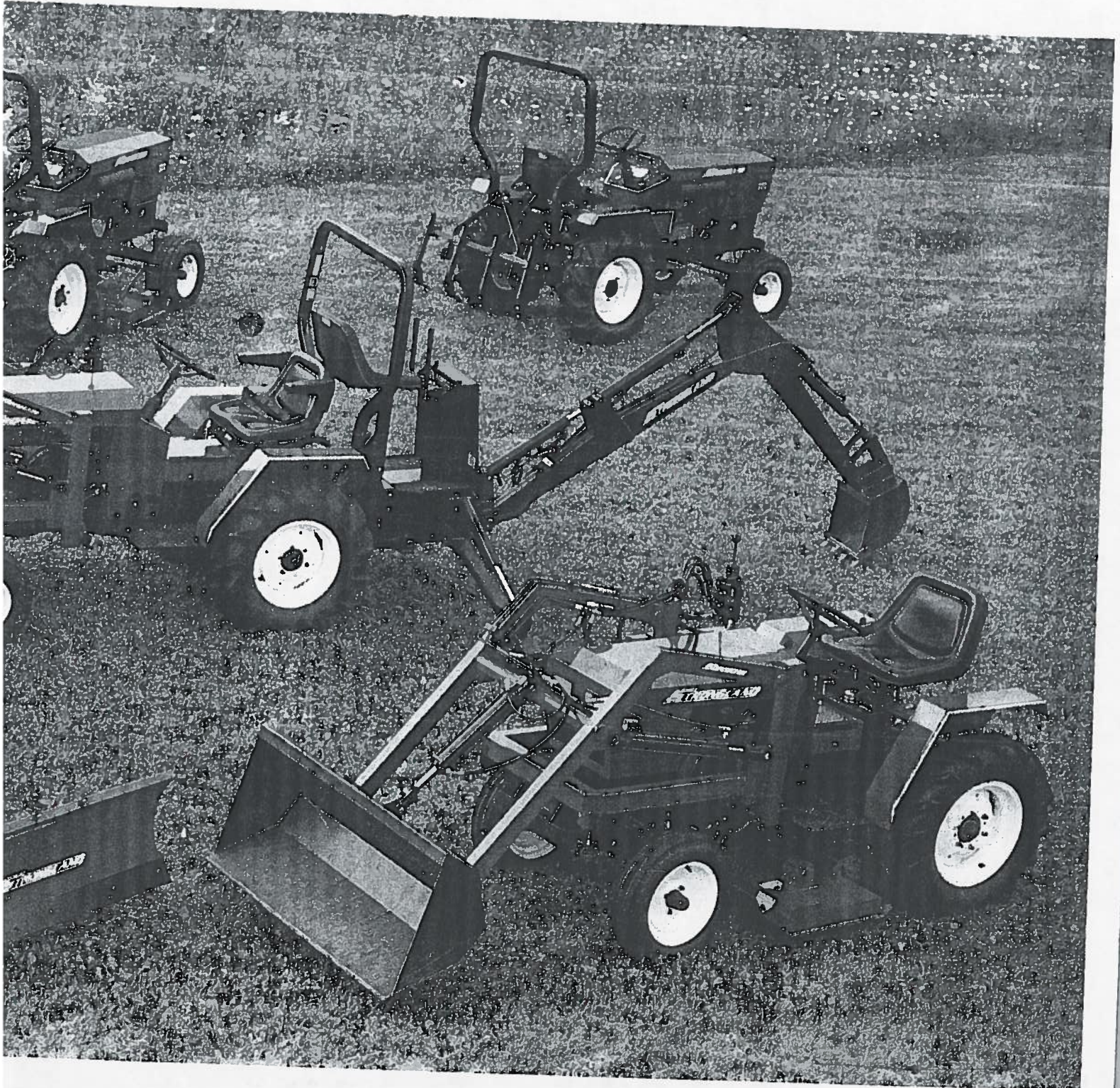


STRONGLAND™

MODEL 672 FRONT LOADER OWNERS MANUAL



OWNER'S MANUAL

STRONGLAND
Quick-Attach Front Loader

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DO NOT OPERATE YOUR LOADER UNTIL YOU DO THE FOLLOWING:

- Carefully read and understand this manual.
- Have your *STRONGLAND* Dealer complete and return the Warranty Registration Card that accompanies this manual.

Your Warranty Registration Card must be returned to Armstrong Tractor Company within ten days after the delivery of your loader for the warranty to remain valid. If you did not receive your Warranty Registration Card, please have your *STRONGLAND* Dealer obtain one for you. Additional warranty information may be found on page 2 of this manual. Please make sure that you fully understand the warranty.

▲ CAUTION ▲

The exclamation point alert symbol as shown above is used throughout this manual to bring your attention to information which may be critical to your own safety as well as the safety of your loader. Please make certain that you fully understand all information contained inside this manual and pay strict attention to information highlighted by the exclamation point alert symbols.

**DO NOT ALLOW ANYONE TO OPERATE THIS UNIT UNTIL THEY HAVE READ
THIS MANUAL AND UNDERSTAND IT FULLY.**

Limited Warranty

The Armstrong Tractor Company warrants to the original retail purchaser of the *STRONGLAND* loader that it will either repair or replace any part which proves upon inspection by Armstrong Tractor to have been defective within one year in residential service or 90 days in commercial service of the date of purchase. To verify the warranty period, purchaser should keep the sales receipt or other proof of purchase date. The purchaser shall be required to present the defective parts or equipment for examination at our factory or at the place of business of the *STRONGLAND* dealer from whom the loader was purchased. ***THIS WARRANTY IS EXPRESSLY MADE IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING SPECIFICALLY WITHOUT LIMITING THE GENERALITY THEREOF ANY IMPLIED WARRANTY OF MERCHANTABILITY, AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON OUR PART.***

This warranty shall not cover damage caused by accident, misuse or tampering with the product, and a charge will be made for such repairs. Warranty shall not apply to any part of the loader if it has been improperly installed, altered, repaired or misused in any way that in the opinion of Armstrong Tractor affects the reliability of or detracts from the performance of the loader. Neither does this warranty apply to any part of the loader if its serial number has been altered, defaced or removed; nor does it cover replacements or repairs necessitated by normal wear, loss or damage resulting from any cause beyond the control of Armstrong Tractor including, but not limited to, acts of God, acts of government, floods, fire, shortages of materials and labor difficulties.

Armstrong Tractor will not assume liability for any costs involving labor, altering of design or welding unless prior authorization is granted by Armstrong Tractor. No warranty shall be allowed as to the attachment of the loader to any equipment other than a *STRONGLAND* tractor.

Defects in components purchased by Armstrong Tractor as complete units for installation in or with the *STRONGLAND* loader will only be made good by Armstrong Tractor to the extent that the original manufacturer warrants them to Armstrong Tractor. Standard warranty on all purchased items is replacement only of defective parts upon inspection by the original manufacturer. Armstrong Tractor will not be liable for any operational delays or consequential damages under this warranty.

Armstrong Tractor neither assumes nor authorizes any person to assume for Armstrong Tractor any other obligation or liability in connection with the sale of this loader.

WARRANTY SERVICE

For warranty service, return your *STRONGLAND* Loader, together with proof of purchase date and serial number, to the *STRONGLAND* dealer from whom the loader was purchased or:

Armstrong Tractor Company,
Attn. Customer Service Dept.
One Parks Bend, Box 12
Vandergrift, PA 15690.

TRANSPORTATION OF YOUR *STRONGLAND* LOADER TO AND FROM THE LOCATION OF WARRANTY SERVICE SHALL BE AT YOUR SOLE EXPENSE AND RISK.

INTRODUCTION

Congratulations on your purchase of the *STRONGLAND* Series 600 Front Loader. It has been designed to tackle farming and landscaping jobs with industry leading power, versatility and performance. The Series 600 Loader continues in the *STRONGLAND* tradition of reliability, durability and ruggedness established by all *STRONGLAND* products.

The Series 600 Front Loader was designed to be compatible with the 72 and 74 Series *STRONGLAND* Tractors. The loader has a quick-attach feature that facilitates assembly for the operator.

In the event that you experience a mechanical problem, or if you have any questions concerning your loader, please contact your nearest *STRONGLAND* dealer. All *STRONGLAND* dealers have well trained technicians and the proper tools to service or repair this unit.

It is important that the operator of the loader read and retain this manual. The instructions will provide valuable information on the assembly, operation, maintenance and safety tips of this loader.

OWNER'S INFORMATION

This manual provides valuable information concerning the assembly, operation, maintenance and safety precautions of the Series 672 *STRONGLAND* Quick-Attach Front Loader. The loader has been designed to give you the long-lasting performance characteristic of all *STRONGLAND* products, but improper care and lack of maintenance will diminish the life of your loader. Therefore, it is imperative that any operator of the loader read and understand this manual. It is important that the operator understand basic maintenance of this equipment in order to prevent unnecessary malfunctions. Make certain that you keep this manual available for quick reference.

Your *STRONGLAND* dealer will help you with any questions you may have concerning your loader. In addition, your *STRONGLAND* dealer has well-trained technicians to help with the maintenance and repair of your loader.

Your *STRONGLAND* dealer carries a complete line of genuine *STRONGLAND* service parts. Be prepared to give your dealer the model and serial number of the tractor and loader when ordering parts. Locate these numbers now and record them below:

LOADER MODEL: _____

LOADER SERIAL NUMBER: _____

TRACTOR MODEL: _____

TRACTOR SERIAL NUMBER: _____

The Armstrong Tractor Company is continually striving to improve its products. We reserve the right to make improvements or changes when it becomes practical and possible to do so without incurring any obligation to make changes or improvements to the equipment previously sold.

OWNER'S ASSISTANCE

We at Armstrong Tractor Company and your local *Strongland* dealer want you to be completely satisfied with your investment. Your *Strongland* Dealer's Service Department will have the capacity to correct any problem that you may encounter with your loader. However, if a situation develops that is not being handled to your satisfaction, we suggest the following:

Contact the owner or general manager of the dealership, explain the problem and request assistance. When additional assistance is needed, your dealer has direct access to our offices.

If you cannot obtain satisfaction by doing this, contact the Customer Service Department at Armstrong Tractor Company and provide them with:

- Your name, address and telephone number
- Equipment model and serial number
- Dealership name and address
- Equipment purchase date and amount of use
- Nature of problem

Armstrong Tractor Company
One Parks Bend, Box 12
Vandergrift, PA 15690
Phone: (724) 845-1250
Fax: (724) 845-1760

When contacting Armstrong Tractor Company's Customer Service Department, be aware that your problem will likely be resolved in the dealership using the dealer's facilities, equipment and personnel. So it is important that your initial contact be with the dealer from whom the equipment was purchased.

SAFETY PRECAUTIONS

OPERATING THE TRACTOR AND FRONT LOADER REQUIRES SPECIAL EFFORT ON YOUR PART TO INSURE YOUR SAFETY AND THE SAFETY OF OTHERS. KNOW THESE REQUIREMENTS BEFORE YOU OPERATE THE TRACTOR AND LOADER.

In order to avoid severe personal injury or equipment damage, observe the following precautions:

- All parts, especially guards and shields, must be in good condition and securely in place.
- Be sure all nuts, bolts, etc., are tight.
- Do not remove any guards, warning labels, shields or safety devices. They are installed for your safety.
- Know how to stop the engine quickly. Thoroughly understand operation of all the controls.
- Never allow anyone to operate the tractor and front loader without proper instructions.
- Do not allow passengers to ride on the tractor or front loader.
- Keep children and pets at a safe distance during operation.
- Never allow anyone to get under the loader bucket or reach through the lift arms when the bucket is raised.
- Always wear sturdy shoes or boots and avoid operating tractor and front loader with bare feet and legs or while wearing bulky or loose fitting clothing.
- Be alert. Do not operate the front loader when tired, ill or under the influence of alcohol or drugs.
- Work with equipment only in daylight or good artificial light.
- Watch out for and use caution around rocks, roots, holes and other hidden objects.
- If you hit an object, stop and inspect for damage; repair any damage before continuing to operate the tractor and front loader.
- Replace damaged, worn or broken parts immediately.
- The exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and may lead to death if the tractor is operated in an enclosed area.
- Avoid overhead wires and obstacles when the loader is in the raised position. Contact with electric wires can cause electrocution, possibly resulting in death.
- Allow for the added length of the front loader when making turns to prevent striking people or objects.
- When operating the front loader on a slope, always drive up and down the face of the grade. Turning or driving across the face of the slope may cause the tractor to overturn.
- Operate the front loader arms gradually by "feathering" (slightly moving) the loader controls to prevent abrupt movements that could cause damage to the tractor and front loader.

- Before leaving the tractor unattended, always lower the loader bucket to the ground, make certain that the tractor is in neutral, set the parking brake, stop the engine and remove the ignition key to prevent children or unauthorized persons from starting the engine.
- Prolonged exposure to loud noise can cause permanent loss of hearing. Wear a suitable protective device such as ear plugs to protect against loud or objectionable noise.
- The use of heavy equipment and/or lifting excessive loads may adversely affect tractor stability and control.
- Use only recommended tractor hitch attachment points.
- Limit loads to those within the tractor and front loader limitations as stated in this manual.
- Use caution while turning or backing-up, and when operating on uneven terrain.
- Unless a backhoe is attached, do not operate without rear counter weights mounted to the rear hitch.
- Operate the tractor and front loader at slow speeds until you become familiar with all the operating characteristics and controls.
- Sudden stops of the tractor and loader during operation can cause the tractor to overturn. Be especially careful during sharp turns and when the bucket has material in it.
- Carry the loader arms and bucket as low as possible during transport. This will enhance tractor and loader stability and front vision.
- Using the front loader for handling large objects such as logs or oil drums is not recommended. Such items can easily shift or roll down the loader front arms causing equipment damage and/or severe personal injury.
- Never operate the tractor and front loader when visibility is diminished by darkness or inclement weather.
- When digging, you must be aware of all underground cables, wires and piping. If uncertain of underground utilities, contact your local utility companies.
- Do not back down or rapidly accelerate up a sloping surface.
- To avoid loss of control or overturning, do not stop or turn on sloping surfaces.
- Do not operate the loader near the edge of a ditch or embankment. Slipping off the edge could lead to severe personal injury or equipment damage.
- To avoid injury to yourself and others, always do the following before leaving the tractor and front loader unattended:
 - Park on level ground and lock the parking brake.
 - Lower the bucket to the ground.
 - Stop the engine and remove the ignition key.
- If it becomes necessary to park on a slope, be sure to lock the parking brake and securely block the wheels.

SPECIFICATIONS

Maximum Lift Height:	85"
Clearance with Bucket Dumped:	77"
Reach at Maximum Height:	20 ½"
Bucket Width:	48"
Bucket Level Volume:	4.5 Cubic ft.
Maximum Lift to Full Height with 74 Series Tractor:	800 lbs.
Maximum Lift to Full Height with 72 Series Tractor:	450 Lbs.
Breakout Force with 74 Series Tractor:	1600 Lbs.
Breakout Force with 72 Series Tractor:	800 Lbs.

LOADER ASSEMBLY

The following must be available to properly mount a loader to the tractor:

Counter Weight/Ballast

Following are the recommended counter weights for each tractor to obtain satisfactory performance. Additional weights may be needed depending upon the tire size. See Figure 1.

- A. 3 pt. Hitch - 50 lbs. (3)
- B. Optional (2) 50-lb. Rear wheel weights

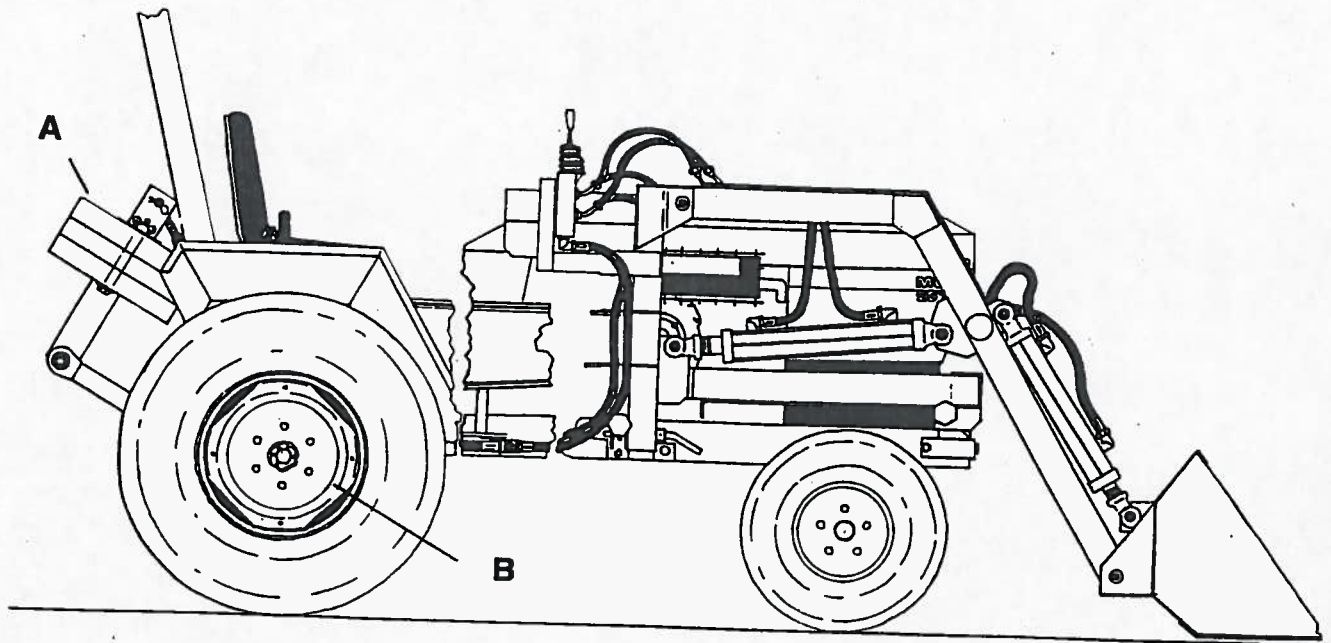


Figure 1

INSTALLING LOADER MOUNTING BRACKETS ON 72 SERIES TRACTOR

1. Attach left and right mower mounting brackets, A, Figure 2, with four $3/8$ " x 2" bolts and $3/8$ " nuts and lock washers on each side.
2. Attach rear loader mounting bracket, B, Figure 2. On the 72 Series tractors, the rear mounting bracket is one complete part. Slide bracket over the tractor's frame and attach to left and right mounting bracket using four $1/2$ " bolts with appropriate nuts and lock washers.
3. Attach front mount, C, Figure 2.

Remove the two bolts attaching the tractor's front bumper to its frame. Slide the front mounting bracket onto the tractor's frame. Make certain that the mounting bracket fits flush against the frame.

Use two $3/8$ " x 2" bolts with nuts and lock washers to attach the left and right side of the front mounting bracket to the tractor's mainframe. Use two $3/8$ " x bolts with nuts to attach the front bumper and the front holes of the front mounting bracket to the mainframe of the tractor.

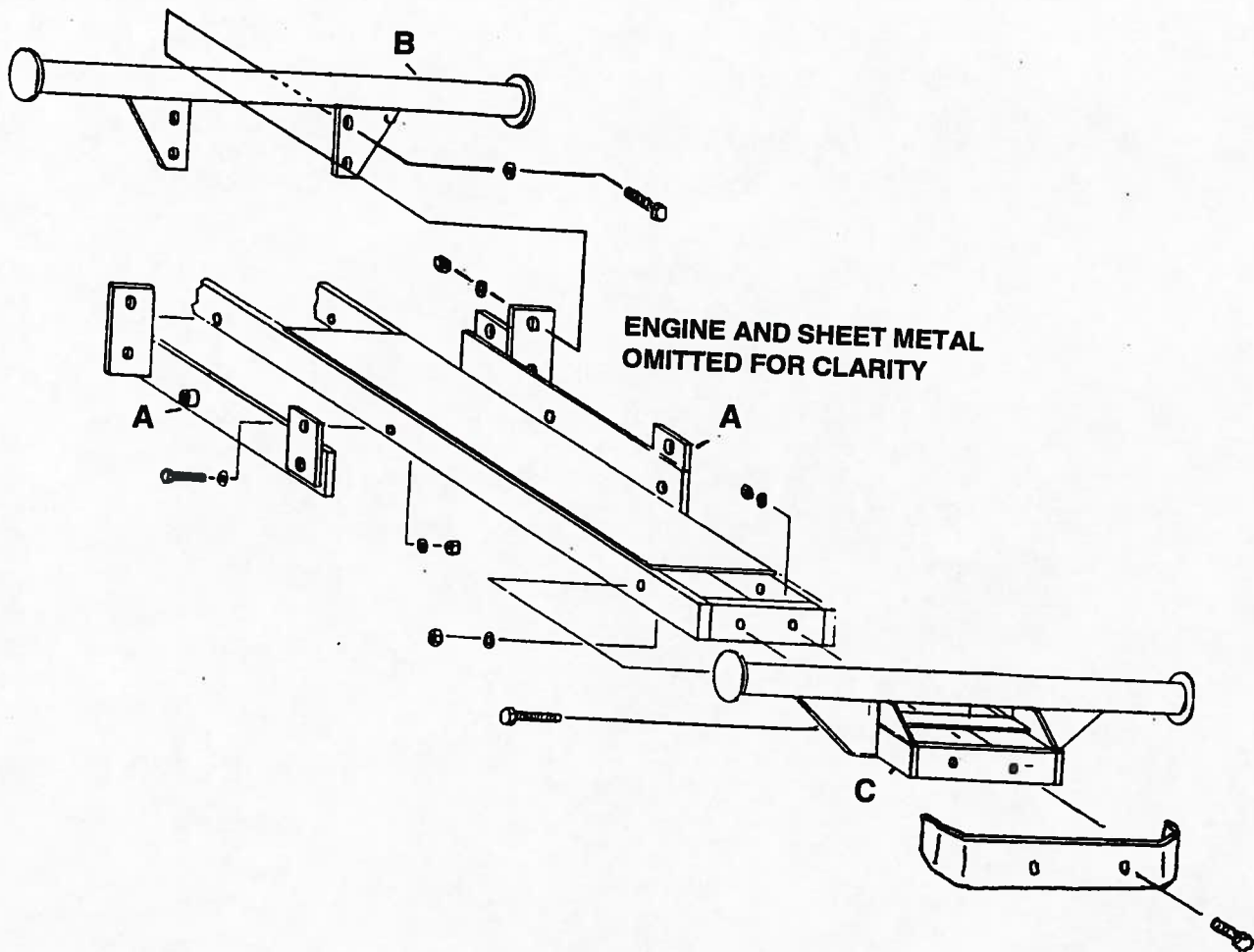


Figure 2

INSTALLING LOADER MOUNTING BRACKETS ON 74 SERIES TRACTOR

1. Attach left, B, and right, A, rear loader mounting brackets, A, Figure 3. On the 74 Series tractors, the rear mounting bracket is composed of one left, B, and one right, A, part. Simply use three 1/2" bolts with nuts and lock washers to attach each piece to the mounting bracket.
2. Attach front mount, C, Figure 3.

Remove the two bolts attaching the tractor's front bumper to its frame. Slide the front mounting bracket onto the tractor's frame. Make certain that the mounting bracket fits flush against the frame.

Use two 3/8" x 2" bolts with nuts and lock washers to attach the left and right side of the front mounting bracket to the tractor's mainframe. Use two 3/8" x 2-1/2" bolts with nuts to attach the front bumper and the front holes of the front mounting bracket to the mainframe of the tractor.

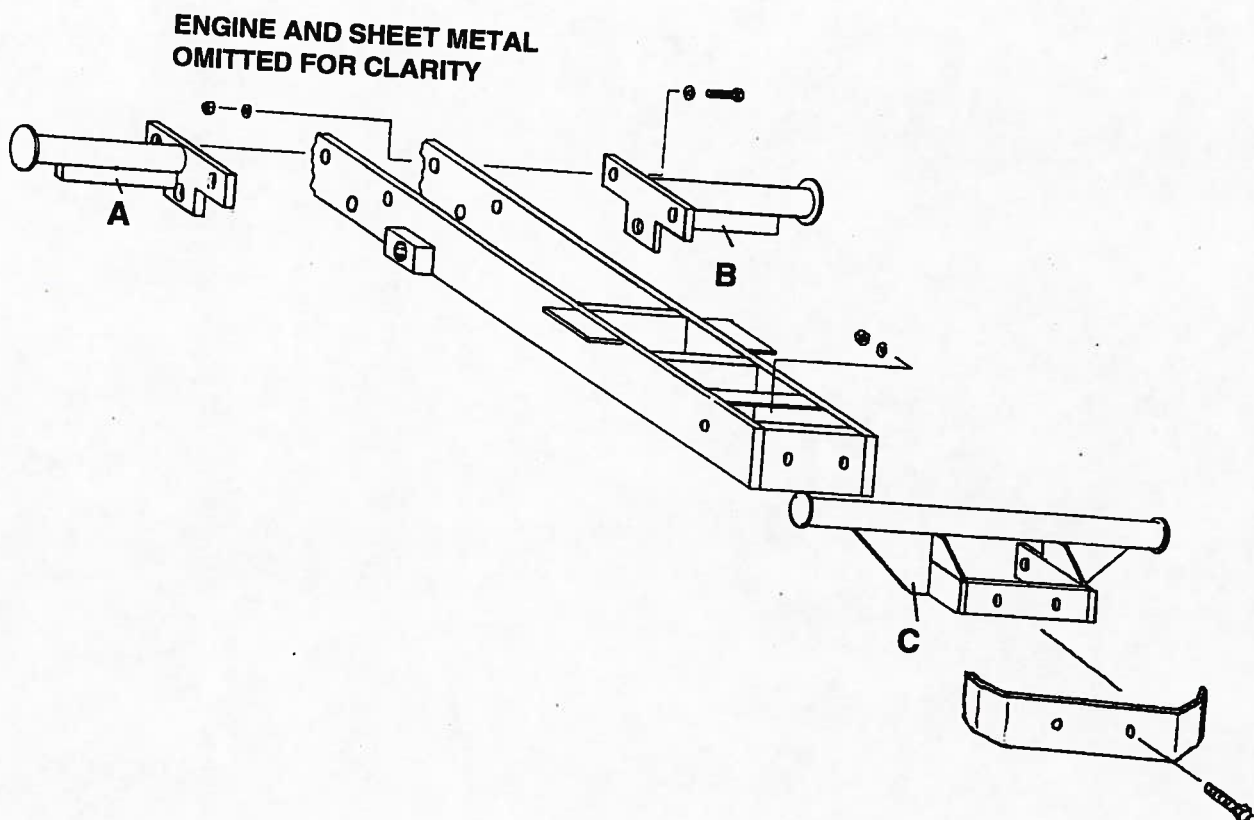


Figure 3

PLUMBING LOADER TO THE TRACTOR

1. Connect the hydraulic lines as shown in Figure 1.
2. Start the tractor and run engine at idle speed. Move the loader control joystick slowly to check for proper action. If a control function is opposite the decal, lower the loader, stop the engine and switch lines for that function for proper operation.
3. If system is functioning properly, place the hoses into the safety ports and secure with hair pin.
4. After all plumbing is completed, start the tractor engine and slowly cycle lift and bucket cylinders several times to free the system of air, then retract cylinders and stop engine. If needed, add additional hydraulic oil to its required level (slightly above tank screen).

BUCKET ATTACHMENT

1. Drive the loader into the bucket to be mounted. Align and install the lower boom loader pins, 4, Figure 4.
2. Extend the bucket cylinders, align and install the bucket pins securing with similar spacers, bolts and nuts.

REMOVING AND MOUNTING LOADER

Removing Loader

▲ WARNING ▲

NEVER ATTEMPT TO REMOVE THE LOADER FROM THE TRACTOR WITHOUT THE BUCKET INSTALLED!

1. Locate the tractor and loader on firm, level ground.
2. Lower the bucket to the ground, stop the engine and set the brakes.
3. Remove attachment pin, 7, Figure 4, from each loader frame. Place the pin in the top part from which it was removed for storage. Remove the two pins from the hose retainer.
4. Start tractor engine and release tractor brakes. Activate lift control lever to raise side frame uprights off of the mid mounting assembly. While gradually activating the lift control lever, slowly back up the tractor allowing the loader to roll off of the front mounting bracket until the lift cylinders are fully extended and the loader front bumper is resting on the ground.

▲ WARNING ▲

BE SURE THE HYDRAULIC HOSES ARE FREE AS THE TRACTOR IS BACKED AWAY!

5. Engage tractor brakes and stop the engine. Do not relieve the pressure in both the bucket and lift circuits.
6. Disconnect the quick couplers and position the ends of the hoses with couplers on the loader so they do not contact the ground.
7. Connect the quick couplers on the tractor together to prevent damage occurring to the tractor's hydraulic pump.

▲ WARNING ▲

NEVER DISCONNECT HYDRAULIC HOSES WHILE THE ENGINE IS RUNNING. DAMAGE TO THE TRACTOR WILL OCCUR. FAILURE TO CONNECT THE TRACTOR HYDRAULIC HOSES MAY CAUSE ENVIRONMENTAL DAMAGE THROUGH AN OIL SPILL AND CAUSE DAMAGE TO THE TRACTOR'S MAIN HYDRAULIC PUMP!

MOUNTING LOADER

The mounting procedure is basically the reverse of the removal procedure.

1. Slowly drive the tractor into the loader until the hoses will reach from the loader to the tractor. Engage the tractor brakes and shut off the tractor engine.
2. Make sure the couplers are clean and connect the hydraulic hoses.
3. Restart the tractor, release tractor brakes and slowly drive the tractor ahead until the front mounting bracket tubes contact side frame channels.
4. Gradually activate joystick in the lowering direction to retract lift cylinders and roll the loader onto the front mounting bracket tubes. Continue rolling the loader on the front mounting bracket tubes and ease the tractor ahead until the side frame mounting hooks are fully engaged on both the front and rear mounting tubes.
5. Install one attachment pin, 7, Figure 4, through the hinge on each loader frame to secure the loader to the tractor.
6. Reposition the hoses into the safety ports and secure with hair pin.
7. After all mounting is completed, start the tractor engine and slowly cycle lift and bucket cylinders several times to free the system of air, then retract cylinders and stop engine. If needed, add additional hydraulic oil to its required level (slightly above tank screen).

NOTICE:

The hoses must be positioned against the tubes or damage to the tractor may occur.

▲ WARNING ▲

NEVER DISCONNECT HOSES WHILE ENGINE IS RUNNING; DAMAGE TO THE TRACTOR WILL OCCUR!

OPERATIONAL CHECK

- Check all pivot points on the loader. Lubricate as necessary. See lubrication chart.
- Check tractor hydraulic fluid.

Note:

Check fluid level with loader arms down and bucket flat on the ground.

- Operate and check the loader mainframe and bucket for interference, noise and bending of parts.

▲ CAUTION ▲

BEFORE USING LOADER, DOUBLE CHECK:

- *Tractor Owner's Manual for recommended tire pressure;*
- *That all bolts and hoses have been tightened and that all tools have been removed from tractor and loader; and*
- *Weight box is installed and correct weight added. Check all hydraulic hose connections to insure that they are not leaking.*

▲ WARNING ▲

BEFORE DISCONNECTING HYDRAULIC LINES, RELIEVE ALL HYDRAULIC PRESSURE. ESCAPING HYDRAULIC OIL UNDER PRESSURE CAN HAVE SUFFICIENT FORCE TO PENETRATE THE SKIN CAUSING SERIOUS PERSONAL INJURY. IF INJURED BY ESCAPING HYDRAULIC OIL, CONSULT A PHYSICIAN IMMEDIATELY. CHECK ALL HYDRAULIC HOSE ROUTING TO INSURE ADEQUATE CLEARANCES EXIST BETWEEN HOSE AND ADJACENT COMPONENTS!

START-UP PROCEDURE

- Check tractor hydraulic fluid level (see tractor manual).

Note:

Bucket and lift cylinders should be fully retracted when checking hydraulic fluid level.

- Check all hydraulic hose connections to insure that they are not leaking.
- Lubricate all pivot points that incorporate grease fittings.
- Start tractor and run engine at medium speed for initial cycling of loader.

▲ WARNING ▲

BEFORE USING FRONT LOADER FOR THE FIRST TIME, CYCLE THE LIFT AND BUCKET CYLINDERS TO PURGE AIR FROM CYLINDERS. AIR IN THE HYDRAULIC SYSTEM CAN CAUSE UNEXPECTED MOVEMENT OF MAINFRAME, CAUSING BODILY INJURY OR DAMAGE TO THE LOADER OR TRACTOR!

Cycle the lift bucket cylinders with bucket empty several times to seat-in cylinder components.

▲ WARNING ▲

THE TRACTOR LOADER SHOULD ONLY BE OPERATED WITH ALL SAFETY EQUIPMENT PROPERLY INSTALLED!

▲ CAUTION ▲

OPERATE LOADER FROM THE TRACTOR SEAT ONLY!

OPERATING TIPS

NOTICE:

Use caution when using the material with bucket cylinder partially extended. Cylinder rod may be partially damaged.

Do not tip bucket cutting edge down (fully extended bucket cylinder) during backfilling/backgrading operation.

Cylinder and rod may be damage.

Position vehicles to be loaded as near the pile as possible and in such a direction so as to minimize the amount of tractor turning required to dump.

Keep the unit clean and perform regular service. Observe safety instructions whenever cleaning, servicing or lubricating.

We urge you to follow this advice:

- Read and understand this manual as well as the tractor owner's manual.
- Remember and observe the Safety Precautions brought to your attention in this manual, the tractor manual and on the loader itself
- Use good common sense in the everyday operation of this unit. Safety instructions can never be all inclusive. You are responsible for avoiding unsafe conditions.
- Never exceed the limits of a piece of machinery. If the machine's ability to perform a job safely is in question, **DO NOT TRY IT.**
- Do not hurry the learning process or take the unit for granted. Ease into it and become familiar with your new loader and tractor.
- When lowering a heavy load, ease it downward slowly. Never drop a loaded bucket and catch it hydraulically. Stopping a load after it has gained downward momentum places undue strain on the unit and may cause damage to the loader or tractor, and possibly may cause the tractor to overturn.

WARNING

DO NOT OPERATE THE LOADER IF THE HYDRAULIC FITTINGS OR HOSES ARE LEAKING OR DAMAGED. A SUDDEN LINE BURST CAN CAUSE THE MAINFRAME TO DROP SUDDENLY, CAUSING DAMAGE TO THE TRACTOR OR LOADER AND/OR INJURY TO THE OPERATOR OR BYSTANDERS!

- **BEFORE OPERATING, LUBRICATE ALL MOVING PARTS. REFER TO LUBRICATING SECTION.**

COLD WEATHER OPERATION

To assure smooth operation in cold weather, allow the tractor to warm-up. Slowly cycle the loader and bucket several times to warm the fluid in the hydraulic fluid system. The loader may operate erratically until the hydraulic fluid has warmed to operating temperature

OPERATING INSTRUCTIONS

Main, lift and bucket cylinders are double acting type (both push and pull under hydraulic power). This means that the loader can be forced down as well as up. It means that the bucket can be tilted down or up with hydraulic pressure.

HYDRAULIC VALVE CONTROL

Your loader control valve uses a single joystick operation that controls the lift and bucket cylinders. The handle will return to the neutral position when released (except when in the float position).

NOTE:

In float position there is no hydraulic pressure going to the lift cylinders. If the loader frame is up off the ground, gravity will lower it to the ground. When the bucket is on the ground (and the valve in float), the loader arms will follow the shape of the ground even when the tractor is moving. This allows hydraulic oil to flow back and forth in the hydraulic system as the loader is raised and lowered by the ground contour.

▲ WARNING ▲

DO NOT ALLOW THE BUCKET LIP TO DIG INTO THE GROUND WHEN TRACTOR IS MOVING FORWARD IN FLOAT. THE BUCKET BOTTOM SHOULD BE LEVEL WITH THE GROUND OR SLIGHTLY ROLLED BACK!

CONTROLLED RATE OF LOADER FUNCTIONS

By feathering (slightly moving) the control levers, precise operational speeds can be obtained. This action controls the position of the valve spools in the control valve and regulates the flow of oil from/to cylinders. It is important to utilize this operational practice when lowering the mainframe when the bucket is loaded with material.

SCRAPING AND PEELING

When scraping, the "float" position should be utilized to maintain the bucket firmly on the ground and at the same time allow the bucket to follow ground contours.

Use a slight bucket angle, tilted forward, and hold the lift control forward to start the cut. Make a short 5' to 8-foot angle cut and break-out cleanly.

With the bucket level, start a cut at the notch approximately 2" deep. Hold the depth by feathering (slightly moving) the bucket control to adjust the cutting lip up or down. When the front tires enter the notch, adjust the lift cylinder to maintain proper depth.

Make additional passes until the desired depth is achieved. During each pass, only use the bucket control while at working depth. This will allow you to concentrate on controlling the bucket angle to maintain a precise cut.

▲ WARNING ▲

WHEN SCRAPING AND PEELING, BE AWARE OF BURIED CABLES, WIRES, PIPING, ETC. IF UNCERTAIN OF UNDERGROUND UTILITIES, CONTACT YOUR LOCAL UTILITY COMPANIES!

BACKFILLING/BACKGRADING

When "backfilling" or "backgrading", position the bucket so it is level on the ground. Do not dump material from the bucket. Additional weight of material in bucket will assist in "backgrading" and increases loader efficiency during "backfilling".

LOADING

Drive straight ahead into pile with bucket cutting edge level with the ground. In order to prevent possibility of damaging tractor or loader:

- Do not ram into a pile at high speed.
- Do not attempt to turn tractor while loading.

As bucket begins to fill with material, gradually roll the bucket back and raise the loader to increase "fill" capacity. This procedure also results in the material being removed in layers from the top for maximum loading efficiency.

NOTE:

Do not be concerned if the bucket is not completely filled during each pass. Maximum productivity is determined by the amount of material loaded in a given period of time. This is lost if two or more attempts are made to fill the bucket on each pass.

When the bucket is full, raise loader so that the bucket is clear of material and slowly back out of pile. For maximum loading efficiency, minimize angle of turn and distance between loading and unloading points.

CARRYING MATERIAL

Transport material to "unloading point" with the loader bucket as low as possible to prevent spillage and maintain maximum tractor/loader stability.

NOTICE:

During transport, the loader should be in a position that will not impair the operator's vision. The ideal position for the bucket is slightly below the hood of the tractor regardless if the bucket is full or empty.

DANGER

DO NOT ATTEMPT TO LIFT BUCKET LOADS IN EXCESS OF LOADER CAPACITY!

DANGER

AVOID ANY OVERHEAD WIRES OR OBSTACLES WHEN LOADER IS RAISED TO AVOID DAMAGE OR POSSIBLE DEATH BY ELECTROCUTION!

WARNING

A LOADED BUCKET SHOULD BE TRANSPORTED IN A LOW POSITION AT SLOW GROUND SPEEDS, ESPECIALLY IF THE GROUND IS IRREGULAR. MAKE TURNS SLOWLY AND USE THE HYDROSTATIC SPEED LEVER CAUTIOUSLY. A FULL BUCKET IN THE RAISED POSITION ALTERS THE CENTER OF GRAVITY OF THE UNIT AND INCREASES THE POSSIBILITY OF MISHAPS, ROLLOVER AND BODILY INJURY!

WARNING

DO NOT LIFT OR CARRY PERSON(S) ON A LOADER OR ATTACHMENT; A SLIP OR FALL COULD CAUSE SERIOUS INJURY!

LOADING FROM A BANK

Choose a forward speed that provides sufficient ground speed for loading.

Exercise caution when undercutting high banks. Dirt slides can be dangerous. Load from as low as possible for maximum efficiency. Loader lift and breakaway capacity diminish as loading height is increased.

Sidecutting is a good technique for cutting down a large pile. However, this loader unit is not designed for digging.

If the pile sides are too high and likely to cause cave-in, use the loader to rake down the sides until a slot can be cut over the top.

Another method for large dirt piles is to build a ramp to the pile.

It is important to keep the bucket level when approaching a bank or pile. This will help prevent gouging the work area.

OPERATING WITH FLOAT CONTROL

During hard surface operation, keep the bucket level and put the lift control in the float position to permit the bucket to lay flat on the working surface. If hydraulic down pressure is exerted on the bucket, it will wear faster than normal.

The float will also prevent the mixing of surface material with stockpile material. The float position will reduce the chance of surface gouging when removing snow or other material, or when working with a blade.

LOWERING THE BUCKET

After the bucket is dumped, back away from the vehicle while lowering and rolling back the bucket.

DUMPING

As the tractor approaches the "unloading point", raise the loader clearance to "dump" bucket.

Drive slowly to position bucket above "unloading point", stop tractor and dump bucket. For best stability, do not raise loader higher than required for 'dumping clearance'. As "dumping" clearance height increases, the bucket position must be adjusted to prevent excessive spillage of material from bucket.

WARNING

Use caution when dumping on uneven terrain!

LUBRICATION AND MAINTENANCE

1. Loader Frame
2. Loader Arms
3. Loader Bucket
4. Loader Pin
5. ¼ UNC x 2" HHCS
6. ¼ UNC Nylock Nut
7. Attachment Pin
8. Hair Pin

Do not perform any service/maintenance operations with front loader raised off the ground.
EXCEPTION — When greasing the loader arms and loader bucket, the loader must be raised off the ground.

Lower front loader to the ground and relieve pressure in loader hydraulic lines prior to performing any service/maintenance operations on tractor or loader.

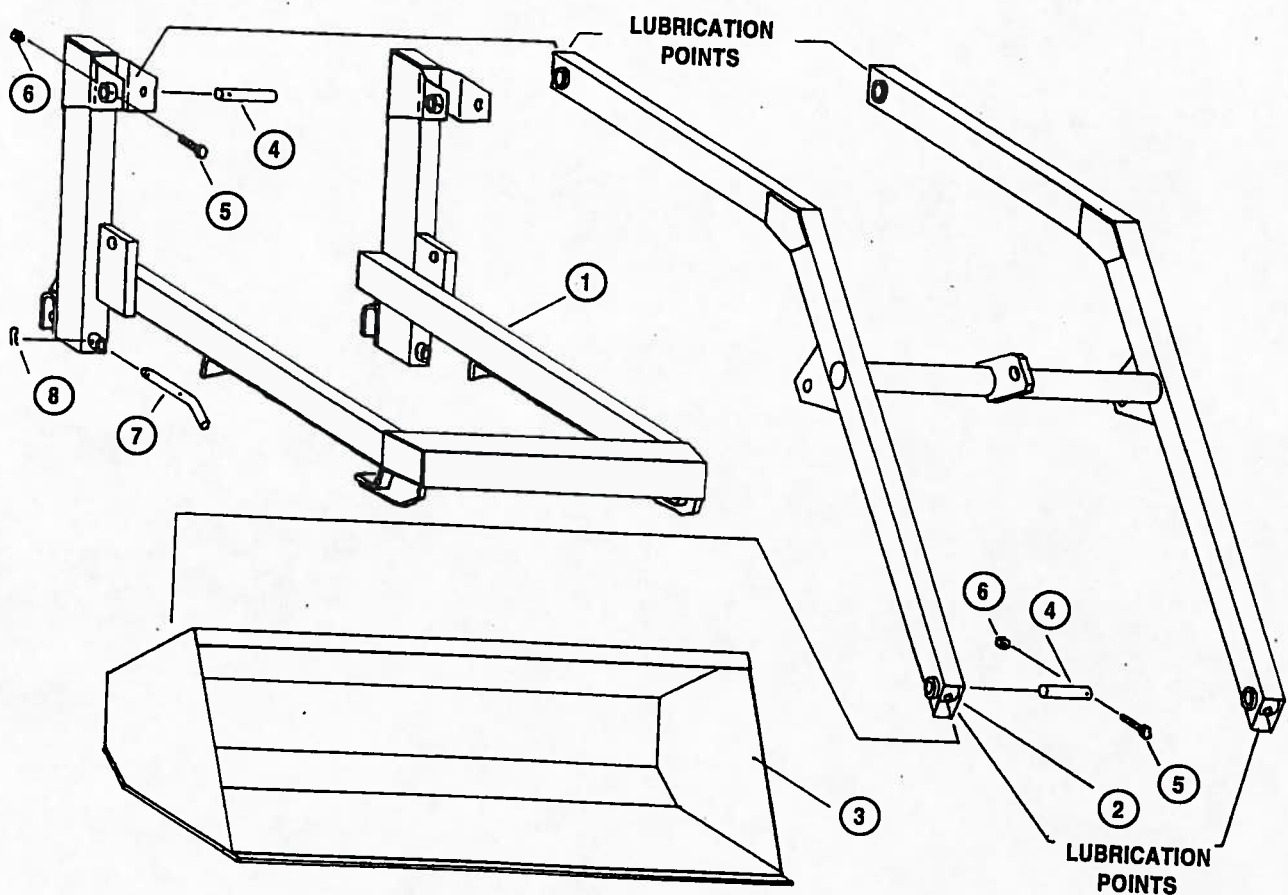


Figure 4

▲ WARNING ▲

DO NOT OPERATE THE FRONT LOADER IF THE FITTINGS OR THE HOSES ARE LEAKING OR DAMAGED. A SUDDEN LINE BURST COULD CAUSE THE MAINFRAME TO DROP SUDDENLY, CAUSING DAMAGE TO THE TRACTOR OR LOADER AND/OR INJURY TO THE OPERATOR!

▲ DANGER ▲

KEEP HANDS AND BODY FROM PRESSURIZED LINES. USE PAPER OR CARDBOARD, NOT BODY PARTS, TO CHECK FOR LEAKS; SEE FIGURE 5. HYDRAULICS UNDER PRESSURE WILL PENETRATE THE SKIN CAUSING SERIOUS INJURY!

▲ WARNING ▲

MAKE SURE THAT ALL OPERATING AND SERVICE PERSONNEL KNOW THAT IN THE EVENT HYDRAULIC FLUID PENETRATES THE SKIN, IT MUST BE SURGICALLY REMOVED WITHIN A FEW HOURS BY A PHYSICIAN FAMILIAR WITH THIS TYPE OF INJURY, OTHERWISE GANGRENE MAY RESULT!

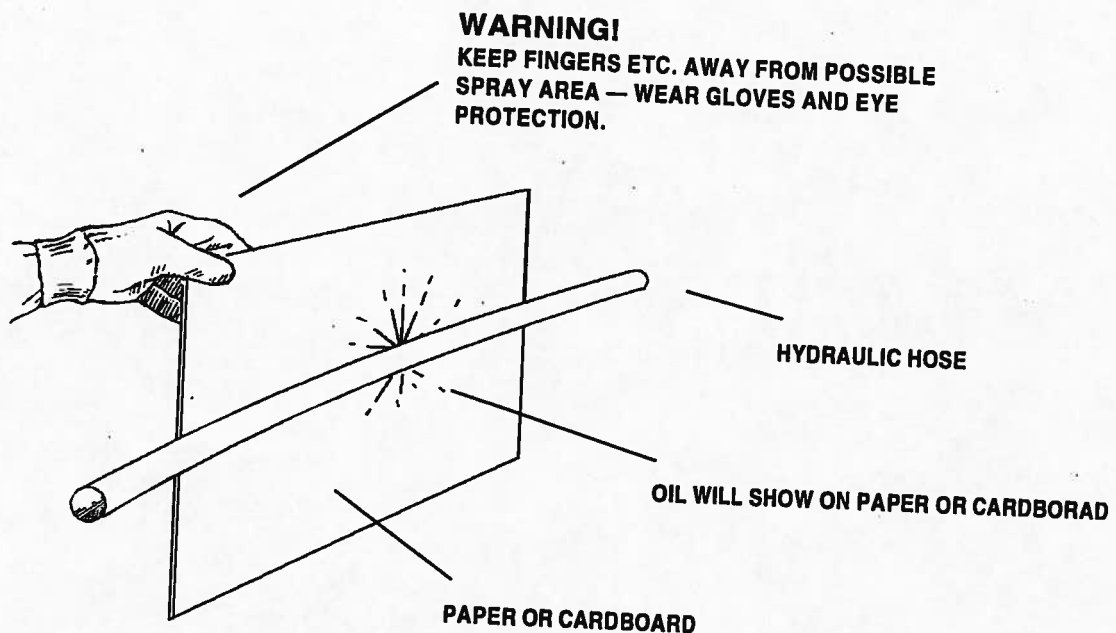


Figure 5

STORAGE

End of Season

- If loader is to be dismantled from the tractor during storage, make sure parking area is hard and ground level.
- Store in a dry and sheltered area.
- Thoroughly clean the loader of all accumulated dirt and material.
- Completely lubricate the loader as specified in lubrication section of manual.
- Using an oil soaked cloth, lubricate all hydraulic cylinder rods to protect them from rust and corrosion.
- Repaint any areas where paint is worn or damaged.
- Wear areas on buckets and other attachments should be coated with grease to prevent rust or corrosion.
- Replace any safety or warning labels that are unreadable due to wear or damage.

▲ WARNING ▲

DO NOT ALLOW CHILDREN TO PLAY ON OR AROUND THE TRACTOR OR LOADER!

Beginning of Season

- Review safety precautions and operation section of this manual
- Thoroughly clean loader of all accumulated dirt and grease.
- If removed from tractor for storage, remount loader per the Loader Installation section of this manual.
- Completely lubricate the loader as per the Lubrication section of this manual.
- Clean with solvent any exposed surfaces which had been coated with grease. Wipe dry with a clean cloth, then lubricate with an oil-soaked cloth.
- Tighten any bolts that may have been loosened and make sure all pins are in place.
- Start tractor and operate loader to make sure it is operating properly and all hoses are properly connected.
- Make sure hydraulic hoses, lines and fittings are in good shape and not leaking. Repair or re-place as needed.

LUBRICATION AND MAINTENANCE CHART

Hydraulic oil level	Check	Daily / 10 hours — add ISO 68 if needed
Tire inflation	Check	Weekly / 50 hours Front Pressure: 30 psi Rear Pressure: 15 psi
Loader pivot points (4)	Lubricate	Daily / 10 hours — Multipurpose lithium grease
Hydraulic lines, hoses and connections	Check for leakage, wear and damage	Daily / 10 hours
Lift bucket cylinders	Check for seepage	Daily / 10 hours
Mounting pins, clip pins and fixing pins	Check; replace if missing	Daily / 10 hours
Sub-frame mounting and hardware	Check; re-torque if necessary	Weekly / 50 hours.

NOTE: Whenever performing maintenance on your equipment, please follow all recommended safety procedures. Wear protective eyewear (safety glasses). Wear long sleeved shirts, long pants and sturdy shoes. When dealing with lubricating or hydraulic fluids follow manufacturers instructions printed on the label.

TROUBLE SHOOTING

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
LOADER DOES NOT WORK AT ALL	<ol style="list-style-type: none"> 1. Oil level low. 2. Oil line restricted or leaking 3. Inlet line restricted or leaking 4. Defective control valve 5. Pump worn or damaged 6. Couplings not connected 7. Hydraulic plumbing incorrect 	<ol style="list-style-type: none"> 1. Fill reservoir to proper level 2. Check all hoses and tubes for leaks, damage or restrictions Replace damages or restricted hoses or tube lines 3. Check, tighten or replace inlet line 4. Check, repair or replace 5. Check, repair or replace 6. Connect couplings 7. Properly attach and tighten
LOADER SLOW OR WILL NOT LIFT AND/OR DUMP	<ol style="list-style-type: none"> 1. Hydraulic oil too heavy 2. Cold oil 3. Low engine speed 4. Oil line restricted or leaking 5. Control valve does not shift properly 6. Air in hydraulic system 7. Cylinder leaks 8. Faulty relief valve 	<ol style="list-style-type: none"> 1. Change to proper oil 2. Allow oil to warm 3. Increase engine speed 4. Check all hoses and tubes for leaks, damage or restrictions Replace damaged or restricted hoses or tube lines 5. Inspect, clean, repair or replace valve 6. Cycle lift cylinders and bucket cylinders several times to free system of air 7. Replace seals 8. Clean or replace relief valve
PUMP CHATTERS OR VIBRATES WHEN RAISING OR LOWERING	<ol style="list-style-type: none"> 1. Air leak in pump inlet line 2. Air in hydraulic system 3. Pump shaft seal leaking 4. Oil level too low 	<ol style="list-style-type: none"> 1. Check, tighten or replace inlet line 2. Cycle lift and bucket cylinders 3. Rebuild/replace pump 4. Add oil as required
PUMP NOISY	<ol style="list-style-type: none"> 1. Oil too heavy 2. Oil too cold 3. Inlet line restricted or leaking 4. Air in oil 5. Oil level too low 6. Pump worn or damaged 	<ol style="list-style-type: none"> 1. See oil specifications 2. Allow oil to warm 3. Check for air leaks, restricted or collapsed hose; Clean filter if necessary 4. Check, tighten or replace inlet line; Check for leaks; check pump seal 5. Add oil as required 6. Repair or replace pump
CONTROL VALVE STICKS OR WORKS HARD	<ol style="list-style-type: none"> 1. Valve damaged or broken 	<ol style="list-style-type: none"> 1. Check, repair, or replace valve

TROUBLE SHOOTING

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
EXCESSIVE WEAR ON BUCKET CUTTING EDGE	<ol style="list-style-type: none"> 1. Bucket riding on cutting edge instead of wear pads. 	<ol style="list-style-type: none"> 1. Use boom "float" position to insure bucket rides on wear pads
CYLINDER LEAKS OIL	<ol style="list-style-type: none"> 1. Loose parts 2. Damaged cylinder tube 3. Leaking rod seal 4. Piston rod damaged 	<ol style="list-style-type: none"> 1. Check and tighten 2. Replace cylinder, correct cause 3. Replace seal; wear may be caused by contamination; look for source 4. Check rod for nicks or scratches Replace defective cylinder or piston rod
OIL OVERHEATING	<ol style="list-style-type: none"> 1. Using incorrect oil 2. Oil level low 3. Engine operating too fast 4. Hydraulic line is restricted 5. Controls stuck in an operating position 6. Dirty oil cooler 	<ol style="list-style-type: none"> 1. See oil specifications 2. Fill reservoir to proper level 3. Reduce throttle 4. Check for restrictions, clean or replace if necessary 5. Put controls in neutral 6. Clean cooler
PUMP LEAKS OIL	<ol style="list-style-type: none"> 1. Damaged seal 	<ol style="list-style-type: none"> 1. Check, repair, or replace
FOAMING OF OIL SYSTEM	<ol style="list-style-type: none"> 1. Restriction in suction line 2. Water in oil system 3. Improper oil in system 4. Oil level low 5. Air leak in pump inlet line 6. Worn seal around pump shaft 	<ol style="list-style-type: none"> 1. Repair or replace oil line 2. Drain and replace oil; repeat after 5 hours 3. See oil specifications 4. Check for leaks; fill reservoir 5. Repair or replace inlet line 6. Replace seal or repair pump
LOAD DROPS WITH CONTROL VALVE IN NEUTRAL POSITION	<ol style="list-style-type: none"> 1. Oil leaking past control valve 2. Oil leaking past piston seals in cylinder 3. Leaking or broken oil lines from control valves to cylinder 	<ol style="list-style-type: none"> 1. Clean or replace valve; wear may be caused by contamination; clean system 2. Replace worn parts; wear may be caused by contamination; check system 3. Check for leaks; tighten or replace lines

NOTE: Whenever performing maintenance on your equipment, please follow all recommended safety procedures. Wear protective eyewear (safety glasses). Wear long sleeved shirts, long pants and sturdy shoes. When dealing with lubricating or hydraulic fluids follow manufacturers instructions printed on the label.