- 1.** Position attachment at a comfortable working height and in a position where gearbox is near level (gearbox rotational axis level with respect to horizontal). **Support the attachment with blocking in this position; be sure the base machine is shut off.**
- 2.** Remove the upper head top access cover.
- 3.** Place a lubricant catch basin capable of holding more than 2 quarts below the drain plug.
- 4.** Remove the drain plug (bottom) and the visible top plug. These plugs are magnetic and will attract metal filings from inside the gearbox. These filings should be removed from the plugs before reinstalling.
- 5.** Reinstall the drain plug once the gearbox is fully drained.
- 6.** Add the applicable gearbox lubricant through top plug hole. Refer to the chart on the following page for proper fill capacity for your gearbox.
- 7.** Remove lubricant catch basin.
- 8.** Reinstall top plug and gearbox access cover.

UNIVERSAL PROCESSORS

PLANETARY GEARBOX LUBRICANTS

OPERATING AMBIENT TEMPERATURE RANGE	RECOMMENDED GRADES
5°F TO 120°F /-14°C TO 49°C -50° TO 120°F /-46°C TO 49°C -25°F TO 180°F /-32°C TO 82°C	SAE 80W- 90 Synthetic ISO 150@104°F Synthetic ISO 460@104°F
APPROVED SOURCE/GRADE	GRADE
Manufacturers of approved SAE lubricants Mobile Oil Corp- Mobilube SHC 75W- 90 Mobile Oil Corp- Mobilube SHC 80W- 140	SAE 80W- 90 Synthetic ISO 150 @ 104°F Synthetic ISO 460 @ 104°F

SYNTHETIC SPECIFICATION

MOBILUBE SHC	75W- 90	80W- 140
Product Number	51100-6	51101-4
SAE Number	75W- 90	80W- 140
Gravity, API	29.8	30.2
Flash PT, °C (°F), Min.	204(400)	218(425)
Pour PT, °C (°F), Max.	-48(-55)	-43(-45)
Viscosity		
cP @-40°C	109,000	---
cP @-26°C	---	80,000
cSt @40°C	117	312
cSt @ 100°C	15.5	31.3
Viscosity Index	139	139

GEARBOX FILL CAPACITIES

Typically, the fill capacity for the rotation gearbox is approximately 3/4 full. Use the chart below for actual fill capacities for your specific gearbox. Refer to the Parts Catalog for the attachment to determine the LaBounty part number of your gearbox.

LaBounty Part Number

510783
511488

Fill Capacity

17 fluid ounces (0.5 liter)
2 pints (1 liter)

Models Where Used

UP 30SV & UP 45SV
UP 70SV

TURNTABLE BEARING LUBRICATION

LUBRICATION FREQUENCY

Equipment operating frequently in extreme environments should be lubricated at least **every eight hours**. If the old grease is noted to be in good condition and free of contamination, the interval may be extended. Conversely, whenever the grease is contaminated or deteriorated, the interval should be shortened. Rotating attachments in storage should be lubricated at least every six months.

LUBRICATION PROCEDURES

Bearings are equipped with one to four grease fittings, depending upon the model. The grease fittings will be located either on the outside of the bearing (if it is an internal drive rotator) or on the upper head side plate (external drive). To lubricate the bearing, grease a fitting and then stand clear to rotate the attachment. This will uniformly distribute the grease and effectively flush out the old grease and contaminants. Grease the same fitting again after rotating before moving on to the next fitting. Grease each fitting a total of eight pumps of the grease gun or until grease escapes through the bearing seals. On an internal drive rotator there are also two grease fittings in the base plate of the rotating head. These provide grease to the gear teeth and pinion gear.



Stand clear of the attachment while rotating. Grease a fitting and then stand clear to rotate the bearing to distribute the grease. DO NOT attempt to grease the bearing while the attachment is rotating or severe injury could occur.

TURNTABLE BEARING LUBRICANTS

For normal operating conditions, periodic lubrication with lithium Grade 2 extreme pressure grease is recommended. For operation below 32F (0°C), Grade 0 is recommended. The following table lists typical lubricants for turntable bearings:

APPROVED SOURCE	TRADE NAME	FOR OPERATION BELOW 32° (0°) OR STORAGE	FOR OPERATION ABOVE 32°F (0°C)
AMOCO	Rycon	EPO	EP2
CHEVRON	Dura Lith	EPO	EP2
EXXON	Lidok	EPO	EP2
MOBIL	Mobilux	EPO	EP2
SHELL	Alvania	EPRO	EP2
SOHIO	Bearing Guard	LTO	2
SUN	Prestige	740EP	742EP
TEXACO	Multifak	EPO	EP2
UNION	Unoba	EPO	EP2

HYDRAULIC REQUIREMENTS

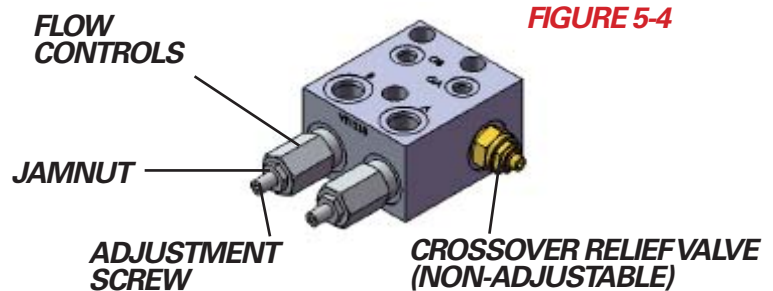
The rotating attachment requires an auxiliary hydraulic circuit in order to operate the rotator. This circuit will need to be a medium pressure (1350-2500 PSI/93-172 BAR), low flow (4-12 GPM/15-45 LPM) hydraulic circuit. There are minimum and maximum pressure and flow requirements that may vary depending on the model of the attachment. These requirements are listed in the Hydraulic Installation Requirements sheet in the Parts Catalog for the attachment. The rotation motor on the attachment is equipped with manifold mounted load controls. The design of the load control manifold varies depending upon the type of the rotation system and the particular requirements for the rotation circuit. The two designs currently used are referred to as the "Crossover Relief/ Flow Control Valve" and the "Motion Control Valve." Adjustment procedures for the load control manifolds are given below. After identifying which manifold is on the attachment, determine which of the procedures follow.

CROSSOVER RELIEF/FLOW CONTROL MANIFOLD

The Crossover Relief/Flow Control Manifold is mounted directly to the hydraulic port of the rotation motor. The manifold controls rotation speed with flow control valves and overload protection with crossover relief valves to govern pressure at both motor ports. The valves have been adjusted at the factory to provide optimal performance of the rotation motor. The flow control valves "meter-out" flow from the rotation motor—they are factory adjusted to a recommended rotation speed of 4 to 6 RPM. They may be adjusted to suit a speed preference; however, keep in mind that the rotation feature is to be used only as a positioning device. Operating in excess of 10 RPM may damage the hydraulic and mechanical components of the attachment.

NOTICE

The motion control manifold does not provide directional control of hydraulic fluid; an auxiliary hydraulic circuit is required to operate the rotator.



ADJUSTING THE FLOW CONTROLS (UP 15SV, 20SV, 25SV)

1. See figure 5-4. Loosen the jamnut locking the adjustment screw.
2. To increase speed, turn the adjustment screw (Allen head) counterclockwise; check rotation speed at each 1/8 turn interval. Recommended rotation speed is 4 to 6 RPM. If the attachment fails to increase in speed, it may be that all of the circuit flow is being used. Check the supply circuit flow with a flow meter to verify whether or not more flow is available.
3. To decrease speed, turn the adjustment screw (Allen head) clockwise; check rotation speed at each turn interval. If the rotation speed does not decrease, replace the flow control valve.
4. Retighten the jamnut after the desired adjustment has been made.

THE CROSSOVER RELIEF VALVE continued

The crossover relief valve provides overload protection for the rotator. This is not intended to replace the circuit relief valve on the base machine. This valve has been preset at the factory and requires no adjustment. Do not tamper with the crossover relief valve. If a malfunction is suspected due a lack of rotator performance, a pressure check should be performed. **Diagnostic fittings*** are installed in the manifold to provide a means of checking pressure. Contact the Stanley LaBounty Service Department for the proper procedure for performing this check.

MOTION CONTROL VALVE MANIFOLD

See figure 5-5. One of two motion control valves are installed on the attachment depending on the size of the rotation motor. The motion control valve manifold provides overload protection and a load control system for the rotator with two crossover relief valves and two brake valves. The crossover relief valves and brake valves have been preset at the factory and require no adjustment; do not tamper with these valves. If a malfunction is suspected due to a lack of performance in the rotator, a pressure check should be performed. **Diagnostic fittings*** are installed in the manifold to provide a means of checking pressure. Contact the LaBounty Service Department for the proper procedure for performing this check. * **Diagnostic fittings require a Parker PD series coupler on gauge.**

CASE DRAIN

A case drain is required to relieve the back pressure that develops in the hydraulic motor case as a result of metering flow out of the motor. Depending on the model, this port is located on the motor or is routed to a bulkhead in the upper head side plate or port block. A ¼" hydraulic line should be connected to this port and routed back directly to the tank via a return line filter or a filter of its own. The maximum allowable back pressure in this line should not exceed 300 PSI.

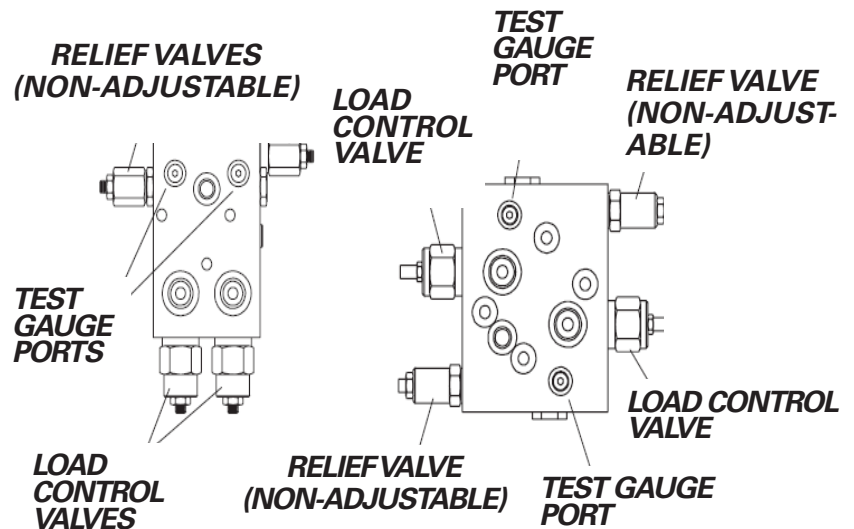


FIGURE 5-5

NOTICE

The case drain line must be connected to prevent failure to the case or motor seals.

UNIVERSAL PROCESSORS

CONTROL VALVE ASSEMBLY SCHEMATICS AND DESCRIPTIONS

Please refer to the Parts Catalog to identify the control valve assembly in your specific attachment.

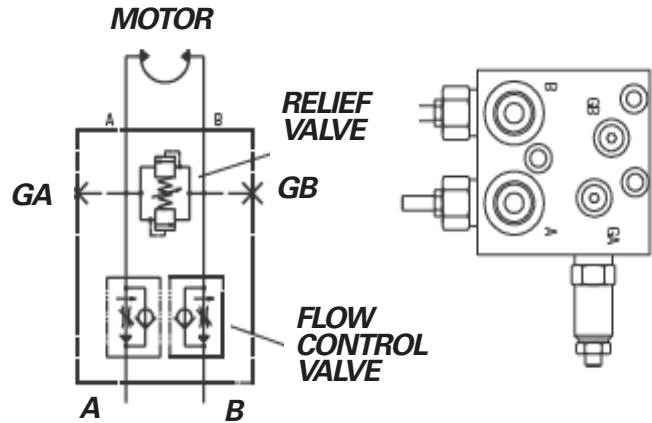
See figure 5-6. Crossover Relief Flow Control Valve used on UP 20SV and UP 25SV
Work Ports (A&B)

SAE #8 O-Ring Boss Ports for 5/8 OD Tube, 7/8-14UNF-2B

Gauge Ports (GA & GB)

SAE #4 O-Ring Boss Ports for 1/4 OD Tube, 3/8-24UNF-2B

FIGURE 5-6



See figure 5-7. Crossover Relief Flow Control Valve used on UP 70SV.

Work Ports (A & B)

SAE #8 O-Ring Boss Ports

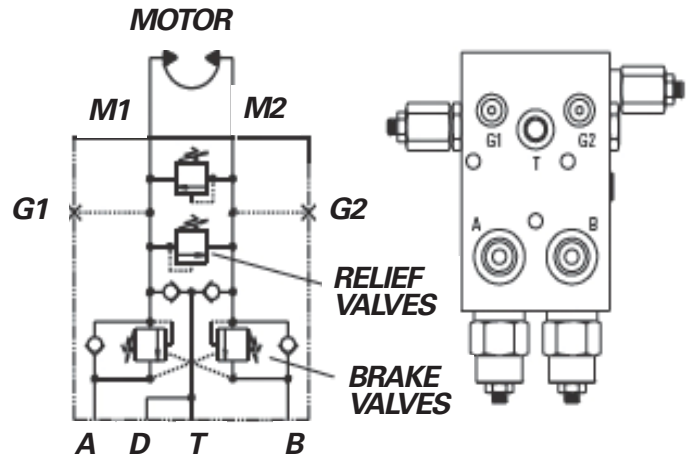
Gauge Ports (G1 & G2)

SAE #4 O-Ring Boss Ports

Drain Ports (D & T)

SAE #4 O-Ring Boss Ports

FIGURE 5-7



See figure 5-8. Motion Control Valve used on UP 30SV and UP 45SV

Work Ports (A & B)

SAE #10 O-Ring Boss Ports

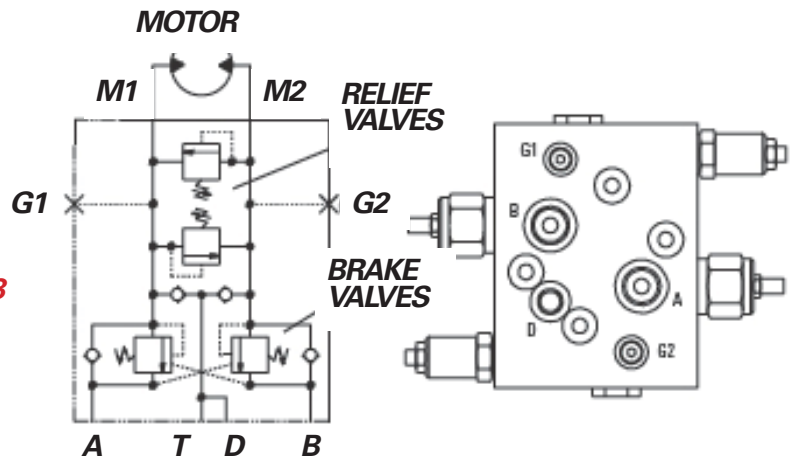
Gauge Ports (G1 & G2)

SAE #4 O-Ring Boss Ports

Drain Ports (D & T)

SAE #6 O-Ring Boss Ports

FIGURE 5-8



UNIVERSAL PROCESSOR HYDRAULIC SCHEMATIC

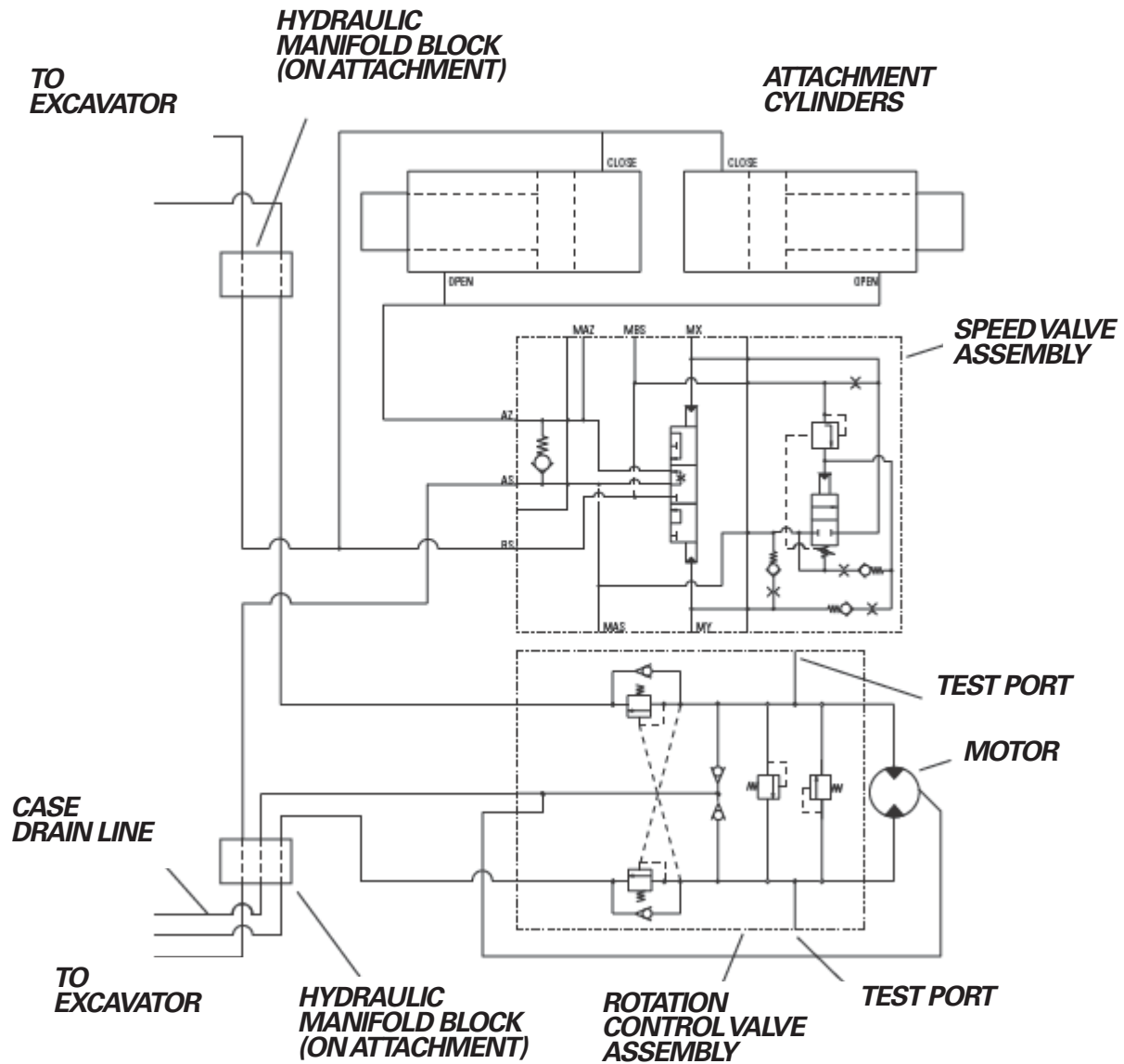


FIGURE 5-9

UNIVERSAL PROCESSORS

HYDRAULIC SCHEMATIC INTERNAL ROTATION CONTROL SYSTEM

if equipped

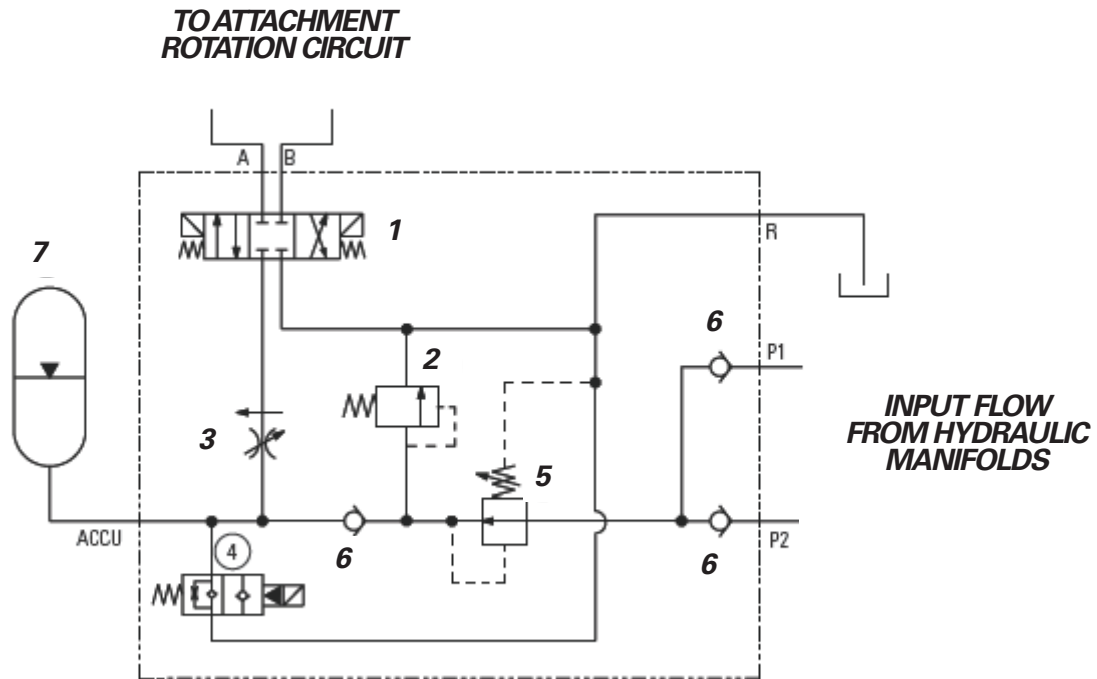


FIGURE 5-10

- 1 **DIRECTIONAL CONTROL VALVE**
- 2 **RELIEF VALVE**
- 3 **FLOW CONTROL**
- 4 **UNLOADING VALVE**
- 5 **PRESSURE REDUCING VALVE**
- 6 **CHECK VALVE**
- 7 **ACCUMULATOR**

SPEED VALVE TEST AND ADJUSTMENT

TOOLS NEEDED

The following tools are recommended for speed valve adjustment on Stanley LaBounty Universal Processors:

1. Pressure gauges—two are recommended so that two test ports can be checked at the same time
2. Appropriate diagnostic test fittings and tools for installing fittings
3. Open- or box-end wrenches (12mm- 19mm)
4. Allen wrenches (4mm- 12mm)

TEST AND ADJUSTMENT

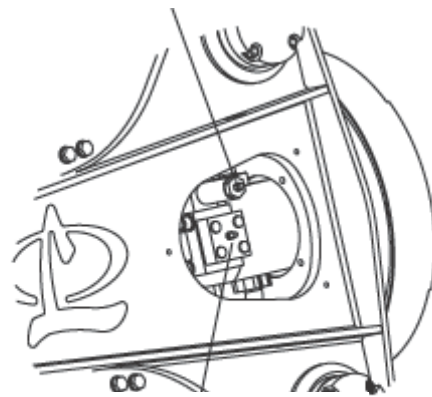
1. From the fully open position, cycle the jaws into the closed position and observe the jaw speed.
 - If functioning properly, the jaw speed will increase after closing approximately 1 to 2" (25 to 50mm).
 - If no change in speed is noticed, turn the pilot valve adjustment screw clockwise (see figures 5-11, 5-12) 45° each time until the valve begins to function properly.

NOTICE

When making adjustments, keep track of how much adjustment has been made at each position in case the screws need to be restored to their original positions.

2. If the speed valve operates properly from the fully open position, check its operation when closing the shear jaw from a partially open position.
 - If functioning properly, the jaw speed will increase after closing approximately 1 to 2" (25 to 50mm).
 - If no change in speed is noticed, turn the main spool adjustment screw clockwise (see figures 5-11, 5-12) 45° each time until it begins to function properly from the partially open position.

**PILOT VALVE
ADJUSTMENT SCREW**



**MAIN SPOOL
ADJUSTMENT SCREW**

**FIGURE 5-11
LARGER UNIVERSAL
PROCESSOR MODELS**

**PILOT VALVE
ADJUSTMENT
SCREW**

**MAIN SPOOL
ADJUSTMENT
SCREW**



**FIGURE 5-12
SMALLER UNIVERSAL
PROCESSOR MODELS**

UNIVERSAL PROCESSORS

SPEED VALVE TEST AND ADJUSTMENT

continued

NOTICE

The pilot valve adjustment is used for setting the point at which the speed valve shifts into and out of the regenerative mode. The main spool adjustment is used to overcome the back pressure in the base machine and to eliminate cylinder drift.

3. If the speed valve operates properly regardless of jaw position, it will then be necessary to check to make sure the valve is shifting out of the regenerative (high speed) mode. Test fittings will need to be installed into the MBS and MAZ test ports on the valve (see figure 5-13).

- If functioning properly, the hydraulic pressure will be approximately the same while the jaws are closing. When the jaw is fully closed, the pressure at the MBS port will reach full system pressure while the pressure at the MAZ port will drop to nearly zero.
- If no change in pressure is evident, turn the pilot valve adjustment screw counterclockwise (see figure 5-11) 45° each time until the pressures are correct.

NOTICE

The MBS port gives the hydraulic pressure at the cylinder bore side. The MAZ port gives the hydraulic pressure at the cylinder rod side.

4. Another adjustment will need to be made if the jaws continue to drift toward the closed position after the operator has released the control. Turn the main spool adjustment screw clockwise (see figure 4-31) 45° each time until this condition ceases. Then repeat steps #1 and #2 to make sure the valve is still shifting into the regenerative (speed) mode properly.
5. After making the proper adjustments, cycle the jaws open and closed a number of times to ensure the speed valve is functioning properly.

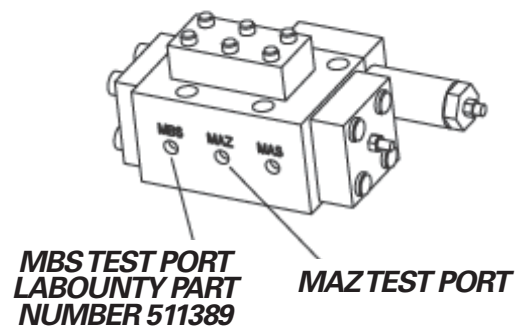
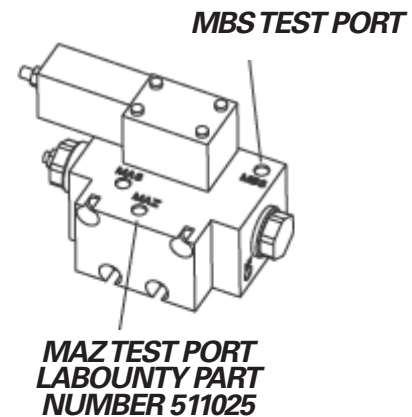


FIGURE 5-13

TORQUE VALUES FOR SPEED VALVE FASTENERS

For the fasteners used to secure the LaBounty speed valve to the attachment cylinder, use the torque values listed here:

- For 100 gpm (378 lpm) speed valves (LaBounty part number 511025) —————185 ft-lbs (250 Nm)
- For 200 gpm (756 lpm) speed valves (LaBounty part numbers 511022 and 511389)———370 ft-lbs (500 Nm)
- For 250 gpm (945 lpm) speed valves (LaBounty part number 511461)———348 ft-lbs (472 Nm)

NOTICE

It is imperative that the fasteners used for mounting the speed valve to the cylinder are properly torqued to the manufacturer's specifications.

UNIVERSAL PROCESSORS

INTERNAL ROTATION CONTROL SYSTEM if equipped

The optional Internal Rotation Control System (not available for the UP 15SV) is designed to provide a medium pressure, low flow hydraulic power source for rotating the attachment. The system is factory installed inside the rotating head of the attachment and consists of the following major components:

- Accumulator
- Accumulator Control Valve Assembly
- Foot Switch

The circuit taps into the attachment's hydraulic supply manifolds to draw only enough fluid to charge the accumulator. This fluid is held in reserve until the control valve is actuated, which sends the fluid to the rotation motor to drive the rotor. The diagram below (figure 5-14) represents a typical Internal Rotation Control System. The layout of the system that has been installed in your attachment may vary slightly, but the main components between attachment models are generally the same.

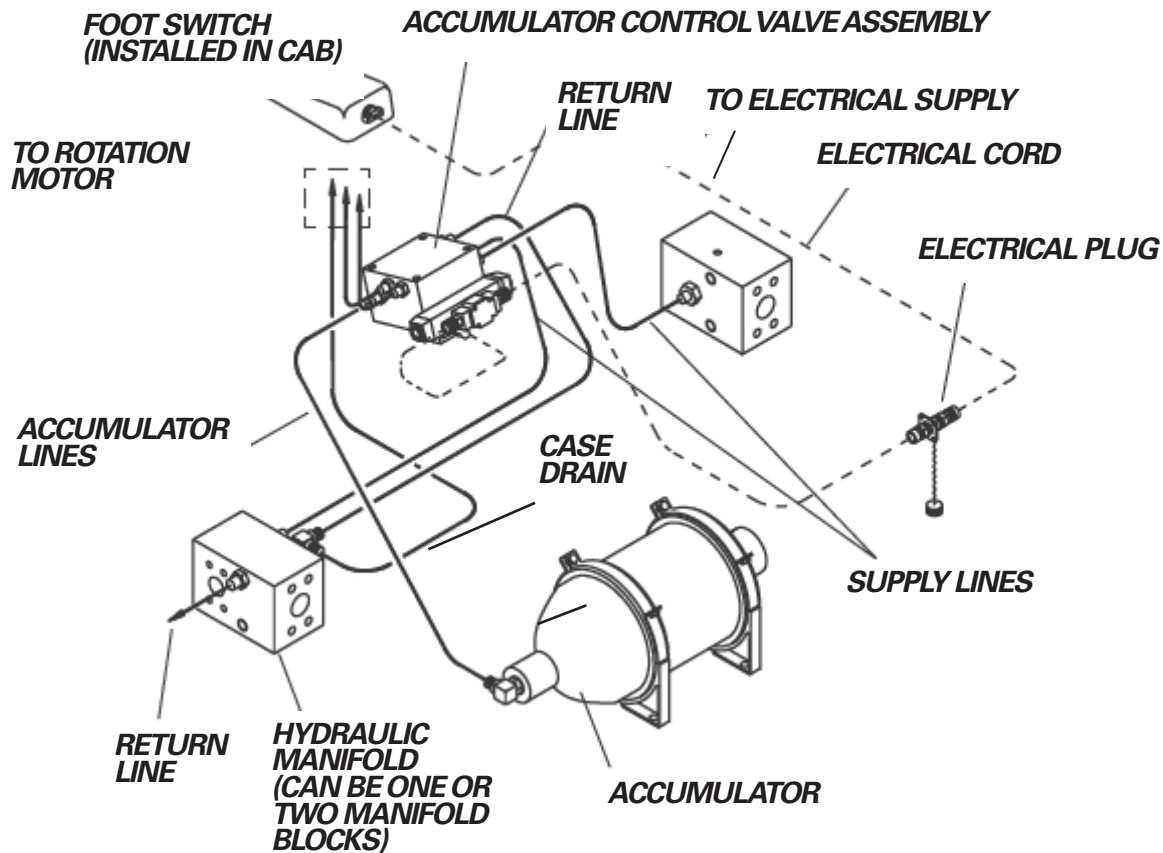


FIGURE 5-14

ACCUMULATOR CONTROL VALVE ASSEMBLY if equipped

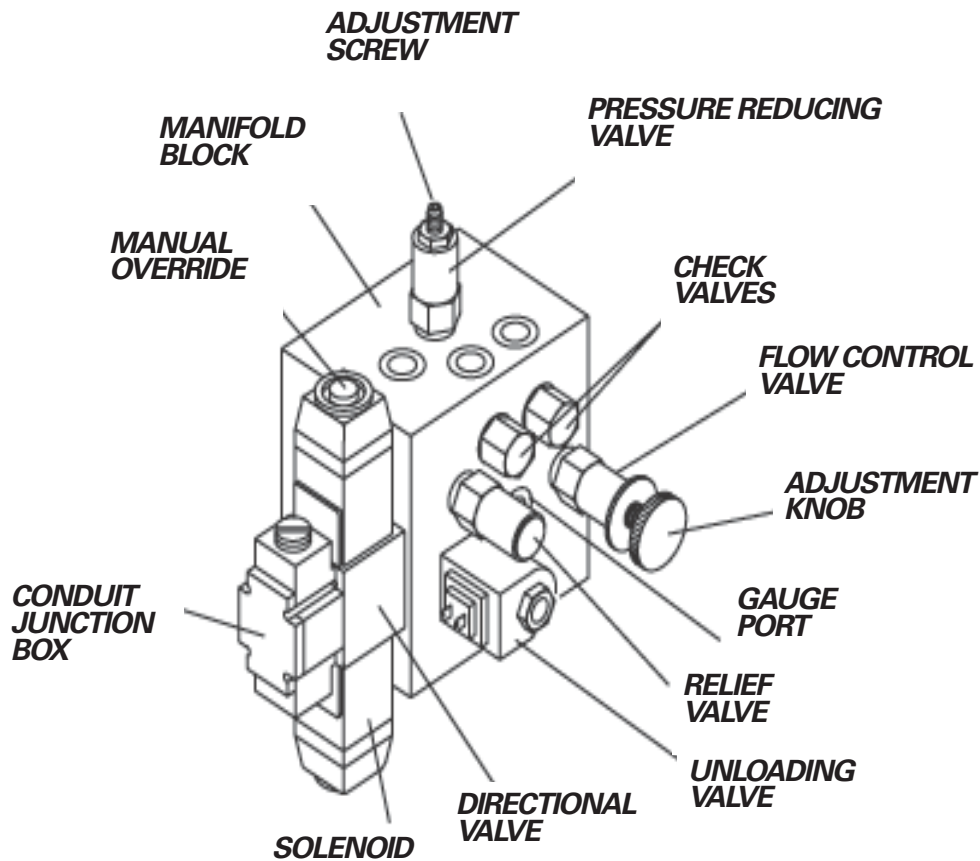


FIGURE 5-15

MAINTENANCE INTERVALS FOR INTERNAL ROTATION

if equipped

A program of regular service should be established for the attachment, including maintenance of the Internal Rotation Control System. Use the base machine hour meter to determine service intervals.

The 8 Hour Inspection Checklist in this manual includes the rotation system and should be used daily to check for wear, loose hose connections or components, and other signs of potential failure.

There are three maintenance items within the Internal Rotation Control System that **should be checked every six months or 1000 hours of operation**:

- Accumulator Precharge Pressure
- Operating Flow
- Operating Pressure

Keeping these three items adjusted to the specifications provided in this section will ensure that the rotator is operating efficiently and safely.

ACCUMULATOR MAINTENANCE

There is a bladder inside the accumulator that is precharged with nitrogen gas when the attachment leaves the factory. When the accumulator is filled with hydraulic fluid, this nitrogen bladder compresses and pressurizes the accumulator. When the rotator function is operated, the pressurized accumulator sends the fluid to the hydraulic motor to rotate the attachment. If the accumulator is not properly precharged, it directly affects the performance of the rotator. For this reason it is necessary to check and maintain the proper accumulator precharge.

Prior to testing or precharging, lower the attachment to the ground and support it properly in a position that will give you the best possible access to the accumulator. It is necessary to drain the accumulator of hydraulic fluid to accurately measure its precharge. This is done by shutting off the base machine. This will cause the unloading valve to drain the accumulator.

To work on the accumulator, the protective cap and cap nut must be removed. The O-ring must not be removed. Install a Schrader valve into the accumulator if one does not already exist there. Contact the Stanley LaBounty Service Department if the Schrader valve has not been installed on your accumulator. Attach an accumulator charge and test unit so the gauge can be easily read. The location of some accumulators may require a special adapter for access to the gas valve.

TESTING THE ACCUMULATOR PRECHARGE

Once the test unit is attached, make sure the relief valve is closed and then turn the spindle. When the pointer of the gauge begins to move, turn the spindle one more full turn. The gauge should now show the amount of accumulator precharge pressure. **The proper amount of accumulator precharge is 1100 - 1200 PSI (76 - 83 BAR).** If the gauge is showing something other than the proper precharge, it will be necessary to either release pressure or further precharge the accumulator.

PRESSURE RELEASE

To release pressure, slowly open the relief valve. This will release nitrogen into the atmosphere. Close the valve when the desired pressure is reached.

ACCUMULATOR PRECHARGING

WARNING

Never used oxygen or shop air to precharge the accumulator; this could cause an explosion. Use only dry nitrogen for precharging accumulators.

1. Connect a charging hose to the shut-off valve of a commercially available nitrogen supply bottle. Connect the other end of the charging hose to the nipple of the charging unit. With the spindle open, slowly open the valve on the nitrogen supply bottle to release nitrogen into the accumulator until the desired level is reached.

WARNING

If the gas pressure in the nitrogen supply bottle is higher than the maximum operating pressure of the accumulator, a gas pressure reducing valve or regulator must be fitted.

2. Allow five minutes for the nitrogen temperature to adjust. Check and repeat process until proper pressure (1100 PSI- 76 BAR) is reached.
3. When the required precharge pressure is reached, unscrew the spindle valve so the gas valve on the accumulator closes. Check the valve on the accumulator for leaks by using sealing spray or soapy water.
4. Replace cap nut and protective cap.

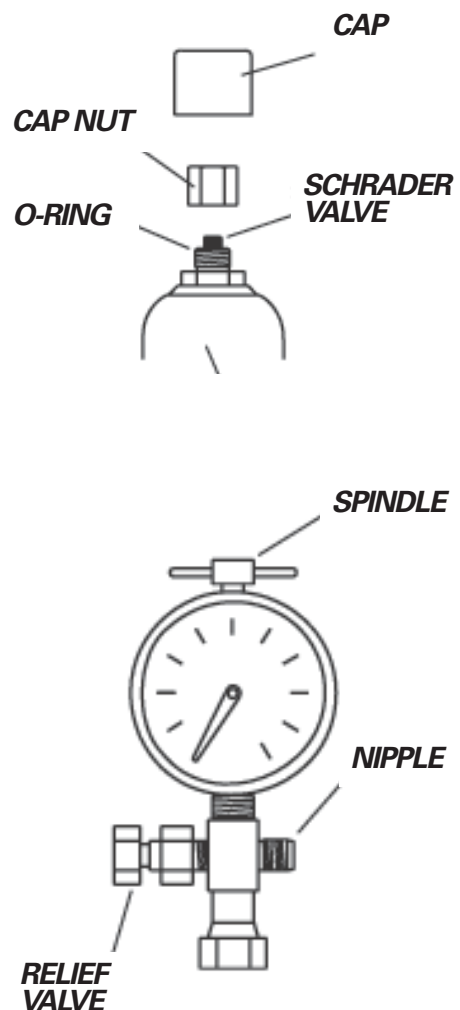


FIGURE 5-16
TYPICAL CHARGE AND TEST UNIT

OPERATING FLOW FOR INTERNAL ROTATION

The operating flow of the Internal Rotation Control System directly affects the speed at which the attachment will rotate. Two people are necessary to check the operating flow of the Internal Rotation Control System. Install a flow meter between the A and B ports on the Accumulator Control Valve Assembly (these are the work ports for the valve). The direction in which the flow meter is installed does not matter. Operate the directional valve by using the foot switch in the operator's cab and check the flow meter reading. **LaBounty recommends that a flow of 4 - 12 GPM (15 - 45 LPM) be maintained.**

It may be desirable to adjust the flow within the recommended range to increase or decrease the speed of rotation. To do this, the lock nut on the flow control valve must first be loosened. Turn the knob clockwise to decrease flow; turn the knob counterclockwise to increase flow. Make sure to retighten the lock nut when the adjustments are completed.

NOTICE

Do not exceed 10 GPM (38 LPM) or damage to the rotation system may result.

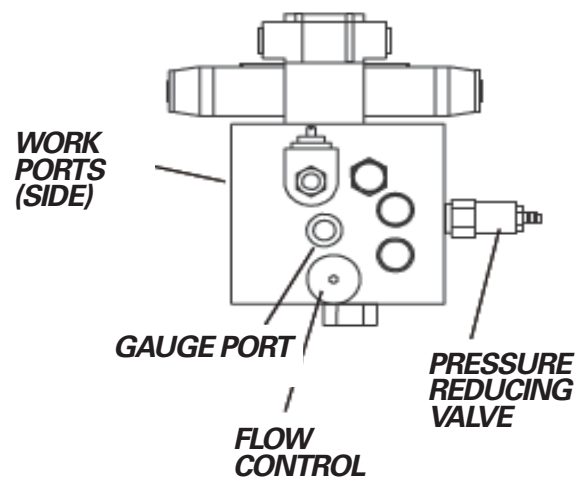
OPERATING PRESSURE FOR INTERNAL ROTATION

To check the operating pressure of the Internal Rotation Control System, the plug in the gauge port of the Control Valve Assembly (marked with a "G") must be replaced with an adapter fitting that is compatible with the pressure gauge you are using. The gauge port is a 7/16" - 20 SAE O-ring Boss threaded port. Once the pressure gauge is hooked up to the gauge port, have the operator start up the base machine. Cycle the attachment jaws until they are either fully open or fully closed and continue to operate this hydraulic function even after the jaws have bottomed out. This will cause the base machine operating pressure to rise and will enable you to check the operating pressure of the rotation system.

NOTICE

The operating pressure of the Internal Rotation Control System should be 2000- 2500 PSI (138- 172 BAR). If your pressure does not fall within this range, it will be necessary to adjust it or the rotation system may be damaged.

To adjust the operating pressure, first loosen the lock nut on the Pressure Reducing Valve. Then slowly turn the adjustment screw in the end of the valve to adjust the pressure until it falls within the specified range. Turn the screw clockwise to increase the pressure and turn the screw counterclockwise to decrease the pressure. Make sure to retighten the lock nut when the adjustments are completed.



CONTROL VALVE ASSEMBLY

FIGURE 5-17

SECTION 6 TROUBLESHOOTING

Hydraulic Performance Troubleshooting Guide.....5-2
Rotation Circuit Troubleshooting Guide5-4
Internal Rotation Control System Troubleshooting Guide (if equipped)5-7
Speed Valve Troubleshooting Guide.....5-10



UNIVERSAL PROCESSORS

HYDRAULIC PERFORMANCE TROUBLESHOOTING GUIDE

The information contained in this guide provides for troubleshooting the LaBounty attachment only. Any reference to the excavator will be made only to give some guidance as to where a problem may exist. Any specific maintenance and troubleshooting information will need to be provided by the original equipment manufacturer of the excavator or the authorized dealer.

SYMPTOM	PROBABLE CAUSE	REMEDY
1. Jaws will not move	<ul style="list-style-type: none"> a. No hydraulic fluid to the attachment cylinder b. Broken hydraulic swivel 	<ul style="list-style-type: none"> i. Check for hydraulic flow at the hydraulic lines to the manifold. ii. Check base machine hydraulic circuit. i. Replace swivel and flush hydraulic circuit.
2. Jaw speed is extremely slow	<ul style="list-style-type: none"> a. Base machine oil supply (flow) is too low b. Hydraulic cylinder seal bypass c. Hydraulic lines are kinked d. Hydraulic swivel seal bypass e. Faulty speed valve operation 	<ul style="list-style-type: none"> i. Check the flow to the attachment and compare with the recommended flow (see hydraulic letter for attachment). ii. Check for excessive back pressure. iii. Check base machine's hydraulic system. i. Check for cylinder seal bypass; replace seals if necessary. i. Check hydraulic lines; replace any damaged lines i. Check for seal bypass (consult your dealer service department for instructions). Install new seal kit if necessary. i. See speed valve troubleshooting guide on page 5-10
3. Jaws move too rapidly	<ul style="list-style-type: none"> a. Hydraulic flow to attachment is excessively high 	<ul style="list-style-type: none"> i. Reduce flow to attachment <p style="text-align: center;">NOTE The attachment may be damaged if flow exceeds the recommended GPM.</p>

HYDRAULIC PERFORMANCE TROUBLESHOOTING GUIDE continued

<i>SYMPTOM</i>	<i>PROBABLE CAUSE</i>	<i>REMEDY</i>
4. Jaws drift open or closed	<ul style="list-style-type: none"> a. Excavator hydraulic valve is open center type b. Excavator control valve is faulty c. Hydraulic cylinder seal bypass d. Hydraulic swivel bypass e. Faulty speed valve operation 	<ul style="list-style-type: none"> i. Check hydraulic circuit to verify. Replace with closed center spool type. ii. Refer to excavator manual <ul style="list-style-type: none"> - check for sticky spool - check for circuit relief valve bypass - check for spool seal bypass (if applicable) i. Check for seal bypass; replace seals if needed i. Check swivel for bypass; replace seals if needed i. See speed valve troubleshooting guide, p. 5-10
5. Will not process or hold material in jaws	<ul style="list-style-type: none"> a. Wrong type or size of material b. Hydraulic lines are kinked c. Attachment pressure is too low d. Excessive back pressure on the return side (rod) e. Cylinder seal bypass f. Faulty speed valve operation 	<ul style="list-style-type: none"> i. Check material size and type; consult factory i. Check the lines feeding oil to the attachment; replace any kinked lines. i. Compare with base machine's operating pressure i. Check for kinked lines ii. Check the size of the lines iii. Check for restrictor valve in the circuit iv. Check the return filter; replace if needed v. Check the control valve i. Replace seal kit and inspect for any necessary repairs to the cylinder i. See speed valve troubleshooting guide, p. 5-10
6. Individual hydraulic function is slow	<ul style="list-style-type: none"> a. Pilot control hoses pinched b. Jumpline/connections leaking c. Base machine hydraulic malfunction d. Circuit relief valve for function set low/malfunctioning e. Faulty speed valve operation 	<ul style="list-style-type: none"> i. Inspect and correct i. Inspect and correct i. Check base machine hydraulic system i. See your base machine dealer i. See speed valve troubleshooting guide, p. 5-10

UNIVERSAL PROCESSORS

ROTATION CIRCUIT TROUBLESHOOTING GUIDE

The information contained in this guide provides for troubleshooting the LaBounty attachment only. Any reference to the excavator will be made only to give some guidance as to where a problem may exist. Any specific maintenance and troubleshooting information will need to be provided by the original equipment manufacturer of the excavator or the authorized dealer.

SYMPTOM	PROBABLE CAUSE	REMEDY
1. Attachment will not rotate	<ul style="list-style-type: none"> a. Operating flow is too low b. Crossover relief valve is bypassing oil c. Operating pressure is too low d. System hydraulic fluid e. Broken output shaft drive f. Internal leakage in manifold block on motor g. Excessive wear on motor rotating components h. Speed reducer gearbox shaft broken i. Internal leakage in valve supplying oil j. Valve supplying hydraulic flow is faulty 	<ul style="list-style-type: none"> i. Flow control valve needs adjustment ii. Check supply flow i. Replace crossover relief valve i. Check crossover relief valve ii. Check supply pressure i. Check base machine hydraulic system temperature excessively high i. Replace or rebuild the hydraulic motor i. Replace manifold block on motor ii. Check cartridge valve seals for damage i. Replace or reseal the hydraulic motor ii. To check this remove the case drain line and measure the amount of flow out of the case i. Rebuild or replace the gearbox i. Check base machine hydraulic system i. Check base machine hydraulic system
2. Rotation is excessively slow	<ul style="list-style-type: none"> a. Operating pressure is too low b. Crossover relief valve bypassing oil c. Operating flow is too low 	<ul style="list-style-type: none"> i. Replace crossover relief valve to increase the pressure i. Replace crossover relief valve i. Adjust flow control to increase flow to rotation group

ROTATION CIRCUIT TROUBLESHOOTING GUIDE continued

<i>SYMPTOM</i>	<i>PROBABLE CAUSE</i>	<i>REMEDY</i>
2. Rotation is excessively slow, continued	d. Internal leakage in manifold block on motor e. Motor is worn out f. Supply pressure too low g. Supply flow too low h. Internal leakage in valve i. Valve supplying hydraulic fluid is not working	i. Replace manifold block on motor ii. Check cartridge valve seals for damage i. Rebuild or replace the motor i. Check base machine hydraulic system i. Check base machine hydraulic system i. Check base machine hydraulic system i. Check base machine hydraulic system
3. Rotation speed excessively high	a. Operating flow too high b. Supply flow too high	i. Adjust flow control to decrease flow to rotation group i. Check base machine hydraulic system
4. Rotation erratic	a. Crossover relieve valve cartridge is faulty b. Flow control valve cartridge is faulty c. Valve spool sticking in valve supplying oil d. Faulty electrical signal at control valve (if electrically controlled) e. Planetary gearbox binding f. Motor binding in planetary gearbox g. Faulty circuit relief valve h. Varying pilot pressure to control valve	i. Replace crossover relief valve i. Replace flow control valve i. Check base machine hydraulic system i. Replace electric solenoid i. Rebuild or replace gearbox i. Disassemble motor from gearbox and inspect to determine cause of binding i. Check base machine hydraulic system i. Check base machine hydraulic system

UNIVERSAL PROCESSORS

ROTATION CIRCUIT TROUBLESHOOTING GUIDE continued

<i>SYMPTOM</i>	<i>PROBABLE CAUSE</i>	<i>REMEDY</i>
5. Rotation drifts	<ul style="list-style-type: none">a. Control valve ports are open to tank with spool in neutral positionb. Excessive leakage in control valve spoolc. Crossover relief valve is leaking excessivelyd. Crossover relief valve set too low	<ul style="list-style-type: none">i. Check excavator hydraulic system.i. Check excavator hydraulic system. Replace crossover relief valvei. Replace crossover relief valve

INTERNAL ROTATION CONTROL SYSTEM TROUBLESHOOTING GUIDE

if equipped

The information contained in this guide provides for troubleshooting the Internal Rotation Control System only. Any references to the attachment or the base machine will be made only to give some guidance as to where a problem may exist. Any specific maintenance or troubleshooting information for the attachment or base machine will need to be obtained from its respective maintenance manual.

To properly troubleshoot the Hydraulic Rotation Circuit the following tools and equipment are needed:

- Hydraulic pressure gauge 0- 5000 PSI range
- Accumulator charge and test unit 0- 1000 PSI range
- Volt-Ohm meter
- Standard blade screwdriver
- Crescent wrench or similar tools for cover removal
- 3/16" Allen wrench
- Test Light (optional)

SYMPTOM	PROBABLE CAUSE	REMEDY
1. Will not rotate	<p>a. Faulty rotation motor</p> <p>b. No flow to rotation motor- no fluid in accumulator</p> <p>c. Faulty unloading valve</p> <p>d. Operating pressure is too low</p>	<p>i. Check motor per manual</p> <p>ii. Check for flow out of ports A & B</p> <p>iii. Check accumulator precharge pressure; should be 650 PSI.</p> <p>iv. Check electrical power to the unloading valve.</p> <p>v. Remove cartridge and check for contamination.</p> <p>vi. Check pressure at the gauge "G" port, which should be 2000-2500 PSI; adjust pressure reducing valve if necessary.</p>

UNIVERSAL PROCESSORS

INTERNAL ROTATION CONTROL SYSTEM TROUBLESHOOTING GUIDE

if equipped, continued

SYMPTOM	PROBABLE CAUSE	REMEDY
1. Will not rotate, continued	<p>e. Directional valve not operating</p> <ul style="list-style-type: none"> - spool sticking - faulty electrical signal - faulty valve solenoid coil <p>f. Flow control valve cartridge is faulty</p> <p>g. Accumulator does not charge with hydraulic fluid</p>	<p>i. Check electrical signal to valve coils. If the electrical signal is good, the coil is faulty and must be replaced.</p> <p>ii. Check continuity of valve coil.</p> <p>i. Remove, check for cartridge contamination.</p> <p>ii. Replace flow control valve.</p> <p>i. Unloading valve is faulty. Replace unloading valve.</p>
2. Rotation very slow	<p>a. Operating pressure is too low</p> <p>b. Flow control valve cartridge faulty</p> <p>c. Faulty unloading valve</p> <p>d. Crossover relief bypassing oil</p> <p>e. Operating flow is too low</p>	<p>i. Check pressure at the gauge "G" port; this should be 2000-2500 PSI; adjust pressure reducing valve if necessary.</p> <p>i. Remove, check for contamination.</p> <p>ii. Replace flow control valve.</p> <p>i. Check electrical ground wire at the unloading valve.</p> <p>ii. Remove cartridge and check for contamination or seal damage.</p> <p>i. Replace crossover relief valve.</p> <p>i. Adjust shear flow control to increase flow to the rotation assembly.</p>

INTERNAL ROTATION CONTROL SYSTEM TROUBLESHOOTING GUIDE

if equipped, continued

SYMPTOM	PROBABLE CAUSE	REMEDY
2. Rotation very slow, continued	<p>f. Internal leakage of valve cartridges in control valve manifold</p> <p>g. Hydraulic motor is faulty</p> <p>h. Supply flow too low</p>	<p>i. Remove unloading valve and relief valve cartridges in control valve cartridges; check for contamination or seal manifold damage.</p> <p>i. Rebuild or replace motor.</p> <p>i. Check base machine's hydraulic system.</p>
3. Rotation speed too fast	a. Operating flow too high	i. Adjust flow control to decrease flow from the accumulator.
4. Rotation is erratic	<p>a. Directional valve spool</p> <p>b. Faulty electrical signal at directional valve or unloading valve</p> <p>c. Flow control valve cartridge is faulty</p> <p>d. Faulty crossover relief on motor</p> <p>e. Faulty hydraulic motor</p>	<p>i. Push in manual overrides alternately, then if sticking; try operating valve.</p> <p>i. Check electrical wiring, valve coil, electrical ground.</p> <p>i. Check for contamination or seal damage.</p> <p>i. Check attachment manual</p> <p>i. Check attachment manual</p>
5. Attachment rotation drifts	a. Directional valve spool is sticking	i. Push in manual overrides alternately, then try operating valve

UNIVERSAL PROCESSORS

SPEED VALVE TROUBLESHOOTING GUIDE

There are two basic operating conditions of the speed valve that have a negative effect on attachment performance and require troubleshooting and adjustment or repair. The first condition occurs when the speed valve does not seem to shift into the regenerative or speed mode, resulting in the shear closing slowly. The second condition occurs when the speed valve does not shift out of the speed mode at the appropriate time, resulting in a loss of processing force. These conditions are referred to below with corrective actions listed to remedy the problem.

For complete step-by-step instructions on adjusting the speed valve, please refer to page 5-23. If the problem still exists after attempting these adjustments, please contact your Stanley LaBounty dealer or the Stanley LaBounty Customer Service Department for further instructions.

The following tools and equipment are needed to properly troubleshoot and adjust the speed valve:

- Pressure gauges- two are recommended so that two test ports can be checked simultaneously
- Diagnostic test fittings and tools for installing the fittings
- Open- or box-end wrenches (12mm- 19mm)
- Allen wrenches (4mm- 12 mm)

<i>SYMPTOM</i>	<i>PROBABLE CAUSE</i>	<i>REMEDY</i>
1. Attachment does not shift consistently into speed mode when closing the jaw	a. Pilot pressure setting is too high	i. Adjust the pilot valve adjustment screw counterclockwise in increments of 1/8 of a turn (45°) until corrected.
2. Attachment shifts into speed mode when jaw has been fully opened, but will not shift if jaws have only been opened partially	a. Too much back pressure in the base machine return line	i. Minimize back pressure if possible by using lines with larger diameters ii. If this is not possible or does not completely solve the problem, adjust the main spool then close adjustment screw clockwise in increments of 1/8 of a turn (45°) until corrected.
3. Jaws continue to close after the attachment has shifted into speed mode and the operator has let go of the control	a. The main valve spool in the speed valve is not fully shifting out of speed mode	i. Adjust the main spool adjustment screw clockwise in increments of 1/8 of a turn (45°) until corrected.
4. Attachment properly shifts into speed mode but seems to lack power	a. The main valve spool is not fully shifting out of speed mode	i. Adjust the pilot valve adjustment screw counterclockwise in increments of 1/8 of a turn (45°) until corrected.

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UNIVERSAL PROCESSOR CONCRETE CRACK JAWS

LaBounty Universal Processor Concrete Cracker Jaws are the safe and economical alternative for efficient, quiet, controlled on-site processing. These jaws excel in a wide range of demolition work. They are ideal for downsizing large concrete for handling and transportation.

High-tensile, abrasion-resistant steel construction assures long, uninterrupted service—even in the harshest conditions. The main pivot of every model is designed for long life and pivots on LaBounty's specially designed bearings.

FEATURES

- Patented Swift-Lock pin-on replaceable teeth offer long wear and impact resistance. One pin secures each tooth segment. A complete set of teeth can be replaced in minutes.
- Replaceable, two-way indexable rebar cutting blades
- At-factory upgrading and rebuilding services available for extended life

CONCRETE CRACK JAW TERMS

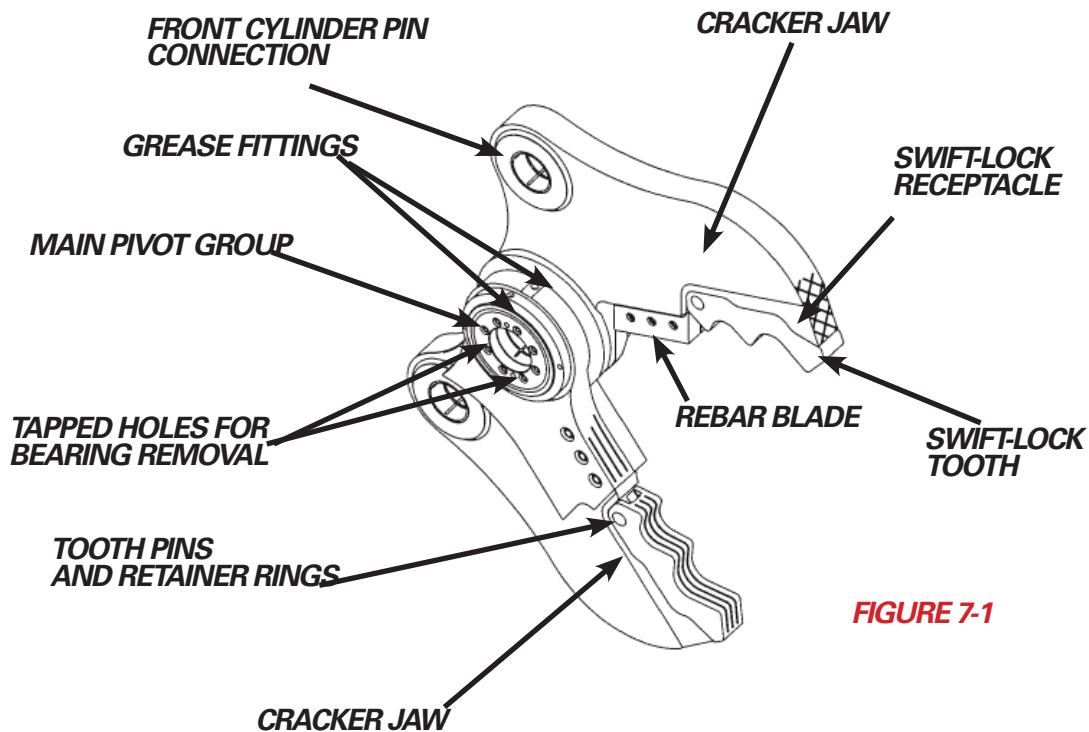


FIGURE 7-1

UNIVERSAL PROCESSORS

CONCRETE CRACK JAWS GLOSSARY

Build Up	Welding process during which worn off parent material is replaced with new metal. A very important maintenance procedure that must be performed regularly throughout the life of the shear jaws.
Cracker Jaw Half	One half of the jaw set. The two jaw halves are identical, mirror images of each other. They each contain a Swift-Lock tooth and a rebar blade
Front Cylinder Pins	The pins that connect the attachment cylinders to the jaws.
Grain of Materials	The direction that the parent material was initially rolled at the steel mill. It is very important when hardsurfacing any part of the shear jaws to weld with the grain of the steel. Cross-grained hardsurfacing has the tendency to start cracks in the base material beneath it.
Hardsurfacing	Welding process of protecting the parent material of the shear jaws. This acts as a wear surface.
Main Bearings	Bushings located in the main pivot group which provide a wear surface between the jaws and the main pin. There are two main bearings in the lower jaw and one in the upper jaw.
Main Pin	Pin on which the jaws rotate. It is a component of the main pivot group.
Main Pivot Group	High tolerance area of the attachment where the jaws pivot. The main pivot group includes the main pin, main bearings, and thrust washers.
Rebar Blades	Short cutting blades in the jaw throat for cutting rebar.
Swift-Lock Receptacles	Seats for the teeth that are welded in place on the upper and lower jaws.
Swift-Lock Teeth	Easily replaceable wear parts on the upper and lower jaws for pulverizing concrete. Each tooth is fastened to its receptacle with a pin and retainer ring.
Thrust Washer	Component located between the upper and lower jaws in the main pivot group to serve as a wear surface between the jaw halves.
Tooth Pins/Retainer Rings	The hardware that fastens each tooth to its receptacle. The tooth pin is held in place by the retainer ring.

PERIODIC SERVICE SCHEDULE

SERVICE THE JAWS AT SPECIFIED INTERVALS

Inspect, lubricate, make service checks and adjustments according to the Daily Inspection Checklist. A program of regular service should be established, using the machine hour meter to determine when the jaws should be serviced. Use the intervals on the Service Schedule when operating in normal conditions. Service the attachment at shorter intervals when operating in extreme environmental or abrasive conditions.

USE CORRECT LUBRICANTS AND BOLT TORQUES

Refer to the Lubrication Instructions and Bolt Torque Table in this section of the Safety, Operation and Maintenance manual when performing maintenance on the attachment.

DAILY SERVICE REQUIRED

Connecting Pins and Pin Retainers Inspect for looseness, damage or wear on the main pivot pin and cylinder pins. Check pinheads and pinstops.

Grease Fittings Lubricate according to Lubrication Section of this manual. Replace broken fittings.

Teeth Inspect for wear indicating that tooth replacement or build-up and hardsurfacing is required. Refer to this manual for tooth maintenance procedures. Check for loose or damaged tooth pins and replace if necessary.

CONCRETE CRACK JAWS DAILY INSPECTION CHECKLIST

ATTACHMENT MODEL _____ EXCAVATOR HOUR METER _____

ATTACHMENT SERIAL NUMBER _____ DATE _____

1. Visually inspect jaws for any damage—especially check for cracks and wear on the Swift-Lock receptacles. Maintain the receptacles if necessary.
2. Inspect Swift Lock teeth for wear. Replace or maintain the teeth if necessary.
3. Inspect all Bolts
 - _____ a. Visually check all bolts for looseness or damage
4. Inspect connecting pins and retaining hardware for looseness, damage, or wear
 - _____ a. Main Pin
 - _____ b. Front cylinder pins
 - _____ c. Pinheads and pinstops
 - _____ d. Retainer pins and retainer ring
 - _____ e. Tooth pins and retainer rings
5. Grease all fittings until excess appears
 - _____ a. Lower jaw at main pivot
 - _____ b. Upper jaw at main pivot
 - _____ c. Lower jaw at cylinder connection
 - _____ d. Upper jaw at cylinder connection
6. Inspect rebar blades
 - _____ a. Rotate or replace blades
 - _____ b. Measure blade gap; refer to blade shimming procedures

INSPECTED BY: _____



UNIVERSAL PROCESSORS

CONCRETE CRACKER JAW LUBRICATION

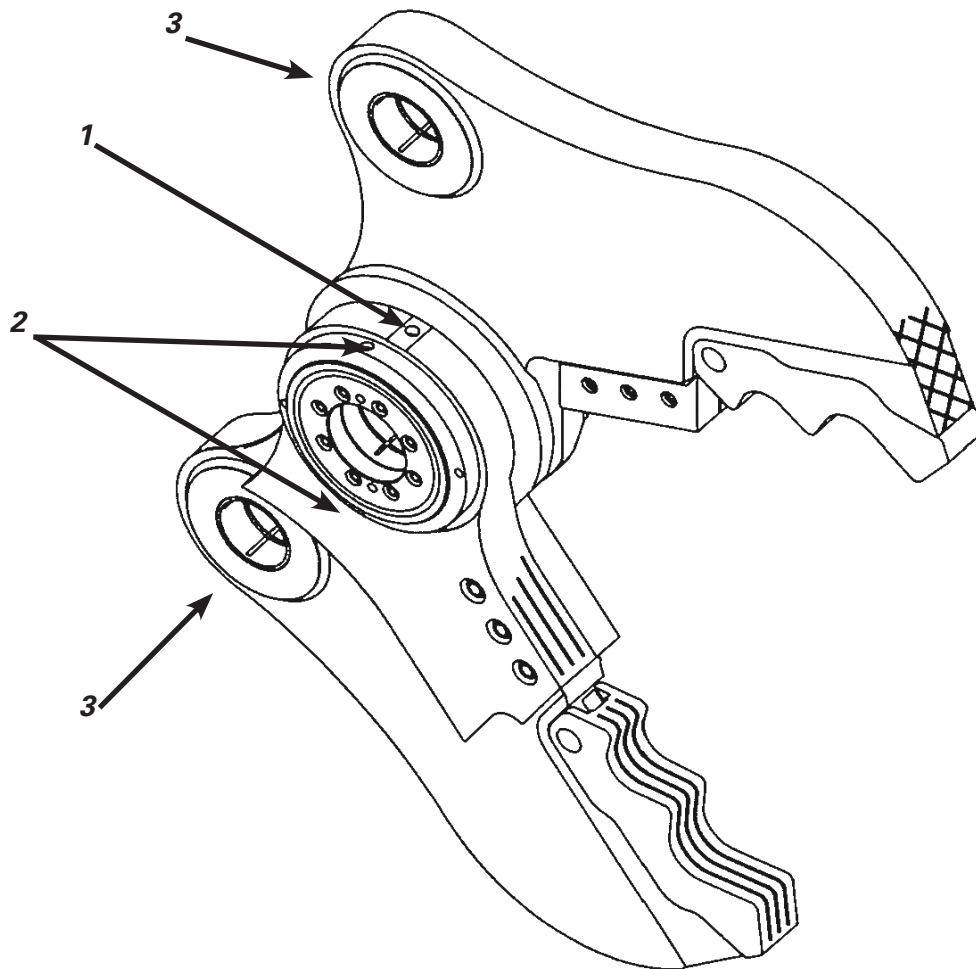


FIGURE 7-2

- Grease all points every 8 hours of attachment operation. Use premium grease no. 2Ep or equivalent.
- Grease fitting locations are indicated on the illustrations and by grease decals on the attachment.

LOCATION ON ATTACHMENT SHOTS

1. Main pivot (each jaw half)
2. Main pivot (at least one of these two locations on each side should be greased)
3. Cylinder connections (two places)

NUMBER OF

6
6
6

BLADE MAINTENANCE

New blades in proper adjustment will increase the cutting performance. Proper rotation of blades will provide optimum use and the best performance. Recommended blade rotation is after approximately 80 hours of use depending on the material being processed.

CAUTION

During blade maintenance, leather work gloves must be worn to prevent injury.

1. To rotate the blades, remove the blade from the jaw set. Do one blade at a time.
2. Grind all rough edges from the blade.
3. Clean out the blade seat.
4. Reinstall the blade. The blade should be flipped end for end (see Figure 7-3) and reinstalled in the same blade seat. Torque the blade bolts according to the Dry Bolt Torque charts in this chapter.
5. When all possible edges of the blades have been worn to a $\frac{1}{4}$ " (6.4 mm) radius or more, it will be necessary to replace the blades.

Remember, with damaged or badly worn blades, cutting ability decreases tremendously and it may eventually cause structural damage to the jaws. This condition also causes the attachment and base machine hydraulic systems to work harder resulting in premature wear.

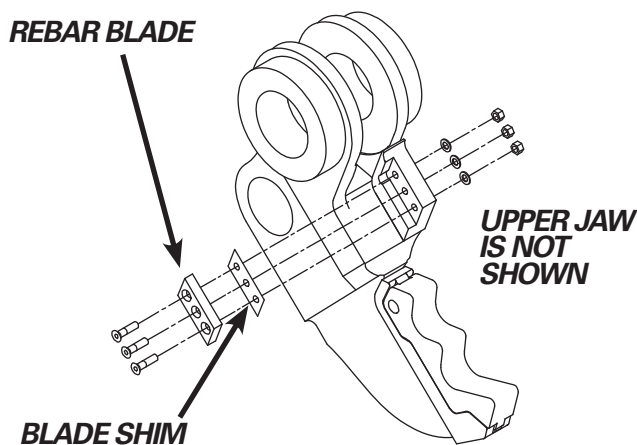


FIGURE 7-3



BLADE SHIMMING

Blade rotating is recommended every 80 hours of jaw set use in order to assure uniform wear so shimming is possible.

After rotating or replacing the blades, there is a possibility there will be a gap between the blades, and shimming may be necessary. It is necessary to maintain a blade gap of 0.060" (1.50 mm) or less to prevent jamming and damage to the jaw set.

1. To check for blade gap, cycle the jaws closed so the blades bypass. Use a feeler gauge between the blades to check the blade gap and record it.

WARNING

Do not move the attachment or jaw set while checking with a feeler gauge.

2. The amount of shims to install behind the blade should be approximately 0.010" (0.25 mm) less than the measurements you recorded earlier. Do not shim out the blade more than 0.125" (3.2 mm), or you may cause structural damage, and the warranty may be voided.
3. To install the shims, loosen the blade bolts and slide the shim between the blade and the blade seat (see Figure 7-3). Tighten the blade bolts to the proper torque according to this manual.
4. Cycle the jaws slowly to ensure there is no blade interference, and then recheck tolerances.

Maintain this shimming procedure for maximum shearing efficiency and blade life. If the blades are not rotated every 80 hours, shimming may not be possible because of uneven wear on the blades.

UNIVERSAL PROCESSORS

SWIFT-LOCK TOOTH REPLACEMENT

When the jawset teeth are badly worn or cracking performance is decreased, the teeth should be replaced. Depending on the type of concrete being processed, the interval between teeth changes will vary. It is recommended that the teeth be replaced as a set for even wear and the best performance.

CAUTION

Safety equipment should be worn at all times when maintaining the attachment to prevent injury. Safety equipment includes eye protection, hard hat, steel toe shoes, leather gloves and hearing protection.

1. Curl the attachment under and lay it down flat on a firm and level surface with the jaws open (figure 7-4). Turn the base machine off. Make sure that the attachment and jaws are stable and will not drop or close.
2. Work only on the jaw closest to the ground with the tooth facing up. The tooth on this jaw will be properly supported when the tooth pin is removed.

WARNING

Each tooth is very heavy. Removing a tooth pin when the tooth is not supported will cause the tooth to fall, which could cause serious injury.

3. Use a soft metal drift (such as brass) and a mallet to drive out the tooth pin.
4. If the tooth is loose in the receptacle, lift and slide it out. If necessary, use a pry bar to loosen the tooth from the receptacle. Do not lose the retainer ring.
5. Insert the new tooth by sliding it into the slot in the receptacle. Make sure the retainer ring is located in its seat in the receptacle before installing the tooth (Figure 7-5).
6. Use a mallet to insert the pin through the holes in the tooth and receptacle. Make sure to install the pin so the groove in the pin will line up with the retainer ring inside. The retainer ring should seat in the pin groove.

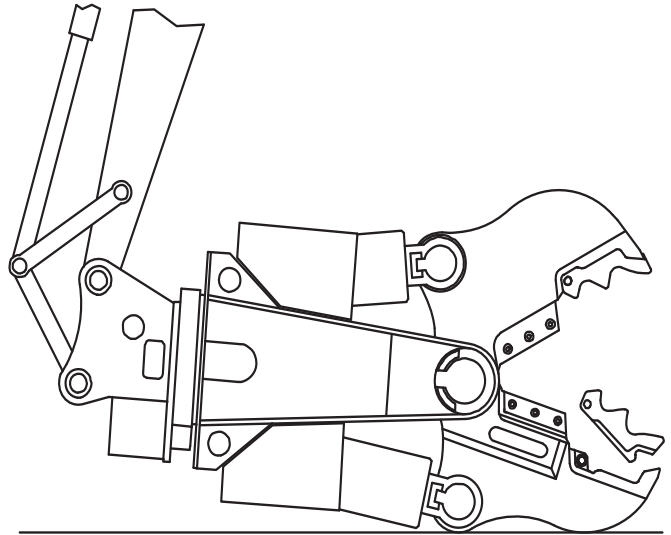


FIGURE 7-4

7. When this jaw is done, start up the base machine. With all personnel standing at a safe distance, lift the attachment and rotate it 180°. Lay the attachment back down on the ground and make sure it will not drop or close.
8. Use steps 3 through 6 to replace the tooth on the other jaw.

RECEPTACLE OR SEAT

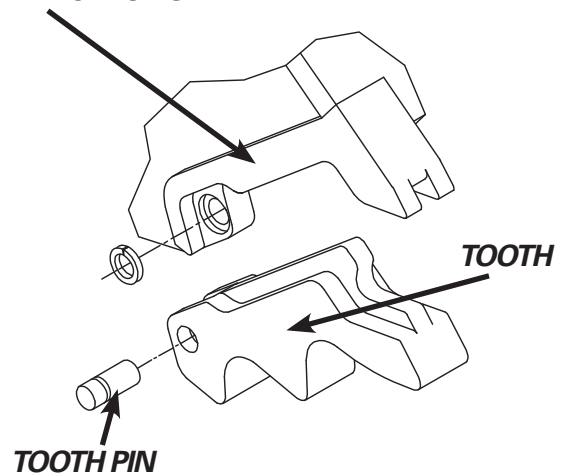


FIGURE 7-5

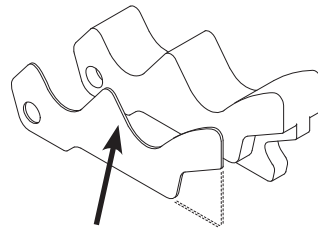
TOOTH BUILD UP AND HARDSURFACING

See the table on page 7-57 for the part numbers for UP Swift-Lock build up templates. If desired, Swift-Lock Teeth can be built up and hardsurfaced to increase their life. Depending on the situation, it may be more cost-effective to replace the teeth when they become worn rather than build them up. Build-up and hardsurface the teeth when there is adequate time for them to cool slowly before they are put back into service.

CAUTION

- **Paint removal and grinding can be hazardous and cause personal injury.**
- **Remove paint before welding or heating. Hazardous fumes can be generated when paint is heated.**
- **When sanding or grinding paint, avoid breathing the dust, wear an approved respirator.**
- **If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from the area before cutting, welding, or grinding.**
- **Have a fire extinguisher nearby during all cutting and welding operations. Clean areas to be cut or welded of oil and flammable materials. Protect all flammable areas from sparks.**
- **Do all work in a well ventilated area. Dispose of paint and solvent properly**

1. Clean all dirt and grease from the areas to be built up. If any old hardsurfacing still exists, remove it down to the base metal by grinding.
2. Place the build-up template along the tooth to determine the amount of build-up required.
3. Preheat the tooth to about 200° F (100° C) to remove moisture. Preheat the area to be built up to 300°- 400° F (150°- 200° C). Do not exceed 450° F (230° C). Use a temperature stick to test the area frequently, because overheating can harm the tooth. Temperature sticks are available from LaBounty.
4. Using AWS E7018 welding rod or equivalent, make side-by-side passes down the face of the cutting edge until the area is covered. Stress relieve and remove slag after each pass by peening vigorously. Continue to do this until the profile of the tooth matches the template as closely as possible. Grind the edges square to match the template profile.



BUILD-UP TEMPLATE

FIGURE 7-6

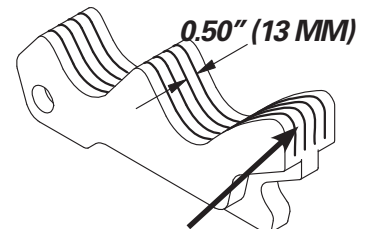


FIGURE 7-7

5. To hardsurface the tooth, start by applying parallel passes of AWS E7018 build-up running the length of the tooth (Figure 7-7). These single passes should be approximately ½" (13 mm) apart and will serve as an underlayment for the hardsurface rod. **DO NOT** apply hardsurface directly to the parent material.
6. Apply a bead of Amalloy 814H rod or equivalent directly on top of each of the underlayment beads. It is important to use an air-operated slag peener on each pass of weld to relieve stress.
7. Taper the ends of each hardsurface bead by grinding in line with the cutting edges. Do not undercut the weld with the grinder.
8. When welding and grinding is complete, peen the welded area until it is shiny or until the peener cannot dent the weld anymore (typically 5 to 10 minutes). This will harden the welded area.
9. When finished, be sure to cover the reworked teeth with a heat blanket to allow them to cool slowly.

NOTICE

Check temperature during this procedure. maintain 300°- 400° F (150° - 200° C). Do not exceed 450° F (230°).

UNIVERSAL PROCESSORS

JAW BUILD UP AND HARDSURFACING

As the jaws become worn from use, it will be necessary to build up the worn areas to prolong the life and increase productivity. It is especially important not to allow the wear to damage the Swift Lock receptacles. If the receptacles become damaged, it may become necessary to replace them.

Build up and hardsurface the jaws when there is adequate time for them to cool slowly before they are put back into service.

Use the following instructions to build up and hardsurface the upper and lower jaws:

1. Carefully remove the Swift Lock teeth from their receptacles. If the teeth need to be built up and hardsurfaced, follow instructions on previous pages.
2. Place the build-up template along the jaw profile to determine the amount of build-up required. The templates should be identified for the upper and lower jaws.
3. Clean all dirt and grease from the areas to be built up. If any old hardsurfacing still exists, remove it down to the base metal by grinding.
4. Preheat the area to about 200°F (100°C) to remove moisture. Preheat the area to be built up to 300-400°F (150-200°C). Do not exceed 450°F (230°C). Use a temperature stick to test the area frequently, because overheating can harm the jaws. Temperature sticks are available from LaBounty.
5. Using AWS E7018 welding rod or equivalent, make side-by-side passes to build up the worn areas. Peen vigorously after each pass to relieve weld stress relieve and remove slag. Continue to do this until the profile matches the template as closely as possible. Grind the edges square to match the template profile.

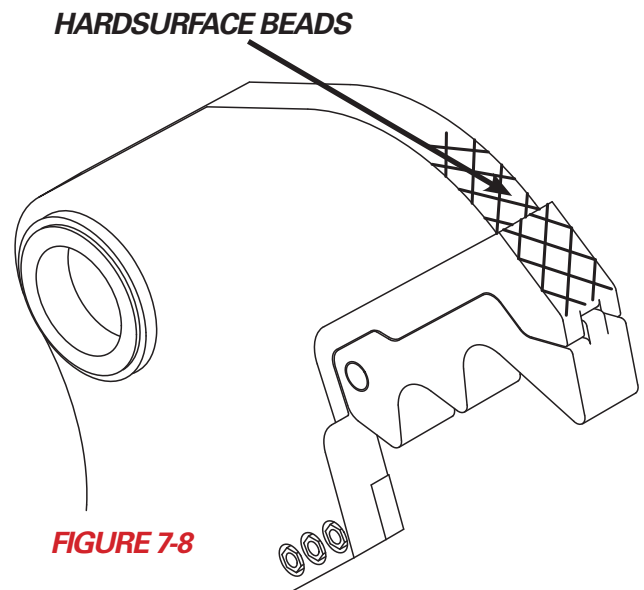
NOTICE

Check temperature during this procedure. maintain 300°- 400° F (150° - 200° C). Do not exceed 450° F (230°).

NOTICE

DO NOT apply the hardsurface directly to the parent material.

6. To hardsurface the area just built up, start by applying single passes of AWS E7018 build-up in a diamond pattern of approximately 1.50" (38 mm) to establish the pattern (see Figure 7-8). This will serve as an underlayment for the hardsurfacing.
7. Apply a bead of Amalloy 814H rod or equivalent directly on top of each of the underlayment beads. It is important to use an air-operated slag peener on each pass to relieve weld stress.
8. Taper the ends of each hardsurface bead by grinding in line with the jaws. Do not undercut the weld.
9. When welding and grinding is complete, peen the welded area until it is shiny or until your peener cannot dent the weld anymore (typically 5 to 10 minutes). This will help to harden the welded area.
10. When finished, be sure to cover the reworked area with a heat blanket and allow the jaws to cool slowly.





UNIVERSAL PROCESSOR CONCRETE PULVERIZER JAWS

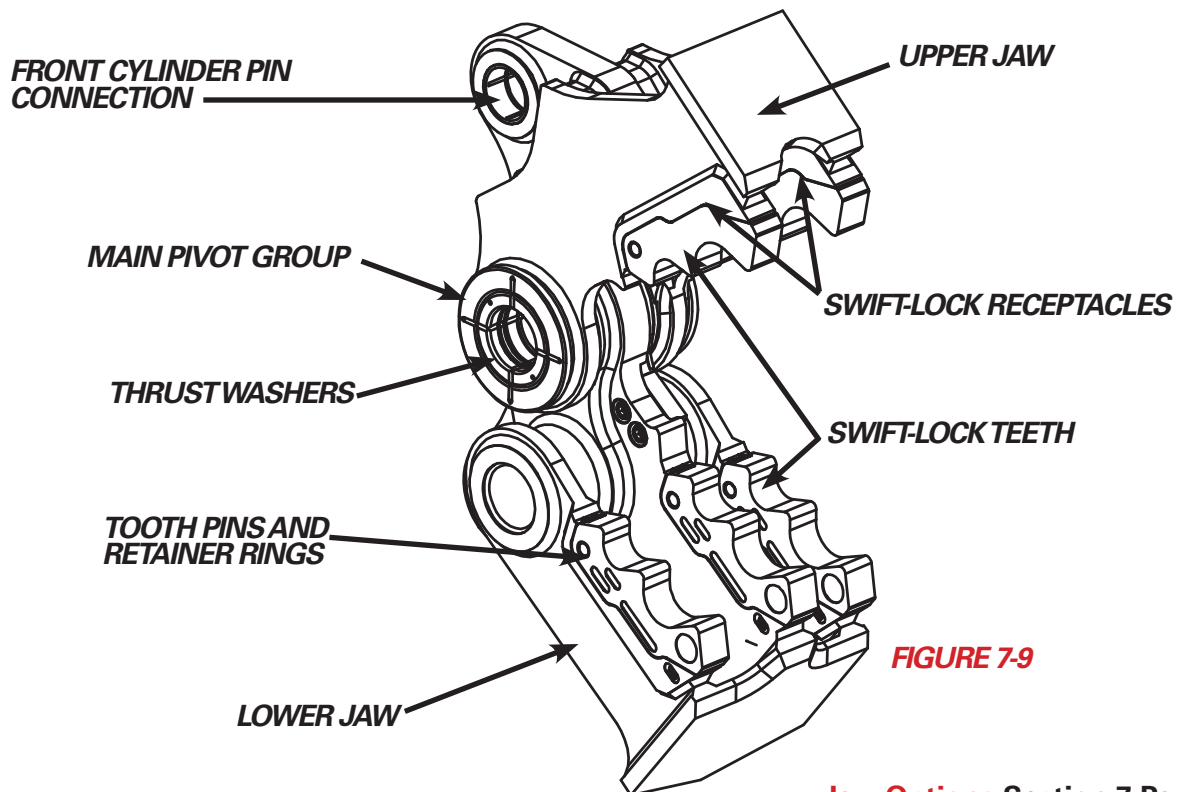
LaBounty Universal Processor Concrete Pulverizer Jaws are the safe and economical alternative for efficient, quiet, controlled on-site processing. The jaw design excels at crushing concrete and separating the rebar, creating two recyclable products.

High-tensile, abrasion-resistant steel construction assures long, uninterrupted service—even in the harshest conditions. The main pivot of every model is designed for long life and pivots on LaBounty's specially designed bearings.

FEATURES

- Patented Swift-Lock pin-on replaceable teeth offer long wear and impact resistance. One pin secures each tooth segment. A complete set of teeth can be replaced in minutes.
- At-factory upgrading and rebuilding services available.

CONCRETE PULVERIZER JAW TERMS



UNIVERSAL PROCESSORS

CONCRETE PULVERIZER JAWS GLOSSARY

Build Up	Welding process during which worn off parent material is replaced with new metal. A very important maintenance procedure that must be performed regularly.
Front Cylinder Pins	The pins that connect the attachment cylinders to the jaws.
Grain of Material	The direction that the parent material was initially rolled at the steel mill. It is very important when hardsurfacing any part of the shear jaws to weld with the grain of the steel. Cross-grained hardsurfacing has the tendency to start cracks in the base material beneath it.
Hardsurfacing	Welding process for protecting the parent material of the jaws. The hardsurface acts as a wear surface.
Lower Jaw	The lower half of the jaw set. It is the wider of the two jaw halves.
Main Bearings	Bushings located in the main pivot group which provide a wear surface between the jaws and the main pin. There are two main bearings in the lower jaw and one in the upper jaw.
Main Pin	Pin on which the jaws rotate. It is a component of the main pivot group.
Main Pivot Group	High tolerance area of the attachment where the jaws pivot. The main pivot group includes the main pin, main bearings, and thrust washers.
Receptacles	Seats for the teeth that are welded in place on the upper and lower jaws.
Swift-Lock Teeth	Easily replaceable, pin-on wear parts on the upper and lower jaws for pulverizing concrete. Each tooth is fastened to its receptacle with a pin and retainer ring.
Thrust Washers	Wear components located between the upper and lower jaws in the main pivot group to serve as a wear surface between the jaw halves. There are also thrust washers located between the jawset and the Universal Processor stick in the main pivot.
Tooth Pins/Retaining Rings	The hardware that fastens each tooth to its receptacle. The tooth pin is held in place by the retainer ring.
Upper Jaw	The upper half of the jaw set. It is the narrower of the two jaw halves.

PERIODIC SERVICE SCHEDULE

Inspect, lubricate, make service checks and adjustments according to the Daily Inspection Checklist. A program of regular service should be established, using the machine hour meter to determine when the concrete pulverizer jaws should be serviced. Use the intervals on the Service Schedule when operating in normal conditions. Service the attachment at shorter intervals when operating in extreme environmental or abrasive conditions. Refer to the Lubrication Instructions and Bolt Torque Table in this section of the *Safety, Operation and Maintenance Manual* when performing maintenance on the attachment.

DAILY SERVICE REQUIRED

Inspect connecting pins and retainers for looseness, damage or wear on the main pivot pin and cylinder pins. Check pinheads and pinstops. Lubricate grease fittings according to lubrication section of this manual. Replace broken fittings. Inspect teeth for wear indicating that tooth replacement or build up and hardsurfacing is required. Refer to this manual for tooth maintenance procedures. Check for loose or damaged tooth pins and replace if necessary.

CONCRETE PULVERIZER JAWS DAILY INSPECTION CHECKLIST

ATTACHMENT MODEL _____ EXCAVATOR HOUR METER _____

ATTACHMENT SERIAL NUMBER _____ DATE _____

1. Inspect the jawset for any damage or missing parts.
2. Inspect Swift Lock teeth for wear. If necessary, replace or maintain the teeth according to the instructions in this manual.
3. Inspect connecting pins and retaining hardware for looseness, damage, or wear
 - _____ a. Main Pin
 - _____ b. Front cylinder pins
 - _____ c. Pinheads and pinstops
 - _____ d. Retainer pins and retainer ring
 - _____ e. Tooth pins and retainer rings
4. Grease all fittings until excess appears
 - _____ a. Lower jaw at main pivot
 - _____ b. Upper jaw at main pivot
 - _____ c. Lower jaw at cylinder connection
 - _____ d. Upper jaw at cylinder connection

INSPECTED BY: _____



UNIVERSAL PROCESSORS

CONCRETE PULVERIZER JAW LUBRICATION

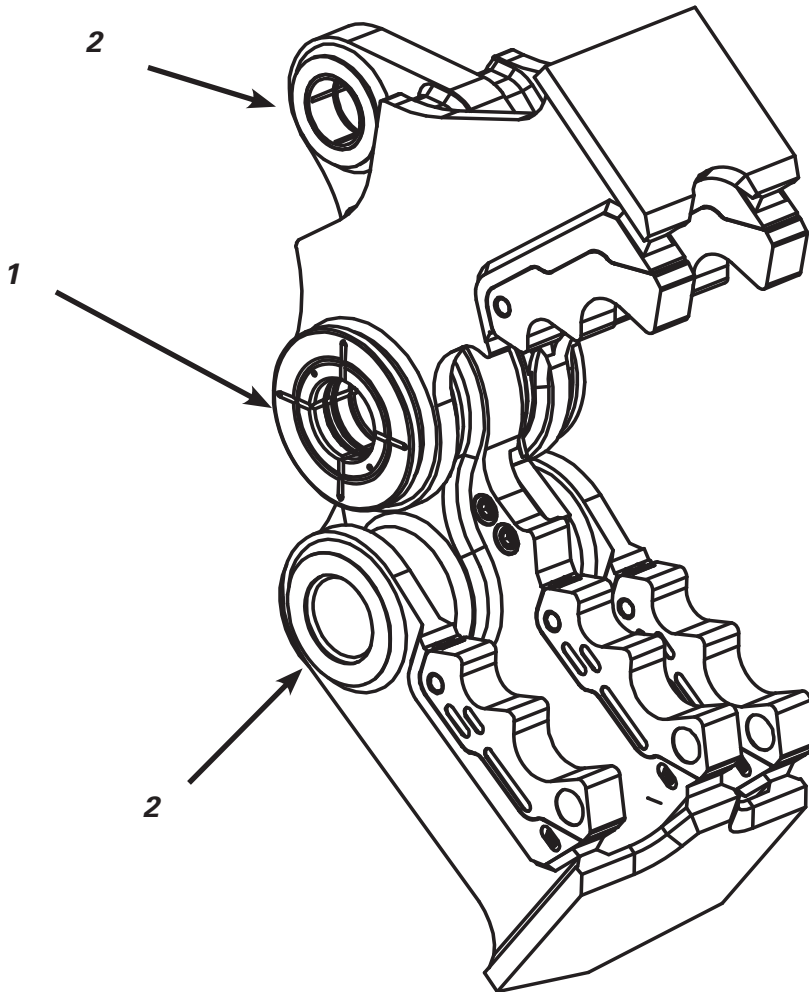


FIGURE 7-10

- Grease all points every 8 hours of attachment operation. Use premium grease no. 2Ep or equivalent.
- Grease fitting locations are indicated on the illustrations and by grease decals on the attachment.

LOCATION ON ATTACHMENT SHOTS

1. Main pivot (both sides)
2. Cylinder connections (two places)

NUMBER OF

6
6

CP BLADE MAINTENANCE

New blades in proper adjustment will increase cutting performance. Proper rotation of blades will provide optimum use and the best performance. Recommended blade rotation is after approximately 80 hours of use depending on the material being processed. **Follow blade maintenance procedure on page 7-7.**

CP BLADE SHIMMING

Blade rotating is recommended every 80 hours of jaw set use in order to assure uniform wear so shimming is possible. See figure 7-11.

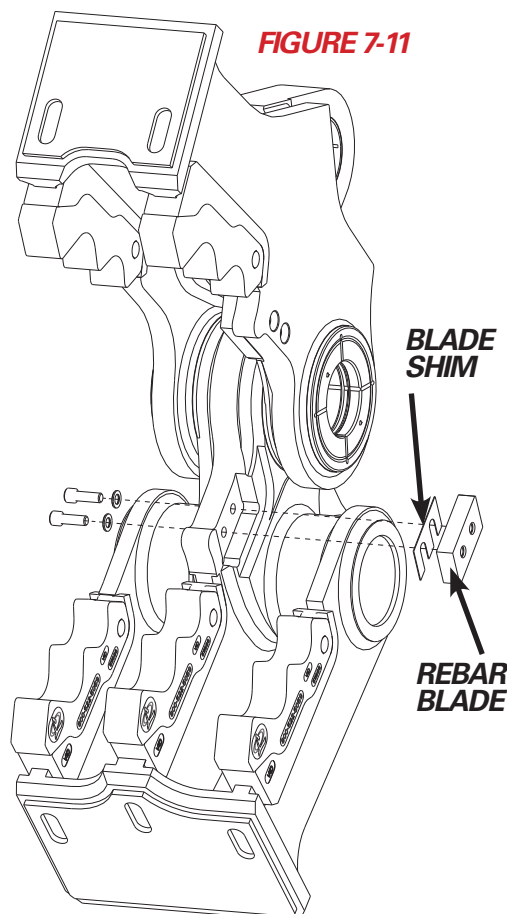
After rotating or replacing the blades, there is a possibility there will be a gap between the blades, and shimming may be necessary. It is necessary to maintain a blade gap of 0.060" (1.50 mm) or less to prevent jamming and damage to the jaw set. **Follow blade shimming instructions on page 7-7.**

SWIFT-LOCK TOOTH REPLACEMENT

When the concrete pulverizer jawset teeth are badly worn or cracking performance is decreased, the teeth should be replaced. Depending on the type of concrete being processed, the interval between teeth changes will vary. It is recommended that the teeth be replaced as a set for even wear and the best performance. **Follow the Swift-Lock Tooth replacement procedure on page 7-8.**

TOOTH BUILD UP AND HARDSURFACING

If desired, Swift-Lock teeth can be built up and hardsurfaced to increase their life. Depending on the situation, it may be more cost-effective to replace the teeth when they become worn rather than build them up. Build-up and hardsurface the teeth when there is adequate time for them to cool slowly before they are put back into service. **Follow the tooth build up and hardsurfacing procedure on page 7-9.**



UNIVERSAL PROCESSORS

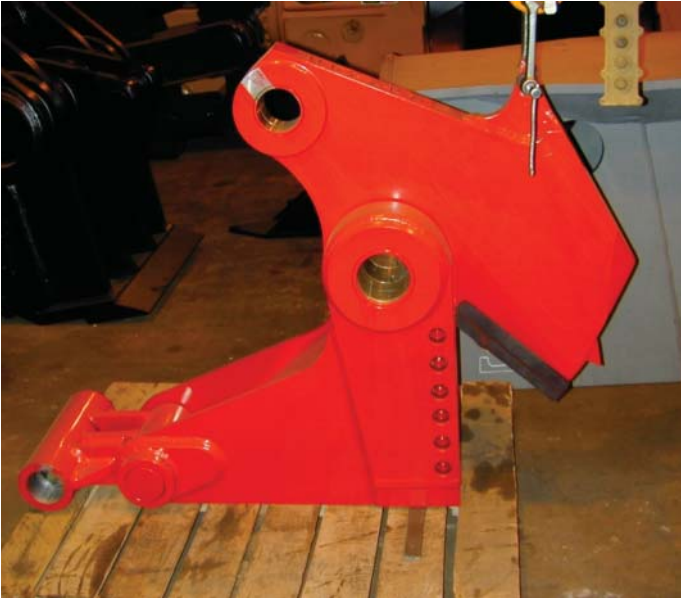


PLATE SHEAR JAWS

Plate Shear jaws are easily installed and removed and are interchangeable with other UP jaw sets. Plate Shear jaws are designed to cut plate steel up to 1 ¼" (32 mm) thick (UP 70 model). The Plate Shear jaws cut plate cleanly, reducing the amount of material distortion to provide denser loads and make the plate more salvageable. They are ideal for tank farm demolition work, processing underground storage tanks, and other applications involving cutting plate steel. Jobsite and environmental safety is greatly increased compared to out-dated torching methods. The main pin of every model is heavy duty for long life and pivots on LaBounty's specially designed bearings.

FEATURES

- Combines maximum cutting force with minimal weight
- Made with high-tensile, abrasion-resistant steel for durability
- Bolt-on replaceable wear parts for easy maintenance
- Four-way indexable cutting blades in lower shear jaw
- Ripper tooth on upper jaw for piercing a hole for jaw to enter
- At-factory upgrading and rebuilding services available

PLATE SHEAR TERMS

FIGURE 7-12

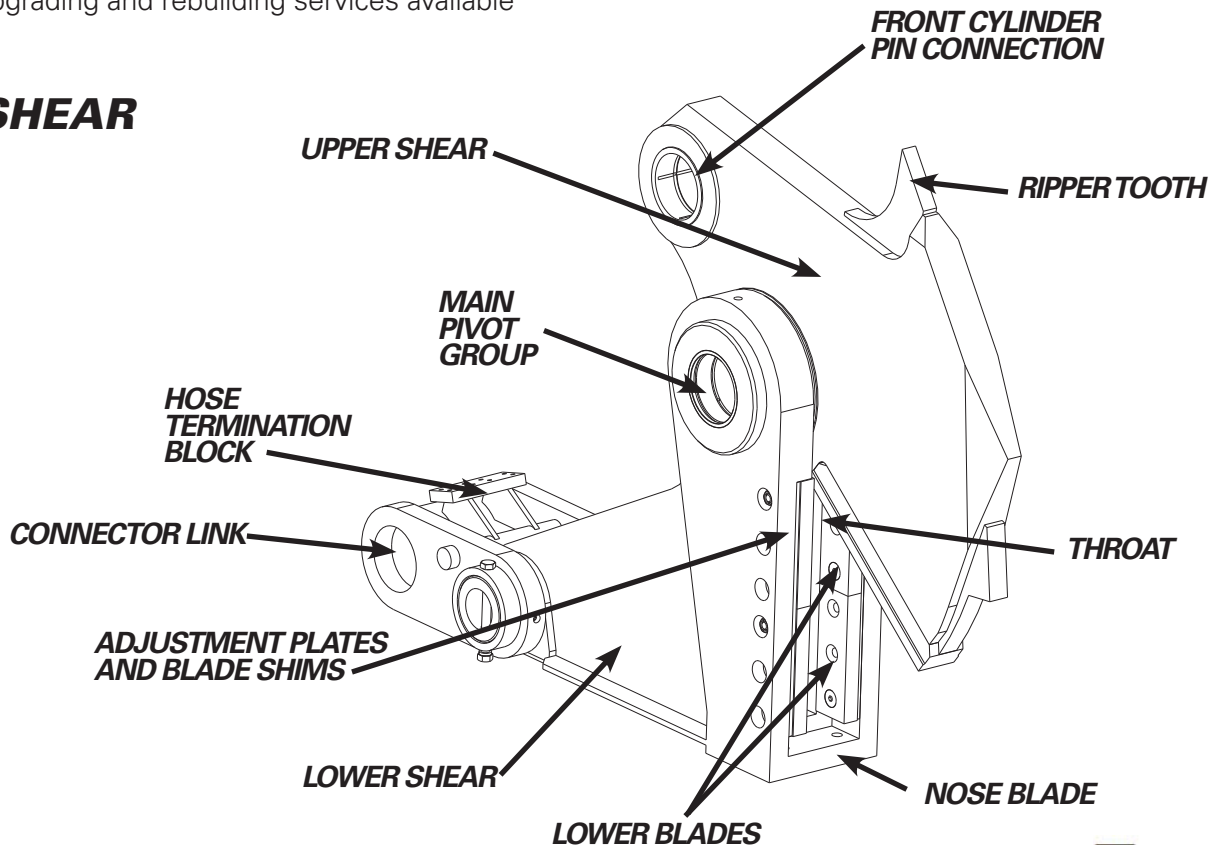


PLATE SHEAR JAW GLOSSARY

Adjustment Plates	Machined plates that precisely adjust the lower primary and secondary blades to be parallel to the upper blades. These make it possible to achieve a uniform blade gap.
Blade Gap	The gap between the upper and lower blades as they bypass each other. A very important maintenance item that must be maintained to ensure longevity of the shear jaws and to prevent material from jamming in the cutting blades.
Blade Shims	Thin metal shims used to adjust lower cutting blades to maintain the proper blade gap.
Build Up	Welding process during which worn off parent material is replaced with new metal. A very important maintenance procedure that must be performed regularly throughout the life of the shear jaws.
Connector Link	The link arm that connects the lower shear to the rear cylinder connection of the Universal Processor. The lower shear and connector link replace the hydraulic cylinder that is removed when the Plate Shear jaw set is used.
Front Cylinder Pins	The pins that connect the attachment cylinders to the upper shear. The lower cylinder is removed when the Plate Shear jaws are installed, so only one of the two front cylinder pins is used.
Grain of Material	The direction that the parent material was initially rolled at the steel mill. It is very important when hardsurfacing any part of the shear jaws to weld with the grain of the steel. Cross-grained hardsurfacing has the tendency to start cracks in the base material beneath it.
Hardsurface	Welding process of protecting the parent material of the shear jaws. It acts as a wear surface.
Hose Termination Block	Machined surface located on the connector link. The hoses that are disconnected from the removed cylinder can be terminated by bolting them to this surface while the Plate Shear jaws are in use.
Lower Blades	The cutting blades in the lower shear. There are lower blades on both sides of the lower shear and the upper shear passes between them.
Lower Shear	The lower half of the jaw set. It contains cutting blades, a nose blades, and adjustment plates. The upper shear passes into the lower shear. When the Plate Shear jaw set is installed, the lower cylinder is removed. The lower shear connects to the connector link, which connects to the rear cylinder connection.
Main Bearings	Bushings located in the main pivot group which provide a wear surface between the jaws and the main pin. There are two main bearings in the lower jaw and one in the upper jaw.
Main Pin	Pin on which the jaws rotate. It is a component of the main pivot group.
Main Pivot Group	High tolerance area of the attachment where the jaws pivot. The main pivot group includes the main pin, main bearings, and thrust washers.
Nose Blade	A blade located in the inside front of the lower shear. This blades acts as a cutting edge to cut off the strip of plate steel as it passes through the lower shear. The nose blade also acts as a wear surface. There are two different nose blade options, one for "ribbon" cutting and one for "coupon" cutting.
Ripper Tooth	A pointed horn that is welded on the top of the upper shear. It can be used for a number of purposes. The main purpose of the ripper tooth is to puncture a tank wall to create a hole where the jaws can start cutting.
Throat	Area of the jawset nearest the main pivot group where the primary blades are located. The throat is the optimum area for shearing material. The shear is most powerful on the primary blades nearest the pivot point.
Thrust Washer	Component that acts as a wear part between adjoining surfaces. There are thrust washers located between the upper shear and the lower shear. There are also thrust washers located between the jaw set and the Universal Processor stick.
Upper Blades	Cutting blades located in the upper shear. There is an upper blade on each side of the upper shear. The left hand and right hand upper blades are not interchangeable.
Upper Shear	The upper half of the jaw set. It contains left and right cutting blades and a ripper tooth. The upper shear passes into the lower shear



UNIVERSAL PROCESSORS

PLATE SHEAR JAW INSTALLATION

Installation of Plate Shear jaws is quite different than the other jaw sets. The Plate Shear jaws use only one of the Universal Processor cylinders. This makes it necessary to remove one cylinder to install these jaws. Use the steps below to install this jaw set.

1. Remove both cylinder shrouds.
2. Remove the existing jaw set.
3. Use the excavator to position the attachment straight out and rest it on a firm, level surface with one cylinder facing up (see Figure 7-13).
4. Shut off the machine and ensure the system hydraulic pressure is relieved.
5. Disconnect the hoses from the top cylinder. Be careful not to spill hydraulic fluid. Cap the hose ends temporarily. Plug the ports of the cylinder for removal and storage.
6. Place a lifting strap in a choke hold around the main tube of the cylinder near the head (see Figure 7-14). Use an overhead crane to hold the weight of the cylinder and remove the rear cylinder pin.
7. Use the crane to lift the cylinder up and away from the attachment.
8. Unpin the connector link from the Plate Shear jaw set. Use the existing cylinder pin to connect the link to the rear cylinder connection.

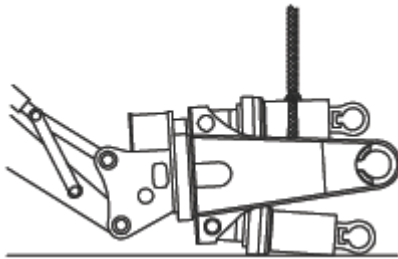


FIGURE 7-13

WARNING

Do not remove the pin until you are sure the cylinder is safely supported. If the weight is not properly supported, it may drop and cause serious injury.

WARNING

Make sure that the lifting strap and crane are rated to safely lift the cylinder.

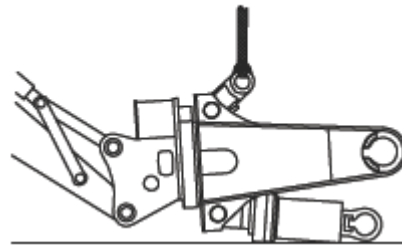


FIGURE 7-14

9. Fasten the loose hoses to the hose termination block on the connector link. Torque to specifications found in this manual.
10. Start the base machine. Lift the attachment off the ground and rotate it 180° so the remaining cylinder is now facing up. The connector link should now be beneath the attachment.
11. Secure the jaw set as necessary to keep it upright and stable during installation. With the attachment still facing out, walk it into position to line up the main pivots of the attachment and jaw set (see Figure 7-15). Install the main pin.

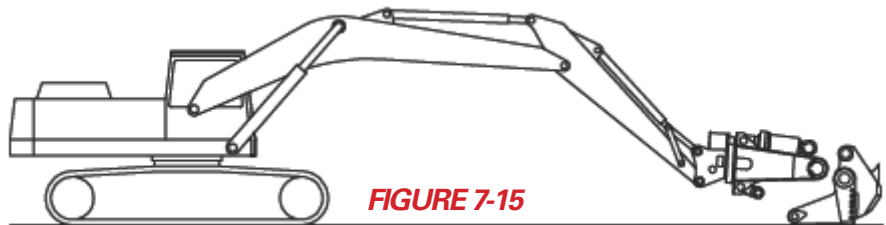


FIGURE 7-15

PLATE SHEAR JAW INSTALLATION *continued*

12. Extend the cylinder as necessary to line up the cylinder bore with the bore on the upper shear. Install the front cylinder pin.

13. With everyone standing clear, raise the attachment in the air slightly and place some blocking beneath the lower shear. Lower the attachment onto the blocking to raise the lower into position so the bores in the connector link and lower shear line up.

14. Pin the lower shear to the connector link. When all pins are fully installed, cycle the upper shear into the lower shear several times and check clearances and blade gaps. Install a cylinder shroud over the remaining cylinder.

PLATE SHEAR JAWS REMOVAL PROCEDURE

Reverse the installation procedure on pages 7-17 to properly remove the jaw set.

PLATE SHEAR JAWS STORAGE

- 1.** Block the attachment up off the ground using wood blocking.
- 2.** Plug all open hydraulic ports.
- 3.** Grease the pins and machined bores of the mounting bracket of the attachment (refer to the attachment lubrication section of the maintenance section of the manual). Then apply a generous amount of grease to shear blades, cylinder rods and all other exposed/unpainted surfaces.

⚠ WARNING

Trapped hydraulic pressure may be present after the base machine is shut off. Extreme caution must be taken when removing attachment hydraulic hoses or possible injury or death could result.

PERIODIC SERVICE SCHEDULE

Inspect, lubricate, make service checks and adjustments according to the 8-hour and 80-hour Inspection Checklists reproduced from this manual. A program of regular service should be established, using the machine hour meter to determine when the jaws should be serviced. Use the intervals on the Service Schedule when operating in normal conditions. Service the attachment at shorter intervals when operating in environments that are extreme or in abrasive conditions. Refer to the Lubrication Instructions on page 7-22 and Bolt Torque Table in this *Safety, Operation & Maintenance* manual when performing maintenance on the jaw set.

8-HOUR SERVICE RECOMMENDED

GREASE FITTINGS Lubricate according to the Lubrication Section on page 7-22. Replace broken fittings.

CONNECTING PINS AND PIN RETAINERS Inspect for looseness and damage or wear on the main pin and cylinder pins.

BOLTS Check for looseness and damage. Retorque if necessary. Refer to Dry Bolt Torque tables in this manual. Bolts may be retorqued once and then must be replaced.

BLADE GAP Inspect for proper gap. See Blade Gap Recommendations on page 7-27 for information on properly setting.

FRONT GAP Inspect for proper gap. See Front Gap Recommendations section on page 7-29 for information on properly setting this gap.

80-HOUR SERVICE RECOMMENDED

BLADES Measure blade gap, rotate, replace or shim blades according to procedures in this manual.

UPPER SHEAR Inspect the upper, upper tooth and wear areas for damage. Refer to manual for build up, hardsurface or replacement.

LOWER SHEAR Inspect nose blade and wear areas. Refer to manual for build up, hardsurface or replacement.

UNIVERSAL PROCESSORS

8-HOUR INSPECTION CHECKLIST

ATTACHMENT MODEL _____ EXCAVATOR HOUR METER _____

ATTACHMENT SERIAL NUMBER _____ DATE _____

- _____ 1. Visually inspect jaws for any damage
- _____ 2. Grease all Points. Refer to lubrication section in this manual
 - _____ a. Each side of lower shear in main pivot
 - _____ b. Each side of pivot group end cap
- _____ 3. Inspect all Bolts
 - _____ a. Visually check all bolts
 - _____ b. Check blade bolt torque
- _____ 4. Inspect Connecting Pins and Pin Retainers
 - _____ a. Main pin
 - _____ b. Cylinder pins
- _____ 5. Check Blade Gap
 - _____ a. Refer to manual for proper adjustment
- _____ 6. Check Front Gap
 - _____ a. Refer to manual for proper adjustment

INSPECTED BY: _____

80-HOUR INSPECTION CHECKLIST

ATTACHMENT MODEL _____ EXCAVATOR HOUR METER _____

ATTACHMENT SERIAL NUMBER _____ DATE _____

- _____ 1. Inspect Blades
 - _____ a. Rotate or replace lower blades
 - _____ b. Replace upper blades, if necessary
 - _____ c. Measure blade gap

- _____ 2. Inspect Upper Shear
 - _____ a. Build up and hardsurface upper

- _____ 3. Inspect Lower Shear
 - _____ a. Build-up and hardsurface lower

- _____ 4. Inspect Main Pivot
 - _____ a. Check for sideplay and wear

INSPECTED BY: _____



UNIVERSAL PROCESSORS

PLATE SHEAR JAW LUBRICATION

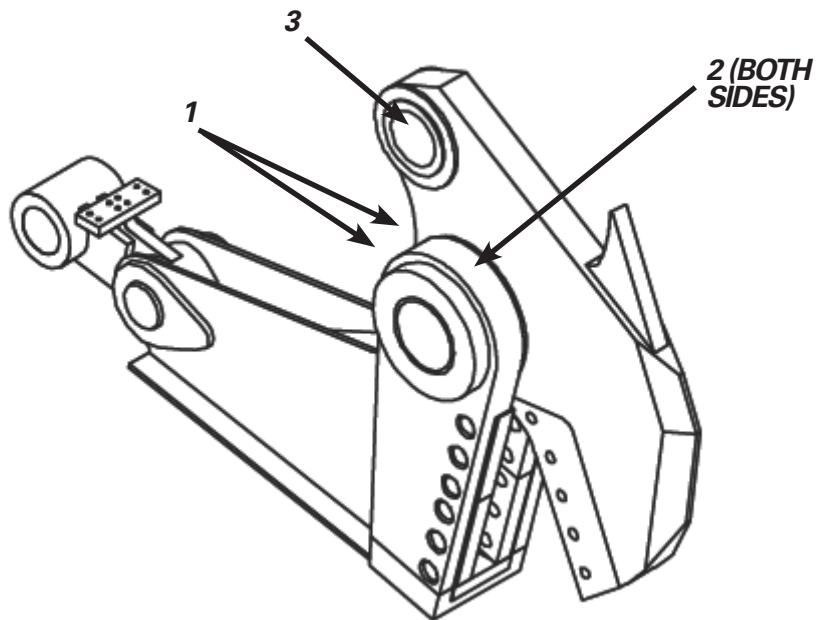


FIGURE 7-13

- Grease all points every 8 hours of attachment operation. Use premium grease #2Ep or equivalent.
- Grease fitting locations are indicated on the illustrations and by grease decals on the attachment.

LOCATION ON ATTACHMENT	NUMBER OF SHOTS
1. Two in upper shear main pivot	6
2. One in each side of lower shear main pivot	6
3. One in cylinder connection of upper shear	6
4. Two in connector link (one at each end)	6

MAIN PIVOT GROUP WEAR

For blade maintenance of the plate shear jaws to be effective, the main pivot group must be within specifications. Always check the pivot group for excessive wear before doing any blade maintenance.

The main pivot group consists of main bearings and thrust washers (see Figure 7-14). The main bearings act as a wear surface between the jaw bore and the main pin. The thrust washers act as a wear surface between the upper and lower jaw halves. Plate shear jaws do not have outer thrust washers like the other jaw set options.

When the main pivot components are excessively worn, there will be sideplay in the main pivot group. Sideplay is when the upper jaw can move from side to side in relation to the lower jaw. When sideplay is present, adjusting the blade gaps will be ineffective. Use the following steps to check for sideplay in your jawset.



Wear proper safety equipment including eye protection and gloves when performing this procedure.

GENERAL PROCEDURE

1. With the jaw set fully installed in the Universal Processor, retract the attachment cylinder to fully open the jaws. Lower the attachment so the lower jaw is on the ground and shut off the base machine. Make sure the attachment is secure and will not drop.
2. Use a pry bar between the upper and lower jaws in the main pivot area on each side to see if the upper can be moved back and forth in relation to the lower jaw. See Figure 7-15.

If there is sideplay or looseness greater than 3/32" (2.5 mm), it may be necessary to replace the main pivot group components. Contact your LaBounty dealer or the LaBounty Customer Service Department for assistance with this maintenance.

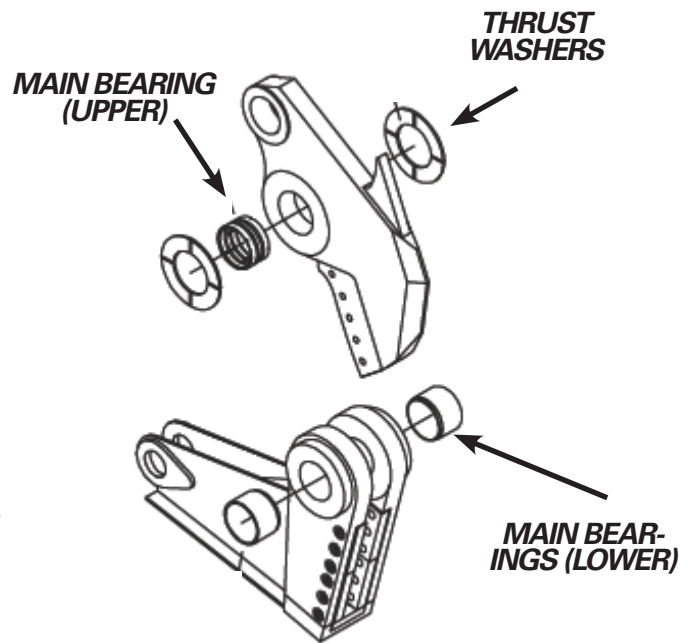


FIGURE 7-14

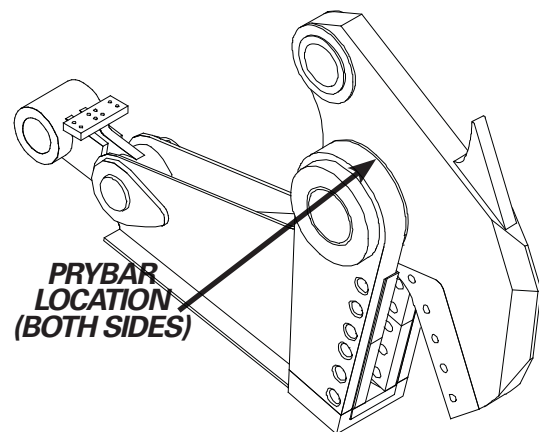


FIGURE 7-15

UNIVERSAL PROCESSORS

BLADE REMOVAL

Safe and proper removal of blades from their blade seats is necessary when performing various types of maintenance on the plate shear. To ensure your safety and to avoid damaging the attachment, always use the following procedure when removing a cutting blade or guide blade from its seat.

GENERAL PROCEDURE

1. Loosen the blade bolts one blade at a time. Make sure the blade is adequately supported so it will not drop and cause injury when the blade comes loose from its seat.
2. Lightly tap on the blade face in several places with a soft-faced hammer. This will sometimes loosen a slightly jammed blade.
3. If the blade is jammed in the seat and is difficult to dislodge, take a soft metal punch or drift pin and insert it in a blade bolt hole from the back side (nut side, see Figure 7-16). Place the punch at an angle against the inside countersink of the blade and strike the punch with a hammer or mallet.
4. If this method fails to dislodge the blade, drive wedges between the blade and the back of the blade seat as shown. Start with small wedges and increase the size as the opening grows.

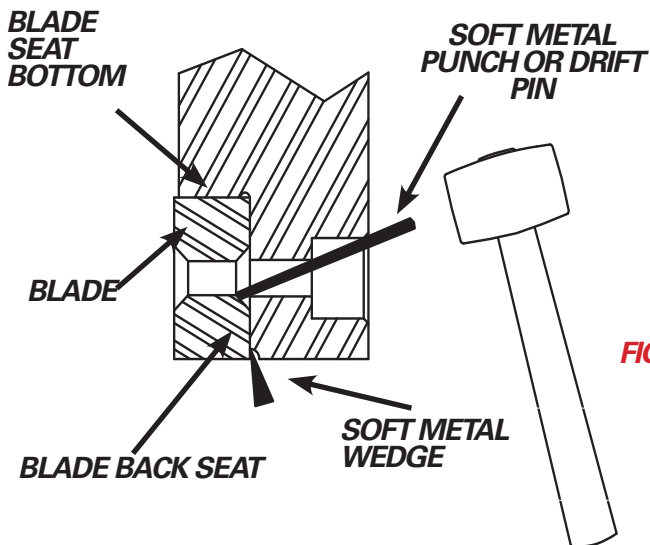


FIGURE 7-16

CAUTION

Safety equipment, including eye protection, hard hat, steel toe shoes, gloves, and hearing protection, should be worn at all times when viewing, operating, or maintaining the attachment to prevent injury.

WARNING

Never strike against a hardened blade with a hardened steel tool of any kind. The blade may chip and cause severe injury.

NOTICE

One method of preventing a blade from dropping is to leave at least two blade bolts installed with the nuts loosely threaded. When the blade becomes dislodged, the bolts will keep the blade from falling and causing injury or damage. If the blade does not come out easily, continue with step 2.

NOTICE

*Never drive wedges between the blade and the **BOTTOM** of the blade seat. This can cause damage to the shear blade seat which will cause future problems with jamming or stuck blades. Wedges may only be used between the blade and the **BACK** of the blade seat.*

LOWER BLADE ROTATION

Proper rotation of the lower blades will ensure the best jaw performance and also makes it possible to maintain an even blade gap. Recommended blade rotation is after approximately 80 hours of use. Depending on the material being processed, this interval may vary.

When processing thin plate, lower blade rotation and shimming is of greater importance than when processing thicker material. It may be necessary to shorten blade rotation intervals when processing thin materials.

When processing thicker materials, frequent blade rotation will extend the life of the blades; however, maintaining a close tolerance blade gap is not as important. Never operate a shear when the blades have rounded to a $\frac{1}{4}$ " (6.4 mm) radius or more.

GENERAL PROCEDURE

1. Remove each blade and grind all rough edges.
2. Remove each blade adjustment plate from the blade seat and clean out the blade seat thoroughly. **Reinstall each adjustment plate in the same position** (see Figure 7-17). Blade adjustment plates are custom machined for a specific blade seat.
3. The first and third times the lower blades are rotated, each blade should be turned end for end and reinstalled in the same blade seat. The second time the blades are rotated, each blade should be flipped over (see Figure 7-18).
4. When the blades have been used on all four edges and edges are $\frac{1}{4}$ " (6.4 mm) radius or more, it will be necessary to replace the blades.

Remember, with damaged or badly worn blades, cutting ability decreases tremendously and it may eventually cause structural damage to the shear. This condition also causes the shear and base machine hydraulic systems to work harder, resulting in premature wear.

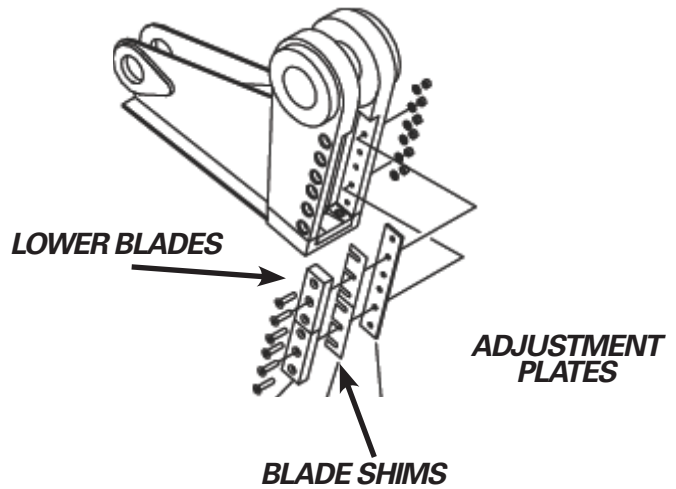


FIGURE 7-17



An approved respirator and leather gloves must be worn when handling and grinding blades.

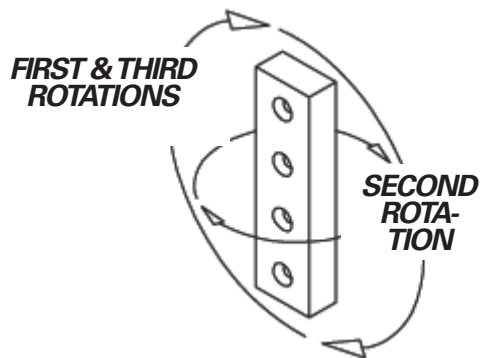


FIGURE 7-18

UNIVERSAL PROCESSORS

UPPER BLADE REPLACEMENT

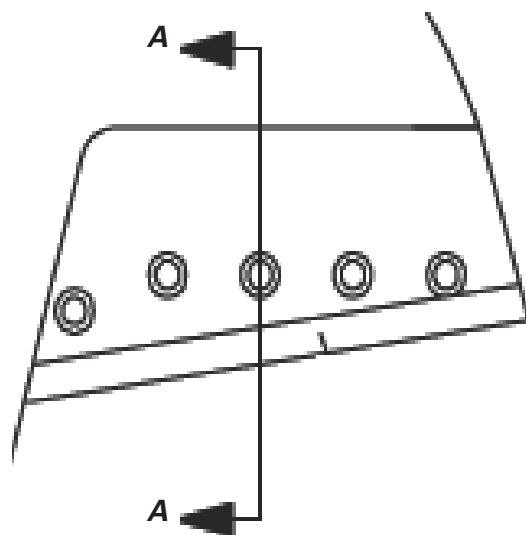
The upper jaw of a Plate Shear jaw set has two blades—a left-hand blade and a right-hand blade. Because the upper blades are each made for a specific side, they cannot be rotated like the lower blades. When the upper blades are worn, they must be replaced or reworked.

WARNING

Replacing the upper blades is done most safely with at least two persons. Do not attempt to do it alone.

WARNING

The upper blades are NOT bolted directly to the upper shear (see Figure 7-19). Make sure the blades are supported before loosening the blade bolts. If the blades are not supported when the bolts are loosened, the blades may drop and cause serious injury.



CAUTION

Be careful when handling blades and always wear protective gloves, eye protection, and steel toe boots. Blade edges are sharp and each blade can weigh as much as 120 lbs. (55 g), depending on the model.

NOTICE

When removing the upper shear blades, it is recommended to position the attachment so the upper shear is upside-down. This will help prevent injuries or damage to the equipment if the blades fall.

UPPER SHEAR

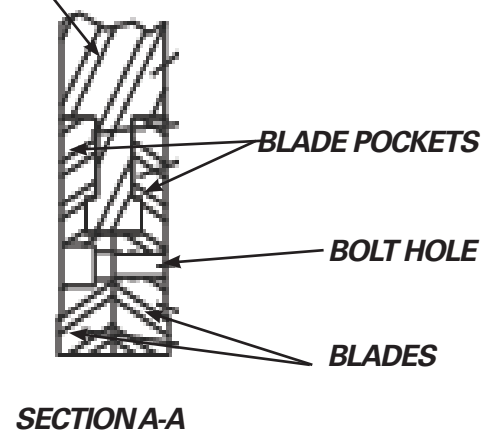


FIGURE 7-19

BLADE GAP RECOMMENDATIONS

The blade gaps are the spaces between the upper and lower blades as they bypass (see Figure 7-20). Plate shear jaws have two blade gaps, one on each side. The blade gaps are critical to how the plate shear jaws will perform.

Depending on the specific material being processed, it may be desirable to change the blade gaps for better performance. For instance, when cutting thin material it is best to set the gaps very narrow to prevent material from jamming in the blades. A wider blade gap may be preferred for processing thicker materials.

Adjusting the blade gap is done by adding or removing blade shims. The shims are located between the lower blades and adjustment plates in the lower shear. LaBounty sets the blade gaps on new plate shear jaws at 0.005" (0.13 mm) on each side. It is possible to widen the blade gaps from 0.005" (0.13 mm) up to 0.130" (3.2 mm).

Use the directions on the following page to properly adjust the blade gaps. **The blade gaps should be checked and adjusted every 80 hours after rotating or replacing the blades.**

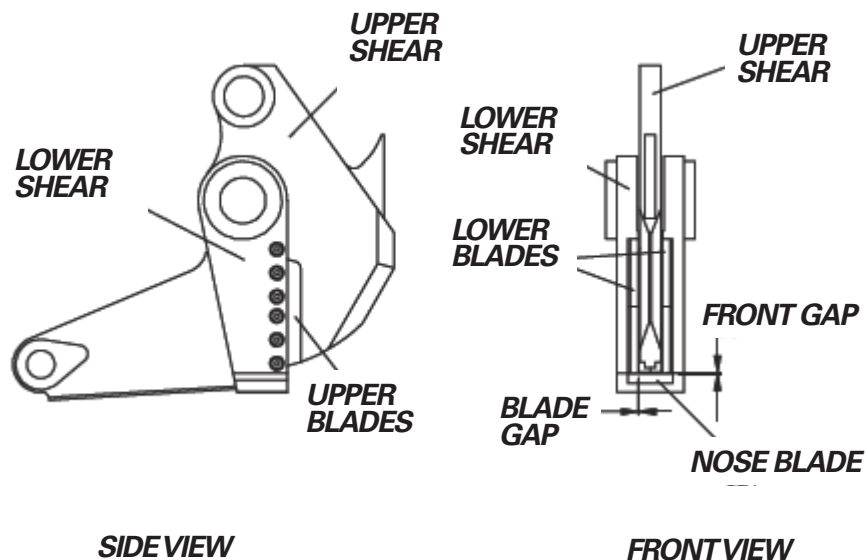


FIGURE 7-20

UNIVERSAL PROCESSORS

ADJUSTING THE BLADE GAPS

After rotating or replacing the blades, it may be necessary to adjust the blade gaps. This is accomplished by shimming the lower blades. Follow the steps below to check and adjust the blade gap.

NOTICE

Before checking the gap or shimming the blades, use the instructions from page 7-23 to check the main pivot group for wear.

GENERAL PROCEDURE

1. To check the blade gap, cycle the jaws closed so the upper blades bypass the lower blades (see side view of Figure 7-20). Use a feeler gauge between the upper and lower blades to check the blade gap on each side and record it. Check the gap near both ends of the blades. The gap should be even for the entire span of the blades.

WARNING

Stand clear before moving the jaws. **DO NOT** check blade gaps with the feeler gauge while the jaws are moving.

2. Subtract the desired blade gap from the actual blade gap that was just recorded. This will determine the amount of shims to use. To widen the gaps, subtract the actual gap from the desired gap to determine the amount of shims to remove.

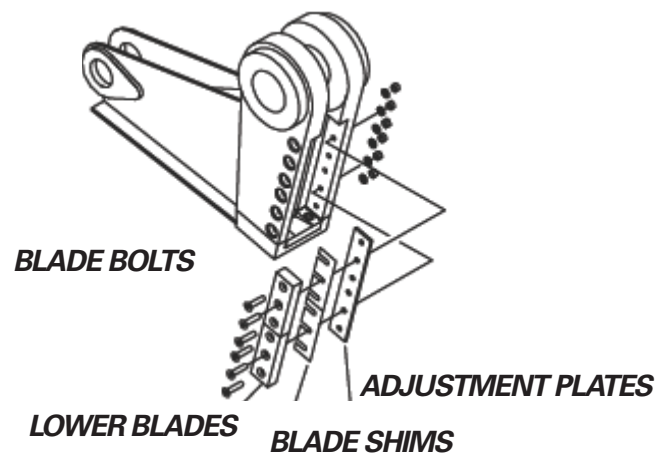
3. Shim only the lower blades. Never shim the lower blades out more than 0.125" (3 mm) total. This can potentially cause structural damage to the jaws.

4. To install the shims, loosen the blade bolts and slide the shim(s) between the existing blade adjustment plate and the blade to be shimmed (see Figure 7-21). Retorque the blade bolts to specifications. If the existing blade bolts have been retorqued more than once, they must be replaced with new bolts of the same size and class.

5. Cycle the jaws slowly and check that the gap is correct and the jaws are not binding.

NOTICE

Regular blade rotation and shimming will provide maximum shearing efficiency and blade life. If the blades are not rotated every 80 hours, shimming may not be possible because of uneven wear on the blades.



UPPER SHEAR IS NOT SHOWN

FIGURE 7-21

NOSE BLADE REPLACEMENT

When the nose blade becomes badly worn, it will be necessary to replace it with a new one. Since it is necessary to remove the lower blades to remove the nose blade, it is suggested that the nose blade be inspected each time the lower blades are rotated or replaced. If the nose blade must be replaced, use the following procedure.

GENERAL PROCEDURE

1. See Figure 7-22. Remove the lower blades to get access to the nose blade bolts.
2. Remove the worn nose blade and clean its seat thoroughly.
3. Place the new nose blade into the seat and install the nose blade bolts and nuts loosely.
4. Place all lower blades into their seats. Make sure they are tight against the adjustment plates in the back of the blade seat.
5. Shim the nose blade out until it is snug against the front edges of the lower blades. Slide the shims between the blade and the back of the seat.
6. Remove the lower blades and tighten the nose blade bolts to the proper torque. The lower blades may then be installed.

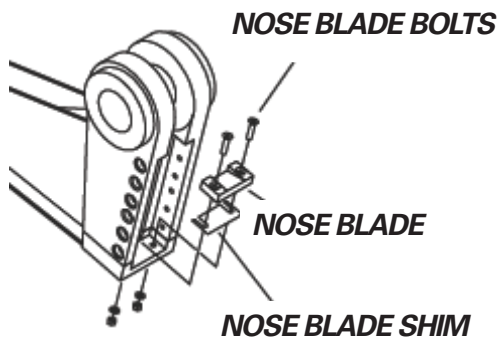


FIGURE 7-22

FRONT GAP RECOMMENDATIONS

The front gap is the space between the front edge of the upper shear blades and the nose blade in the lower shear as they bypass. The size of the front gap is an important factor in how the jaws will process plate. If the front gap is set wide, the material being cut is more likely to form a continuous "ribbon" of steel that will be pushed through the lower shear as the cut is made. If the front gap is set narrow, the ribbon of steel is more likely to be clipped off with each cut. This will create many short, rectangular pieces of steel called "coupons." The decision to set the front gap for ribbon or coupon cutting depends on what is preferred for your application. The front gap can only be changed if and/or when a different nose blade is installed.

NOTICE

Two different nose blades are offered for each model, one for ribbon cutting and one for coupon cutting (see Figure 7-23). LaBounty Plate Shear jaws are set up for ribbon cutting unless otherwise specified when the jaw set is ordered.

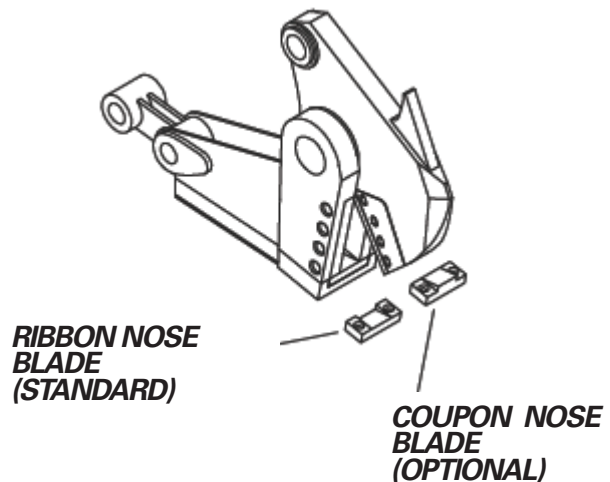


FIGURE 7-23

UNIVERSAL PROCESSORS

GENERAL BUILD UP AND HARDSURFACING

Proper build up and hardsurfacing requires inspection according to the inspection scheduled for each jaw type. If the jaws are in a severe application, the interval for maintenance may need to be shortened. Excessive hardsurfacing can damage the jaws and affect the performance. Allow the hardsurface material to wear down—but not completely away—before hardsurfacing again. Never apply more than two layers of hardsurface material. The quality and attention to detail in welding can significantly affect the life of the jaws. LaBounty strongly recommends that only experienced, certified welders do this work.

NOTICE

Stanley LaBounty recommends that build up and hardsurfacing is performed at the end of the work day to allow them adequate time to cool.

Strict adherence to the welding rod manufacturer's handling and storage instructions is essential. Electrodes exposed to the atmosphere for more than four hours must not be used; the moisture absorbed by the electrode covering will change the mechanical properties of the weld, which can cause cracks and porosity in the weld or adjacent base metal. LaBounty recommends using AWS E7018 rod or equivalent for build up. After vigorously peening each pass, the hardsurfacing is placed directly on top of the E7018 beads. The E7018 becomes the bonding or underlayment for the hardsurfacing. This will help reduce the chances of having the hardsurface material crack. LaBounty recommends using Amalloy 814H rod or equivalent for hardsurfacing. **DO NOT** use stainless hardsurface rod; it is too brittle and cracks, weakening the base metal.

GENERAL PROCEDURE

1. Clean all dirt and grease from the area to be built up.
2. Remove the worn hardsurfacing by grinding to the base metal. **DO NOT** build up on top of any hardsurface material.
3. Preheat the surrounding area to at least 200°F (100°C) to remove moisture. Preheat the area to be built up to 300- 400°F (150- 200°C). Use a temperature stick to verify that this temperature is maintained throughout the welding process. Temperatures in excess of 450°F (230°C) may harm parent metal.
4. Build up and restore any worn or damaged surfaces with E7018 (or equivalent). Each pass must be peened vigorously to relieve stress and remove slag.
5. Hardsurface as instructed in this manual. It is not necessary to cover the entire surface with hardsurfacing to be effective. Vigorously peen the hardsurfacing to stress relieve and work harden the material.
6. Post heat to 300- 400° F (150- 200°C). Again, **DO NOT** exceed 450°F (230°C). Cover with a heat blanket and allow to cool slowly to the ambient temperature. Never operate an attachment immediately following welding repairs without allowing it to cool properly.

GENERAL BUILD UP AND HARDSURFACING CONTINUED

IMPORTANT NOTES

1. Always hardsurface in the direction of the grain of the steel.
2. Use an air operated slag peener on each pass of all welds to relieve weld stress.
3. **DO NOT** start or stop a weld bead within 1" (25 mm) of a blade bolt hole.
4. Stagger the ends of the adjacent beads. **DO NOT** stop or start beads in a straight line with each other.
5. Grind the end of a hardsurfacing bead smooth, tapering for 1 ¼"- 1 ½" (31- 38 mm) to the parent material. **DO NOT** undercut the bead with the grinder. Grind marks must be in the same direction as the grain of the base material.
6. **DO NOT** hardsurface into the throat area of the lower or upper, which can cause surface cracks that may develop into major structural failures.
7. Check temperature frequently to maintain 300-400°F (150- 200°C) throughout the process. **DO NOT** exceed 450°F (230°C).
8. Never operate an attachment following repairs without first allowing it to cool slowly to ambient temperature.

CAUTION

PAINT REMOVAL AND GRINDING CAN BE HAZARDOUS AND CAUSE PERSONAL INJURY. PLEASE TAKE THE FOLLOWING PRECAUTIONS:

- **REMOVE PAINT BEFORE WELDING OR HEATING. HAZARDOUS FUMES CAN BE GENERATED WHEN PAINT IS HEATED.**
- **WHEN SANDING OR GRINDING PAINT, AVOID BREATHING THE DUST. WEAR AN APPROVED RESPIRATOR.**
- **IF YOU USE SOLVENT OR PAINT STRIPPER, REMOVE STRIPPER WITH SOAP AND WATER BEFORE WELDING. REMOVE SOLVENT OR PAINT STRIPPER CONTAINERS AND OTHER FLAMMABLE MATERIAL FROM THE AREA BEFORE CUTTING, WELDING, OR GRINDING.**
- **HAVE A FIRE EXTINGUISHER NEARBY DURING ALL CUTTING AND WELDING OPERATIONS. CLEAN AREAS TO BE CUT OR WELDED OF OIL AND FLAMMABLE MATERIALS. PROTECT ALL FLAMMABLE AREAS FROM SPARKS.**
- **DO ALL WORK IN A WELL VENTILATED AREA. DISPOSE OF PAINT AND SOLVENT PROPERLY.**



FIGURE 7-24

UNIVERSAL PROCESSORS

UPPER SHEAR BUILD UP AND HARDSURFACING

For maximum life and efficiency the upper shear should be checked for wear regularly. All edges should be kept square. It is recommended that this maintenance be done at the end of the working day to allow adequate cooling time before putting the plate shear jaws back into service.

GENERAL PROCEDURE

1. Clean all dirt and grease from area to be built up.
2. Remove all existing hardsurfacing by grinding down to the base metal before beginning build-up and hardsurfacing procedures.
3. To determine how much build up is required on the front edges of the upper shear, place a square along the sides and front of the upper shear. If the edges are worn, there will be a gap indicating how much build up is required (see Figure 7-25).
4. Preheat the surrounding area to at least 200°F (100°C) to remove moisture. Preheat the area to be built up to 300- 400°F (150- 200°C). Use a temperature stick to check the temperature frequently, as overheating can harm the jaws. The maximum temperature is 450°F(230°C).
5. For build up, apply AWS E7018 welding rod. Each pass must be peened vigorously to relieve weld stress and remove slag. Grind all edges to 90°.
6. To protect the area just built up, hardsurface the front face of the upper shear from the cutting blades about halfway up to the ripper tooth by applying single passes of AWS E7018 build up in a diamond pattern of approximately 1½" (38 mm; see Figure 7-26). This will serve as an underlayment for the hard-surface rod. **DO NOT** weld on the blades or in the blade seat. **DO NOT** apply hardsurface directly to the parent material. **DO NOT** apply build up and hardsurface to the front of the cutting blades.
7. Apply a bead of Amalloy 814H rod on top of each of the underlayment beads. It is important to use an air operated slag peener on each pass of weld to relieve stress.

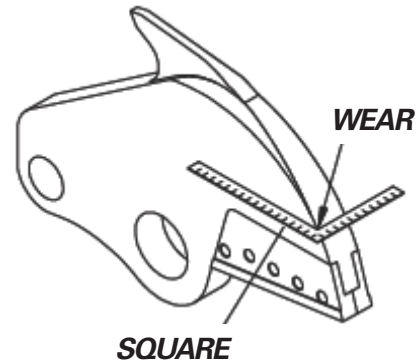


FIGURE 7-25

WARNING

When welding on the upper jaw, the upper jaw MUST be grounded.

NOTICE

Check temperature during this procedure. maintain 300°- 400° F (150° - 200° C). Do not exceed 450° F (230°).

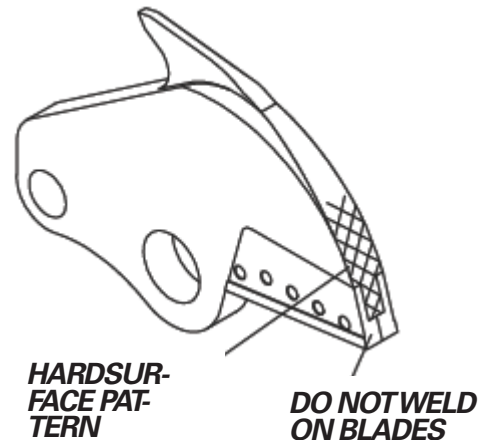


FIGURE 7-26

LOWER SHEAR BUILD UP AND HARDSURFACING

It is necessary that the lower portion of the shear be maintained routinely by the following process.

GENERAL PROCEDURE

1. Clean all dirt and grease from area to be built up.
2. Remove all existing hardsurfacing by grinding down to the basemetal before beginning build-up and hardsurfacing procedures.
3. Use a square to determine how much build up is required on the edges of the nose plate and sides of the lower shear (see Figure 7-27).
4. Preheat the surrounding area to at least 200°F (100°C) to remove moisture. Preheat the area to be built up to 300- 400°F (150-200°C). Use a temperature stick to test the area frequently, as overheating can harm the jaws. The maximum temperature is 450°F (230°C).

NOTICE

Check temperature during this procedure. maintain 300°- 400° F (150° - 200° C). Do not exceed 450° F (230°).

5. For required build up, apply AWS 7018 welding rod in single passes running with the grain of the base material (see Figure 7-28). Peen each pass to relieve weld stress and remove slag. Grind all edges to 90°.

6. Hardsurfacing must follow the grain of the material. To hardsurface the area just built up, start by applying three or four passes of AWS E7018 build up running the length of the shear and across the nose plate to establish the hardsurface pattern. This will serve as an underlayment for the hardsurface rod. **DO NOT** apply hardsurface directly to the parent material.

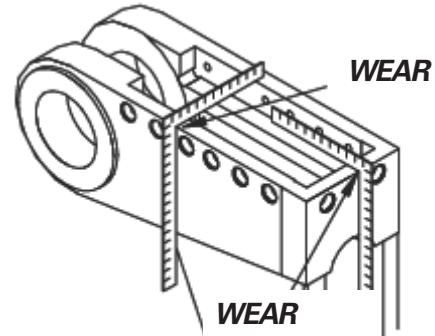
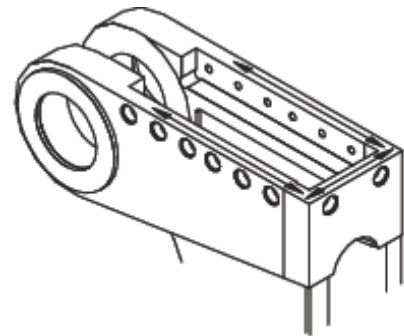


FIGURE 7-27



ARROWS INDICATE GRAIN OF DIRECTION

FIGURE 7-28

LOWER SHEAR BUILD UP AND HARDSURFACING

CONTINUED

7. The beads along the sides of the lower shear should end between the first and second blade bolts closest to the throat. **DO NOT** weld into the throat area. Stagger the ends of the welds (see Figure 7-29). Taper the ends of each weld down to the base material with grind marks going with the grain, but do not undercut the ends of the weld with the grinder.

8. Apply Amalloy 814H rod or equivalent on top of each of the underlayment beads. It is important to use an air operated slag peener on each pass of weld to relieve stress. No more than two layers of this rod should be used.

9. To hardsurface the front and sides of the nose plate, establish a diamond pattern of parallel lines approximately 1 1/2" (38 mm) apart (see Figure 7-30). Again, use the build-up rod to lay down the pattern and use the hardsurface rod on top of it as in step 7. Taper the ends of each weld down to the base material with the grind marks going in the same direction as the weld bead. **DO NOT** undercut the ends of the weld with the grinder.

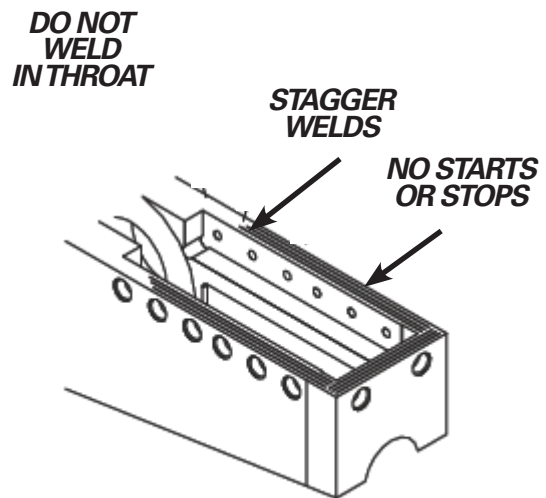
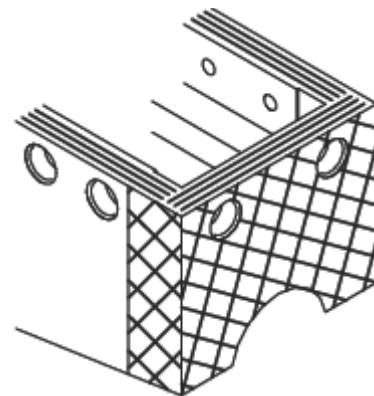


FIGURE 7-29



LOWER NOSE PLATE HARDSURFACE PATTERN

FIGURE 7-30

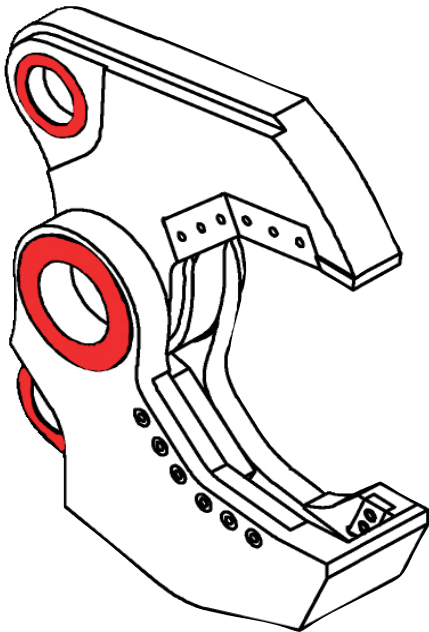
UP SHEAR JAWS

High tensile, abrasion-resistant steel construction assures long, uninterrupted service – even in the harshest conditions. The main pin of every model is heavy duty for long life and pivots on LaBounty's specially designed bearings.

Shear jaws can cut a wide variety of materials including I and H beams, other building materials, steel plate, round stock, wire, rebar and concrete. They are ideal for demolition work, road and bridge reconstruction, scrap processing, and in jobs where torching is not possible.

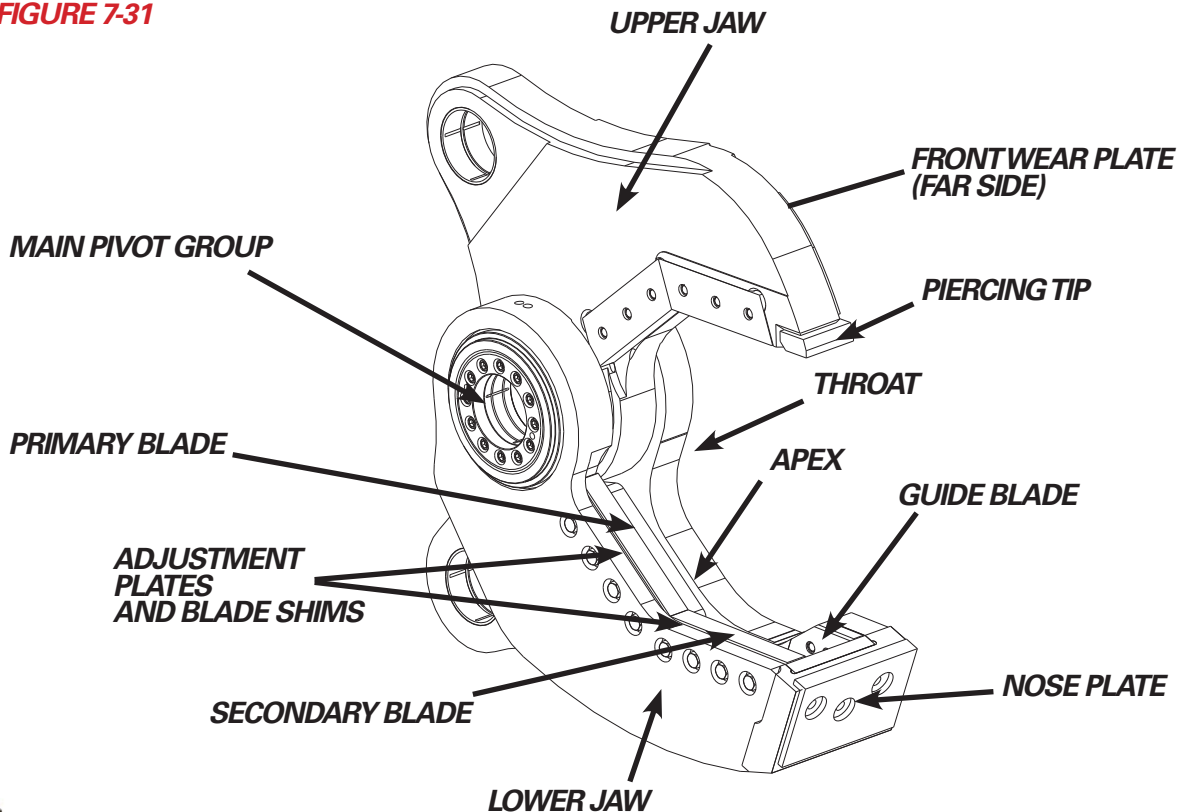
FEATURES

- Patented design combines maximum cutting strength and reach with minimal weight
- Made with high tensile, abrasion-resistant steel for durability
- Replaceable wear parts for easy maintenance
- Four-way indexable blades
- At-factory upgrading and rebuilding services available



UP SHEAR JAW TERMS

FIGURE 7-31



UNIVERSAL PROCESSORS

UP SHEAR JAW GLOSSARY

Adjustment Plates	Custom-made plates that precisely adjust the lower primary and secondary blades to be parallel to the upper blades. These make it possible to achieve a uniform blade gap.
Apex	The point where the primary and secondary blades come together.
Blade Gap	The gap between the upper and lower blades as they bypass each other. A very important maintenance item that must be maintained to ensure longevity of the shear jaws and to prevent material from jamming in the cutting blades.
Blade Shims	Thin metal shims used to adjust lower cutting blades to maintain the proper blade gap.
Build Up	Welding process during which worn off parent material is replaced with new metal. A very important maintenance procedure that must be performed regularly.
Cutting Blades	Replaceable components bolted into the upper and lower jaws that bypass to cut various materials. The upper and lower jaws each have a primary and a secondary blade.
Front Cylinder Pins	The pins that connect the attachment cylinders to the jaws.
Front Wear Plate	A replaceable wear plate that is welded to the upper jaw on the opposite side from the upper cutting blades. The upper wear plate makes contact with the guide blade during shearing. This is a very important maintenance item and must be replaced when worn.
Grain of Material	The direction that the parent material was initially rolled at the steel mill. It is very important when hardsurfacing any part of the shear jaws to weld with the grain of the steel. Cross-grained hardsurfacing has the tendency to start cracks in the base material beneath it.
Guide Blade	A replaceable component located opposite the cutting blades in the lower jaw. The main purpose of the guide blade is to support the upper jaw during the cutting cycle. This is a very important maintenance item.
Guide Blade Gap	The gap between the guide blade and the front wear plate as the upper jaw is cycled into the lower jaw. A very important maintenance item that must be maintained to ensure the structural integrity of the jaws.
Guide Blade Shims	Thin metal shims used to adjust the guide blade to maintain the proper guide blade gap. Shims come in a designated set that determines when the guide blade will be indexed or replaced.
Hardsurfacing	Welding process of protecting the parent material of the shear jaws. This acts as a wear surface.
Lower Jaw	The lower half of the shear jaw set. It contains a primary blade, secondary blade, and guide blade. The upper jaw passes into the lower jaw.
Lower Piercing Area	The front area of the lower jaw through which the piercing tip passes. Requires regular build up and hardsurfacing.
Main Bearings	Bushings located in the main pivot group which provide a wear surface between the jaws and the main pin. There are two main bearings in the lower jaw and one in the upper jaw.
Main Pin	Pin on which the jaws rotate. It is a component of the main pivot group.
Main Pivot Group	High tolerance area of the attachment where the jaws pivot. The main pivot group includes the main pin, main bearings, and thrust washers.
Nose Plate	Tie plate located at the front of the lower jaw. The profile of the nose plate is a very important maintenance item that must be maintained with build up and hardsurface to prevent wear of the parent material.
Piercing Tip	Replaceable wear part that is welded to the tip of the upper jaw.
Primary Blades	The cutting blades in the shear jaws that are closest to the throat. Primary blades are found in both the upper and the lower jaws.
Secondary Blades	The cutting blades in the shear jaws farthest from the throat. Secondary blades are found in both the upper and lower jaws.
Throat	Area of the jawset nearest the main pivot group where the primary blades are located. The throat is the optimum area for shearing material. The shear is most powerful on the primary blades nearest the pivot point.
Thrust Washer	Component located between the upper and lower jaws in the main pivot group to serve as a wear surface between the jaw halves.
Upper Jaw	The upper half of the shear jaw set. It contains a primary blade, secondary blade, piercing tip, and front wear plate. The upper jaw passes into the lower jaw.

PERIODIC SERVICE SCHEDULE

SERVICE THE JAWS AT SPECIFIED INTERVALS

Inspect, lubricate, make service checks and adjustments according to the 8-hour and 80-hour Inspection Checklists reproduced from this manual. A program of regular service should be established, using the machine hour meter to determine when the jaws should be serviced. Use the intervals on the Service Schedule when operating in normal conditions. Service the attachment at shorter intervals when operating in extreme environmental or abrasive conditions.

USE CORRECT LUBRICANTS AND BOLT TORQUES

Refer to the Lubrication Instructions and Bolt Torque Table in this section of the Safety, Operation and Maintenance manual when performing maintenance on the attachment.

8-HOUR SERVICE RECOMMENDED

GREASE FITTINGS

Lubricate according to the Lubrication Section on page 7-40. Replace broken fittings.

BOLTS

Check for looseness and damage. Retorque if necessary. Refer to Dry Bolt Torque tables in this manual. Bolts may be retorqued once and then must be replaced.

GUIDE BLADE GAP

If the gap exceeds 0.030" (0.76mm) refer to manual for adjustments.

PRIMARY AND SECONDARY BLADE GAP

The gap is acceptable if it is less than 0.060" (1.50 mm) and the jaws are not jamming. If jamming occurs between the blades, the gap will need to be tightened to 0.030" (0.76 mm) or less. The maximum allowable gap is 0.060" (1.50 mm). Refer to the blade shimming procedure in this manual.

PIERCING TIP

Inspect piercing tip for square fit in lower jaw. Refer to manual for maintenance procedure.

LOWER PIERCING AREA

Inspect for wear indicating build up or hardsurfacing is required. Refer to manual for maintenance procedure.

80-HOUR SERVICE RECOMMENDED

BLADES

Measure blade gap, rotate, replace or shim blades according to procedures in this manual.

UPPER JAW

Inspect piercing tip, wear plate and upper. Refer to manual for build up, hardsurface or replacement.

LOWER JAW

Inspect guide blade, lower piercing area and lower. Refer to manual for build up, hardsurface or replacement.

UNIVERSAL PROCESSORS

UP SHEAR JAW 8-HOUR INSPECTION CHECKLIST

ATTACHMENT MODEL _____ EXCAVATOR HOUR METER _____

ATTACHMENT SERIAL NUMBER _____ DATE _____

1. Visually inspect jaws for any damage
2. Grease All Points. Refer to lubrication section in this manual
 - _____ a. Each side of lower shear in main pivot
 - _____ b. Each side of pivot group end cap
3. Inspect all Bolts
 - _____ a. Visually check all bolts
 - _____ b. Check blade bolt torque
4. Check Wear Plate/Guide Blade Gap
 - _____ a. Refer to manual if gap exceeds 0.030" (0.76 mm)
5. Check Primary and Secondary Blade Gap.
 - _____ a. Refer to manual if gap exceeds 0.060" (1.50 mm) or if jamming occurs
6. Inspect Piercing Tip
 - _____ a. Piercing tip fit squarely in lower piercing area
7. Inspect Lower Piercing Area
 - _____ a. Piercing tip fit squarely in lower piercing area

INSPECTED BY: _____

UP SHEAR JAW 80-HOUR INSPECTION CHECKLIST

ATTACHMENT MODEL _____ EXCAVATOR HOUR METER _____

ATTACHMENT SERIAL NUMBER _____ DATE _____

1. Inspect Blades

- _____ **a.** Rotate or replace all blades
- _____ **b.** Measure blade gap, refer to manual for shimming procedure and tolerance range.

2. Inspect Upper Shear

- _____ **a.** Replace or build up and hardsurface piercing tip
- _____ **b.** Replace wear plate
- _____ **c.** Build-up and hardsurface upper

3. Inspect Lower Shear

- _____ **a.** Build-up and hardsurface lower piercing area
- _____ **b.** Build-up and hardsurface lower
- _____ **c.** Replace guide blade

4. Inspect Main Pivot

- _____ **a.** Check for sideplay and wear

INSPECTED BY: _____



UNIVERSAL PROCESSORS

SHEAR JAW LUBRICATION

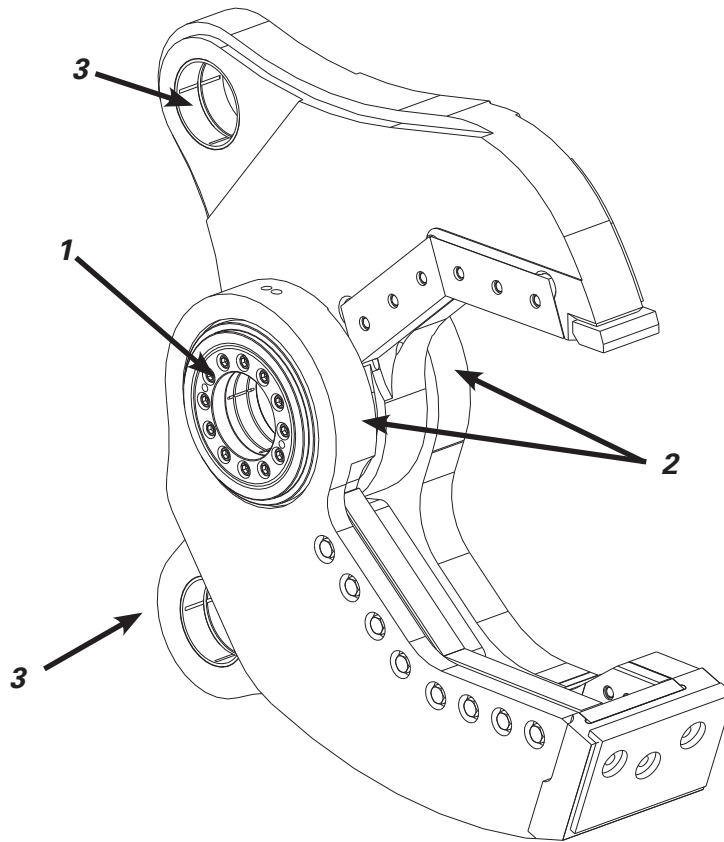


FIGURE 7-32

- Grease all points every 8 hours of attachment operation. Use premium grease no. 2Ep or equivalent.
- Grease fitting locations are indicated on the illustrations and by grease decals on the attachment.

LOCATION ON ATTACHMENT

- 1.** Rear cylinder connections
- 2.** Front cylinder connections
- 3.** Main jaw pivot

NUMBER OF SHOTS

6
6
6

MAIN PIVOT GROUP WEAR

For blade maintenance of the shear jaws to be effective, the main pivot group must be within specifications. Always check the pivot group for excessive wear before doing any blade maintenance.

The main pivot group consists of main bearings and thrust washers. The main bearings act as a wear surface between the jaw bore and the main pin. The inner thrust washers act as a wear surface between the upper and lower jaw halves. The outer thrust washers are located between the jaw set and the attachment stick.

When the main pivot components are excessively worn, there will be sideplay in the main pivot group. Sideplay is when the upper jaw can move from side to side in relation to the lower jaw. When sideplay is present, adjusting the blade gaps will be ineffective. Use these steps to check for sideplay in your jawset:

CAUTION

Wear proper safety equipment including eye protection and gloves when performing this procedure.

1. With the jawset fully installed in the Universal Processor, retract the attachment cylinders to fully open the jaws. Lower the attachment so the lower jaw is on the ground and shut off the base machine. Make sure the attachment is secure and will not drop.
2. Use a pry bar between the upper and lower jaws in the main pivot area on each side to see if the upper jaw can be moved back and forth in relation to the lower jaw.

If sideplay or looseness is visible, it may be necessary to replace the main pivot group components. Contact your LaBounty dealer or the LaBounty Customer Service Department for assistance with this maintenance.

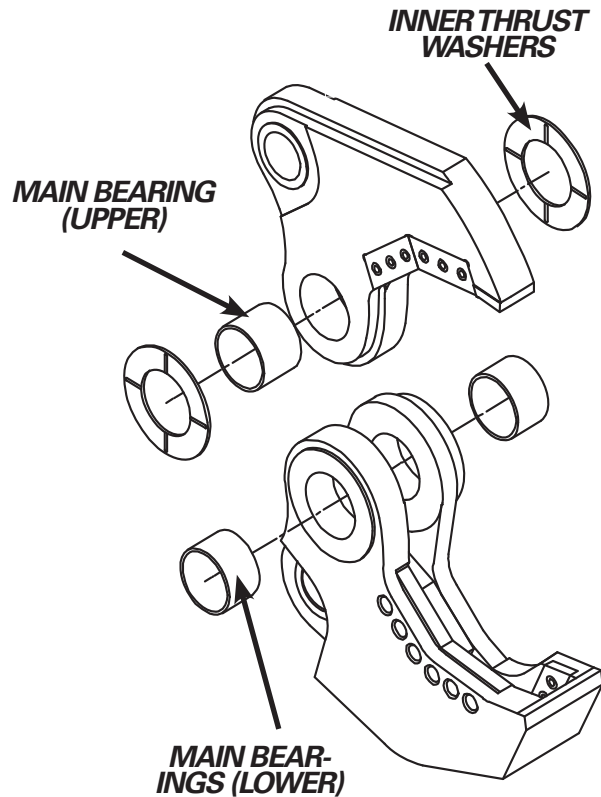


FIGURE 7-33

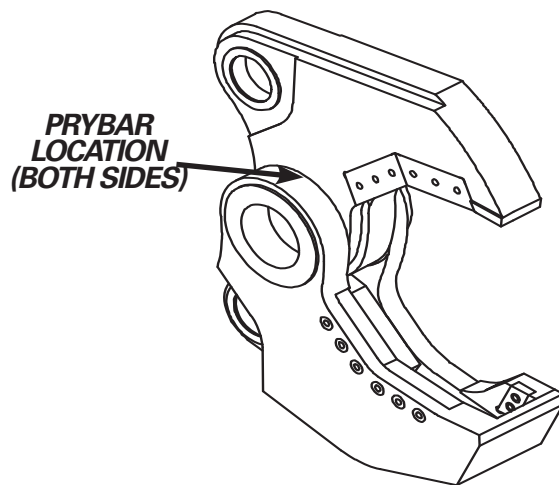


FIGURE 7-34

UNIVERSAL PROCESSORS

BLADE REMOVAL

Safe and proper removal of blades from their blade seats is necessary when performing various types of maintenance on the shear. To ensure your safety and to avoid damaging the attachment, always use the following procedure when removing a cutting blade or guide blade from its seat.

1. Loosen the blade bolts one blade at a time. Make sure the blade is adequately supported so it will not drop and cause injury when the blade comes loose from its seat.
2. Lightly tap on the blade face in several places with a soft-faced hammer. This will sometimes loosen a slightly jammed blade.
3. If the blade is jammed in the seat and is difficult to dislodge, take a soft metal punch or drift pin and insert it in a blade bolt hole from the back side (nut side, see Figure 7-35). Place the punch at an angle against the inside countersink of the blade and strike the punch with a hammer or mallet.
4. If this method fails to dislodge the blade, drive wedges between the blade and the back of the blade seat as shown. Start with small wedges and increase the size as the opening grows.

CAUTION

Safety equipment, including eye protection, hard hat, steel toe shoes, gloves, and hearing protection, should be worn at all times when viewing, operating, or maintaining the attachment to prevent injury.

WARNING

Never strike against a hardened blade with a hardened steel tool of any kind. The blade may chip and cause severe injury.

NOTICE

One method of preventing a blade from dropping is to leave at least two blade bolts installed with the nuts loosely threaded. When the blade becomes dislodged, the bolts will keep the blade from falling and causing injury or damage. If the blade does not come out easily, continue with step 2.

NOTICE

*Never drive wedges between the blade and the **BOTTOM** of the blade seat. This can cause damage to the shear blade seat which will cause future problems with jamming or stuck blades. Wedges may only be used between the blade and the **BACK** of the blade seat.*

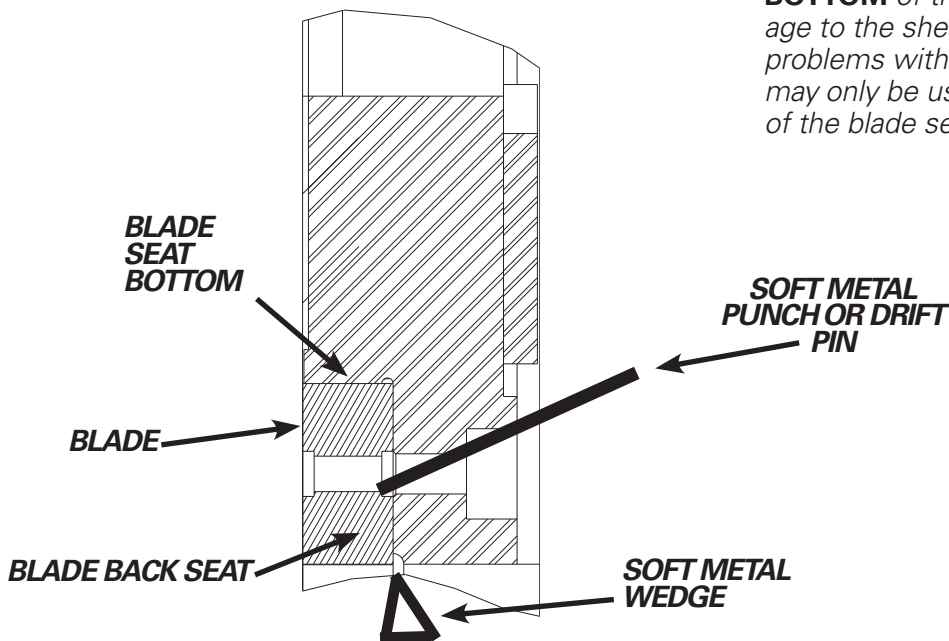


FIGURE 7-35

GUIDE BLADE SHIMMING AND ROTATION

Guide blade shimming keeps the upper jaw properly supported during use and must be checked daily.

1. With the jaws partially closed so the front wear plate is beginning to bypass into the lower shear, check the gap between the front wear plate on the upper shear and the top edge of the guide blade. Cycle the upper jaw into the lower and check in several spots. Shim to the smallest gap. This gap should not exceed 0.030" (0.76 mm). See Figure 7-36.
2. Shims have been provided for shimming out the guide blade. When all of these provided shims have been placed between the guide blade and seat and the gap again exceeds 0.030" (0.76 mm), the guide blade can then be turned end for end and reshimmied for proper gap. When all shims have been used again the guide blade is worn out and must be replaced.
3. If a new guide blade is installed and fully shimmed and the gap still exceeds 0.030" (0.76 mm), the front wear plate must be replaced. Refer to the procedure for replacing the front wear plate later in this chapter.

BLADE ROTATION

New blades in proper adjustment will increase the cutting performance of the shear. Proper rotation of blades will provide optimum use and the most performance from the shear. Recommended blade rotation is after approximately 80 hours of use, depending on the material being processed, this interval may vary.

When processing thin materials blade rotation and shimming is of greater importance than when processing larger materials. It may be necessary to shorten blade rotation intervals when processing thin or non-ferrous materials.

When processing large materials frequent blade rotation will extend the life of the blades, however maintaining the close tolerance blade gap is not as important. Never operate a shear when the blades have rounded to a ¼" (6.4 mm) radius or more. Maintaining the guide blade gap is very important at all times, regardless of the material being cut.



Protective gloves must be worn at all times during blade maintenance.

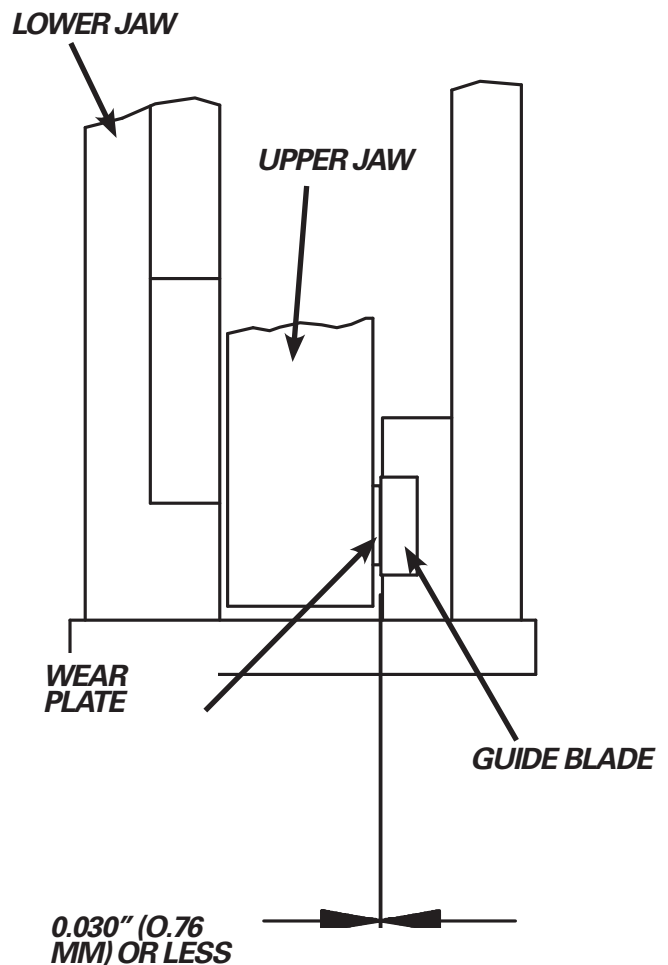


FIGURE 7-36

UNIVERSAL PROCESSORS

BLADE ROTATION CONTINUED

1. Remove each blade and grind all rough edges from it. Clean out the blade seat.
2. If a blade adjustment plate (in lower jaw only) is loose, remove it, clean out the blade seat and reinstall the adjustment plate in the same position. Blade adjustment plates are machined to fit in one blade seat only.
3. **For parallelogram blades:** The first and third times the blades are rotated, each blade should be turned end for end and reinstalled in the same blade seat. The second time the blades are rotated, the blades will change positions. The upper primary blade and lower secondary blade should swap positions and the upper secondary blade and the lower primary blade should swap positions (Figure 7-37). **For rectangular blades (UP 90 only):** The first and third times the blades are rotated, each blade should be turned end for end and reinstalled in the same blade seat. The second time the blades are rotated, each blade should be flipped over.
4. When the blades have been used on all four edges and edges are $\frac{1}{4}$ " (6.4 mm) radius or more, it will be necessary to replace the blades.

Remember, with damaged or badly worn blades, cutting ability decreases tremendously and it may eventually cause structural damage to the shear. This condition also causes the shear and base machine hydraulic systems to work harder, resulting in premature wear.

CAUTION

An approved respirator and gloves must be worn when grinding blades.

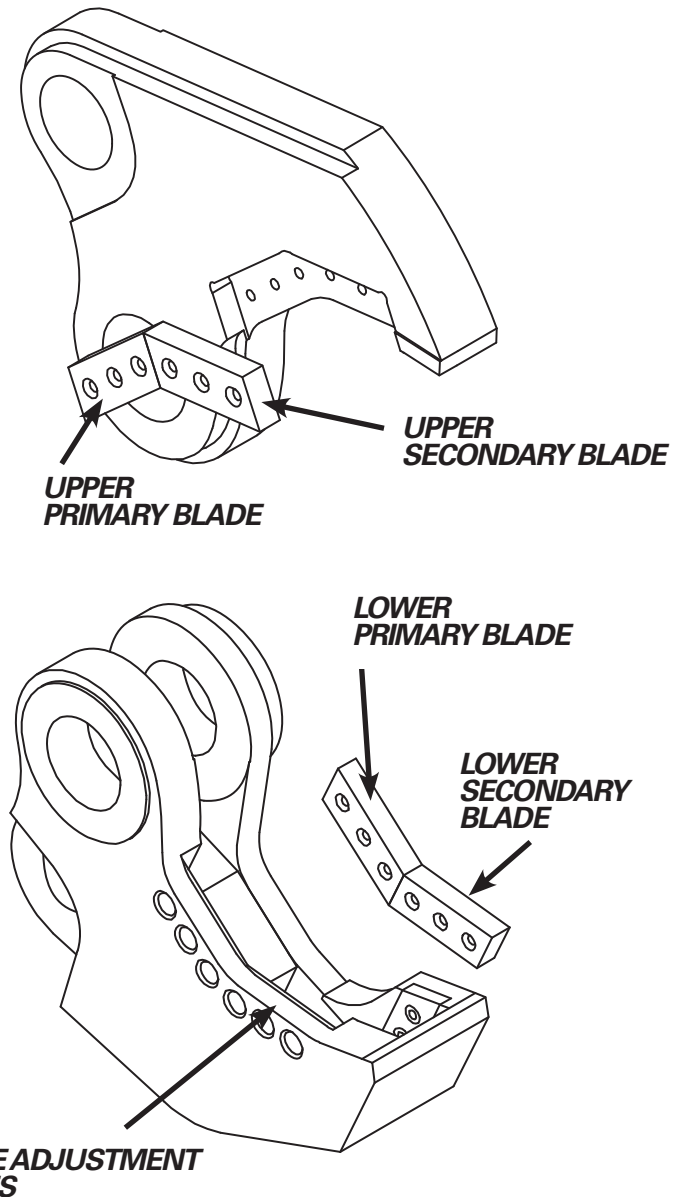


FIGURE 7-37

BLADE SHIMMING

Blade rotation is recommended every eighty hours of operation for even blade wear. This makes blade shimming possible. After rotating the blades, it may be necessary to shim the lower blades to tighten the blade gap. The proper blade gap depends on the type of material being processed with the shear jaws. A large blade gap from 0.030" to 0.060" (0.76 to 1.50 mm) may be acceptable when processing large structural members or concrete. A smaller blade gap of 0.030" (0.76 mm) or less is necessary when processing thin materials, such as sheet metal. If material is not jamming in the jaws and the blade gap is less than 0.060" (1.50 mm), shimming is not necessary. The maximum allowable blade gap is always 0.060" (1.50 mm). Follow the steps below to check the blade gap and shim, if necessary.

1. To check for blade gap, cycle the jaws closed so the secondary blades in the upper and lower start to bypass. Using a feeler gauge between the upper and lower blades, check the blade gap and record it.
2. Cycle the jaws closed so the secondary blades start to bypass at the apex (see Figure 7-38). Check the gap at this point using a feeler gauge and record this measurement also. If the blades have been rotated properly, the gap in the secondary blades should be fairly even for the entire span of the blades.
3. Subtract the desired blade gap from the actual blade gap that was just recorded. This will determine the amount of shims to use.
4. Shim only the lower blades. It is recommended that the blades with the least amount of wear be installed in the upper jaw, when possible. Never shim the lower blades out more than 0.125" (3 mm) total. This can cause structural damage to the jaws and jeopardize the warranty.
5. To install the shims, loosen the blade bolts and slide the shim(s) between the existing blade adjustment plate and the blade to be shimmed. Retorque the blade bolts to specifications. If the existing blade bolts have been retorqued more than once, they must be replaced with new bolts of the same type.
6. Cycle the jaws slowly and check that the gap is not too tight in the throat area, and then recheck tolerances.

Regular blade rotation and shimming will provide maximum shearing efficiency and blade life. Remember, if the blades are not rotated every 80 hours, shimming may not be possible because of uneven wear on the blades.

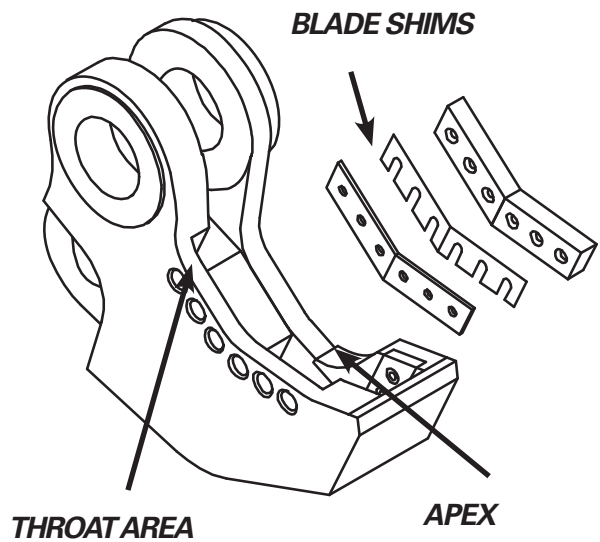


FIGURE 7-38

WARNING

Stand clear before moving the jaws. Do not check blade gaps with the feeler gauge while the jaws are moving.

NOTICE

Before checking the gap or shimming the blades, use the instructions from earlier in this chapter to make sure the main pivot group is within wear specifications.

UNIVERSAL PROCESSORS

GENERAL BUILD UP AND HARDSURFACING

See page 7-30 for additional important information. Proper build up and hardsurfacing requires inspection according to the inspection scheduled for each jaw type. If the jaws are in a severe application, the interval for maintenance may need to be shortened. Excessive hardsurfacing can damage the jaws and affect the performance. Allow the hardsurfacing to wear down, but not completely away, before hardsurfacing again. Never apply more than two layers of hardsurfacing. The quality and attention to detail in welding can significantly affect the life of the jaws. LaBounty strongly recommends that only certified welders perform this procedure.

Strict adherence to the welding rod manufacturer's handling and storage instructions is essential. Electrodes exposed to the atmosphere for more than four hours must not be used; the moisture absorbed by the electrode covering will change the mechanical properties of the weld. This can cause cracks and porosity in the weld or adjacent base metal.

LaBounty recommends that AWS E7018 rod or equivalent is used for build up. After vigorously peening each pass, the hardsurfacing is placed directly on top of the E7018 beads. The E7018 becomes the bonding or underlayment for the hardsurfacing. This will help reduce the chances of having the hardsurfacing material crack.

LaBounty recommends using Amalloy 814H rod or equivalent for hardsurfacing. Do not use stainless hardsurface rod. For LaBounty applications it is too brittle and cracks, weakening the base metal.

NOTICE

It is recommended that build-up and hardsurfacing be performed at the end of the work day to allow adequate time to cool.

GENERAL PROCEDURE

1. Clean all dirt and grease from the area to be built up.
2. Remove the worn hardsurfacing by grinding to the base metal. **DO NOT** build up on top of any hardsurface material.
3. Preheat the surrounding area to at least 200°F (100°C) to remove moisture. Preheat the area to be built up to 300- 400°F (150- 200°C). Use a temperature stick to verify that this temperature is maintained throughout the welding process. Temperatures in excess of 450°F (230°C) may harm parent metal.
4. Build up and restore any worn or damaged surfaces with E7018 (or equivalent). Each pass must be peened vigorously to relieve stress and remove slag.
5. Hardsurface as instructed in this manual. It is not necessary to cover the entire surface with hardsurfacing to be effective. Vigorously peen the hardsurfacing to stress relieve and work harden the material.
6. Post heat to 300- 400°F (150- 200°C). Again, **DO NOT** exceed 450°F (230°C). Cover with a heat blanket and allow to cool slowly to the ambient temperature. Never operate an attachment immediately following welding repairs without allowing it to cool properly.

UPPER PIERCING TIP BUILD UP AND HARDSURFACING

For maximum efficiency, the piercing tip should be checked daily. If the tip is badly worn, it is best to replace it. However, if the wear is not severe, build up and hardsurface may be a good alternative. Blade maintenance must be performed before any piercing tip build up or hardsurfacing is done. It is recommended that piercing tip maintenance be done at the end of the working day to allow adequate cooling time before putting the shear back into service.

1. To check for wear, close the shear jaws so the piercing tip is just entering into the lower jaw (see Figure 7-39). The piercing tip should fit squarely into the lower jaw. To determine how much build-up is required, place a straightedge along the cutting blades and extend beyond the tip, or use the upper template supplied by LaBounty (Figure 7-40). There will be a gap indicating how much build-up is required (see Figure 7-41).

2. Clean all dirt and grease from area to be built up.

3. Preheat the surrounding area to at least 200° F (100° C) to remove moisture. Preheat the area to be built-up to 300°- 400° F (150°- 200° C). Use a temperature stick to test the area frequently, as overheating can harm the shear. The maximum heat is 450° F (230° C).

4. Apply AWS E7018 welding rod to build up the worn area. Each pass must be peened vigorously to relieve stress and remove slag.

5. To hardsurface the build up just completed, use Amalloy 814H or equivalent and apply single passes, side by side. No more than two layers of this rod should be applied.

6. When build up and hardsurfacing are complete, grind weld smooth and square with wear plate and cutting blades. After welding and grinding have been completed, peen the welded area until it is shiny or until the peener can no longer dent the weld (typically 5 to 10 minutes each side). This will work harden the welded area.

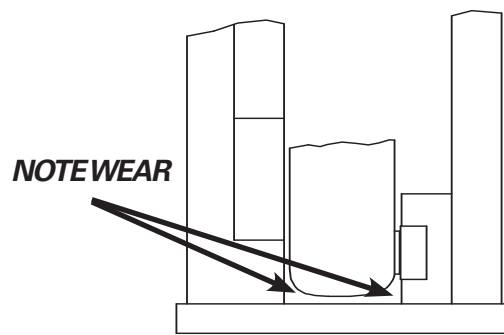


FIGURE 7-39

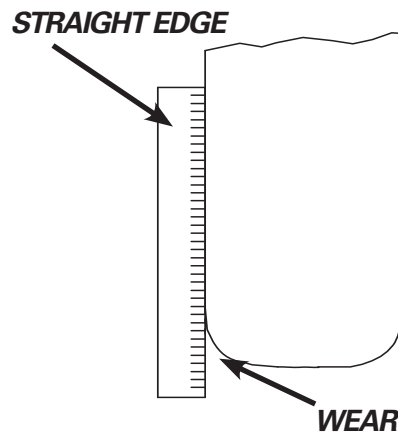


FIGURE 7-40

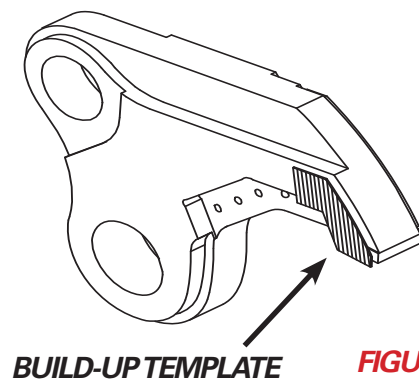


FIGURE 7-41

NOTICE

Check temperature during this procedure. maintain 300°- 400° F (150° - 200° C). Do not exceed 450° F (230°).

UNIVERSAL PROCESSORS

UPPER SHEAR BUILD UP AND HARDSURFACING

All upper piercing tip and lower piercing area maintenance must be performed before any upper shear build up and hardsurfacing is done. It is recommended that this maintenance be done at the end of the working day to allow adequate cooling time before putting the shear back into service.

1. For maximum efficiency, the upper should be checked for wear regularly. All edges should be kept square with the blades and piercing tip.
2. Clean all dirt and grease from area to be built up.
3. Remove all existing hardsurfacing by grinding down to the base metal before beginning build up and hardsurfacing procedures.
4. To determine how much build up is required on the front of the upper shear, place a straightedge along cutting blades and the newly maintained or replaced piercing tip. There will be a gap indicating how much build-up is required (see Figure 7-42).
5. Preheat the surrounding area to at least 200° F (100° C) to remove moisture. Preheat the area to be built up to 300°- 400° F (150°- 200° C). Use a temperature stick to test the area frequently, as overheating can harm the jaws. The maximum temperature is 450° F (230° C).
6. For build up, apply AWS E7018 welding rod. Each pass must be peened vigorously to relieve weld stress and remove slag. Grind all edges to 90°.
7. To hardsurface this area, beginning above the piercing tip to approximately half way up the front of the upper shear, apply single passes of AWS E7018 build up in a diamond pattern of approximately 1 ½" (38 mm) to establish the hardsurface pattern (see Figure 7-43). This will serve as an underlayment for the hardsurface rod. **DO NOT** apply hardsurface directly to the parent material. Apply a bead of Amalloy 814H rod or equivalent on top of each of the underlayment beads. It is important to use an air operated slag peener on each pass of weld to relieve stress.

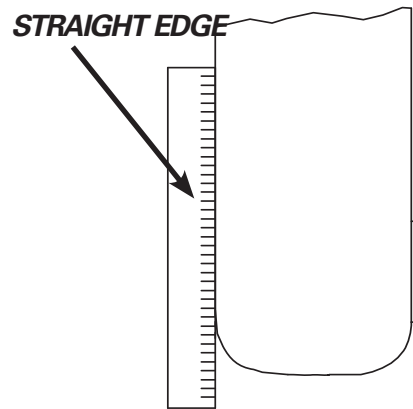


FIGURE 7-42

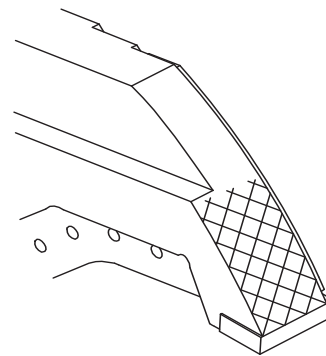


FIGURE 7-43

NOTICE

Check temperature during this procedure. maintain 300°- 400° F (150° - 200° C). Do not exceed 450° F (230°).

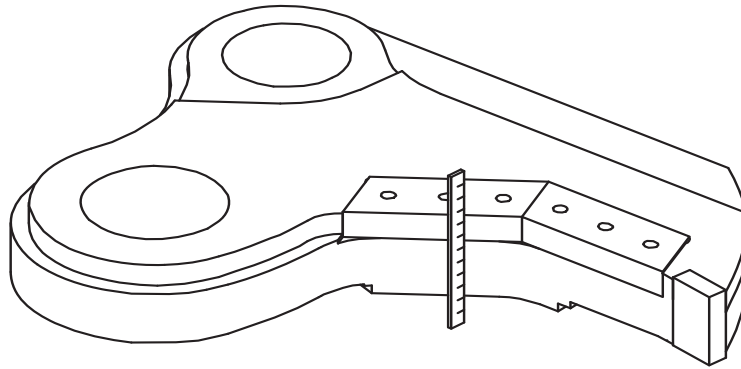


FIGURE 7-44

8. To determine how much build up is required along the blade seats, place a square or straight edge across the blades. Repeat steps 3 and 4 to build up this area flush with the blade (see Figure 7-44).

9. To hardsurface the area, from behind the piercing tip to approximately the midpoint to the primary blade, apply three or four beads of AWS E7018 in single passes running the length of the jaw to establish the hardsurface pattern (see Figure 7-45). This will serve as an underlayment for the hardsurface rod. **DO NOT** apply hardsurface directly to the parent material. Apply a bead of Amalloy 814H rod or equivalent on top of each of the underlayment beads. It is important to use an air operated slag peener on each pass of weld to relieve stress.

10. Hardsurface should end approximately at the midpoint of the primary blade. Stagger the ends of the welds. **DO NOT** end welds within 1" (25 mm) of bolt holes. **DO NOT** undercut the ends of the weld beads with the grinder. Taper ends of welds into the base metal with grind marks going with the grain of the base material (in line with the upper shear).

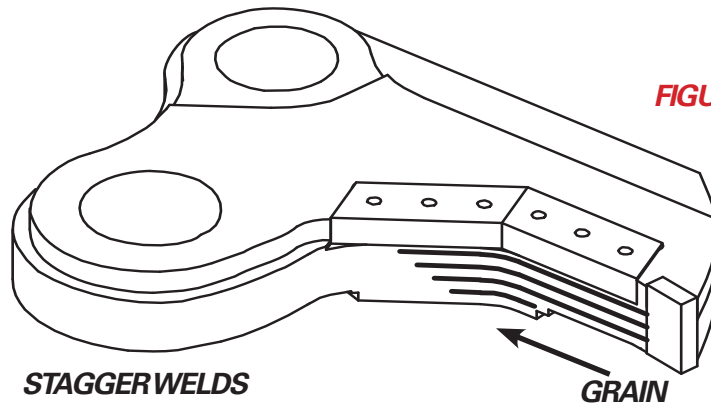


FIGURE 7-45

STAGGER WELDS

GRAIN

WARNING

When welding on the upper jaw, the upper jaw MUST be grounded.

UNIVERSAL PROCESSORS

REPLACING PIERCING TIP

If the piercing tip has been neglected and the profile is badly worn, it is advisable to install a new one.

1. Preheat the tip and surrounding area to 300°-400° F (150°- 200° C). Use a temperature stick to test the area frequently, as overheating can harm the jaws. The maximum temperature is 450° F (230° C). Temperature/melt sticks are available from LaBounty.

2. Air-arc the old tip to remove it. Be sure to remove the old tip completely. Please note that a notch or seat for the tip is present in the upper jaw.

3. To completely prepare the surface for the new tip, the upper must be chamfered as shown (see Figure 7-46). The chamfer size should be approximately one half the thickness of the tip.

4. Place the new tip into the seat. Use a straight-edge to position the tip before tacking it into place. Place the straightedge against the face of the secondary blade and maintain the alignment to the side edge of the replaceable tip (see Figure 7-47).

5. Move tip squarely against edge, make sure it is level, then tack firmly in place.

6. Check tip profile with the LaBounty supplied template (see Figure 7-48).

NOTICE

Before installing the new piercing tip, grind the area flat and smooth and remove carbon residue from the air-arc.

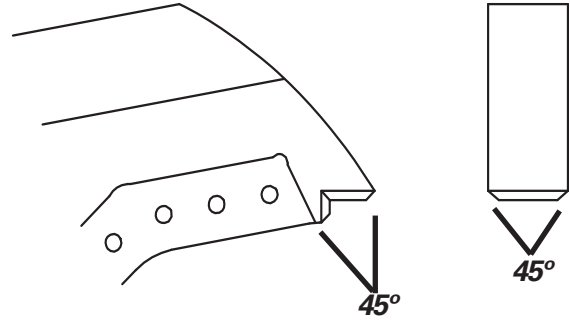


FIGURE 7-46

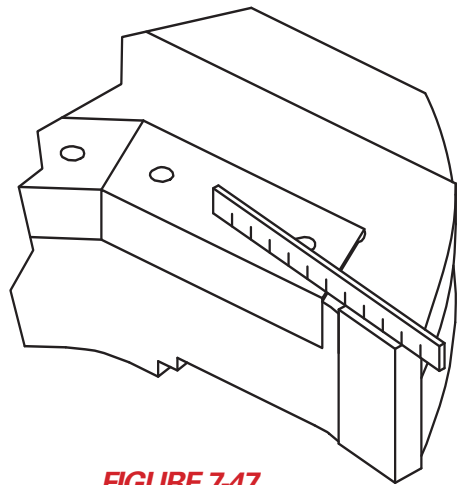


FIGURE 7-47

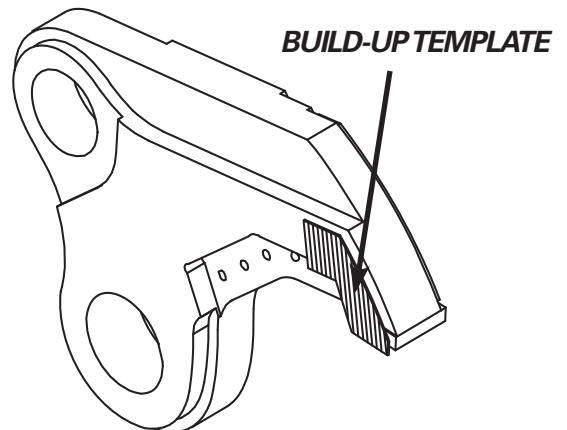


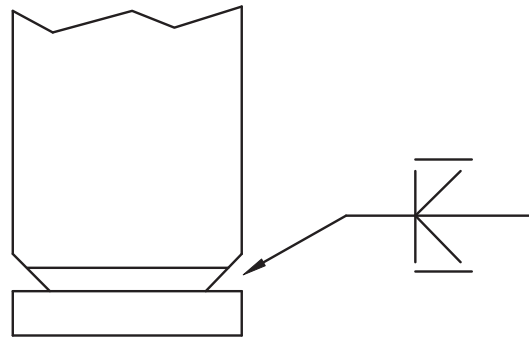
FIGURE 7-48

REPLACING PIERCING TIP CONTINUED

6. Cycle the upper jaw into the lower jaw to check the clearance of the new tip. If clearance is correct, proceed with the following steps. If not, determine where the interference is and adjust the position of the tip accordingly.
7. Preheat the upper and the surrounding area to 300 - 400° F (150 - 200° C). Again, never exceed 450° F (230° C).
8. Use AWS E7018 weld rod and fill the chamfered areas with multiple passes. Do the sides first and stress relieve each pass by peening.
9. A weld is required on both sides of tip (see Figure 7-49).
10. Weld the back and front to the upper, following the same procedure (see Figure 7-50).
11. When all welding is complete, grind the welds flush. The weld on the side opposite the blades should be ground flush with the front wear plate.

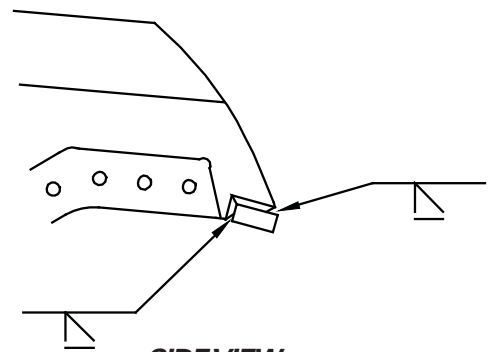
NOTICE

If the front wear plate needs to be replaced, it is suggested that the piercing tip be replaced also.



FRONT VIEW

FIGURE 7-49



SIDE VIEW

FIGURE 7-50

UNIVERSAL PROCESSORS

FRONT WEAR PLATE REPLACEMENT

1. To remove the old wear plate, first preheat it and the surrounding area to 300- 400°F (150 - 200°C). **DO NOT** exceed 450°F (230°C) (use temperature stick). Air-arc the old wear plate to remove it completely. Please note that a machined area for the wear plate is present in the upper.
2. Before installing the new wear plate, make sure the area is flat and smooth with all carbon residue removed.
3. Place the new wear plate into the machined area existing on the upper. Position the new wear plate so there is approximately $\frac{1}{2}$ " (12.7 mm) gap between the wear plate and the piercing tip, and equal distances on the other sides of the seat. Clamp the wear plate into the proper position and tack it in place.
4. Keep the area heated to 300- 400°F (150- 200°C). **DO NOT** exceed 450°F (230°C).
5. Use AWS E7018 rod to fill the area between the wear plate and the piercing tip. Then weld an approximate $\frac{1}{2}$ " (13 mm) fillet on all remaining sides around the wear plate. Stress relieve each pass by peening.
6. When welding is complete, grind off welds flush with wear plate and piercing tip.
7. Check the gap again and shim the guide blade accordingly.

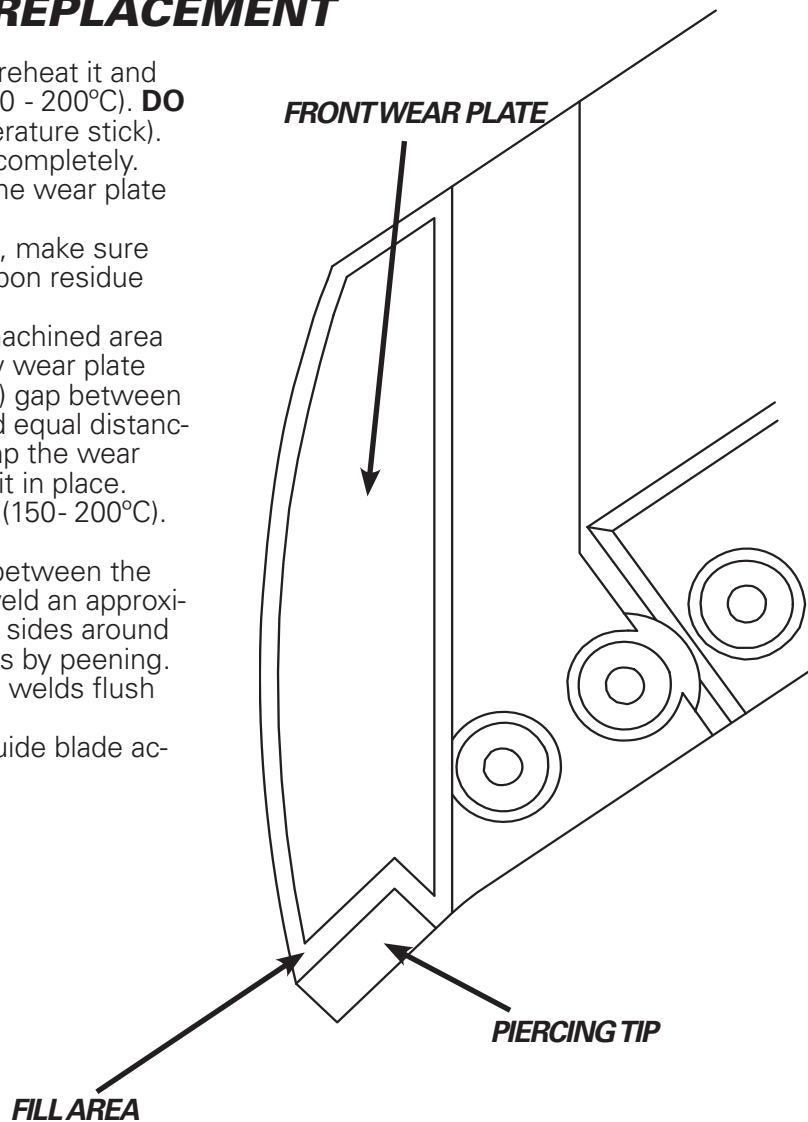


FIGURE 7-51

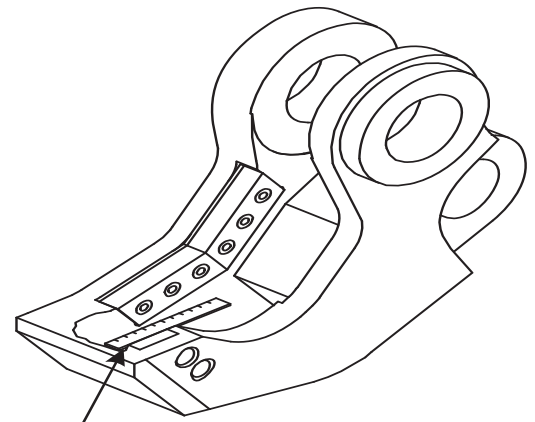
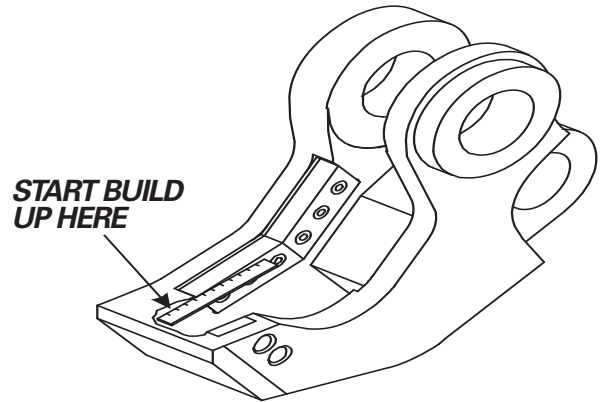
LOWER PIERCING AREA BUILD UP AND HARDSURFACING

In order to perform maintenance on the lower piercing area, all blade maintenance and piercing tip maintenance must be completed. It is necessary to maintain the lower portion of the shear regularly by the following process.

1. Place the shear in a horizontal position and block it up about 18" (0.5 m) high, or preferred working height.
2. Determine the amount of build up and hardsurfacing required. There are two ways to do this. Use a straight edge on the inside of the shear blades and guide blade (see Figure 7-52), or use the lower profile build-up template supplied by LaBounty (see Figure 7-53).
3. Clean all dirt and grease from area to be built up.
4. Remove any existing hardsurface material down to base metal by grinding.
5. Preheat the surrounding area to at least 200°F (100°C) to remove moisture. Preheat the area to be built up to 300- 400°F (150- 200°C). Use a temperature stick to test the area frequently, as overheating can harm the jaws. Maximum heat is 450°F (230°C). Temperature/melt sticks are available from LaBounty.
6. For build up, start inside the lower in front of the cutting blade (see upper illustration in Figure 7-52). Use AWS E7018 to make single passes side by side until the area is covered. Repeat the process on the guide blade side (see lower illustration in Figure 7-52) and inside the nose plate. Peen each pass to relieve stress and remove slag.

NOTICE

Check temperature during this procedure. maintain 300°- 400° F (150° - 200° C). Do not exceed 450° F (230°).



FINISH HERE

FIGURE 7-52

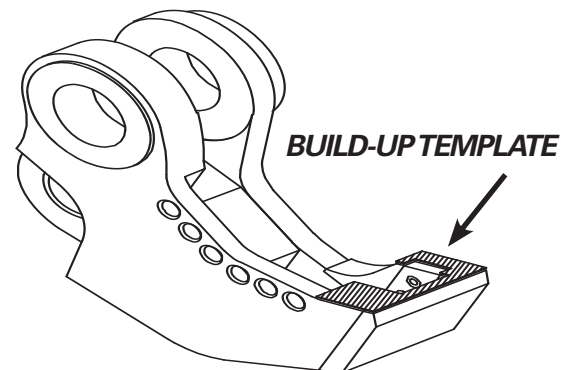


FIGURE 7-53

UNIVERSAL PROCESSORS

LOWER PIERCING AREA BUILD UP AND HARDSURFACING

continued

7. To hardsurface the build up just completed, we recommend using Amalloy 814H or equivalent. Start approximately 2" - 3" (50- 75 mm) down from the top edge of the lower. Apply single passes, side by side, running the length of the shear on each side and across the inside of the nose plate (see Figure 7-54). Peen each pass. No more than two layers of this rod should be used.

8. Hardsurface the top side of the lower 1½" - 2" (38 mm - 50 mm) wide (see Figure 7-55) using the same preheating, welding and peening procedure. Be sure to weld with the grain of the steel.

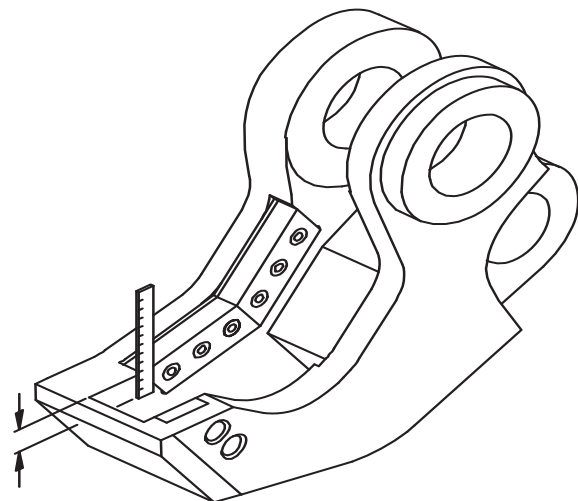
9. Grind the lower jaw to a sharp edge flush with the cutting blades and guide blade by using a straightedge across the blades. After welding and grinding has been completed, peen the welded area until it is shiny or until the peener cannot dent the weld anymore (typically 5 to 10 minutes). This will work harden the welded area.

10. Be sure to cover the lower with a heat blanket when procedure is complete to allow it to cool slowly to the ambient temperature.

The hardsurfaced area acts like an extension of the blades. Following these procedures will make cutting easier and prolong the life of the cutting edges and guide blade.

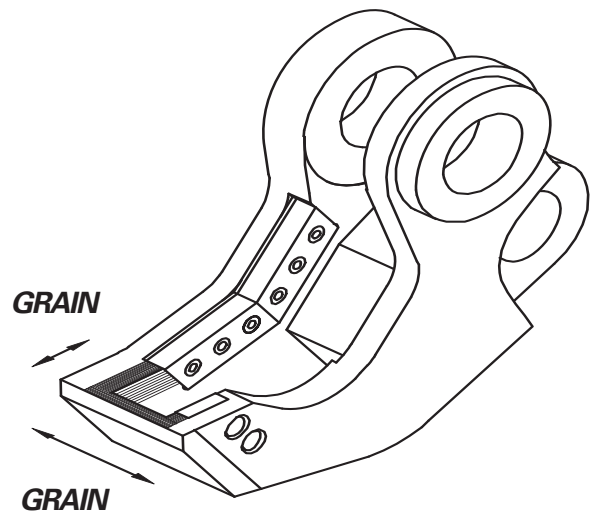
NOTICE

It is important to use an air-operated slag peener on each pass of weld to relieve stress. Grind off in line with cutting edges.



2 TO 3"
APPROX.

FIGURE 7-54



GRAIN

FIGURE 7-55

LOWER SHEAR BUILD UP AND HARDSURFACING

All piercing tip and lower piercing tip seat maintenance must be performed before any lower shear build up and hardsurfacing is done. It is necessary that the lower portion of the shear be maintained routinely by the following process:

1. Place the lower jaw in a horizontal position and block it up about 18" (0.5 m) high, or preferred working height.
2. Clean all dirt and grease from area to be built up.
3. Remove any existing hardsurface material down to base metal by grinding.
4. Use a straight edge or the lower profile template supplied by LaBounty to determine how much build up is required on the nose plate (see Figure 7-56). Use a square or straight edge, as on the upper shear, to determine build-up requirements on the top side of the lower shear.
5. Preheat the surrounding area to at least 200° F (100° C) to remove moisture. Preheat the area to be built up to 300- 400° F (150- 200° C). Use a temperature stick to test the area frequently, as overheating can harm the jaws. The maximum temperature is 450° F (230° C).

NOTICE

Check temperature during this procedure. maintain 300°- 400° F (150° - 200° C). Do not exceed 450° F (230°).

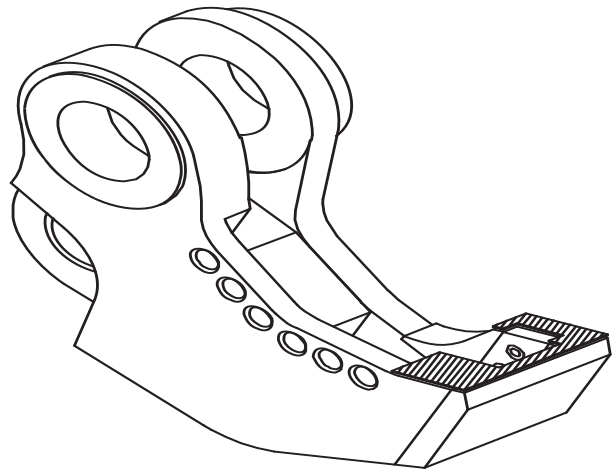
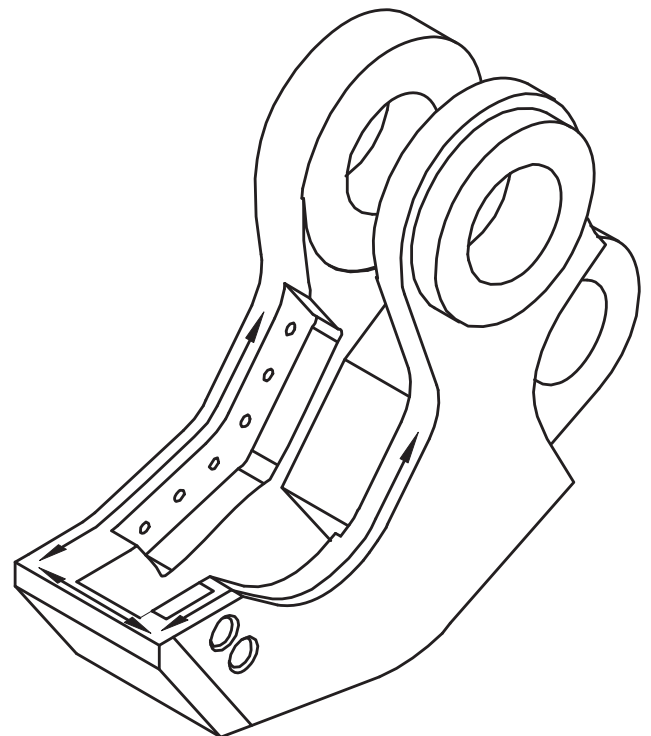


FIGURE 7-56



ARROWS SHOW GRAIN DIRECTION

FIGURE 7-57

UNIVERSAL PROCESSORS

LOWER SHEAR BUILD UP AND HARDSURFACING continued

7. To hardsurface the build up just completed, apply three or four passes of AWS E7018 build up running the length of the shear and across the nose plate to establish the hardsurface pattern (see figure 7-58). This will serve as an underlayment for the hardsurface rod. **DO NOT** apply hardsurface directly to the parent material. Apply Amalloy 814H rod or equivalent on top of each of the underlayment beads. It is important to use an air operated slag peener on each pass of weld to relieve stress. No more than two layers of this rod should be used.

8. The hardsurface should end approximately at the midpoint of the primary blade (see figure 7-58). Stagger the ends of the welds. Do not end welds within 1" (25 mm) of bolt holes. Do not undercut the ends of the weld with the grinder. Taper ends of welds down to the base material with grind marks going with the grain.

9. To hardsurface the front and sides of the nose plate, establish a diamond pattern of approximately 1½" (38 mm) (see figure 7-59). Again, use the build-up rod to lay down the pattern and use the hardsurface rod on top of it as in step 7.

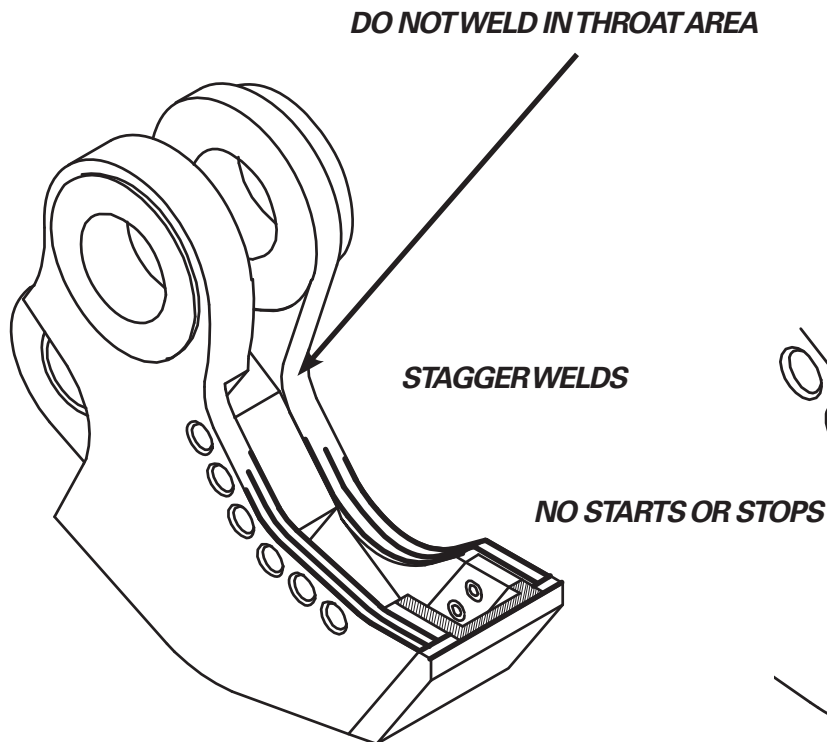


FIGURE 7-58

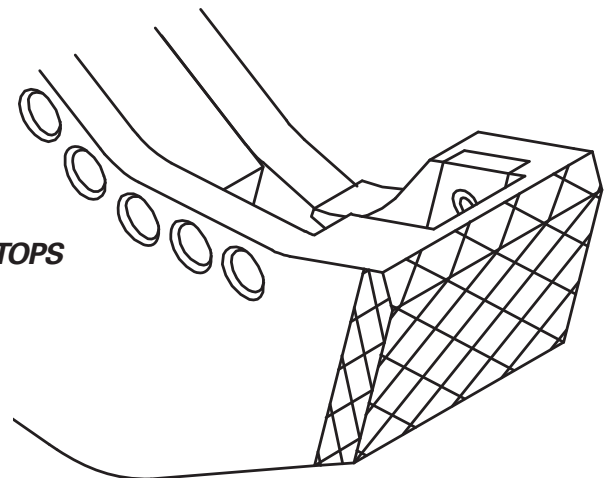


FIGURE 7-59

SWIFT-LOCK BUILD UP TEMPLATE PART NUMBERS

UP MODEL	PART NUMBER	DESCRIPTION	QTY
15	149538	Template	1
	149117	Build-up Template	1
20	157499	Template	1
	149117	Build-up Template	1
25	174835	Template	1
	149117	Build-up Template	1
30	164947	Template	1
	149117	Build-up Template	1
45	160259	Template	1
	160884	Build-up Template	1
75	161433	Template	1
	162210	Build-up Template	1

LIMITED WARRANTY

New Attachment

Stanley LaBounty warrants its manufactured products against deficiency in material or workmanship for a period of 12 months from the date of first use, rental or sale, or 1500 hours of operation, whichever occurs first.

Limitations

- Remanufactured or used product or service repair are not warranted under this Limited Warranty.
- Product that is damaged by alteration, improper maintenance, unauthorized service, abuse, misuse, or contamination by the base machine is not warranted.
- This Limited Warranty is the exclusive warranty. Stanley LaBounty makes no representations, expressed or implied, of merchantability or fitness for a particular purpose.
- Agents of Stanley LaBounty have no authority to make representations beyond those contained herein.

Exclusive Remedy

The exclusive remedy for a product Stanley LaBounty determines deficient in material or workmanship is repair or replacement at Stanley LaBounty's option. The following procedure governs a repair or replacement warranty claim:

1. All warranty claims require a claim number provided by Stanley LaBounty Service Department.
2. A factory-issued Return Material Authorization tag (RMA) must accompany returned product.
3. Returned product found deficient by Stanley LaBounty will be replaced or repaired without charge FOB Distributor/Customer or will be credited to account balance.
4. Authorized repair can occur at the Stanley LaBounty factory or authorized Stanley LaBounty Dealer. Labor for warranty repair will be paid under a formula determined by Stanley LaBounty.

Stanley LaBounty is not liable for incidental or consequential costs or losses incurred by the product, purchaser or user.

Limited Warranty

To validate the Limited Warranty, a completed warranty certificate and delivery inspection report must be returned to Stanley LaBounty. Prohibited operation and/or unauthorized adjustment or assembly will void this Limited Warranty. See the Operation, Maintenance and Safety Manual.

Contact Information

Contact your Stanley LaBounty Dealer or Stanley LaBounty regarding warranty questions. All requests for information, service or spare parts should include model and serial numbers. For the nearest Stanley LaBounty dealer contact:

Stanley LaBounty
1538 Highway 2
Two Harbors, MN 55616-8015 USA
Phone: (218) 834-2123 or (800) 522-5059
FAX: (218) 834-3879
E-mail: labounty@stanleyworks.com
Website: www.stanleyhydraulic.com



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