

# **Tree Shear**

For

# **Skid Steer Loaders**

Operator's Manual
Set-Up Assembly
Maintenance
Parts Information



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### REFERENCE INFORMATION

| Write the serial number for your attachment in the spaces below. Always refer to this serial number when calling for service or parts. |
|--|
| Serial Number  |
| OUR ATTACHMENT DEALER  |
| ADDRESS:   |
| PHONE:   |
| CONTACT:   |

**NOTE:** Erskine Attachments LLC reserves the right to make improvements in design or changes in specifications at any time without notice and without incurring any obligations to install them on units previously sold.

### **SAFETY**

DO NOT use or perform maintenance on this machine until this manual has been read and understood. In addition, read the Operation and Maintenance Manual(s) pertaining to the attachment and the attachment carrier ("Loader").

The user is responsible for inspecting the machine daily, and for having parts repaired or replaced when continued use of the machine would cause damage, excessive wear to other parts or make the machine unsafe for continued operation.

If an operating procedure, tool device, maintenance or work method not specifically recommended is used, you must satisfy yourself that it is safe for you and others. You must also ensure that the attachment will not be damaged or made unsafe by the procedures you choose.

Erskine Attachments LLC cannot anticipate every possible circumstance that might involve potential hazard. The safety messages found in this manual and on the machine are therefore not all inclusive.

The signal words **CAUTION**, **WARNING**, or **DANGER** are used to indicate hazards.

▲ CAUTION Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

▲ WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

▲ DANGER Indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury.

The word **IMPORTANT** is used in the text when immediate damage will occur due to improper technique or operation.

The word **NOTE** is used to convey information that is out of context with the manual text; special information such as specifications, techniques, reference information, and other information of a supplementary nature.

# Improper operation can cause serious injury or death.

### **Pre-operation**

- This attachment is designed for shearing tree trunks or limbs 14" or less in diameter.
   NEVER use this machine for any other purpose.
- To protect the operator, the loader must be fitted with approved Forestry Door, Forestry Kit, and Level II Falling Object Protective Structure (FOPS) Kit.
- Read the operator's manual for the "Skid Steer Loader." NEVER allow untrained people to operate.
- Operating instructions must be given to everyone before operating this attachment and at least once a year thereafter in accordance with OSHA regulations.
- NEVER exceed the maximum recommended input power or speed specifications for the attachment. Over-powering or over-speeding the attachment may cause personal injury and/or machine damage.
- Keep all shields, guards, and covers in place.
- Do not modify equipment or add attachments that are not approved by Erskine Attachments LLC.
- Use adequate safety warning lights and devices as required by local regulations. Obey all local laws and regulations regarding machine operation on public property.

### Operation

- Hydraulic connections may be hot after use. Use gloves if connecting or disconnecting after use.
- Check and be sure all operating controls are in neutral before starting the engine.
- Keep people away from loader and attachment and discharge when in use. This attachment can drop trees and limbs in surprising directions.

### **Operation (continued)**

- NEVER operate near embankments or terrain that is so steep that rollover could occur. If trees must be cut in areas with side hills, care must be taken to avoid tipping during operation.
- Always stay in the operator position when using the attachment.
- Before leaving the operators position, disengage hydraulic drive, lower the attachment to rest flat on the ground, stop engine, set park brake, and wait for all motion to stop.
- NEVER place hands in the discharge area or clear debris while engine is running.

### **Avoid High Pressure Fluids Hazard**



- Escaping fluid under pressure can penetrate the skin causing serious injury.
- Avoid the hazard by relieving the pressure before disconnecting hydraulic lines.
- Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks. Wear protective gloves and safety glasses or goggles when servicing or performing maintenance on hydraulic systems.
- If an accident occurs, see a doctor immediately.
   Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

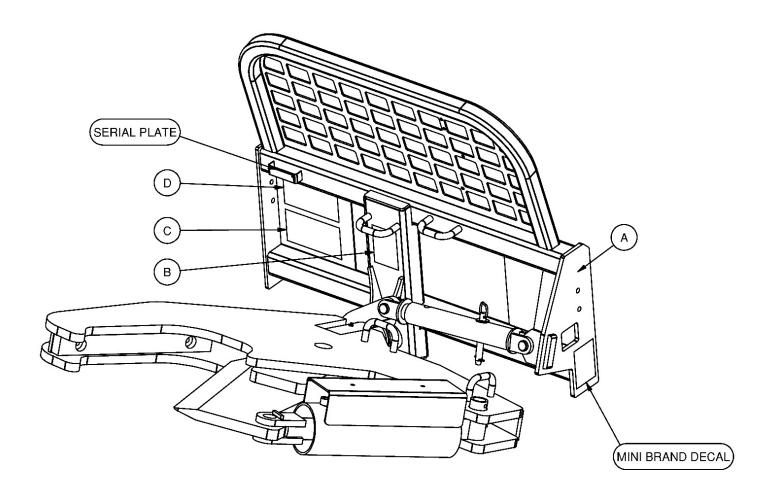
### Maintenance

- NEVER make adjustments, lubricate, clean, or perform any service on the machine while it is in operation.
- Make sure the attachment is serviced on a daily basis. Improper maintenance can cause serious injury or death in addition to damage to the attachment and/or your equipment.

# SERIAL NUMBER AND SAFETY DECAL LOCATIONS

### **Serial Number Location:**

It is important to refer to the serial number of the attachment when making repairs or ordering parts. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use different procedures in doing a specific operation.







- DO NOT USE PARTS OF YOUR BODY TO CHECK FOR LEAKS
- HIGH PRESSURE OIL CAN ENTER YOUR BLOODSTREAM
- SEEK MEDICAL ATTENTION IMMEDIATELY IF THIS HAPPENS
- READ OWNER'S MANUAL BEFORE OPERATING EQUIPMENT

200001

Part number: 200001

**Location:** On upper left endplate

Quantity: 1



### **WARNING**

Falling trees and limbs can cause serious injury or death.

Before using this attachment, make sure your machine has an approved:

- · Forestry Door,
- Forestry Kit, and
- Level II Falling Object Protective Structure (FOPS) Kit.

Do not modify. Replace if damaged. If you have questions about Forestry Doors, Forestry Kits, or Level II FOPS, contact your dealer. See operator's manual for more instructions.

Part number: 316796

**Location:** On lower front of mount plate

Quantity: 1





Part number: 203234

Location: On front of mount plate

Quantity: 1



### **WARNING**

To avoid serious injury or death, keep people away from loader and attachment when in use. This attachment can drop trees and limbs in unpredictable directions.



- Make sure there are no people, buildings, or other objects that could be in the fell zone when cutting trees or limbs.
- To avoid electric shock or electrocution, NEVER operate attachment near overhead power lines.

Always read manual before use.

316795

Part number: 316795

**Location:** On upper front of mount plate

Quantity: 1

**Mini Brand Decal** 

Location: On lower sides of frame

Quantity: 2

### **Safety Decals Locations:**

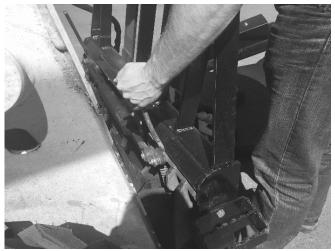
The locations of the safety decals are shown. If these decals are missing, damaged, or painted over they must be replaced. Call Erskine Attachments LLC (218-435-4045) for replacement decals.

### **USER'S MOUNTING INSTRUCTIONS**

After the initial set-up assembly is completed use the following procedure to mount the attachment to the loader for user operation.

▲ WARNING Coupler wedges or pins must extend through the holes in attachment. Levers must be fully down and locked. Failure to secure wedges or pins can allow attachment to come off and cause injury or death.





- 1. Use the step, safety treads, and grab handles to get on and off the loader and attachment.
- 2. Sitting in the operator's seat, lower seat bar and fasten the seat belt.
- 3. Drive the loader to the rear of the attachment. Put the loader quick attach coupler into the attachment mounting bracket.
- 4. Tilt the loader coupler backward a small amount until it is fully engaged in the attachment mounting bracket.
- 5. Stop the engine and engage the park brake.
- 6. Secure the coupler locking mechanism that attaches the attachment to the loader.

### **USER'S MOUNTING INSTRUCTIONS**

7. Connect the hydraulic quick couplers from the attachment to the loader.

**IMPORTANT:** Make sure the quick couplers are fully engaged. If the quick couplers do not fully engage, check to see that the couplers are the same size and brand. Do not force the quick couplers together.

**IMPORTANT:** Wipe the ends of the hydraulic quick couplers (both lead and loader) with a rag to remove any possible contamination. Contamination can cause hydraulic components to fail and <u>is not covered under</u> warranty.

NOTE: See the loader's operator's manual.

**NOTE:** Attachment is shipped with 8FJX (1/2" Female JIC Swivel) fittings on the ends of the lead hoses.

- 8. If the hydraulic rotate package is equipped, connect the attachment wire harness to the loader's wire harness receptacle.
- Make sure the hoses are properly routed to fit your specific loader. If the hoses are not routed correctly, hoses may get pinched or rub on tires. Be sure to check the hose routing through the <u>full range</u> of intended motion of the attachment <u>before</u> operating it.

More than one routing may be acceptable depending on the loader. Pick the routing that best suits your loader.

**IMPORTANT:** Proper hose routing is the responsibility of the owner and/or operator. Pinched or stretched hoses are not covered under warranty.

Mounting is now complete and you are ready to use the attachment. Use reverse order of above instructions to dismount the attachment from the loader.









Felling a Tree (Blade in Horizontal Position)

▲ WARNING

To avoid serious injury or death, keep people away from loader and attachment when in use. The attachment can drop trees and limbs in unpredictable directions. Make sure there are no people, power lines, buildings, or other objects that could be in the fell zone. NEVER cut trees that could fall onto these objects.

▲ WARNING To avoid electric shock or electrocution, never operate the Tree Shear near overhead power lines.

1. Select a tree 14" in diameter or less.

▲ WARNING To avoid injury or death, never shear a tree larger than 14" in diameter.

- 2. With the operator in the loader seat, seat belt fastened and seat bar lowered (if so equipped), start the engine.
- 3. Position the loader behind the tree so that the fell zone is to the right of the loader. While the attachment wedge pushes trees 90 degrees to the right of the cab, tree felling can be unpredictable. Consider factors like: lean of the tree, contact with other trees, bend, wind direction, branch arrangement, and snow.
- 4. Approach tree with the loader arms within 2 feet of the ground.

**★ WARNING** To avoid tipping, never shear more than 2 feet above the ground when felling a tree.

- 5. Open the blade on the attachment. Drive the loader forward to position the tree between the blade and the jaw.
- 6. Activate the hydraulics on the loader to close the blade on the attachment to shear the tree.
- 7. After tree has been fully sheared and has fallen to the ground, open the blade and back the loader away from the tree stump.
- 8. Always keep the attachment in a low position when moving from tree to tree.

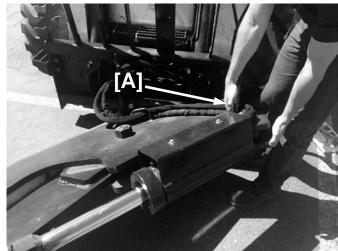
# Changing Blade from Horizontal to Vertical (Felling to Limbing)

- 1. Raise the loader's arms up enough for the blade/jaw assembly to be turned to the vertical position.
- 2. Close the blade on the shear.

**A WARNING** To avoid serious injury or death, NEVER change blade direction with the blade open on the shear.

- 3. Shut down the engine of the loader, set the parking brake, and exit the cab.
- 4. Remove the pin from the adjustable arm assembly.
- 5. Grab hold of handle [A] and lift. Rotate until blade/jaw assembly is in fully vertical position.
- 6. Install the pin into the adjustable arm assembly to lock the blade/jaw assembly into the vertical position.











**Limbing a Tree (Blade in Vertical Position)** 

A WARNING This attachment may not allow you to control the falling direction of limbs. Make sure there are no people, power lines, buildings, or other objects that could be in the fell zone. NEVER cut limbs that could fall onto these objects.

**A WARNING** To avoid electric shock or electrocution, never operate the Tree Shear near overhead power lines.

1. Select a limb 14" in diameter or less.

A WARNING To avoid injury or death, never shear a tree larger than 14" in diameter.

- 2. With the operator in the loader seat, seat belt fastened and seat bar lowered (if so equipped), start the engine.
- 3. With the attachment in the vertical position, drive the loader up to the tree.
- 4. Open the blade on the attachment. Drive the loader forward to position the tree limb between the blade and the jaw.
- Activate the hydraulics on the loader to close the blade on the attachment to shear the tree limb.
- 6. After the tree limb has been fully sheared and has fallen to the ground, open the blade and back the loader away from the tree.
- 7. Always keep the attachment in a low position when moving from tree to tree.

### **Cutting Trees to Size**

1. With the attachment in the vertical position, drive the loader perpendicular to the fallen tree.

**⚠ WARNING** To avoid injury or death, never shear a tree larger than 14" in diameter.

- 2. Open the blade on the attachment. Drive the loader forward to position the tree between the blade and the jaw.
- 3. Activate the hydraulics on the loader to close the blade on the attachment to shear the tree.
- After the tree limb has been fully sheared, open the blade and back the loader away from the tree. Reposition the loader and make other cuts as necessary.





### OPERATING TREE SHEAR WITH HYDRAULIC TILT FUNCTION



PUSH AND HOLD TO ENERGIZE DIVERTER



PUSH AND HOLD TO ENERGIZE DIVERTER (OPTIONAL PISTOL GRIP HARNESS SHOWN)



OPERATE AUXILIARY HYDRAULICS TO TILT

A tree shear with the hydraulic rotate option installed is equipped with an electrically actuated diverter valve. The valve can send oil to one of two paths. The primary (default) path is to the hydraulic cylinder that moves the blade. The secondary path is to the tilt cylinder.

**IMPORTANT:** Skid Steer Loader controls vary from machine to machine. Read the loader's operating instructions to become familiar with the loader control functions. Certain loaders may require a special harness jumper wire to operate correctly.

### To Operate Tilt:

- 1. Stop auxiliary hydraulic flow.
- 2. **Push and HOLD** the button that energizes the diverter valve. (usually on left handle)
- 3. Momentarily operate auxiliary hydraulic flow in forward or reverse direction to achieve desired tilt angle.
- 4. De-energize the diverter valve.
- 5. Resume normal operation.

**IMPORTANT:** Do not attempt to tilt while cutting a tree. Always stop hydraulic flow before operating tilt function.

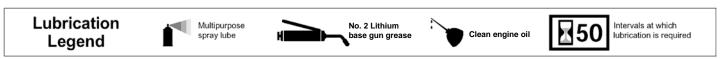
### **ROUTINE MAINTENANCE**

▲ WARNING Lower the attachment to the ground, shut down the engine, relieve the hydraulic pressure to the attachment, wait for all motion to stop, and set park brake before leaving the operator's seat to perform service of any kind.

It is the operator's responsibility to make daily inspections of the loader and attachment for damage, loose bolts, fluid leaks, or anything else that could cause a potential service or safety problem. Preventive maintenance is the easiest and least expensive type of maintenance.

**IMPORTANT:** Bolts and set screws can loosen after initial usage. After the first hour of operation check all bolts and set screws.

### LUBRICATION

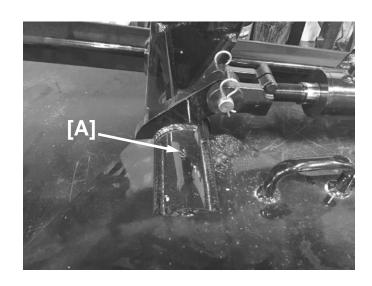


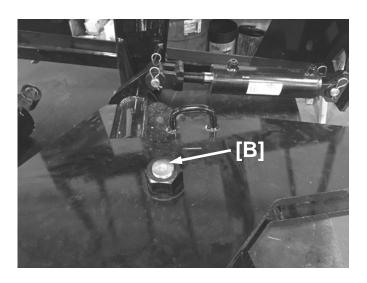
Use No. 2 lithium base gun grease when lubricating all the attachment grease fittings.

Grease the Jaw Pivot Bushing zerk [A] and the zerk on the Blade Pivot Pin [B] once after every 4 hours of operation.

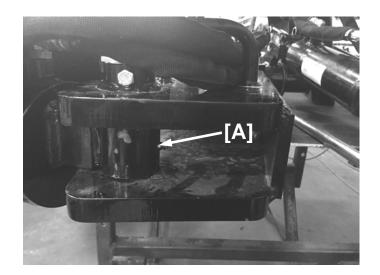


**IMPORTANT:** It is the responsibility of the owner/operator to make sure the attachment is serviced on a daily basis. Improper maintenance can cause extensive damage to the attachment and/or your equipment.





# **ROUTINE MAINTENANCE**



Grease the Cylinder Base Bushing zerk [A] and the zerk on the Cylinder Rod Pin [B] once after every 4 hours of operation.





### **SET-UP ASSEMBLY**

### **Wire Harness Installation**

**NOTE:** If the loader is equipped with an Attachment Control package, the appropriate harness should be installed from the factory.

If the attachment was ordered with the pistol grip control harness, follow these instructions:

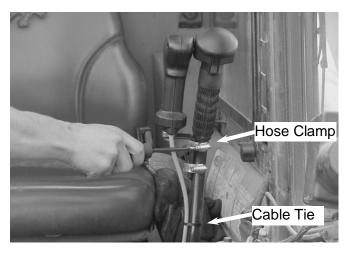
1. Install the control handle on either steering lever, whichever you prefer, with (2) hose clamps.

**IMPORTANT:** The control handle bracket can be positioned several different ways. We recommend it be positioned as shown.

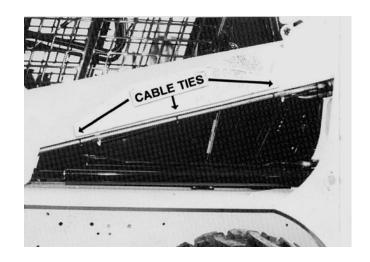
- 2. Put a cable tie around the wiring harness and the steering lever.
- 3. Install the wiring harness receptacle bracket on either the loader arm or near the hydraulic quick couplers.

**IMPORTANT:** It may be necessary to make an adapter bracket in order to attach the wire harness to the loader.

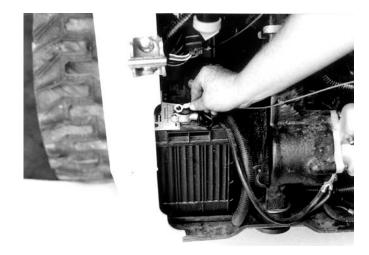
- 4. Route the wiring harness back along the tube lines on the loader arms and fasten with cable ties.
- 5. Open the rear door. Pull the excess wiring harness into the engine compartment.
- 6. Raise the operator cab. (See loader's operator's manual for the correct procedure.)







### **SET-UP ASSEMBLY**





 Connect the red fused wire to the positive battery terminal or to a suitable accessory wire with a minimum rating of 5 amps. Route the wiring along the loader main frame toward the front of the loader.

Connect the black wire from the harness to a frame ground.

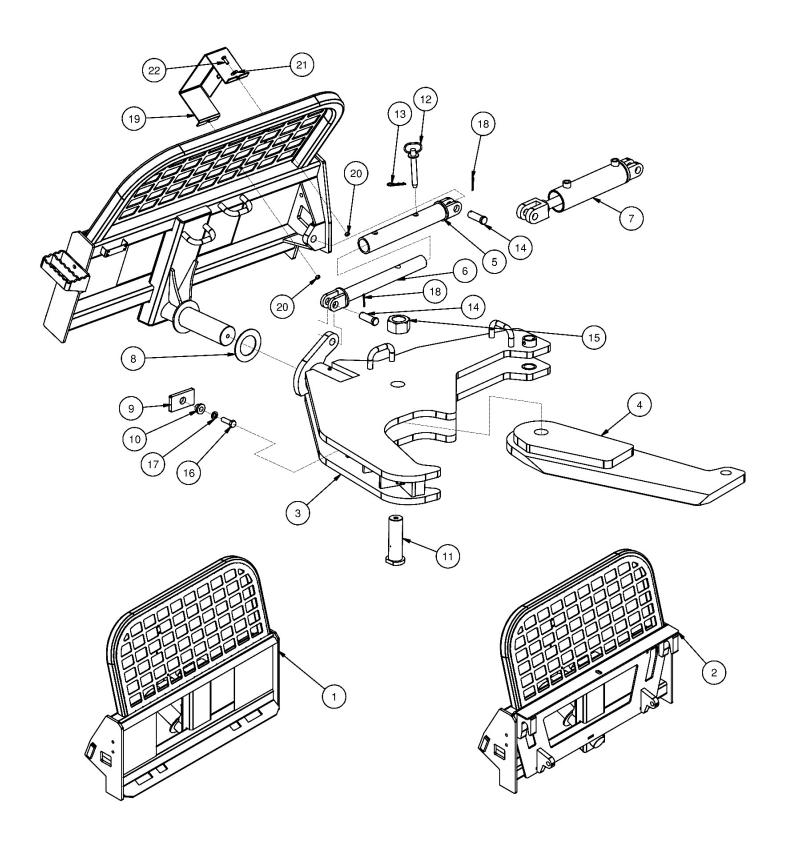
8. Fasten the control handle wiring harness connector to the main wiring harness connector.

**IMPORTANT:** Secure the wiring harness in place with plastic cable ties, making sure it is clear of extra hot areas or any moving parts on the engine or loader. Pinched, stretched, or melted wire harnesses are not covered under warranty.

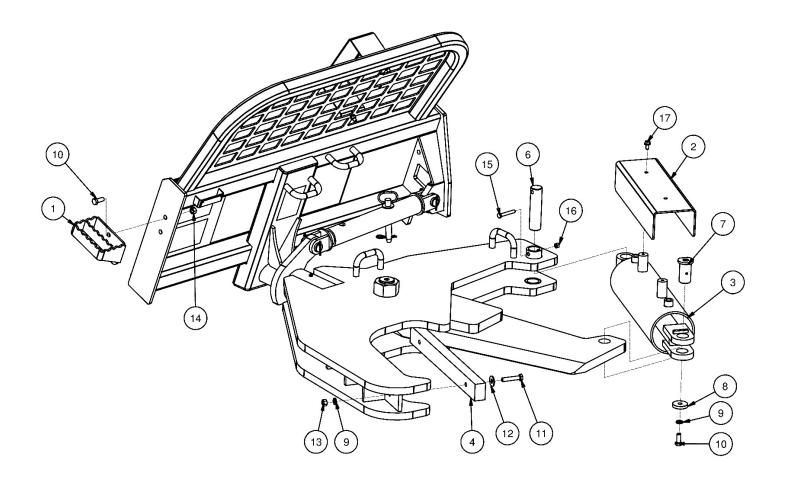
9. Lower the cab. (See loader's operator's manual for the correct procedure.)

**NOTE:** Be sure the control handle wiring harness is properly positioned as the cab is lowered.

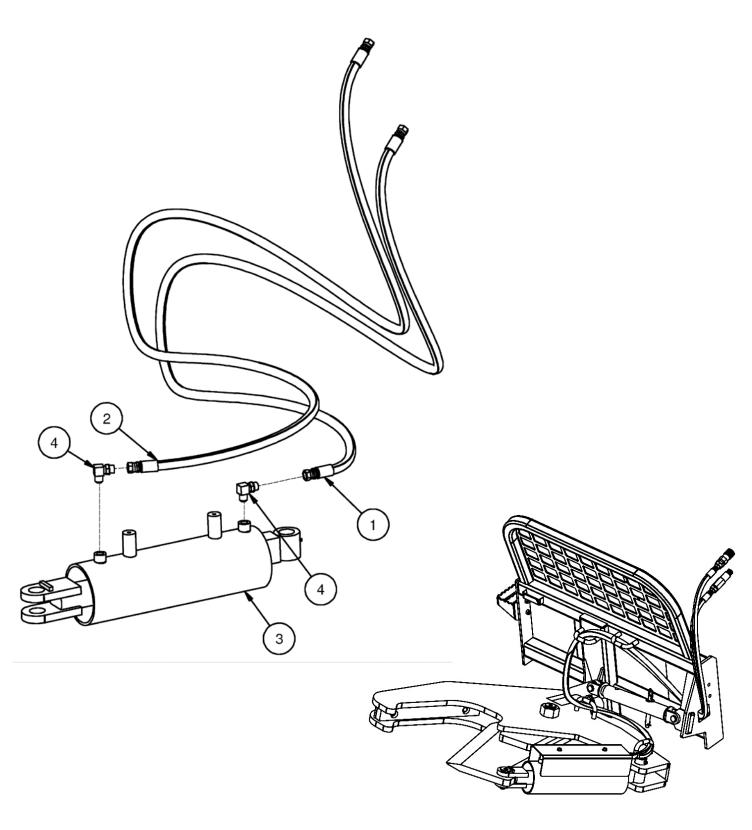
|      |     |          | THE STANDARD                   |                   |  |
|------|-----|----------|--------------------------------|-------------------|--|
| ITEM | QTY | PART NO. | PART NO. DESCRIPTION STOCK NO. |                   |  |
| 1    | 1   | 316745   | FRAME TREE SHEAR W/A PAINTED   | REPLACED 313275   |  |
|      | 1   | 313275   | FRAME TREE SHEAR W/A PAINTED   | OBSOLETE          |  |
| 2    | 1   | 422142   | FRAME TREE SHEAR EURO W/A      | REPLACED 422135   |  |
|      | 1   | 422135   | FRAME TREE SHEAR EURO W/A      | OBSOLETE          |  |
| 3    | 1   | 313276   | JAW TREE SHEAR W/A             |                   |  |
| 4    | 1   | 313277   | BLADE W/A                      |                   |  |
| 5    | 1   | 316720   | SUPPORT ADJ MANUAL ROTATE W/A  |                   |  |
| 6    | 1   | 316721   | SUPPORT W/H MANUAL ROTATE W/A  |                   |  |
| 7    | 1   | 203346   | CYLINDER 3 X 8 20.25 C-C       | HYD TILT OPT ONLY |  |
| 8    | 1   | 316728   | WASHER PLASTIC 3.06 X 5        |                   |  |
| 9    | 1   | 313299   | FLAT .5 X 2.44 X 4.5 W/ H PNT  |                   |  |
| 10   | 1   | 316731   | BUSH 1.5 X .69 X .81 Z         |                   |  |
| 11   | 1   | 313296   | PIN BLADE PIVOT                |                   |  |
| 12   | 1   | 300284   | PIN HITCH 3/4 X 5              |                   |  |
| 13   | 1   | 200064   | PIN CLIP #11 1/8 X 2 5/8       |                   |  |
| 14   | 2   | 316727   | PIN CLEVIS 1 X 2.75            |                   |  |
| 15   | 1   | 36483    | NUT HEX FULL                   | 2 NF GR 8         |  |
| 16   | 1   | 13311    | BOLT HEX                       | 5/8 X 2 NC GR 5   |  |
| 17   | 1   | 33630    | WASHER LOCK                    | 5/8"              |  |
| 18   | 2   | 65105    | PIN COTTER 5/32 X 1 1/2        |                   |  |
| 19   | 1   | 316735   | SHIELD VALVE PAINTED           | HYD TILT OPT ONLY |  |
| 20   | 2   | 37212    | NUT REV LOCK 3/8 NC GR 5       | HYD TILT OPT ONLY |  |
| 21   | 2   | 33008    | WASHER FLAT 3/8                | HYD TILT OPT ONLY |  |
| 22   | 2   | 13105    | BOLT HEX 3/8 X 1 NC GR 5       | HYD TILT OPT ONLY |  |



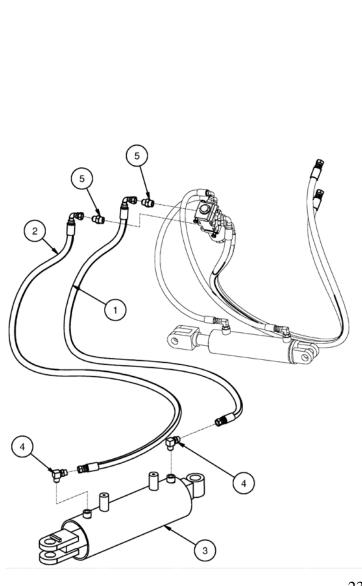
| ITEM | QTY | PART NO. | DESCRIPTION                       | STOCK NO.           |
|------|-----|----------|-----------------------------------|---------------------|
| 1    | 1   | 316420   | STEP BOLT ON W/A                  |                     |
| 2    | 1   | 316703   | SHIELD CYLINDER 5.75 X 18 PAINTED | (UNPAINTED 316702)  |
| 3    | 1   | 316725   | CYLINDER 5.5 X 14 C-B             |                     |
| 4    | 1   | 313298   | PLASTIC BLADE STOP                |                     |
| 6    | 1   | 313295   | PIN 1.50 X 5.875 Z W/H            |                     |
| 7    | 1   | 316732   | PIN 1.5 X 2.81 MACHINED Z         |                     |
| 8    | 1   | 313243   | WASHER 1/2 X 2 CYL ROD            |                     |
| 9    | 3   | 33626    | WASHER LOCK 1/2                   | 1/2"                |
| 10   | 3   | 13207    | BOLT HEX                          | 1/2 X 1-1/4 NC GR 5 |
| 11   | 2   | 13213    | BOLT HEX                          | 1/2 X 2-1/2 NC GR 5 |
| 12   | 2   | 33012    | WASHER FLAT                       | 1/2"                |
| 13   | 2   | 36110    | NUT HEX FULL                      | 1/2 NC              |
| 14   | 2   | 37214    | NUT HEX LOCK                      | 1/2 NC              |
| 15   | 1   | 13113    | BOLT HEX                          | 3/8 X 2-1/2 NC GR 5 |
| 16   | 1   | 37212    | NUT HEX LOCK                      | 3/8 NC              |
| 17   | 2   | 19929    | BOLT HEX FLANGED                  | 3/8 X 3/4 NC GR 5   |

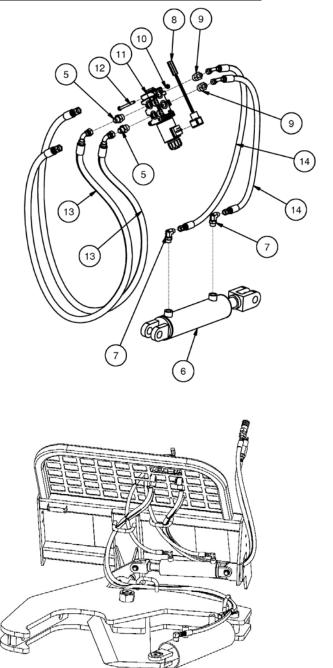


| ITEM | QTY | PART NO. | DESCRIPTION              | STOCK NO. |
|------|-----|----------|--------------------------|-----------|
| 1    | 1   | 316712   | HOSE 1/2 X 125 8FJX-8FJX | CYL BASE  |
| 2    | 1   | 316713   | HOSE 1/2 X 141 8FJX-8FJX | CYL ROD   |
| 3    | 1   | 316725   | CYLINDER 5.5 X 14 C-B    |           |
| 4    | 2   | 202037   | ADPT ELB 8MB-8MJ-90      |           |



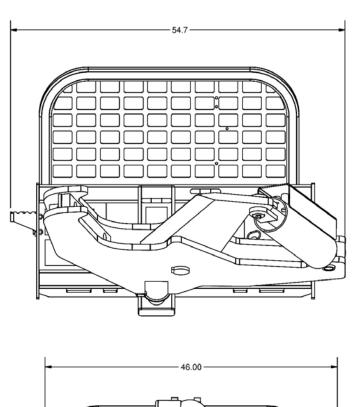
| ITEM | QTY | PART NO. | DESCRIPTION               | STOCK NO.              |
|------|-----|----------|---------------------------|------------------------|
| 1    | 1   | 316707   | HOSE 1/2 X 76 8FJX-8FJX90 | CYL BASE TO TOP PORT   |
| 2    | 1   | 316708   | HOSE 1/2 X 93 8FJX-8FJX90 | CYL ROD TO BOTTOM PORT |
| 3    | 1   | 316725   | CYLINDER 5.5 X 14 C-B     |                        |
| 4    | 2   | 202037   | ADPT ELB 8MB-8MJ-90       |                        |
| 5    | 4   | 201523   | ADPT STR 10MB-8MJ         |                        |
| 6    | 1   | 203346   | CYLINDER ASM 203346       |                        |
| 7    | 2   | 320089   | ADPT ELB 8MB-6MJ-90       |                        |
| 8    | 1   | 313468   | HRN ADPT METPAK TO DIN    |                        |
| 9    | 2   | 300903   | ADPT REST 10MB-6MJ-3/32   |                        |
| 10   | 2   | 37211    | NUT REV LOCK              | 5/16 NC                |
| 11   | 1   | 313467   | VALVE 6-WAY SELECT ELEC   |                        |
| 12   | 2   | 13066    | BOLT HEX                  | 5/16 X 3-1/4 NC GR 5   |
| 13   | 2   | 316710   | HOSE 1/2 X 88 8FJX-8FJX90 | LEAD HOSES             |
| 14   | 2   | 316709   | HOSE 3/8 X 34 6FJX-6FJX90 | TILT CYL               |

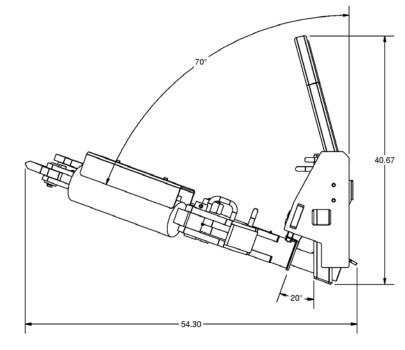


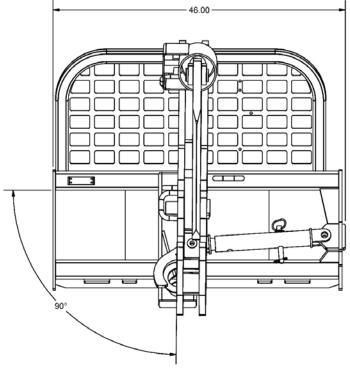


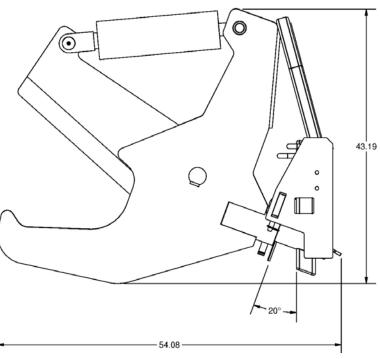
# **GENERAL SPECIFICATIONS**

| Model                       | TS       |
|-----------------------------|----------|
| Hydraulic Cylinder – PSI    | 3000     |
| Hydraulic Cylinder – Bore   | 5.5"     |
| Hydraulic Cylinder – Stroke | 14"      |
| Hydraulic Cylinder – Rod    | 2-1/2"   |
| Maximum Cutting Diameter    | 14"      |
| Overall Height              | 43"      |
| Overall Width               | 55"      |
| Operating Weight            | 980 lbs. |









# **BOLT TORQUE INFORMATION**

**Torque-Tension Relationships for SAE J429 Grade Bolts** 

| Nominal | Nominal SAE J429 Grade 2     |            |             | SAE J429 Grade 5        |           |            | SAE J429 Grade 8  |             |            |
|---------|------------------------------|------------|-------------|-------------------------|-----------|------------|-------------------|-------------|------------|
| Thread  | Clamp                        | Tightening | Torque      | Clamp Tightening Torque |           | Clamp      | Tightening Torque |             |            |
| Size    | Load (lbs)                   | K = .15    | K = .20     | Load (lbs)              | K = .15   | K = .20    | Load (lbs)        | K = .15     | K = .20    |
|         | Unified Coarse Thread Series |            |             |                         |           |            |                   |             |            |
| 1/4-20  | 1,300                        | 49 in-lbs  | 65 in-lbs   | 2,000                   | 75 in-lbs | 100 in-lbs | 2,850             | 107 in-lbs  | 143 in-lbs |
| 5/16-18 | 2,150                        | 101        | 134         | 3,350                   | 157       | 210        | 4700              | 220         | 305        |
| 3/8-16  | 3,200                        | 15 ft-lbs  | 20 ft-lbs   | 4,950                   | 23 ft-lbs | 31 ft-lbs  | 6,950             | 32.5 ft-lbs | 44 ft-lbs  |
| 7/16-14 | 4,400                        | 24         | 30          | 6,800                   | 37        | 50         | 9,600             | 53          | 70         |
| 1/2-13  | 5,850                        | 36.5       | 49          | 9,050                   | 57        | 75         | 12,800            | 80          | 107        |
| 9/16-12 | 7,500                        | 53         | 70          | 11,600                  | 82        | 109        | 16,400            | 115         | 154        |
| 5/8-11  | 9,300                        | 73         | 97          | 14,500                  | 113       | 151        | 20,300            | 159         | 211        |
| 3/4-10  | 13,800                       | 129        | 173         | 21,300                  | 200       | 266        | 30,100            | 282         | 376        |
| 7/8-9   | 11,425                       | 125        | 166         | 29,435                  | 321       | 430        | 41,550            | 454         | 606        |
| 1-8     | 15,000                       | 187.5      | 250         | 38,600                  | 482.5     | 640        | 54,540            | 680         | 900        |
|         |                              |            | Unified     | Fine Thread             | Series    |            |                   |             |            |
| 1/4-28  | 1,500                        | 55 in-lbs  | 75 in-lbs   | 2,300                   | 85 in-lbs | 115 in-lbs | 3,250             | 120 in-lbs  | 163 in-lbs |
| 5/16-24 | 2,400                        | 112        | 150         | 3,700                   | 173       | 230        | 5,200             | 245         | 325        |
| 3/8-24  | 3,600                        | 17 ft-lbs  | 22.5 ft-lbs | 5,600                   | 26 ft-lbs | 35 ft-lbs  | 7,900             | 37 ft-lbs   | 50 ft-lbs  |
| 7/16-20 | 4,900                        | 27         | 36          | 7,550                   | 42        | 55         | 10,700            | 59          | 78         |
| 1/2-20  | 6,600                        | 41         | 55          | 10,200                  | 64        | 85         | 14,400            | 90          | 120        |
| 9/16-18 | 8,400                        | 59         | 79          | 13,000                  | 92        | 122        | 18,300            | 129         | 172        |
| 5/8-18  | 10,600                       | 83         | 110         | 16,300                  | 128       | 170        | 23,000            | 180         | 240        |
| 3/4-16  | 15,400                       | 144        | 193         | 23,800                  | 223       | 298        | 33,600            | 315         | 420        |
| 7/8-14  | 12,610                       | 138        | 184         | 32,480                  | 355       | 473        | 45,855            | 500         | 668        |
| 1-12    | 16,410                       | 205        | 273         | 42,270                  | 528       | 704        | 59,670            | 745         | 995        |

Clamp load estimated as 75% of proof load for specified bolts.

Torque values for ¼ and 5/16 inch series are in inch-pounds. All other torque values are in foot-pounds.

Torque values calculated from formula T = KDF

where: K=0.15 for "lubricated" conditions K=0.20 for "dry" conditions

# **NOTES**



# **LIMITED WARRANTY**

Erskine Attachments LLC warrants each new machine manufactured by us to be free from defects in material and workmanship for a period of twenty-four (24) months from date of delivery to the original purchaser.

Our obligation under this warranty is to replace free of charge, at our factory or authorized dealership, any part proven defective within the stated warranty time limit.

All parts must be returned freight prepaid and adequately packaged to prevent damage in transit.

This warranty does not cover:

- New products which have been operated in excess of rated capacities or negligence
- 2. Misuse, abuse, accidents or damage due to improperly routed hoses
- 3. Machines which have been altered, modified or repaired in any manner not authorized by our company
- 4. Previously owned equipment
- Any ground engaging tools in which natural wear is involved, i.e. tooth tips, cutting teeth, etc
- 6. Normal maintenance
- Fork tines
- 8. Hydraulic motors that have been disassembled in any manor

In no event will the Sales Representative, Dealership, Erskine Attachments LLC, or any other company affiliated with it or them be liable for incidental or consequential damages or injuries, including but not limited to the loss of profit, rental or substitute equipment or other commercial loss. Purchaser's sole and exclusive remedy being as provided here in above.

Erskine Attachments LLC must receive immediate notification of defect and no allowance will be made for repairs without our consent or approval.

This warranty is in lieu of all other warranties, express or implied by law or otherwise, and there is no warranty of merchantability or fitness purpose.

No agent, employee, or representative of Erskine Attachments LLC has any authority to bind Erskine Attachments LLC to any warranty except as specifically set forth herein. Any of these limitations excluded by local law shall be deemed deleted from this warranty; all other terms apply.

This warranty may not be enlarged or modified in any manner except in writing signed by an executive officer of Erskine Attachments LLC to improve its products whenever it is possible and practical to do so. Erskine Attachments LLC reserves the right to make changes and or add improvements at any time without incurring any obligation to make such changes or add such improvements to products previously sold.

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